FINAL YEAR INTERNSHIP REPORT ON

NETWORK MANAGEMENT USING MIKROTIK

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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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DHAKA, BANGLADESH

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APPROVAL

This Project/internship titled **"Network Management Using Mikrotik"**, submitted by MD. MOFIZUR RAHMAN, ID No: 152-15-6202 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 date 05.05.2018.

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DECLARATION

I am hereby declare that, this project has been done by us under the supervision of **Most.Hasna Hena, Sr. Lecturer, Department of CSE,** Daffodil International University.

We also declare that neither this project nor any part of this project has been submitted else where for award of any degree or diploma.

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First I am express our heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year internship successfully.

I am really grateful and wish our profound our indebtedness to **Most. Hasna Hena**, **Sr. Lecturer**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*Networking*" 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 our heartiest gratitude to Dr. Syed Akhter Hossain, Professor, and Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

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

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

ABSTRACT

MikroTik is a very low free cost and clean get entry to router that can be used for dealing with small and massive networks. Especially this networking device is appropriate for small networks like patron management and protection. The mikro electric router is the operating system of the mikro-router board that can be set up on a popular PC and the PC becomes a mikro router. Mikro electric is a totally low price and easy to access router effortlessly and it could be used for small and larger community control. Especially this networking device suits for small networks from every detail like customer manipulate and protection. It is a type of community that makes use of a Mikrotik router, which enables network administrators to reveal the bandwidth over the consumer in the overall network, which makes use of some sorts of protocols. The motive of the BW Manipulate is to deliver a clean community and B.W., which uses the Mikotik router the use of a few quality BWB control methods. After allocating the IP cope with, we configure the router in DHCP mode so that all customers inside the community can cope with a dynamic IP. I do some basic configuration like Interfaces, Add IP address ,Routes, DNS, DHCP, Bridge, Simple Queue ,Backup file and Restore file. Besides those, we also tend to configure wireless access point. We have also a discussion on MikroTik Router OS upgrade process which may require adopting new version in future. Finally, to manage and provide security in our network we use some special features of MikroTik Router OS like NAT, ARP Bandings, Queue Management etc.

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TABLE OF CONTENTS

CONTENTS	PAGE NO
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
Table of contents	v-vi
List of figures	vii
CHAPTER 1: Introduction	**1-4**
1.1 Introduction	1
1.2 Motivation	1-2
1.3 Internship objectives	2
1.4 Introduction to the company	2-3
1.5 Report layout	4
CHAPTER 2: Organization	**5-7**
2.1 Introduction	5
2.2 Product and market situation	5
2.3 Target Group	5
2.4 SWOT Analysis	6

2.5 Organizational Structure 6-7

CHAPTER 3: Tasks projects & Activities **8-34**

3.1 IP addressing sub-netting 8

3.1.1 Private &Public IP addressing 8-9

3.1.2 History of Mikrotik 10

3.2 Daily tasks and Activities 10-32

3.2.1 Downloading and installation of Mikrotik 14

3.2.2 Installation Procedure 15-20

3.2.3 Bandwdith Management procedure 21-30

3.3 Events And Activities 33

3.4 Challenges 33-34

CHAPTER 4: Competencies And Smart Plan **35-36**

4.1 Competencies Earned 35

4.2 Smart Plan 35

4.3 Reflections 36

CHAPTER 5: Conclusion And Future Career **37-38**

5.1 Discussion And Conclusion 37

5.2 Scope For Further Career 38

APPENDIX **40**

REFERENCES **39**

LIST OF FIGURES

FIGURES	PAGE	PAGE NO
Figure 3.1: VMware start	11	
Figure 3.2: VMware start	12	
Figure 3.3: Installation Process	12	
Figure 3.4: Installation Process	13	
Figure 3.5: Installation Process	13	
Figure 3.6: MikroTik	14	
Figure 3.7: MikroTik Installation	15	
Figure 3.8: Installation Process	16	
Figure 3.9: Installation Process	16	
Figure 3.10: Installation Process	17	
Figure 3.11: Installation Process	18	
Figure 3.12: Installation Process	19	
Figure 3.13: Installation Process	19	
Figure 3.14: Installation Process	20	
Figure 3.15: Starting with winbox	22	
Figure 3.16: Winbox interface configuration	23	
Figure 3.17: Add Address for Interface	24	
Figure 3.18: Create IP-> Route	25	
Figure 3.19: DNS Setup	26	
Figure 3.20: Firwal & NAT	27	
Figure 3.21: DHCP Setup	27	
Figure 3.22: Bridge Configuration	28	
Figure 3.23: Bandwidth Simple Queue General screen	30	

Figure 3.24: Simple queue List 30
Figure 3.25: Backup File 31
Figure 3.26: Restore File 32
Figure 3.27: Password set 32

CHAPTER-1
Introduction

1.1 Introduction

It has been a period of time in the world for ages and forever, forever and ever; We think it's our IT Affects the fields, so that my future can be beneficial. Internet and intranet visitors have become important issues this time where the use of big and big site visitors increases. Although improvements in Internet bandwidth have been improved. Most utilities today use bandwidth extensively using wide bandwidths. Most impact site visitors also use peer-to-use tools that are useful for the bandwidth used, due to its method of sending large amounts of data from the receiver to the sender. The Internet Provider Providers (ISPs) or Network Service Providers are very much interested in an organization that can offer the best community management and an important role in giving the best to the provider for ensuring overall performance [1].

1.2 Motivation

Mikrotik Linux-based totally running gadget whose name is MIKROTIK Router OS. Mikrotik Router that can provide my internship or job seek facility. This is an opportunity to construct a report of many abilities to win one-of-a-kind sorts of paintings, career and the industry of your careers. This can assist to enhance my career interest and the next steps. Using the day-to-day holes is depending on the world pc gadget. I am currently school of my Bachelors in Computer Science Engineering at Daffodil International University, I apprehend the significance of acquiring real know-how with a view to satisfy the knowledge of textbooks and help students in a bigger perspective. During the internship I determined that I changed into fully professional in the information of the Mikrotik network. As an internet service issuer, I got my comments through speaking with the general public, expertise their wishes and

giving them higher services. My capacity to study the state of affairs significantly and understand my capability to lie and paintings speedy and nonetheless well.

1.3 Internship Objectives

The primary cause of training is to accumulate know-how. I desired an internship due to the fact I wanted to benefit from the experience. I desired a brand new venture and could learn, enhance and increase new sets of talents. Responsibility of obligations and sports as a community aid engineer and their analysis from different perspectives. I present my actual expertise as nicely:

- To meet the necessities of the internship program below the CSE software.
- Knowledge of the Mikrotik
- Learn more about networking components
- Mikrotik configuration
- How to contact the clients
- How to offer desirable services to customers [1].

1.4 Introduction to the Company

Daffodil Online Ltd. Become established in 2002. Daffodil Online Limited (Doll) is one of the maximum essential groups for the Internet and actually provides ICT offerings and answers in July 2002. It has furnished WAN infrastructure services to its private fiber optic and radio link company, SME and character customer institutes running with worldwide businesses with giant movements and all associated excessive-to-excessive reward. It makes use of the present day technology and improvements to fulfill the wishes of a magician.

The Center Corporate Network Solutions Division is able to offer latest community and telecommunications solutions with a group of exceedingly professional technical specialists. Daffodil online limited (Doll) has a study strong engineering and management crew this is affiliated with San, CSO, Microsoft, Linux and Oracle,Mikrotik and is actively worried with the world-main computing association. As a group concern, (Doll) three essential platform examples: Education, race constructing and environment, promotions via its packages and offerings [1].

Head Office

Table-1: Company address Details

Name	Daffodil online limited
Address	102,sukrabad(3rdfloor), Mirpur road,Dhanmondi ,Dhaka-1207,Bangladesh
Telephone	02-9143258-60
Fax	880-2-8116103
Email	info@daffodilnet.com
Type of Organization	Nationwide internet service provider(ISP)
Employees	14

1.5 Report Layout

The number one topics consist of title page, approval page, abstract / executive summary, Acknowledgments (optional), table of contents, list of tables, list of figures, other lists (such a nomenclature), and the preface (optional). Preliminary pages are paginated separately from the rest of the text. Proper order of Preliminary Pages:

In Chapter 1, I have defined the motive of internship, concept of internship and Introduction to the company.

In Chapter 2, I have described my internship method. And this chapter offers statistics about in which the internship is attached to launch this software. It also includes how the global paintings is carried out, about the organisation, DoL's IT carrier offerings .

In Chapter 3, I have described about daily task and activities, Events and Activities and Challenges.

In the chapter 4, I have described is Competencies Earned, Smart Plan, Reflections.

In the chapter 5, I have described is Conclusion and Future Scope. I discuss Future Scopes of Linux and write conclusion.

CHAPTER-2
Organization

2.1 Introduction

Daffodil Online Ltd. (DOL) is one of the most importance company for internship and providing ICT services and solution since July 2002. It has its own Fiber Optic & Radio Link WAN infrastructure to serve corporate, SME and individual clients. The institute worked with many national projects and international organizations with high appreciation from all concerned. It using the latest technologies and upgrading the services wherever it is required [1].

2.2 Product and Market Situation

Daffodil online confined is imparting of products and services to meet patron call for.

Actually Daffodil on line limited corporation linkage of many different corporation. I am make sure Daffodil on line constrained is the maximum crucial of IT zone for market scenario [3].

2.3 Target Group

Daffodil on line confined well-known for IT answer ,software program & hardware all over the united states .

The company's customer base includes all consumers and all small- to medium-sized businesses, including start-ups. The company plans to concentrate on SOHO clients, as these are perfect targets for our new high-speed offerings, and hold the greatest growth potential for the company. Web Solutions feels that these market segments have special pricing and service needs, and make more dedicated, reliable customers [1].

2.4 SWOT Analysis

SWOT approach strength, weakness, opportunities , and threats. The purpose of SWOT evaluation is to apprehend the important key internal and external additives for a aim.

Strengths: Enterprise functions that examine commercial enterprise or undertaking with other advantages or abuses. Internal troubles within those employers.

Weakness: Sometimes a kind of thought can motive a disturbance. This is passionately advocated to use new techniques for excessive effectiveness, every so often, could reason troubles because employers are used with preceding strategies

Opportunities: Communication can be a spotlight a few of the reduction in competition, the fee of broadcasting, technological development, oral exchange network boom.
Unexpectedly, a telecommunications producer may additionally take advantage of new fiber optics investment within the second of being transferred to the market, to take benefit of recent technology.

Threats: A company has determined for my internship if very last results are pronounced. Use of modern-day technology and enhancements to the region where in wished. Daffodil Online Limited (Doll) is one of the most important businesses due to the terrific carrier from the sphere of jobs. Many of them use numerous control. So I develop all of the internship work experience.

2.5 Organizational Structure

Daffodil Online Ltd (Doll) is the most critical organization for inter delivery and provides ICT services and answers on account that July 2002. It has its own fiber optic and radio link WAN infrastructure to serve corporate, SMEs and individual customers. The institute works with many countrywide initiatives and excessive regards to all stakeholders worried

with global organizations. It wishes the contemporary generation and desires offerings where it wishes to be upgraded. Daffodil Online Limited (Doll) is one of the very critical organizations because of the good work achieved within the job sector. Many devices have many uses. Such as Mikrotik router, optical fiber cable, and plenty of different PCs. Easy to apply for each device business enterprise for internship [1].

CHAPTER-3

Tasks, Projects and Activities

3.1 IP Address Sub-netting

At the initial degree of the development of Internet Protocol, network directors have interpreted an IP address in two components: community number and host range part. The maximum order octet (the most enormous eight bits) changed into recognized because the community variety as an address and the final bit changed into referred to as resting area or host identifier and used for the host wide variety in a network. A big range of sophistication-finished network designs permit for the appointment of people or networks and the properly-prepared sub-community layout. An IP settlement is describing the greatness of managing the first three bits of the very best maximum octet. Three classes (A, B, and C) are defined for preferred unique addressing [5].

Table-2: IP address

Class	Range	No of Networks	No of address per network
A	0-127	27=128	224=16777216
B	128-191	214-=16384	216=65536
C	192-223	221=2097152	28=256

3.1.1 Private & Public IP Addresses :

Early network format, predicted from the stop-to-stop connections international Communicating with all Internet hosts, IP addresses are in my opinion assigned A special computer or device Now computer systems are not related to the Internet, which incorporates separate separate networking unit machines through TCP / IP that currently

do no longer have special IP addresses worldwide. There had been three ranges of IPv4 addresses in personal networks reserved.

Table-3: Private IPv4 Network ranges

Class	Private IP	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

Table-4: Public IPv4 Network ranges

Class	Public IP	Subnet Mask	Address Range
A	203.190.10.0/26	255.255.255.129	203.190.10.0-203.190.10.128

3.1.2 History of MikroTik :

Mikrotik is a Latin enterprise in the beginning created to build big router and wi-fi ISP structures in 1995. Smartphone now offers hardware and software program programs for the Internet connection at the sector's fastest worldwide area.

Experience in the use of industry well known PC hardware and the entire routing framework turned into created in 1997 to create our Router's software program software .software device which offers massive stability, manage and versatility for all types of records interface and routing.

In 2002, Mikrotiks had been set to create their very own non-public hardware and the Router board brand turned into born. They are primarily reseller of sectors and probably every USS subscriber On the planet [5].

3.2 Daily Task and Activities

1. Create bootable Flash Drive or CD/DVD with the ISO file.
2. use the installation media to boot up the PC and install MikroTik RouterOS in Dedicated PC Router.
3.Open VMware Workstation and click on "Create New Virtual Machine". New Virtual Machine Wizard window will open .

VMware start :

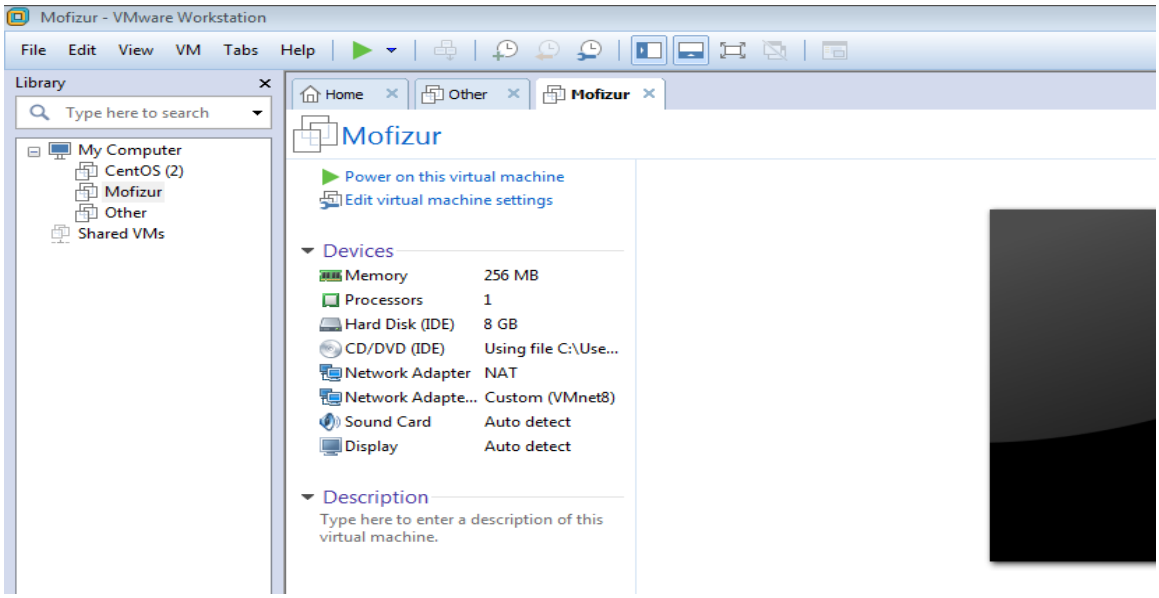


Fig: 3.1 VMware start View

VMware start :

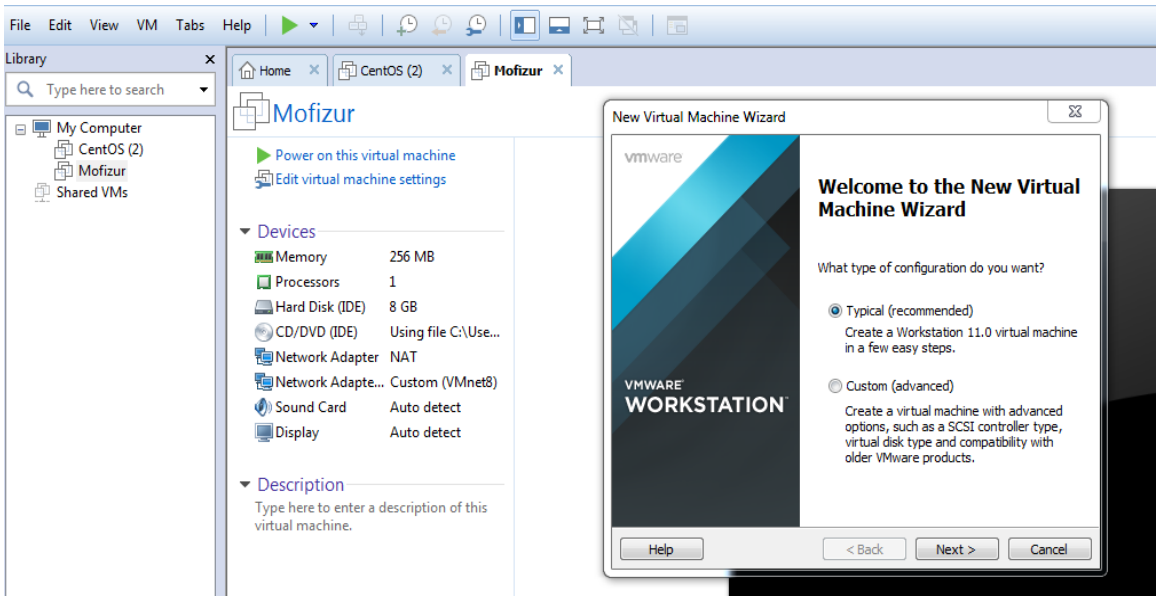


Fig: 3.2 VMware start View

4. Click 'Next' -> 'Next'-> Select "I will install operating system later".

5. Select Guest Operating System Other. Click Next

6. Give Virtual Machine Name "Mikrotik_Test" and show installation location.

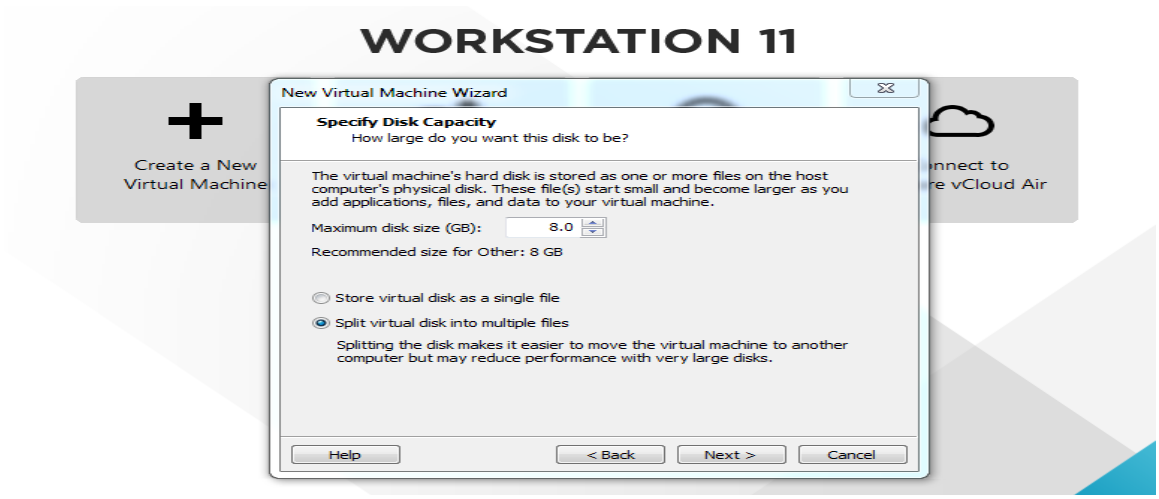


Fig: 3.3 Installation processes

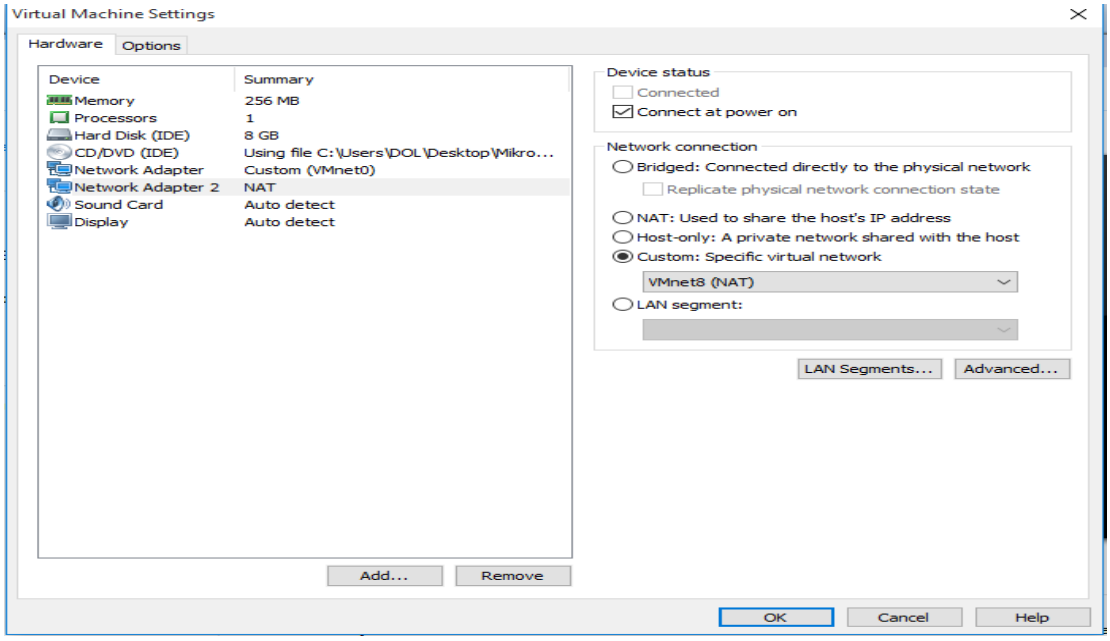


Fig: 3.4 Installation processes

7. Power on the recently created virtual machine.

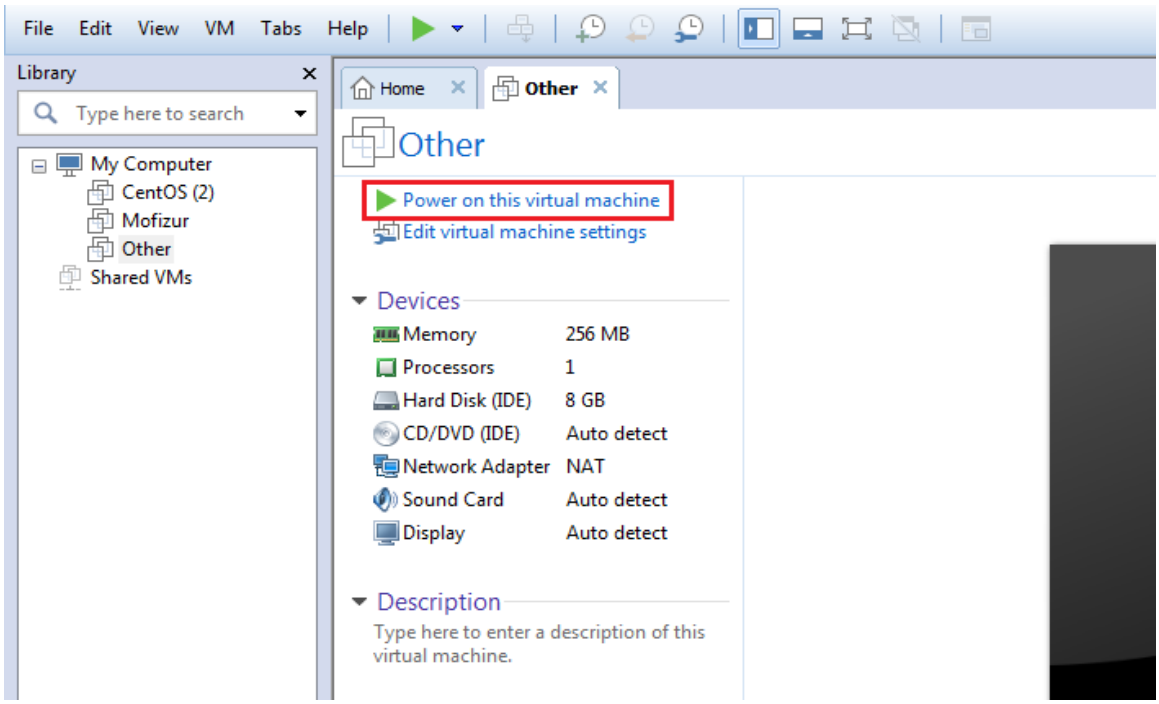


Figure 3.5 Installation processes

8. When file load will complete selects all the option by pressing 'a' and click on 'i' to start Router OS installation.

9. Press 'y' to process disk format.

10. Then machine will take restart and will come a login interface.

3.2.1 Downloading and Installation of MikroTik Router OS

To The down load and set up of MikroTik Router OS is defined inside the following diagram :

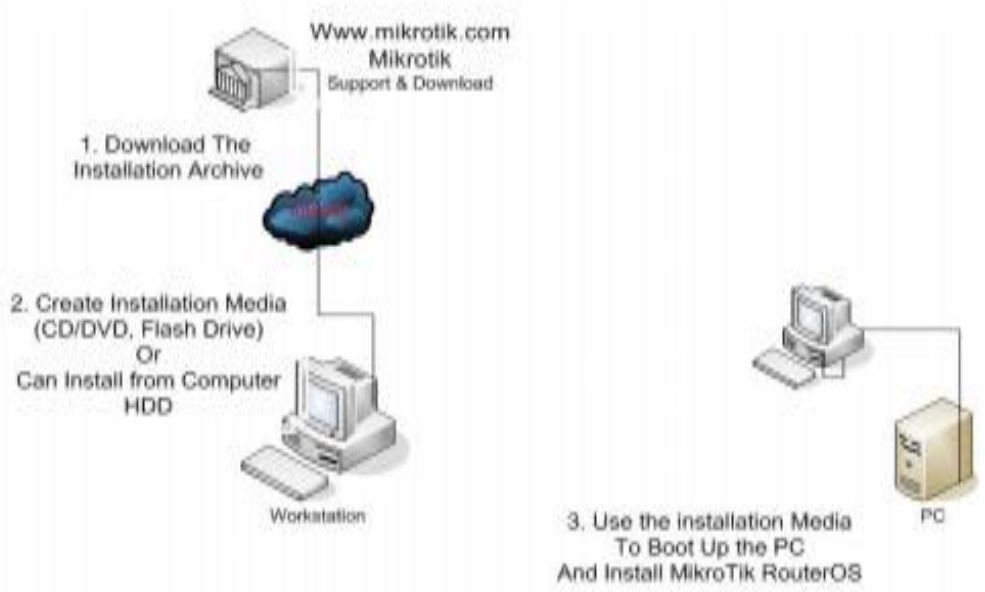


Fig: 3.6 Mikrotik

3.2.2 Installation Procedure:

The boot process will display a menu of software options that will be installed ,select the approriate needs to be planned. For selecting one by one use the “space “ and if for all items of press “ a ”. Select the “ I ” for the installation.

Do you want to keep old configuration ?[y/n] type N

Step 1: Download Mikrotik, Download ISO

Step 2: Then burn the CD, burn the photo

Step 3: Then insert the CD / DVD ROM CD and set the primary boot inside the BIOS.

Step 4: Wait so long as the computer appears below.

Step five: Press 'a' (pick all) then press 'i' (to put in) then press 'n' (antique configuration isn't always required) and then press 'y'.

Step 6: Let's start the installation manner, begin the installation disc at the disk after set up on the give up of the installation procedure. Then press 'enter' to open the microcontroller

login window after rebooting the laptop, you must log in consumer: admin and any password .

Do you want to keep old configuration ?

Continue ? [y/n] type N

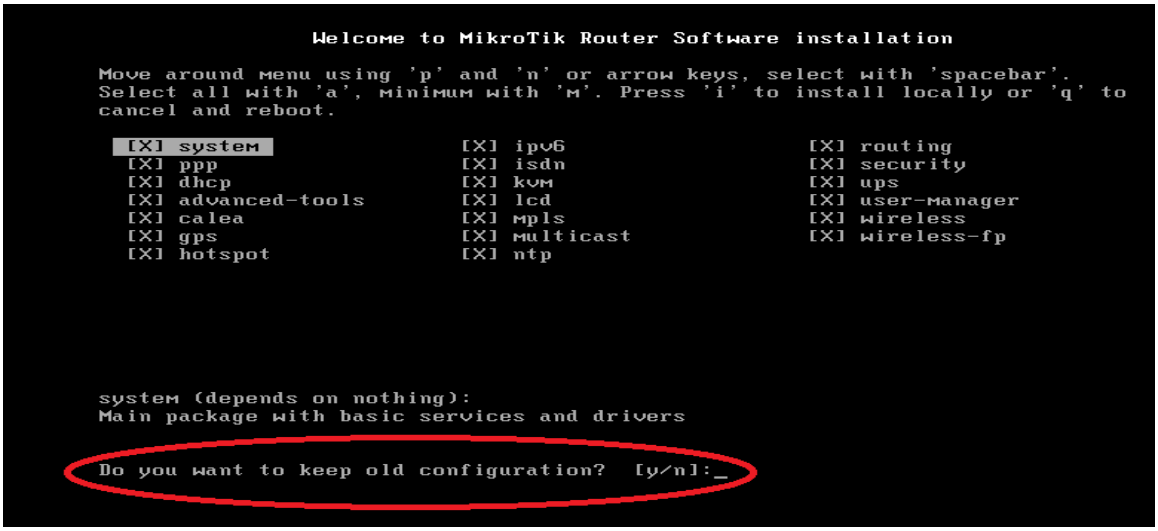


Fig: 3.7 Mikrotil Installation

All data on the disk will be erased ?

Continue ? [y/n] type Y

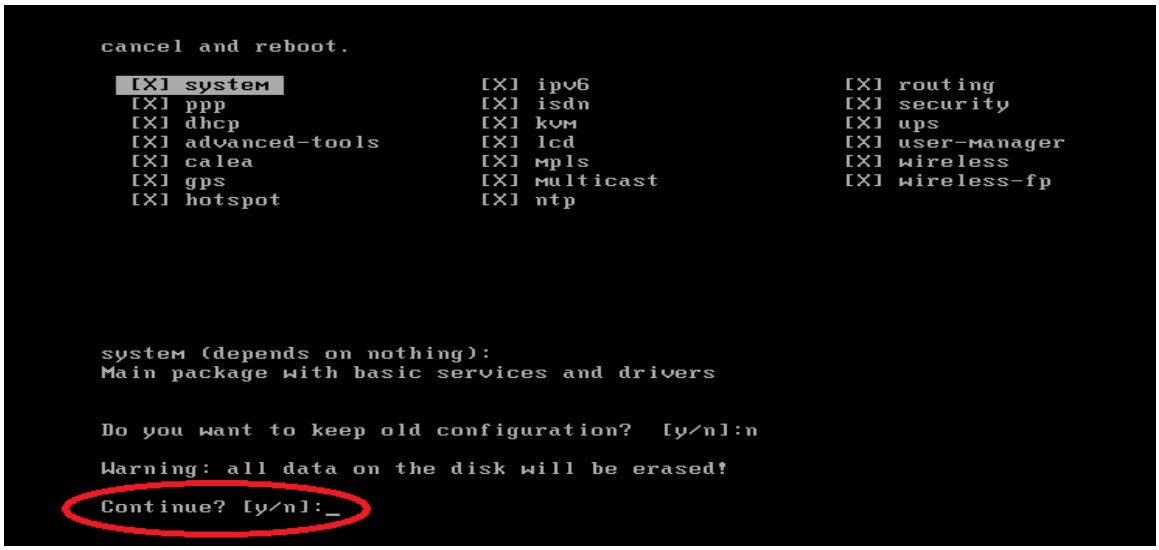


Figure 3.8 Installation processes

Creating partition and formatting disk process:

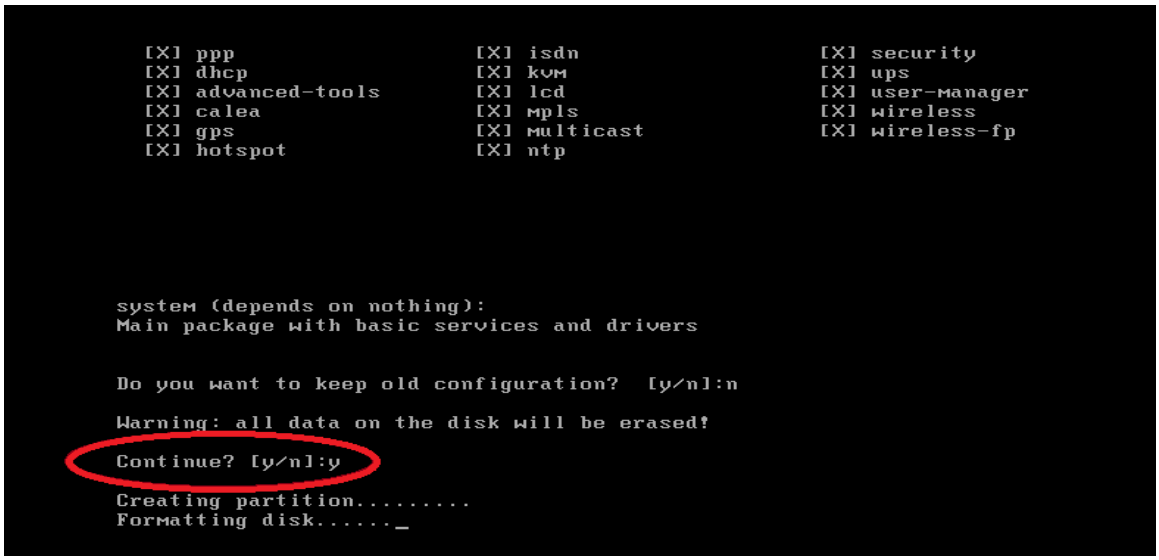


Figure 3.9 Installation processes

After the system installation process will begin .And in the Mikrotik we do not need to create a disk partition because it will be formed automatically.

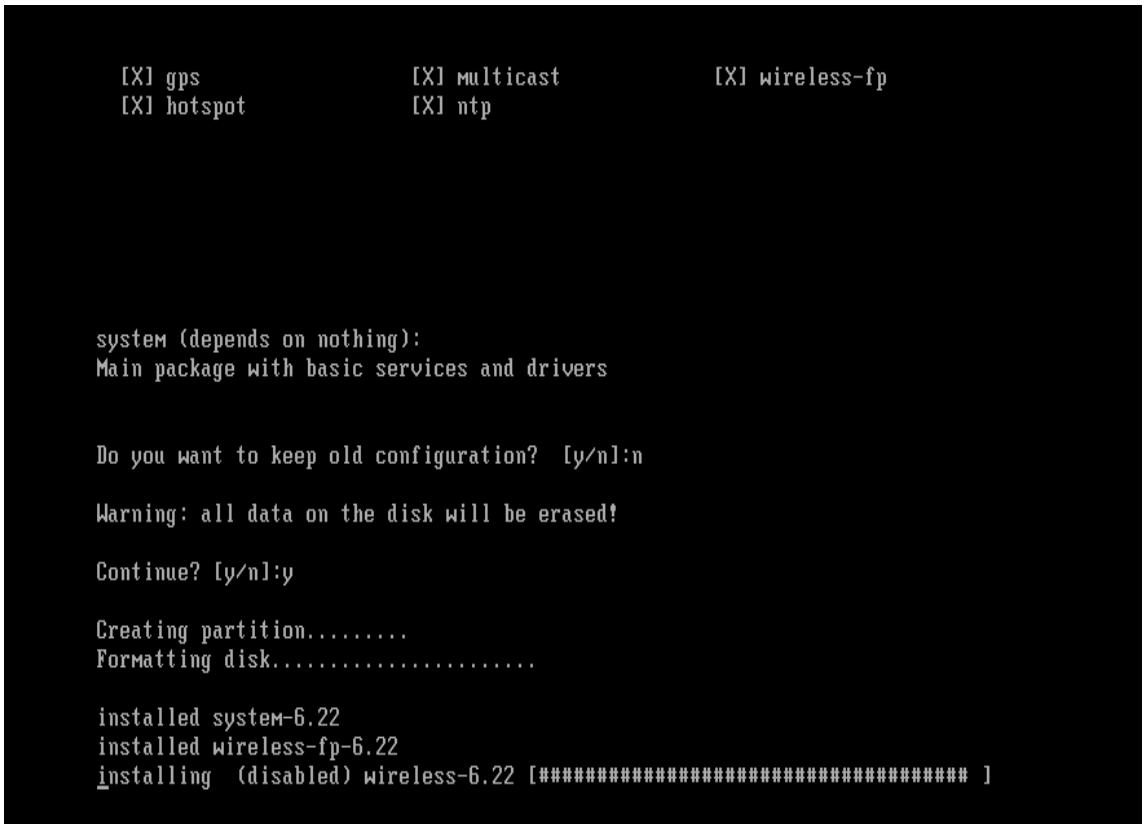


Figure 3.10 Installation processes

Installation process

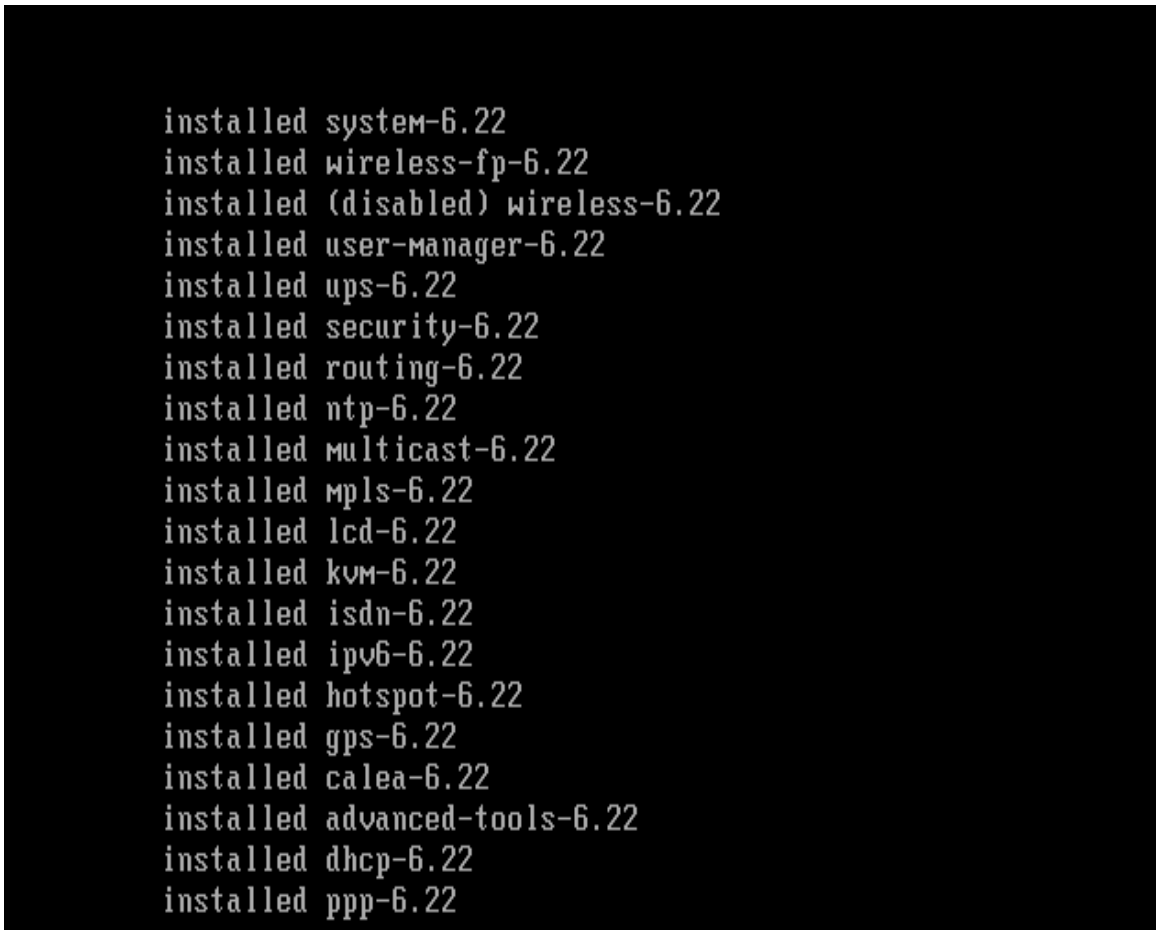


Figure 3.11 Installation processes

After the installation is completed we will be asked restart the system , press Enter to restart the system.

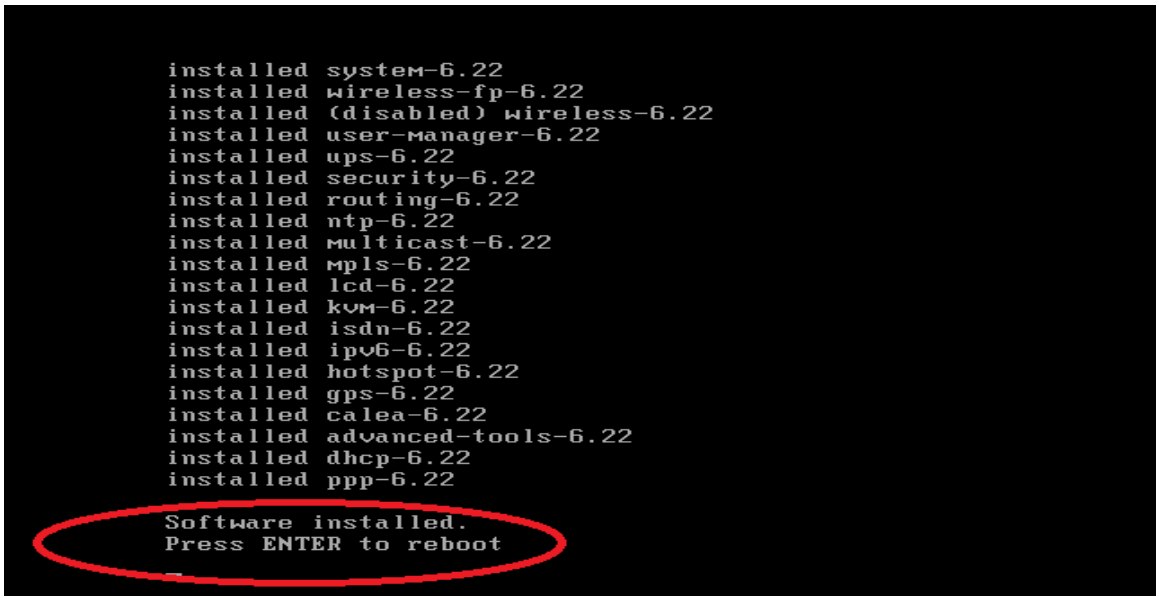


Figure 3.12 Installation processes

Figure 3.13 Installation processes

Prompt command line :

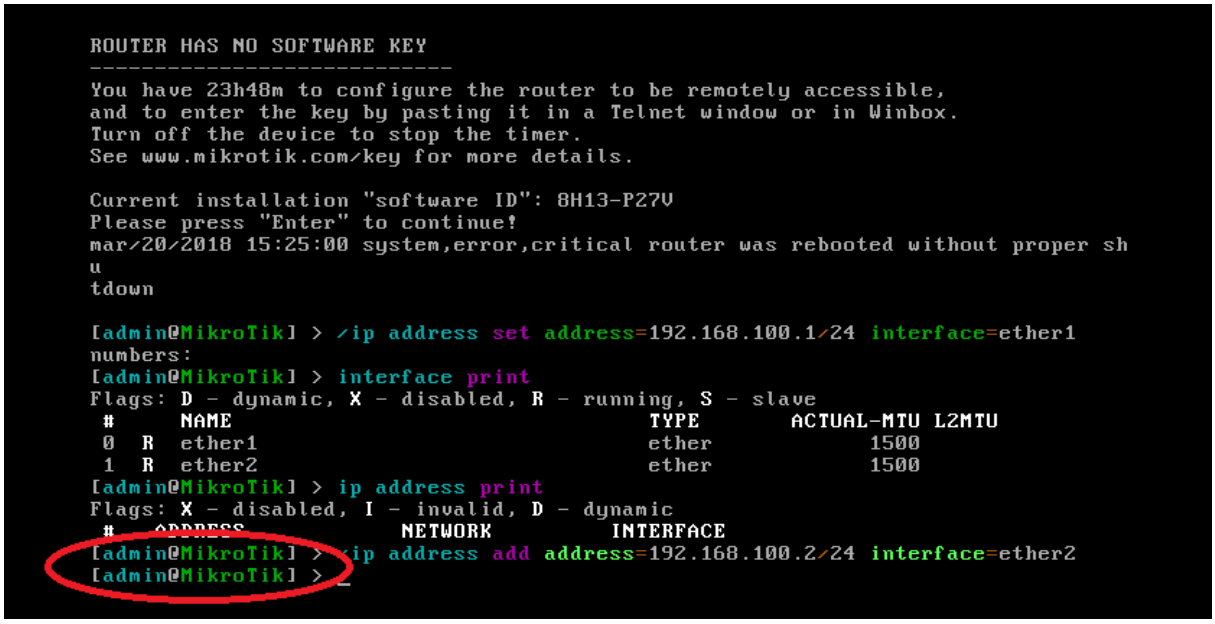


Figure 3.14 Installation processes

Click on the menu item that winbox says to download winbox.exe from Mikrotik download server.

(a) When winbox.exe is downloaded, double click on it and winbox loader window wiil pop up. To connection the router enter IP or MAC address of the router ,specify username and password and click on connect button. then get the Mac address select and reconnect to the server then use to the winbox.

3.2.3 Bandwdith Management procedure

The Bandwdith Management procedure is described step by step in the following pages.

Configuration of Router Gateway and Firewall [7].

1. Click on Winbox

2. Connect to our Router IP D4:CA:6D:86:C0:CC
3. Select the Login Name “admin”
4. Type the password…….
5. Select the option “Connect”

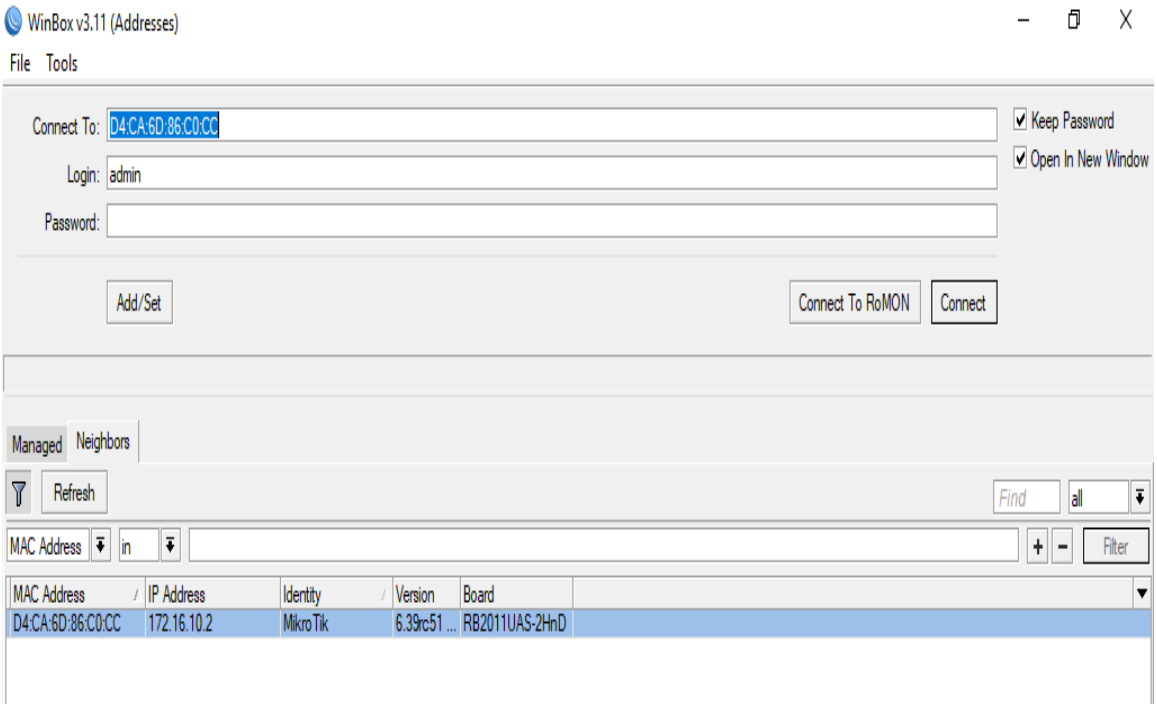


Fig: 3.15 Starting with winbox

(a) Winbox Interface configuration :

We do not have much work to with interface menu. Basically Interface Menu is used to rename or comment on interfaces to recognize interface later. Here in our project we rename ether1 to ether1-WAN that will give a better understanding that ether1 is using for WAN connectivity.

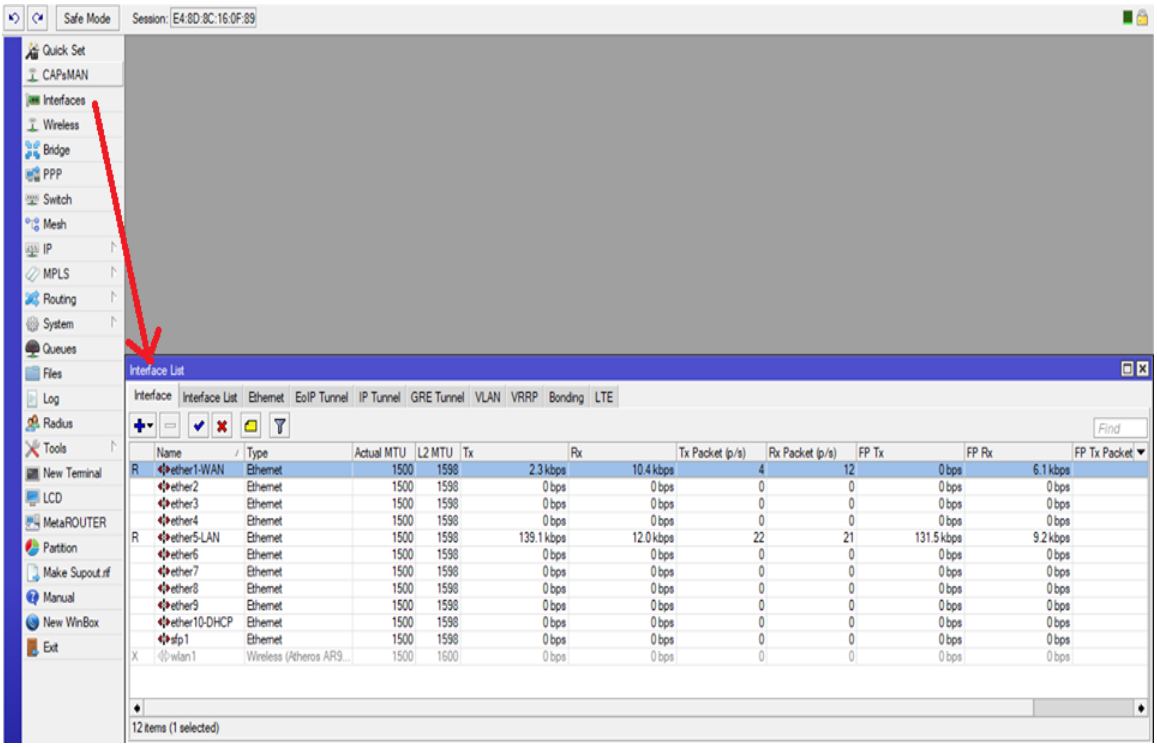


Fig: 3.16 Winbox Interface configuration

(b) Address for interface :

(1) Click on IP -> Address

(2) Click on the red ‘ + ’ to add an address

(3) Enter the IP address 192.168.50.30/24, interface ->ether1-WAN

(4) Click on the red ‘ + ’ to add another address

(5)) Enter the IP address 172.16.10.1/29, interface ->ether5-LAN

(6) Click on the red ‘ + ’ to add another address

(7) Enter the IP address 10.10.10.1/29, interface ->ether10-DHCP

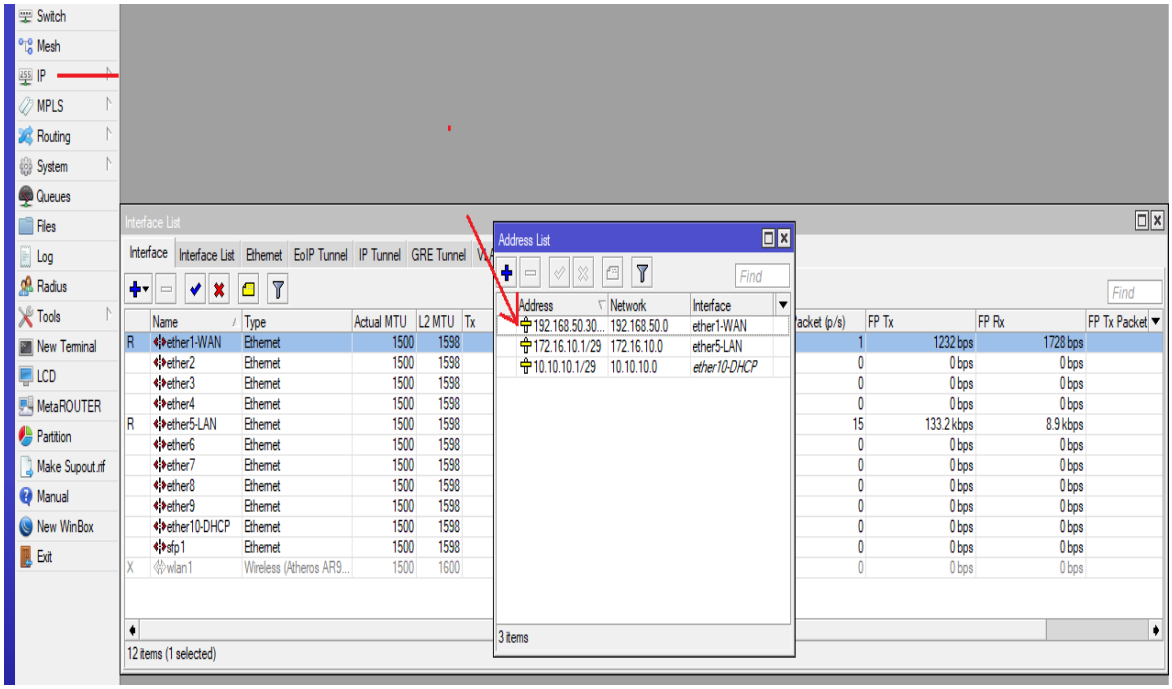


Fig: 3.17 Add address for interface

(8) Click on the red ‘ + ’ to add default route

(9) In the destination field enter the address 0.0.0.0/0.

(10) In the Gateway field in the IP address 192.168.50.1

(11) click on ok save changes

(c) Route list:

Winbox go to IP-> Routes a new window will open name "Route List". Click on '+' button to add a route another window will open name "New Route “keep dst. address 0.0.0.0/0 and default gateway address will be 192.168.50.1 . We do not need to do anything here, click Ok. A new Route will add to Route List.

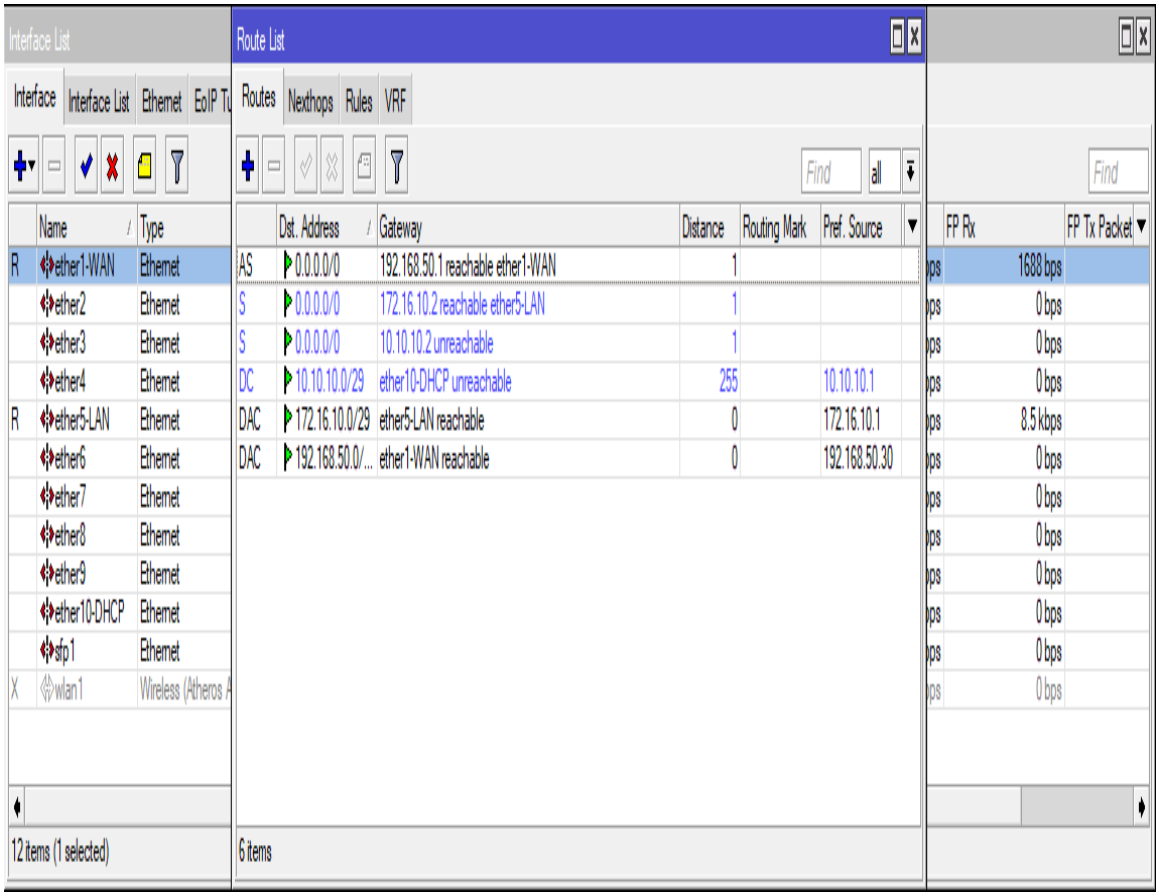


Figure: 3.18 Create IP-> route

(d) DNS settings:

To set up DNS server we need to go IP-> DNS-> Click on 'Setting' as a result a DNS setting window will open. The following DNS Setup process. Click on IP->DNS then add ' + ' and servers 8.8.8.8.

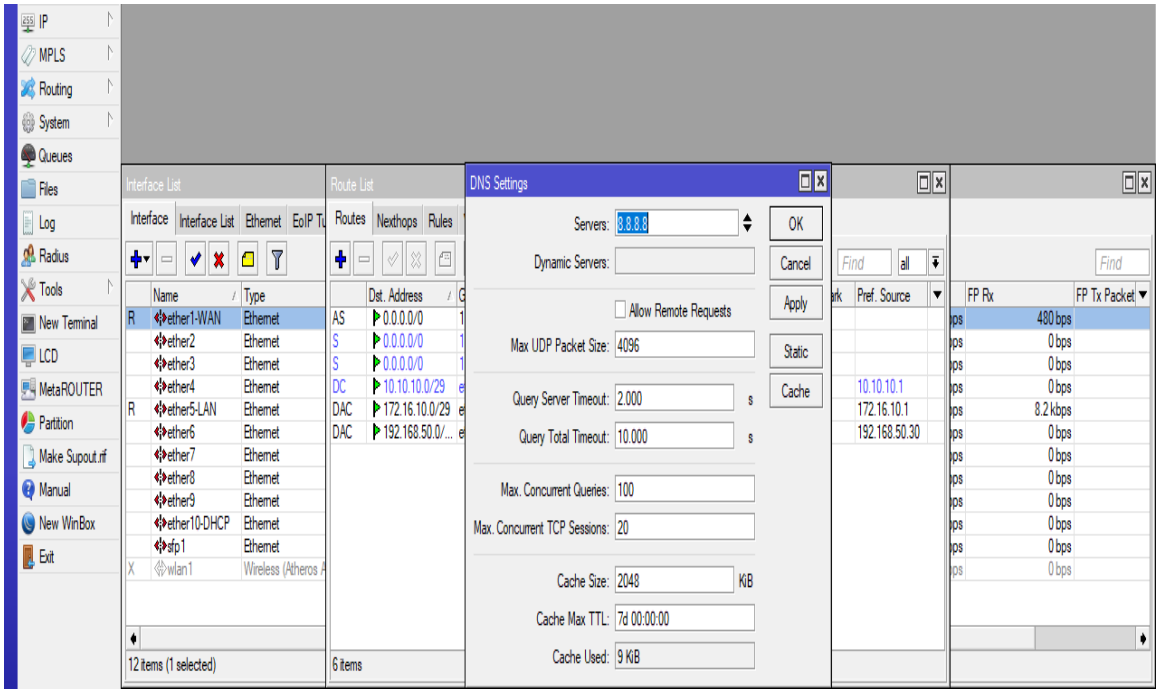


Fig: 3.19 DNS setup

(e) Firewall with NAT:

(14) Click on IP->Firewall

(15) Click on the NAT tab

(16) Click on the red ‘ + ’ to add a new NAT rule

(17) Click on the action tab

(18) Select masquerade from the Action list box [2].

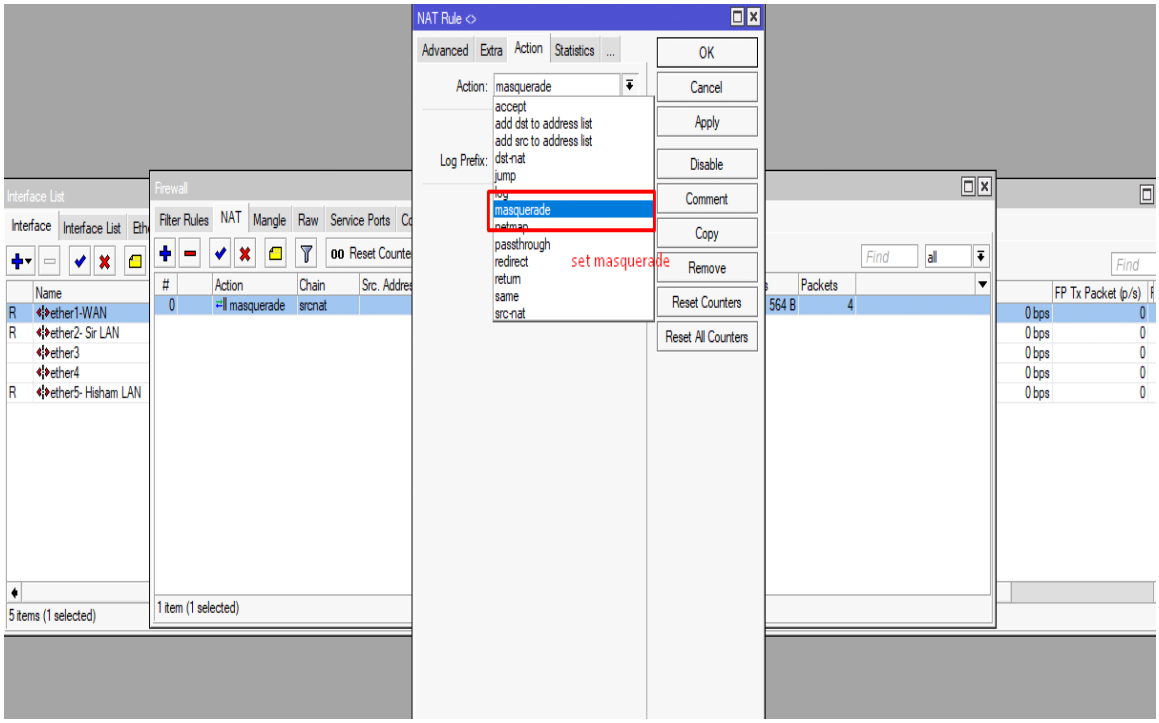


Fig: 3.20 Firewall & NAT

(19) Click on ok to save

(f) DHCP Setup:

Dynamic Host Configuration Protocol (DHCP) is also featured by MikroTik. It enables MikroTik Router to easy distribution of IP address in a network. The MikroTik Router OS DHCP provides IP address/Mask to requested client, default gateway, domain name and DNS server.

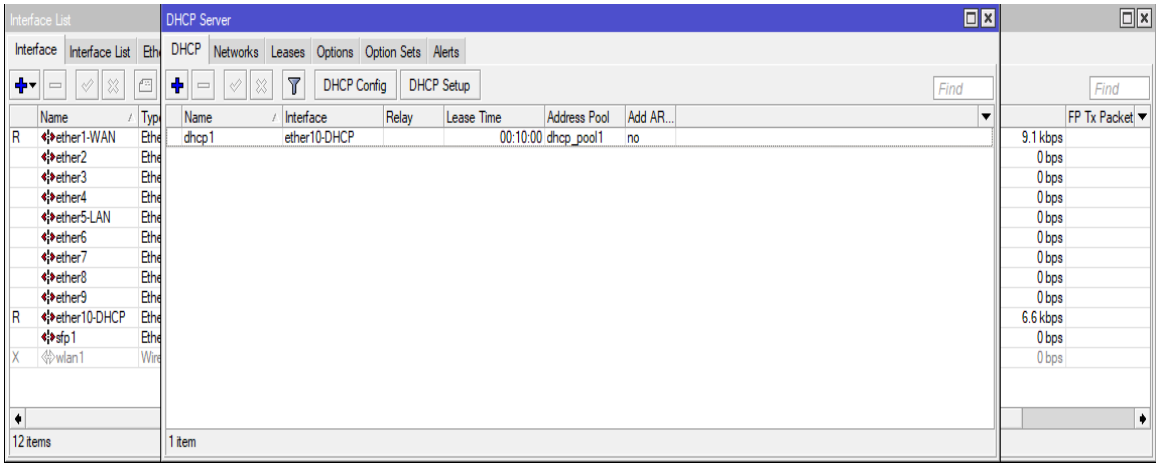


Fig: 3.21 DHCP Setup

• At first select DHCP server interface. we are doing DHCP for interface ether2. So we select ether2-LAN. Then click on 'Next'.

• Now need to provide expected network address with mask for DHCP client. Then click on 'Next'.

• Give gateway IP address for the configuring DHCP. Click on 'Next'.[5].

(g) Bridge configuration:

Bridge lets in logical interfaces to allow this bridge interface to integrate both Or integrate into more physical interfaces or physical and logical interfaces. From Click "Bridge" to create bridge connection Then click on "+" at the bridge tab, a brand new window will open. Enter a name for the new one Interface and click OK so this can create a brand new interface with the given call.

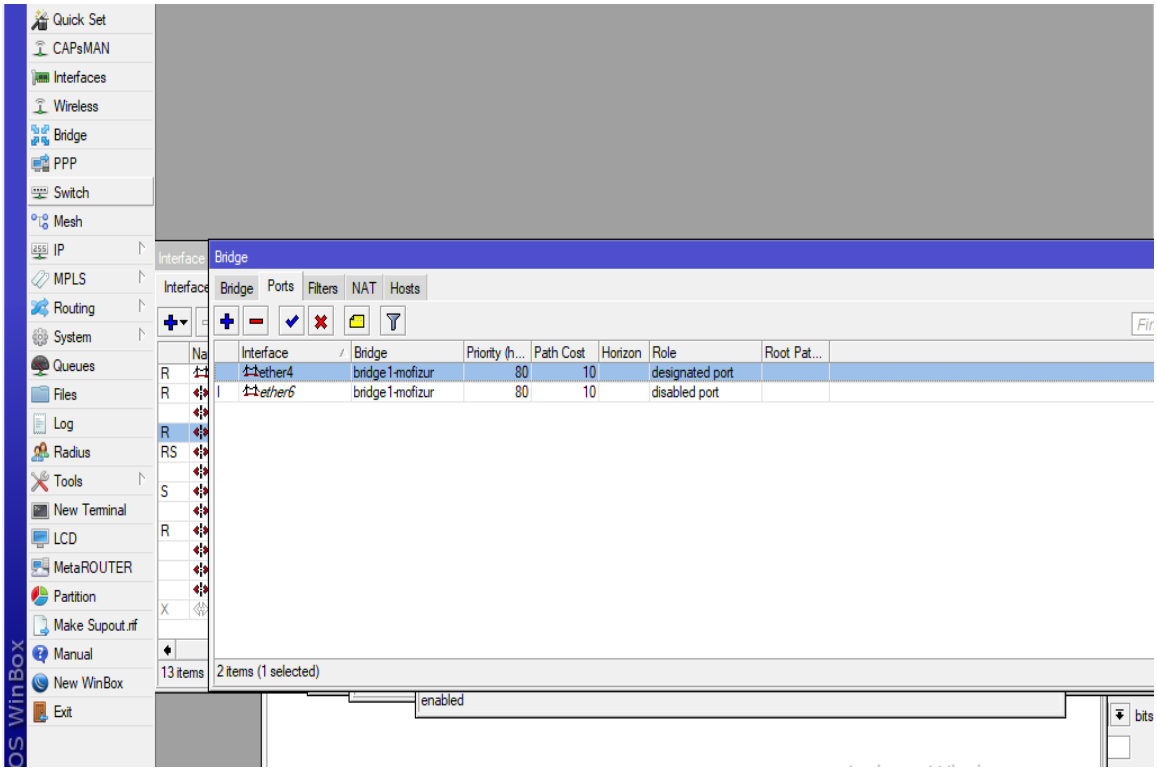


Fig: 3.22 Bridge configuration

We need to add the interface beneath this bridge interface. For this, click on at the "Port" tab And click the "+" icon. A new window will open where we want to select the interface

In the 'interface' discipline add bridge interface and then pick between bridge interface The 'bridge' subject. Here we can upload as plenty physical or reasonable interface as we want to Add underneath Bridge Interface.

Now you want to add an IP cope with to the Broad interface. That's what we need to do Click the IP cope with> '+' and add an IP cope with as we've got already accomplished By following this procedure we can configure bridge connections

Figure 3.25 shows the Bandwidth Simple Queue General Screen. These Queues add the name ,IP address, Max limit (Target Upload &Target Download),Burst limit ,Burst threshold and Burst time.

(h) Queue Management:

Queue is considered to be the maximum powerful feature of mikrotic router. This makes an permitting one Network Administrators to manipulate their IP address separately via their bandwidth shape And other functions.We can without problems create queues the use of the Win box. Just register '+' in sign up queue window.

Then name the queue within the Name discipline, restoration the cope with subject IP cope with and upload And download speed.

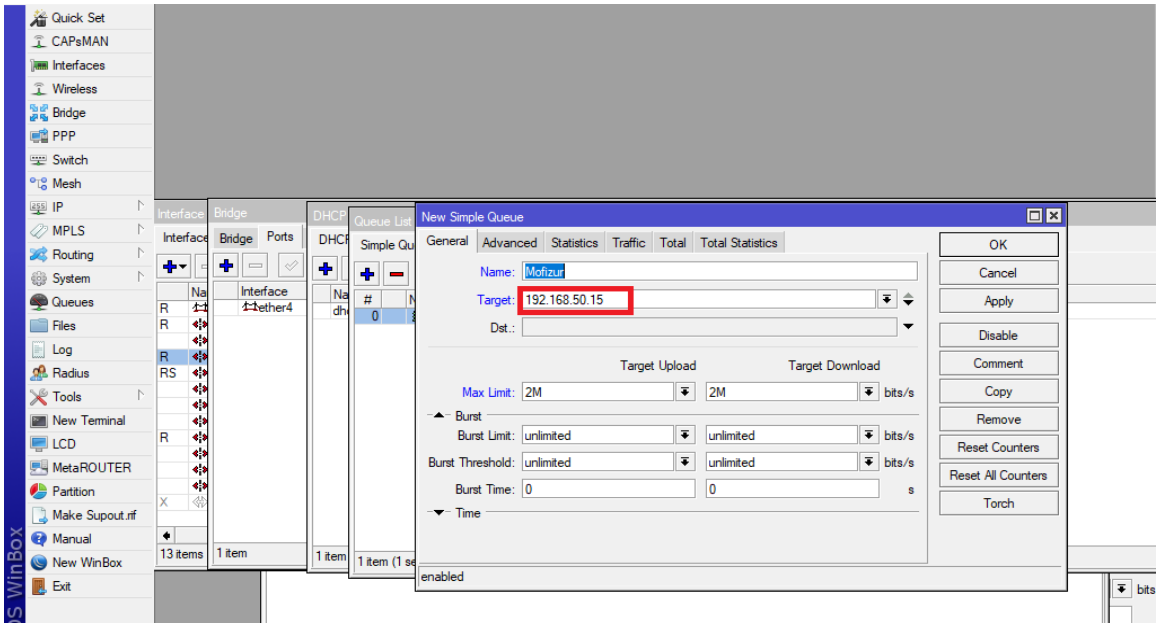


Figure 3.23 The Bandwidth Simple Queue General Screen

Now we can screen the use of customer bandwidth in smooth coup lists. If it seems inexperienced The mild next to the queue, that is simply linked to the patron with out the use of the net. If it's miles Red means the purchaser using the full bandwidth method if the purchaser makes use of the yellow The common of its bandwidth Speed.

(i) Queue List:

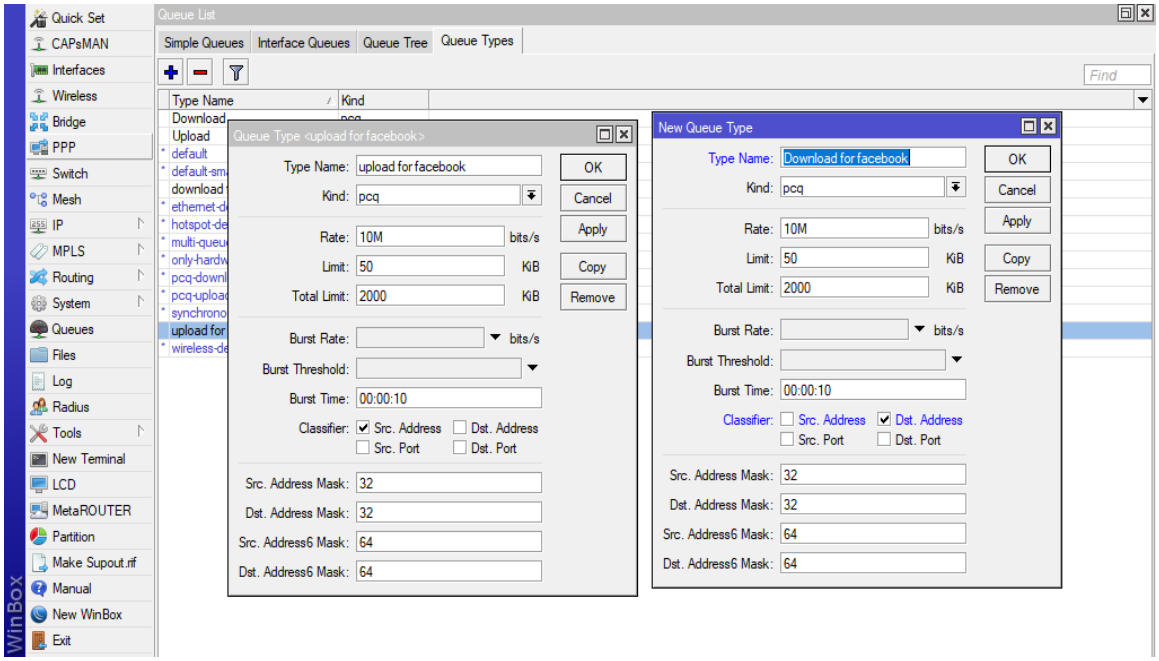


Figure 3.24 Simple Queue List

(j) Backing up and Restoring AP Configurations:

1) Click on files
2) Click on backup

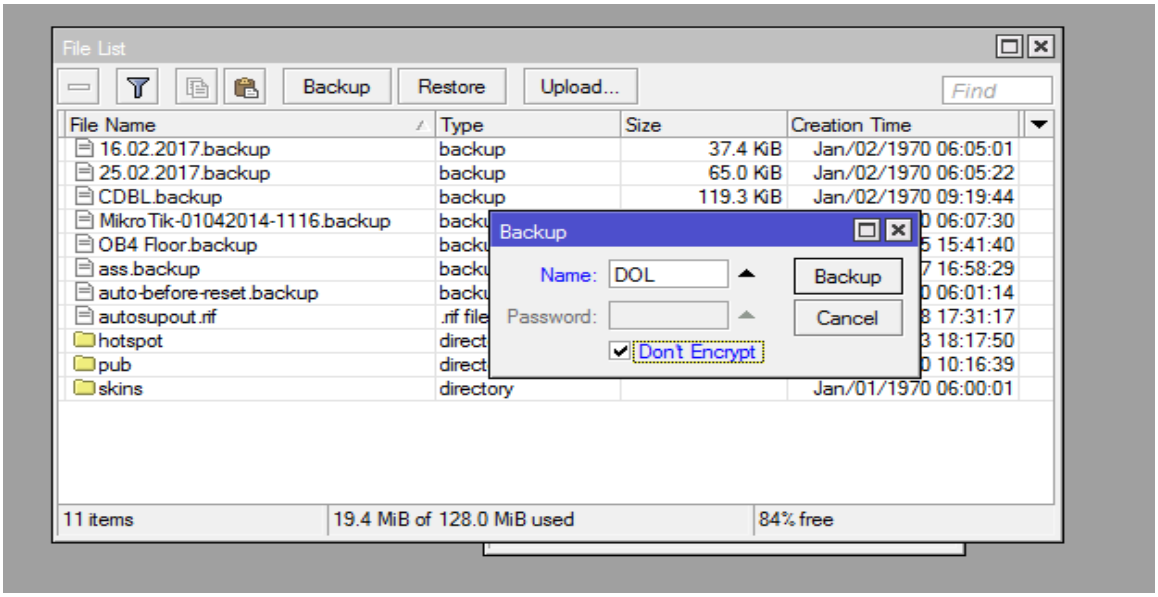


Fig: 3.25 Backup file

3)The system configuration will automatically be saved

4)To download the file , ftp to the router and download the file.

(k) To Restore your configuration :

1)Open an FTP connection to the router and upload the configuration file

2) Click on files

3) Select the backup file and click on restore

Create New User ID and password:

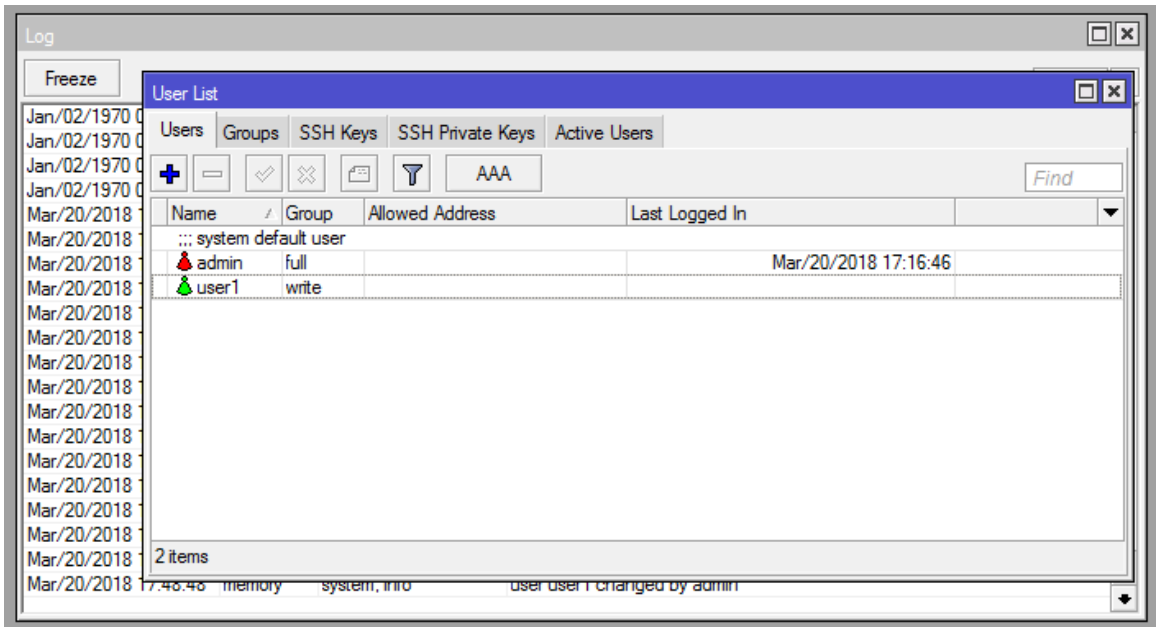


Fig: 3.26 Restore file

(l) Password Set:

After MikroTik Router OS installation, at first we secure router access with simple password command in MikroTik Router interface .It's also posible to provide password using winbox .

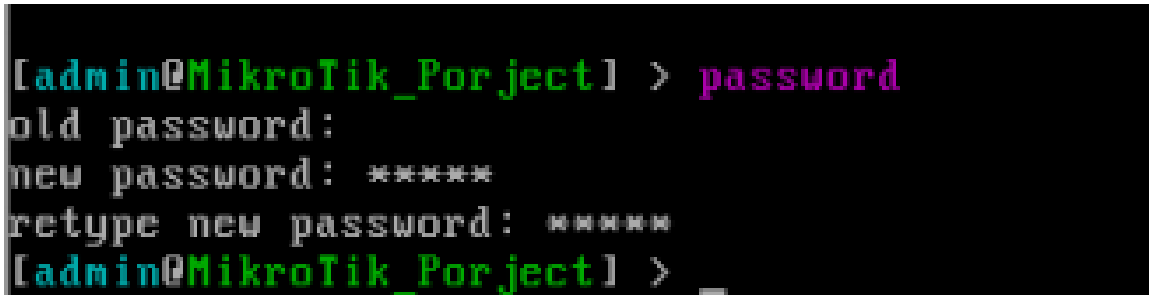


Fig: 3.27 Password Set

It's also posible to provide password using winbox.

3.3 Events and Activities

One of the number one steps to solving a computer hassle (or any other programmable device) is to determine whether it is due to a hardware failure or faulty software program. Errors appear or appear, errors before the thrashing that indicate that a few styles of hardware have a hardware trouble. So far inside the operation of the tool, the simple BIOS and primary system hardware changed into alive. After the disaster takes place, the tool's present day device does not come into play once more. I can still get the organization wrong before that beep inside the extraordinary training :

- Hardware catastrophe
- Hardware failure (bodily disturbance with boot pressure)
- Lack of infected or boot documents
- Non-machine disc or disk mistakes
- Defective system documents are missing or lacking

Both configuration troubles and boot-up problems may be caused by a hardware or operational failure. If the configuration putting is accurate, but those signs and symptoms are present, a hardware trouble is diagnosed because the motive of the problem. Conversely, boot troubles are associated with the system [5].

3.4 Challenges

No work has claimed the scenario, however sharing my internship enjoy 4 months and the predicted happy hours after sharing the buddies, I've located that there are a few popular demanding situations internally I suppose it's three things: intermediate / down, brief, and they will be satisfied Become a nation. Though the demanding situations have been so busy with the officials, they gave me honest time and complete sincere cooperation to prepare this document. While gathering information, I was confined to getting certain statistical access rights for privacy purposes, if I needed to spend sufficient time to test various sorts of jobs hired through me and with more recent humans,

with greater latest paintings experience, and this is a way of working without any doubt To create a lot of opportunity, it ought to be so May be touchy and offensive to compete with its internal nature: Fortunately I grew to become an intermediate; We ask every other's questions and may effortlessly be integrated with initiatives that assist businesses in these collaborative courting. Interns at a career within the future, or a suggestion for an awesome letter can be difficult in distinctive workplace environments, so cannot be friendly.

CHAPTER-4

Competencies and Smart Plan

4.1 Competencies Earned

Having an potential to installation and configure a Windows Server 2003-based totally complete DHCP server on a server, an evidence changed into given to solve some of the following sections.

The customer can't reap an IP address if a DHCP sponsor does no longer have a configured IP agreement, it usually suggests that the consumer is able to touching a DHCP server can be a network disturbance, or due to the fact the DHCP server is unavailable. If the DHCP server starts and distinctive customers can acquire legitimate addresses, verify that the customer has legitimate connections and that everyone related patronized hardware devices (including cables and network adapters) are walking properly.

The DHCP server is unavailable if the DHCP server not provides a registered cope with for clients, but this is basically because the DHCP carrier is not in this example, the server community might not be allowed to work. If you had been capable of first of all start a DHCP service, but it become because of shutting down, use the occasion viewer to check the device log for an advert that could provide an explanation [6].

4.2 Smart Plan

My smart plan is to offer every commercial enterprise undertaking from the Net Carrier Issues (ISP) distribution bandwidth to all agencies. In truth, it uses mile-router's rapid bandwidth for fast network get admission to to speed. Smart bandwidth manipulate with router running system The fine technique of Mikrotik bandwidth control. Because it is simple to configure for LAN, WAN and DHCP servers. In truth, if every company desires to provide ISP or DHCP server, then I use Mikrotik control using bandwidth in future life-style.

4.3 Reflections

Mikrotik is a beneficial provider for handling an ISP agency's legit Bandwidth . Mikrotik router can be a sufficient location in many nearby locations. Although the network will distribute the same duration of bandwidth we can be able to connect with the computer from WAN first bandwidth off. Hook up with the mikro curricular router and anyone within the local area community's non-public PC cannot discourage their patron from an ISP enterprise's network administrator or some other employer workplace. With the MikroTik carrier, the bandwidth mikro electric issuer with ISP or local ISP bandwidth management [6].

CHAPTER-5

Conclusion and Future Career

5.1 Discussion and Conclusion

Now most of a day's organizations are highly dependent on the Internet for their work and service management. But in addition to the proper network design, it is not possible to manage their network fully and achieve the goals of the organization. As a result, there should be knowledge about design of a network. MikroTik is a very low cost router which may suitable for small network. MikroTik can access through winbox. As a result MikrTik RouterOS can be managed easily. MikroTik also featured filter rules, layer 7 protocols, bandwidth shaping etc. to provide enough security for the network. MikroTik can provide strong wireless access point and web proxy server management. So, our project is to know about basic network design and mainly to learn about MikroTik RouterOS features and configuration which may able us to design a network using MikroTik Router.The internship has been a wonderful and rewarding experience. I have seen the future and I will be able to help me with the opportunity to network with a lot of people have been able to confirm that. Through this internship, I have learned that one of the main issues and time management skills as well as self-motivation. When I first started I was five hours a day, five days a week is going to be able to sit in an office and did not think that. Once I found out what I had to do my hours of overlapping is not broken, so I organize my day activity. Organized and it was the right time, after I get a reaction organized for questions that need to be learned. This internship and time control of the workplace for lots hours, I had to learn how to inspire my self via. I'm nevertheless searching out the use of the enterprise came up with the diverse proposals and ideas. I still have open options for my new possibilities, however, painting for the inside of the university of the world is continuing. I'm taking part in this line of labor. I have worked hard for my position and hope to know about this industry and to meet new people. It became an outstanding experience, and I wanted another intermediate to load it out.

5.2 Scope for Further Career

Our main objective of this Internship was to use our gathered knowledge in real field. In this Internship I learnt about different concepts and models of network design which may help to design a network later. Again, MikroTikRouterOS offers lots of features which may suitable to fulfill any network requirements. Here in this Intern I configure almost every feature and worked on MikroTik firewall features also. As a result we will able to design a network using MikroTik device and can manage that network properly [5].

References

[1] Get idea about Daffodil online limited (DOL), Available at: <http://www.daffodilnet.com/>index.php?option=com_content&view=article&id=54&Itemid=112, last accessed on 02 March 2018, 11.30pm.

[2] About Configuring DNS, Available at: <<http://compnetworking.about.com/od/dns_domainnamesystem/f/dns_servers.htm>>, last access On 29 March 2018, 11:00am.

[3] About Recommended Partitioning Scheme, Available at: <http://daffodil.family/business-ventures/ict-ventures/daffodil-online> Installation_Guide/s2-diskpart recommend-ppc.html, last accessed on 03 March 2018, 4.00pm.

[4] Get Concept about DNS server, Available at <<http://compnetworking.about.com>>/od/dns_domainnamesystem/f/dns_servers.htm, last access On 17 March 2018, 11:00am.

[5] Get wiki/Manual:Initial_Configuration#DHCP_Client <<https://wiki.mikrotik.com>>/ Last access on 02 March 2018,09.00 pm.

[6] Get Concept about MikroTik Router, https://en.wikipedia.org/wiki/MikroTik 20 March 2018, 11:00am.

[7] http://en.wikipedia.org/wiki/Bandwidth_Management,retreived last access on 02 March 2018, 09:00pm.

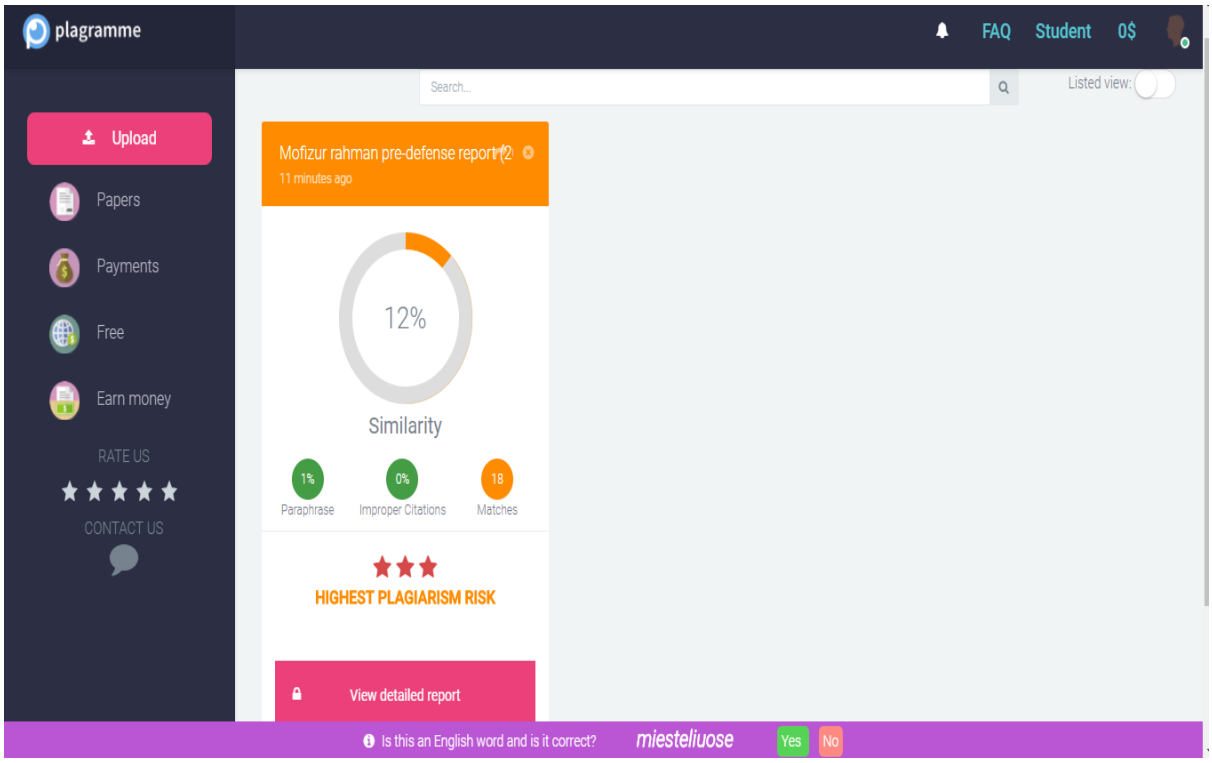
Appendices

- **Appendix A: Internship Reflection**

The primary goal of my internship in a professional setting, practical solutions to real-world problems is to apply the knowledge gained in the classroom. And professionally relevant competencies and relationships in a professional setting, learning to deal with new knowledge, skills, and the ability to determine how to sharpen and develop plans. Add to network with other professional's supervisors and professional relationships. 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**

Head Office

Name	Daffodil Online Limited
Address	102,Shukrabad (3rd floor),Mirpur Road, Dhanmondi ,Dhaka - 1207, Bangladesh.
Telephone	02-9143258-60
Fax	880-2-8116103
E-mail	info@daffodilnet.com
Website	www.daffodilnet.com
Type of Organization	Nationwide Internet Service Provider (ISP)
Employees	14

Plagiarism Test: