NETWORK MANAGEMENT USING MIKROTIK ROUTER

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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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JULY 2020

APPROVAL

This internship Report titled "**Network Management Using Mikrotik Router**", submitted by **PRANAB KUMAR BARMON** 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 *08-07-2020*.

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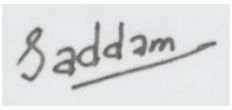

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DECLARATION

I hereby declare that this project has been done by us under the supervision of **Mr. Aniruddha Rakshit,Senior Lecturer, Department of CSE** Daffodil International University. I also declare that, I collect Information from my Internship Company Daffodil Online Limited(DOL), ISP Base Corporation, Books, Internet, and Big Brother and friends also.

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Firstly I 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 profound indebtedness to **Mr. Aniruddha Rakshit, Senior Lecturer,** Department of CSE, Daffodil International University, Dhaka. Who has Deep Knowledge & keen interest of supervision in the field of "**Network Management Using Mikrotik Router**" to carry out this Internship? Her 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 internship.

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 members and the staff of CSE department of Daffodil International University.

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

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

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ABSTRACT

This Internship on“ **Network Management Using Mikrotik Router** ”,Mikrotik Operating system varies easy to maintain and low-cost efficiency. The operating system is designed for a network router. The computer includes a lot of features for ware and wireless Network. A Mikrotik router is many functions Bandwidth management, DNS server, Static, Dynamic, Firewall, NAT, Hotspot, cash Server, point to point Tunneling, DHCP Server, etc. The Mikrotik router mainly uses in bandwidth management for small or Big Industry. We have also a discussion on Mikrotik router Operating system Upgrade process which may require adopting new version in features. The aim of this Internship is to create virtually a Mikrotik Router to manage a small or Big Network. A Mikrotik Router mainly use for bandwidth control for your user. You can Provide Internet Ware or Wireless to Control Bandwidth. When you Setup On ISP server or Mikrotik Router Configure that time this Router Provide High Security service for Client. This report discussed about the purpose of the specific server using on Internet service Industry or any client.

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CHAPTER 1

Introduction

1.1 Instructions:

A Network Device is connecting to computer, Peripherals and Lot of device, Router, Switch, Hop and Wireless access points are the essential networking basics. I choose An Internship Because I wanted to get Experience. Mikrotik router are using for bandwidth control. Most impact site visitors also use peer to use tools that are useful for the bandwidth used, due to its method of sending big size of data from the receiver to the sender. The ISP Company mostly uses Mikrotik routing from bandwidth control and user management.

1.2 Motivation

We know that the Internet using increases day by day. Every company or Organization is using Networking. That's why I choose Daffodil Online limited for the learning networking management system. Daffodil Online Limited(DOL) has many well-known and one of the leading Internet service provider in Bangladesh. I was able to communicate better with the clients as well as the delivery on the Internet.

1.3 Internship Objective

This Mikrotik operating system provides a command base and graphical user interfaces operating system and works very easily. The main goal and purpose are to maintain users and provide security Insure. My Internship Program is to set myself up as qualified in the focused activity advertises.

More Objective is given bellow:

- Install Mikrotik network configuration.
- Learn about the networking device
- How to Communicate with Clients
- Provide better service to clients
- Install Linux for server administration and maintain hardware.

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1.4 Introduction of Company

Daffodil online limited is one of the high-quality Internet service providers in Bangladeshand providing a one-stop integrated ICT service and solution since July 2002. Daffodil online limited are provide many services and professional courses and training. DOL is the fastest Internet service in Bangladesh and a reasonable price. It has own Fiber Optic and Radio Link WAN infrastructure to serve corporate, AME and individual clients. This is company all the time latest technology and upgrading the service day by day.

Table 1.1 Information on the company

Company Name	**Daffodil Online Limited**
Type of Organization	Internet Service Provider(ISP)
Address	102, Shukrabad (3rd floor), Mirpur Road, Dhanmondi, Dhaka – 1207, Bangladesh
Cell Phone	9143258,9143259
Internal IP Phone	+8801713493097
E-mail	info@daffodilnet.com
Website	https://www.daffodilnet.com/

1.5 Report Layout

Chapter-1 I have discussed the objective of internship, Introduction, Motivation of internship, Motivation of Company. **Chapter-2** I have discussed Company profile, Company services, etc. **Chapter-3** I have discussed daily work and activities, Challenges, etc. **Chapter-4** I have discus on the Competencies Earned, smartly planned Reflections.**Chapter-5** I discussed details on the conclusion and Future Scope.

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CHAPTER 2

ORGANIZATION

2.1 Introduction

Daffodil Online Limited is the oldest internet service Provider in Bangladesh and providing one-stop integrated information and Communication Technology service and solution since July 2002. It has won Optic and Radio link infrastructure to serve corporate. Daffodil Online Limited is a very secure and strong management team certified and associated with SUN, Cisco, Microsoft, Linux, and Oracle, world-leading computing associations including IEEE, ACM, ACS, BCS, and PMI. DOL uses everyday latest and upgrades technology in your company and 24/7 hour service to provide your clients. The center's Corporate Network Solution department is capable of providing state-of-art network and telecommunication solutions with a group of highly efficient technical experts.

2.2 Service provide

- **IT services**
    - High-Quality Internet Speed provide
    - Every day Backup
    - Internet Solution in Corporate Level
    - 24/7 day supports
    - Make Wi-Fi zone in any area
    - Datacenter and Co-Location
    - DNS and proxy server solution
    - Mail server Solution
    - Domain and Hosting

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- **Professional Training Service**
    - Internet service provider setup using Mikrotik and Linux
    - Training Course on Certified Ethical Hacking(CEH)
    - Red hat Certified Security Specialist(RHCSS)

2.3 Target Group

- We can try to increase the main goal of the high level in our country
- This goal is the main core issue of a company. Fineness is varied well for the company so you want to provide good service to any client or any Organization.
- One or more of the businesses are run in your organization example education, hospitals, clinics, wood Industries, Garments Industries, Real estate companies, etc.
- We would like to increase our journey to high levels of skills and business of their clients.

2.4 Strength Weaknesses Opportunities and Threats Analysis

This is a Business approach in any kind of location to develop the skill.

Strength	**Weaknesses**
Opportunities	Threats

Strength

Communicate with each other try to solve the problem, collect information also establishes E-Business. Knowledge of existing networks. Good Understand with a user.

Weaknesses

More double cost of efforts and infrastructure. The high cost of the result is a more similar effort.

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Opportunities

Increase the efficiency of the people. Globalization Response. The easy arrangement on cloud stages

Threats

This confines us to the server, where it's difficult to manufacture a group.

2.5 Organization Structure

Structure of Daffodil Online Limited

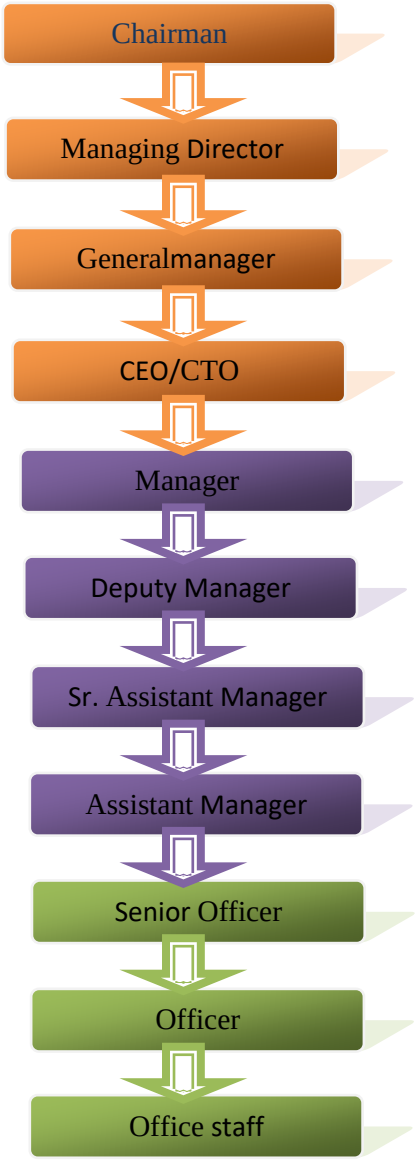

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Figure 2.5.1.0Organization structure

CHAPTER 3

Internship Roles & Responsibility

3.1 Daily Task and Activities:

- Month-1 In this month of my Internship at Daffodil Online Limited I have learned and performed the following Tasks.
  - About IP Address
  - About subletting
  - Introduction of Mikrotik
  - Pc base Installation of Mikrotik operating system using VMware
  - Configure Mikrotik Router
  - Mikrotik router Configure ISP link
  - Configure LAN Network

- Month-2 This month I have learned and performed the following tasks:
  - Firewall and NAT Configuration
  - Static-IP Configuration
  - (DHCP) Dynamic Routing Configuration
  - Queue Configuration

- Month-3: This month I have learned and Performed the following Tasks:
  - Bridge Mode Configuration
  - Site Blocking Configuration
  - Bandwidth Distribution
  - Day/Night Package

- Month-4 This month I have Learned and Performed the Following Tasks:
  - Bind MAC Address
  - PPPOE Server Configuration In Mikrotik Router

3.3 project Task and Activities:

3.3.1 About IP address

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IP means Internet Protocol; Network directors have interpreted an IP address in two components. When any person communication through Internet that time you using IP. A big range of sophistication finished network design permit for the appointment of people or network and the properly sub community layout. An IP address is 5 Classes

Class	Range	No of Network	No of Address per Network
A	0-126	27=128	224=16777216
B	128-191	241=16384	216=65536
C	192-223	221=2097152	28=256
D	224-239	Multicast Address	
E	240-254	Multicast Address	

3.3.2 About Subletting

A subnet work or subnet is a logical subdivision of an IP Network. When you are work small network that time you calculation Subnet or you Loss IP.

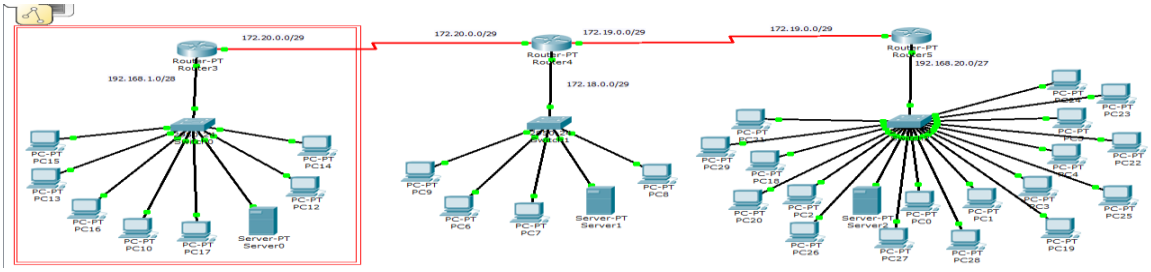

Figure 3.3.2.1 subnetting

3.3.3PC Based Installation of Mikrotik Router Using VMware:

MikroTik is a network-based equipment manufacturing company. MikroTik was founded by Latvia in 1996 to develop ISP System with Router & Wireless Devices.

Requirement Items:

- VMware Workstation Application
- Mikrotik Router OS ISO Image file
- WinBox

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Figure:-3.3.3.0 Software for VMware, Mikrotik ISO, Winbox exi

This software are use for Configuration on Mikrotik Router.

Now, I will The Install Guideline Step by step:

Step 1: At First install VMware Application and open it, Then click on File> New Virtual Machine and Next> Next> Ok.

Step 2: Create a new virtual machine.

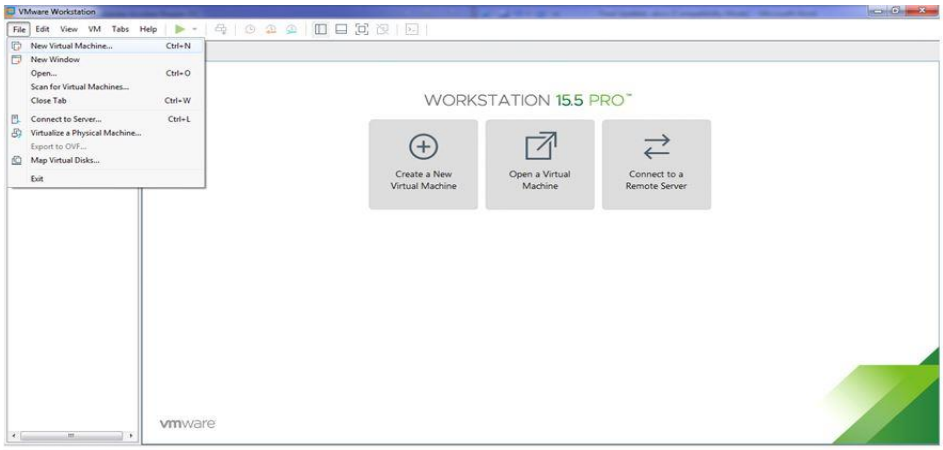

Figure:- 3.3.3.1 New Virtual Machine Create

Step 3: Select virtual machine hardware compatibility and next.**Step 4:**Guest operating system installation>Select, I will install the operating system later>Next.**Step 5:**Select a guest operating system>Select**,** Other>Version>other>next. **Step 6:**Give me a name for the virtual machine and select the file location.>Write a virtual machine name: Example of: Mikrotik>Location: Example of: C:\Users\MD BABU\Documents\Virtual Machines\Mikrotik>Next. **Step 7:**Select the processor's configuration as needed>Write a Number of processor: Example of: 1>Number of cores per processor: Example of: 1>Next.**Step 8:**Let's select the range of memory for the virtual machine >Write a Memory for this virtual machine: Example of: 1024 MB>Next. **Step 9:**Let's select the range of disk capacity for the virtual machine>Write a Maximum disk size

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(GB): Example of: 10> select split virtual disk into multiple files>Next. **Step 10:**Specify disk file location>Write a disk file: Example of: Mikrotik.vmdk>Next.**Step 11:**Ready to create a virtual machine>If I verify the information, click on the Next option.**Step 12:**Select Virtual Machine settings>Double click, "Edit Virtual Machine settings".**Step 13:**Edit Virtual Machine settings.>**Click on,** Add and ok.**Step 14:**Add hardware wizard>**Click on,** "Network Adapter>Finish>Ok".**Step 15:**Now select on the Installer disk image file (ISO) and choose the ISO image file and then click on Next. After that create a virtual machine name and also choose a location, where the machine will be installed, then click next. Now configure the Hardware requirement how we have need.>**Select all with,** "press 'a'>press 'n'>press 'y'>Enter".**Step 15:**Install successful Mikrotik OS.

Now I select the Installer Disk image disk(ISO) and choose the ISO Image file and click next. Then I create virtual machine name and select which location this file save or install and click next. Now Configure the Hardware Requirement how we are need

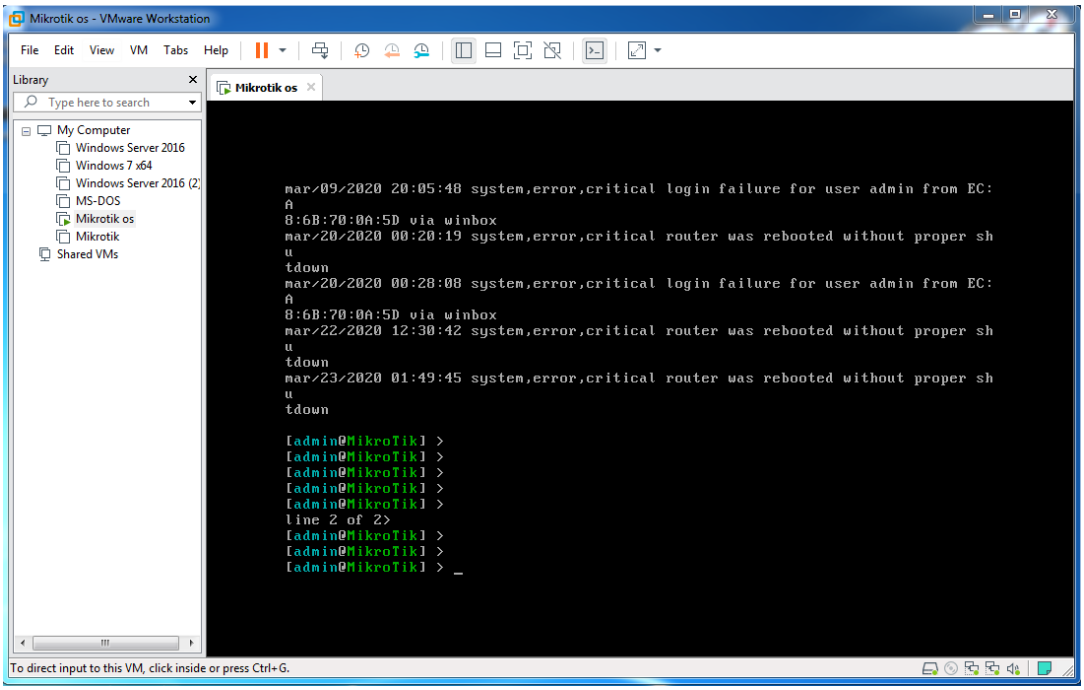

Figure 3.3.3.2Mikrotik OS Installation

3.3.4 Mikrotik router Configuration

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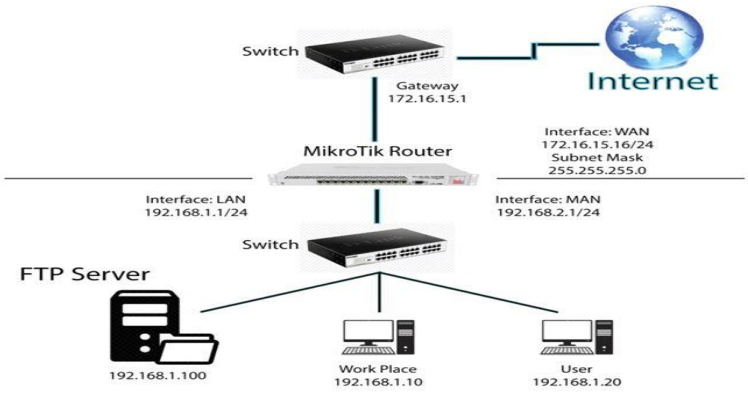

Figure 3.3.4.1 Network Topology for Mikrotik

When the Mikrotik ISO Install Successful that time wait for user name and password for login then Mikrotik router default user name admin and password not given that when we press enter then Mikrotik router run command line. I am using Mikrotik router GUI interface on WinBox software. This Software connects to Mikrotik router MAC Address.

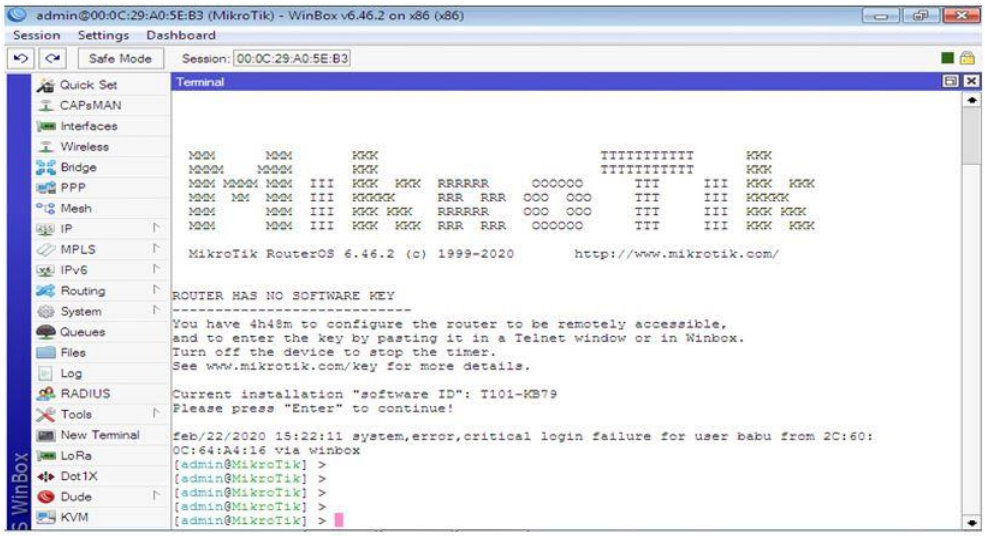

Figure 3.3.4.2 WinBox Dashbord

Press user name admin> password Nun.

3.3.5 Static IP Configuration with Mikrotik Router

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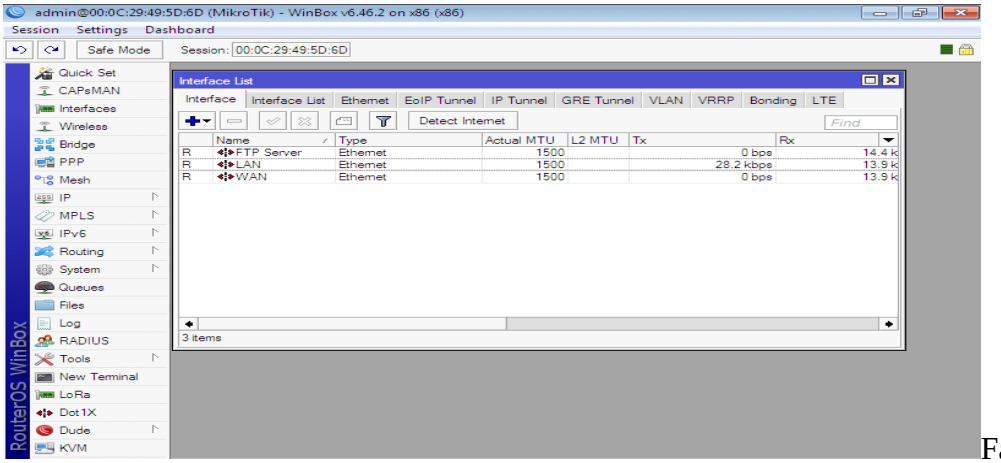
Step 1: Mikrotik Router Assign Port name which port are LAN, WAN and FTP server



Fast of all I am defend Port name. I am click Interface> port name 2 click and change name >LAN, FTP Server, WAN

Figure 3.3.5.1 Interface

Now Add a IP address first Click IP>Address>Add IP on Address on CIDR value then apply > ok.

Step 2: Static IP Use for manually assign on Mikrotik Router LAN port and which Computer are Connect on this port this Computer manually assign IP that is Static Now I am select add and put IP address and choose Interface.

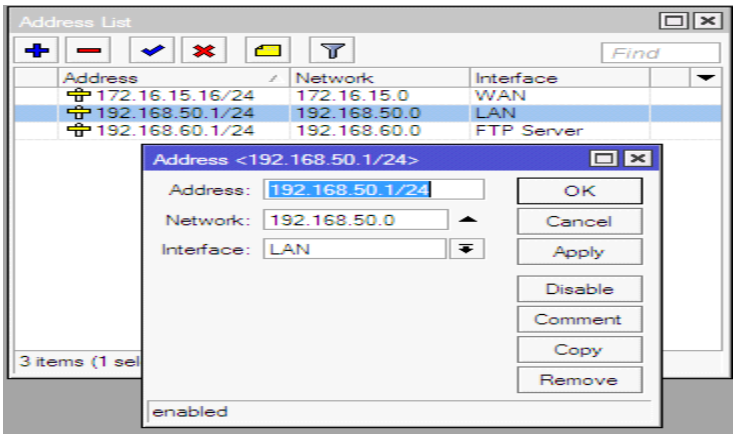


Figure 3.3.5.2 IP Addressing

Add>Address>192.168.50.1/24>interface>LAN.

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Step 3: Domain Name System are use server IP you can use your personal server IP. I am using Google server IP 8.8.8.8

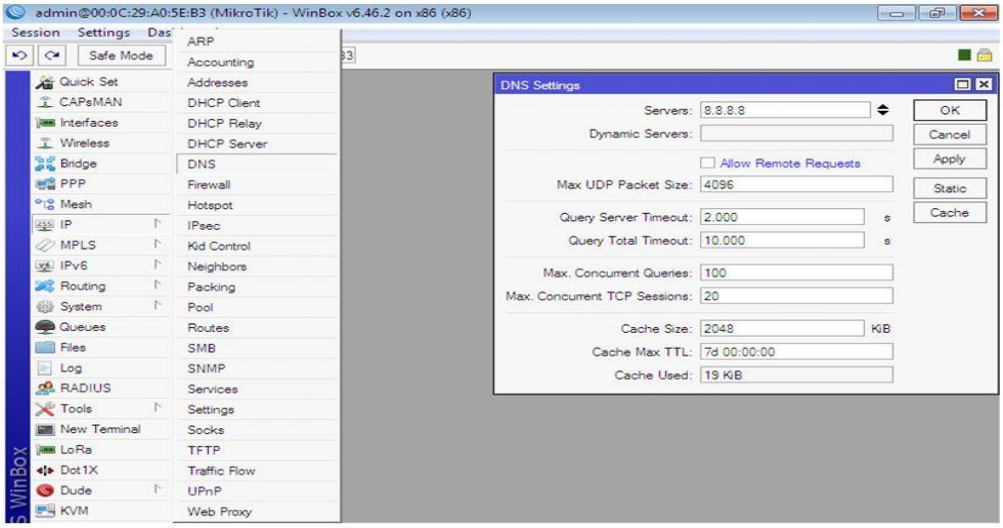

Figure 3.3.5.3 Domain Name system Server

Now I am Click Again IP > DNS > Add Server IP address > Apply Ok

Step 4: Firewall Configuration means you can permission Communication for World Aria Network first I am select srenet

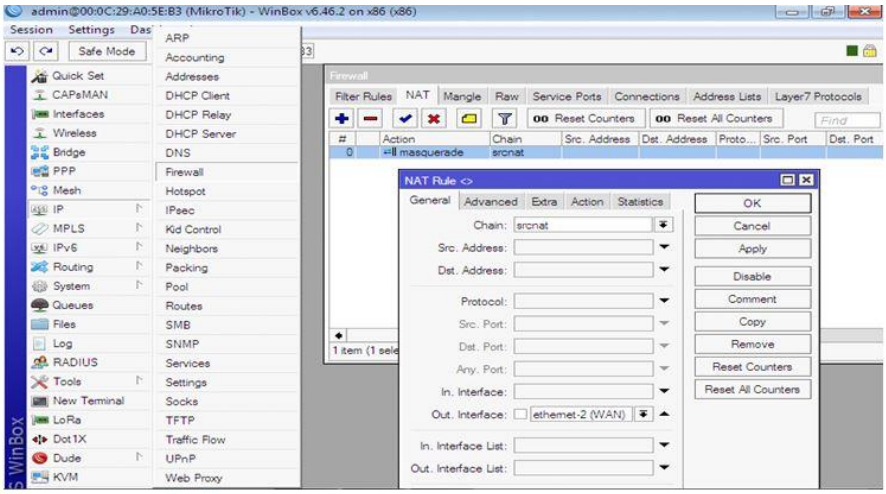

Figure 3.3.5.4 Firewall

After again Click IP > Firewall > NAT > Add +> General > Chain: srcnat > Out Interface Ethernet-2 (WAN) > Apply > OK

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Step 5: Firewall Configuration means you can permission access World Aria Network convert Private IP to Public IP for Communication. Second I am select masquerade.

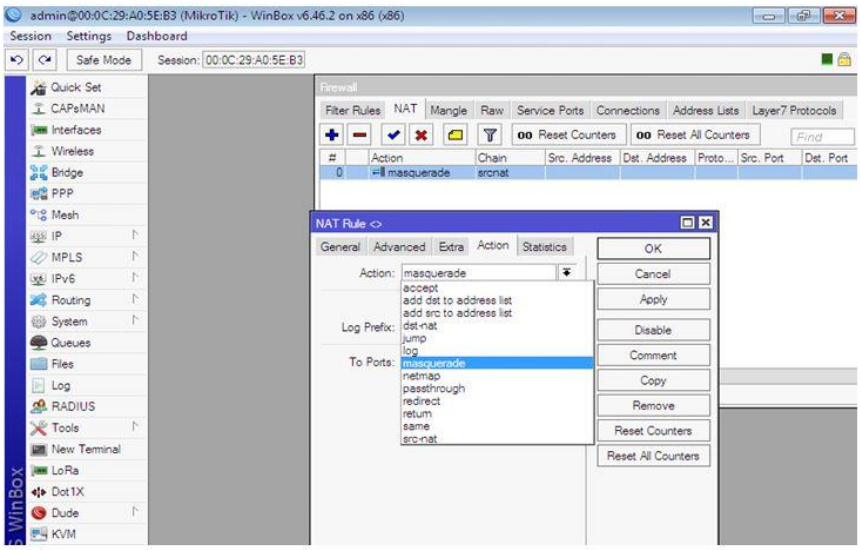

Figure 3.3.5.5 Firewall

And again Click IP > Firewall > NAT > Add +> Action=masquerade> Apply > OK

Step 6 IP Route means you select your destination address and your gate way when you select 0.0.0.0/0 then you can reach any destination and which route you access the Internet that is Gateway my gateway is 172.16.15.1

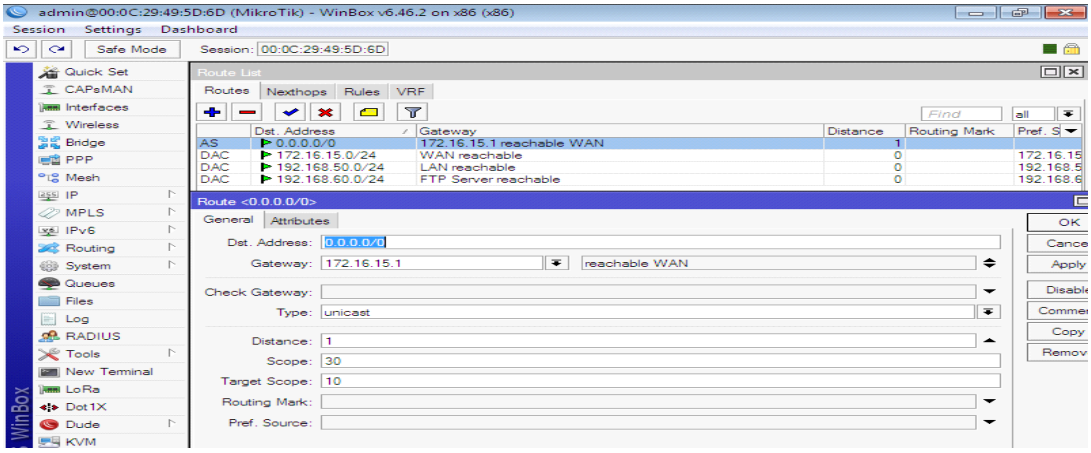

Figure 3.3.5.6 IP Routing

Now Click IP > Routes > Add +> General > Dst Address + Gateway > Apply > Ok

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Step 7: Then Static IP Configuration has been Complete. Than I am cheek internet on Mikrotik Router on Terminal

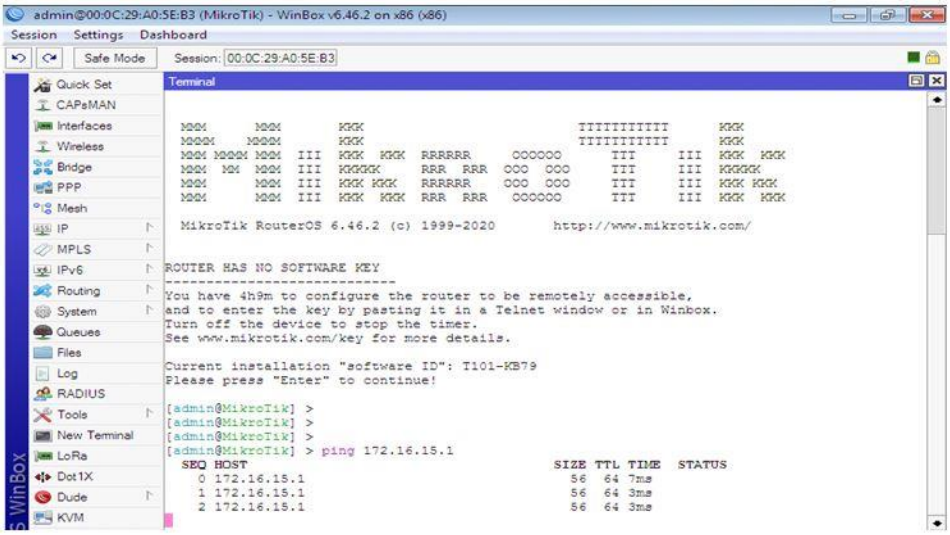

Figure 3.3.5.7 Internet Protocol Ping (IP)

New Terminal > press Enter and write ping space (gateway IP) then press Enter

Step 8: Finally I am Connect on My Computer with Static IP Manually and I am using Google domain name system server 8.8.8.8

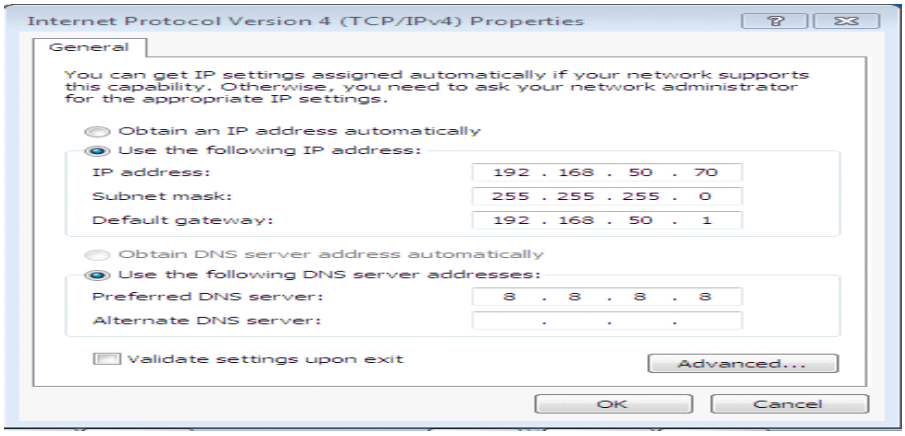

Figure 3.3.5.8 TCP/IPV4 Configuration

Click Network Setting > Change Adapter Option > Local Area Connection > Right Click and Properties > Choose Option IPV4 > use IP Address gateway subnet mask and DNS server > Apply > Ok

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3.3.6 Dynamic Host Configuration Protocol (DHCP) With Mikrotik

DHCPservers provide IP by default. Whish port Configure DHCP Choose this port. You define your DHCP Network address and Gate Way then you select a Pool Which IP provide on DHCP and define your DNS server and when DHCP server provide IP that time this IP fix assign on Computer .

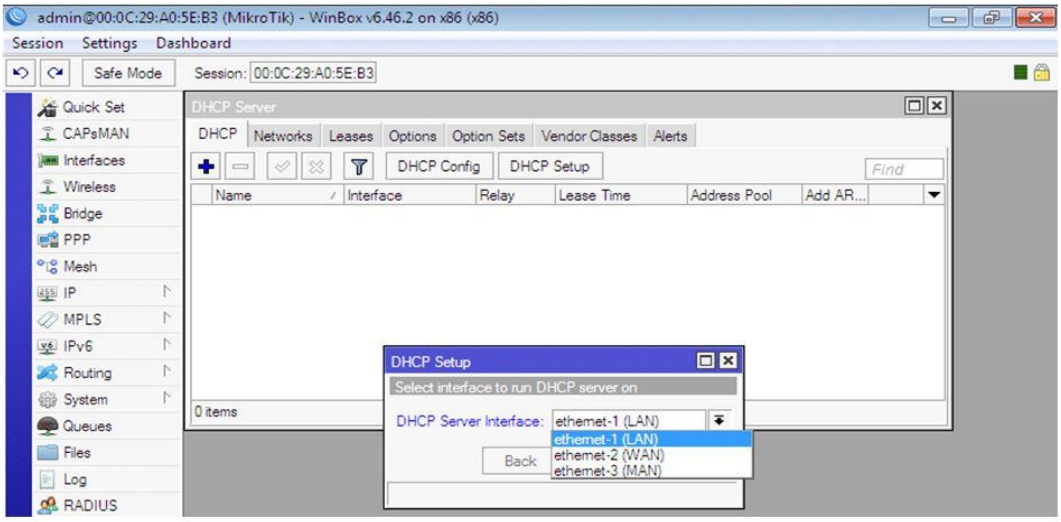

Figure 3.3.6.1 Domain Name System

Click on, IP>DHCP Server>DHCP>DHCP Setup>DHCP Server Interface: Select interface>**Step 2:** Input a DHCP address space for the Dynamic Host Configuration Protocol(DHCP) server.> DHCP Address Space: Example of 192.168.10.0/24>**Step 3:** Input a gateway for Dynamic Host Configuration Protocol(DHCP) network.> Gateway for DHCP Network: 192.168.10.1>**Step 4:** Input an address to give out for the Dynamic Host Configuration Protocol(DHCP) server.>Addresses to Give Out: 192.168.10.100-192.168.10.254>**Step 5:** Input a Domain Name System (DNS) server for the Dynamic Host Configuration Protocol(DHCP) Setup.> DNS Servers: Example of 8.8.8.8 and 124.6.224.4>**Step 6:** Input a lease time for the Dynamic Host Configuration Protocol(DHCP) Setup.>Lease Time: Example of 00:10:00>

Step 7: Let's see, if the Address Resolution Protocol (ARP) matches the user'sMedia Access Control (MAC) address.

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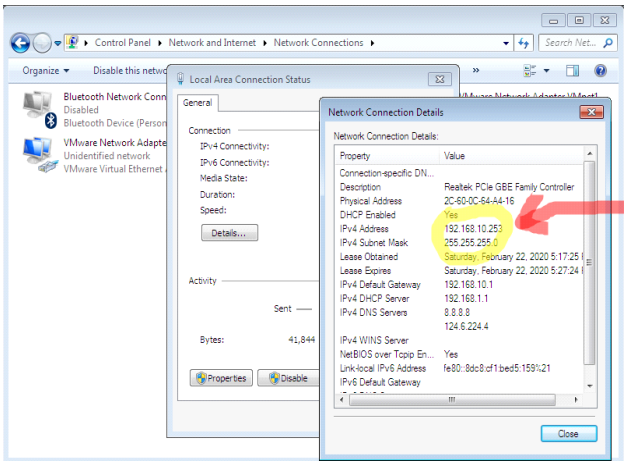

Figure 3.3.6.2 Dynamic Host Configuration Protocol

Now, PC Setting>Network>Change adapter setting>Local Area Connection>Disable and enable>Double Click on Local Area Connection>Details>Show all information.

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3.3.7 Queue Configuration

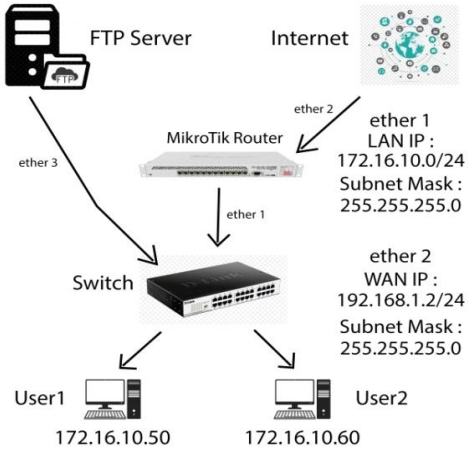

Figure 3.3.7.1 Network Topology of Queue Configuration

Step 1: Add IP address for Local Area Network (LAN).

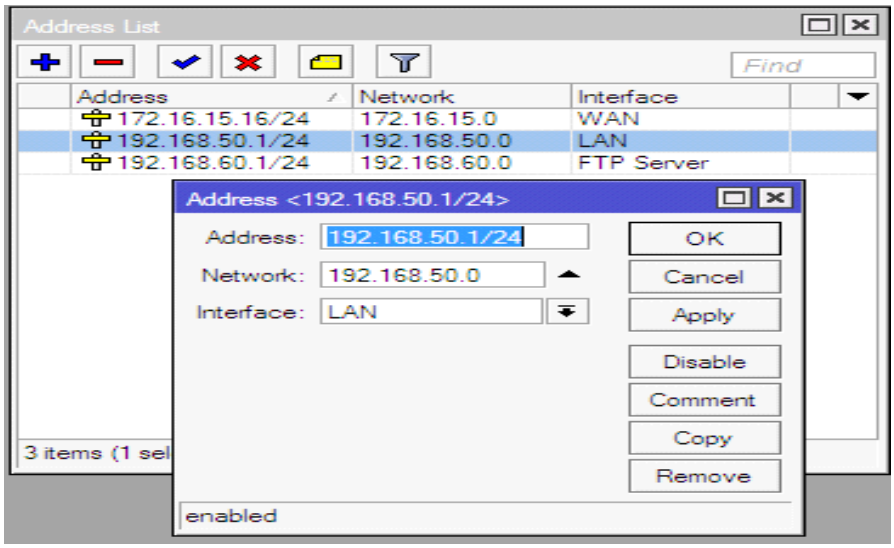

Figure 3.3.7.2 Add IP Address

At First Click on IP > Address > Add IP On Address and Network > Apply > Ok

Step 2: Hasan: 4MB Upload and 4MB Download

Raju: 10MB Upload and 8MB Download

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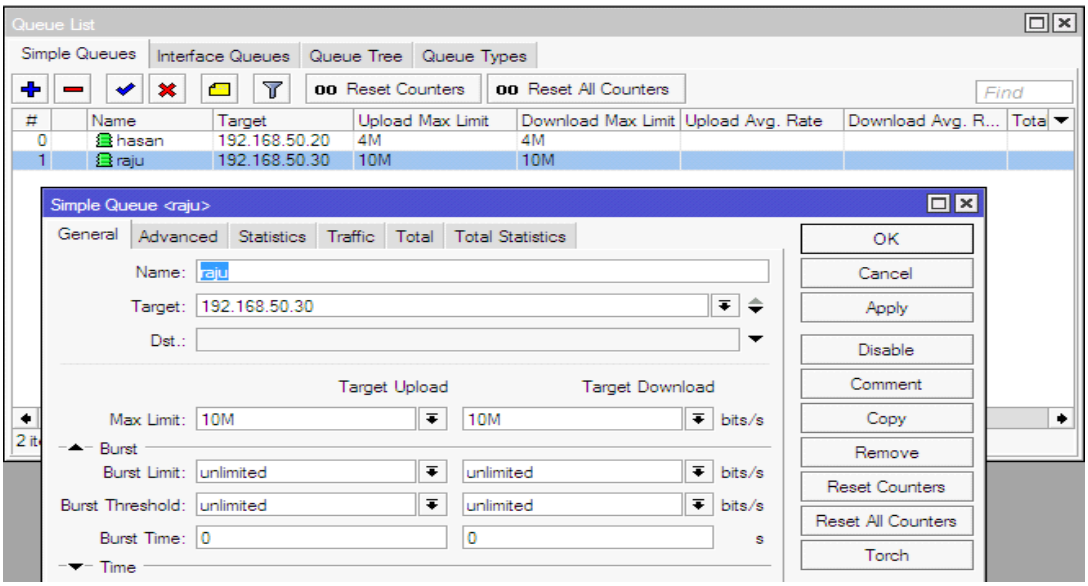
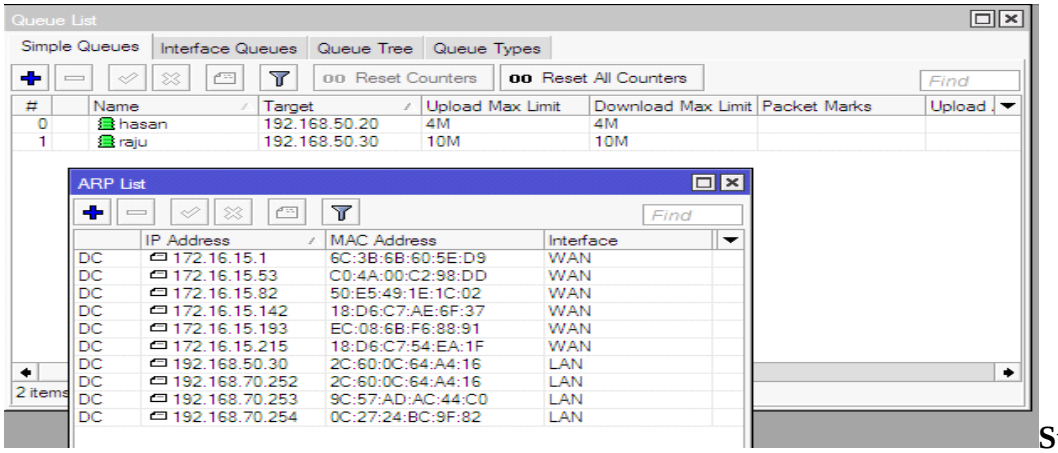


Figure 3.3.7.3 Queues

Now, click on “Queues>Simple Queues>Add>General>Name, Target, Max Limit>Upload andDownload>Apply OK".

You can defiant name and IP and which user max limited Internet Upload and Download speed assign this IP.



Step 2: Let’s see the MAC address “Hasan”

Figure 3.3.7.4 Adders Regulation Protocol

IP> ARP list

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Step 3: You can see this IP ping or not when this IP ping that time you see TTL=64 and when this IP is not ping that time you see Unreachable host.

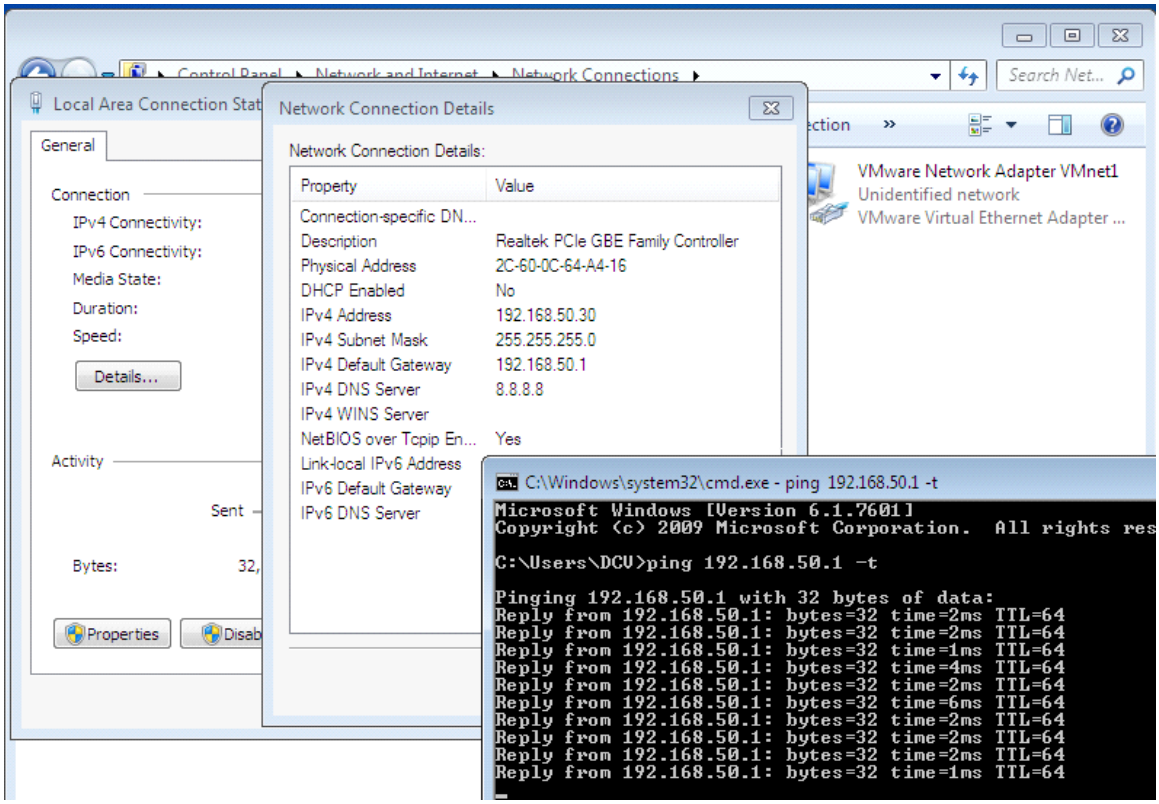

Figure 3.3.7.5 Network Connection Details

Windows key+ r> cmd > ping 192.168.50.1

Set of "PRIORITY":

Step 4: You can Add user on Queue List and set on Individual Priority for user. This is lower the user's range, the higher the priority.

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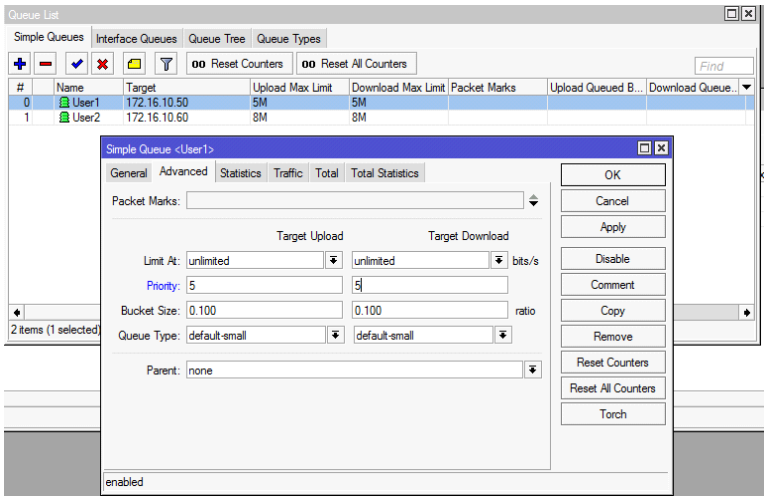

Figure 3.3.7.6 Simple Queues

Click on “Queues>Simple Queues>User1>Advanced>Priority>Target Upload and Target Download>Apply OK".

Queues of Parent Concept:

Step 1: Creates a parent concept's blog diagram

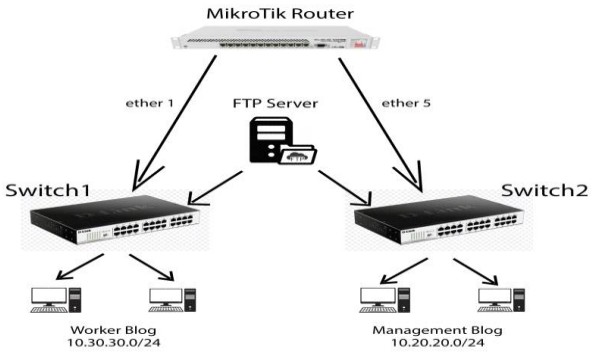

Figure 3.3.7.7 Network Topology of Parent Concept

Step 2: You can Divide user which user are manage are and which user are Workers. When you apply any rules on manager Blog than

In the same way, we create the next blog and create a user of management blog.

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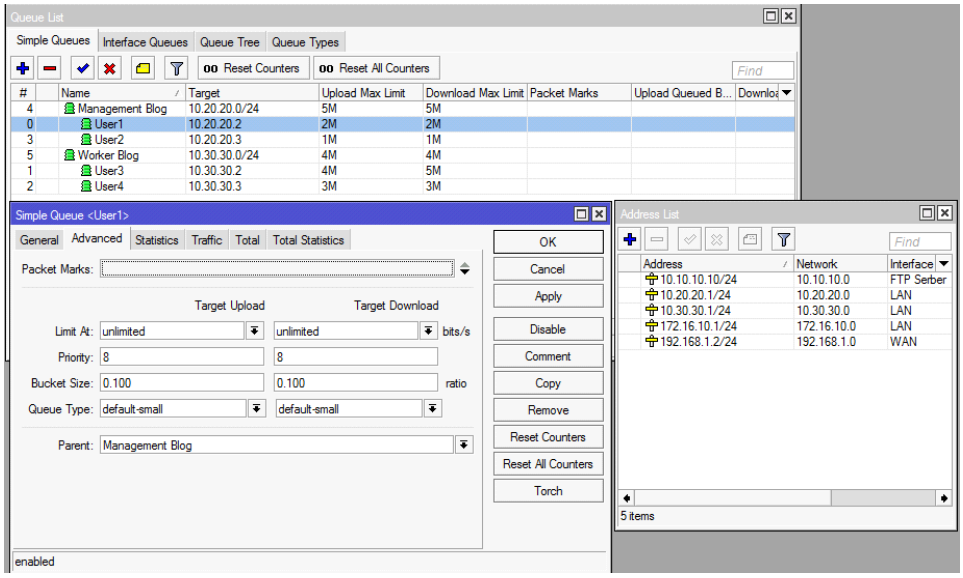

Figure 3.3.7.8 Simple Queues of Parent

At first Click on "Queues>Simple Queues>General>Name :(example: Management Blog)>Target:(example:10.20.20.0/24)>Apply OK".

Next Click on “Queues>Simple Queues>General>Name :(example: User1)>Target :(example: 10.20.20.2)> Advanced >Parent: select management blog >Apply>OK"

3.3.8 Bridge Configuration with MikroTik:

Ether Ports **Step 1:** Ethernet ports of Mikrotik Router:

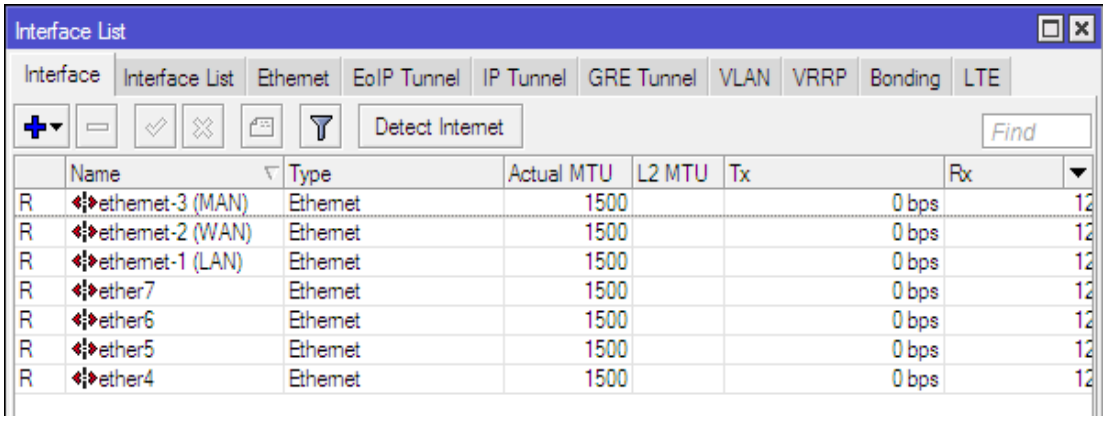

Figure 3.3.8.1: Interface List of Bridge

Click Interface list

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Now I am click on Interface list and show my Interface which you create.

Step 2: Now I am creating Bridge. Bridge mines LAN one port to other port Inter connection.

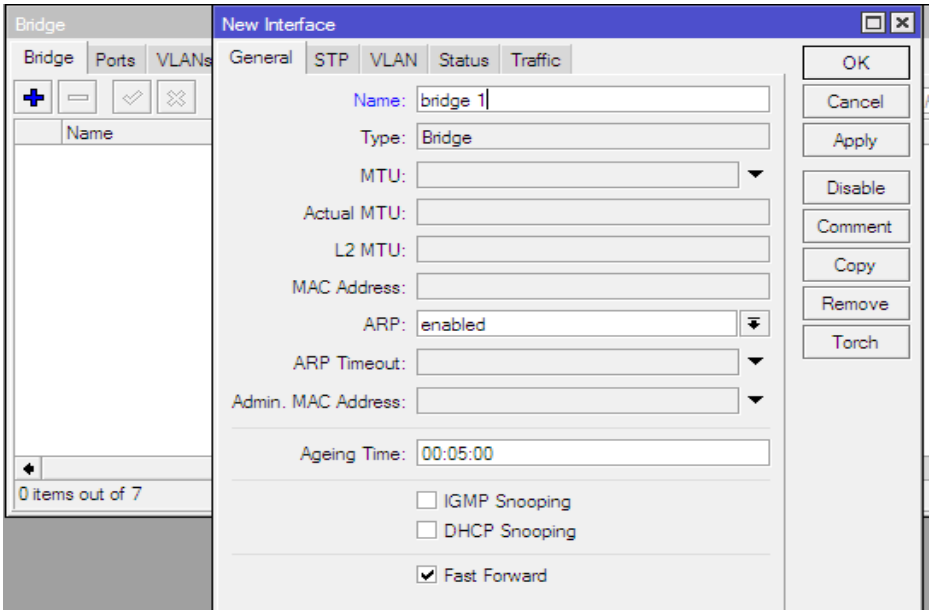
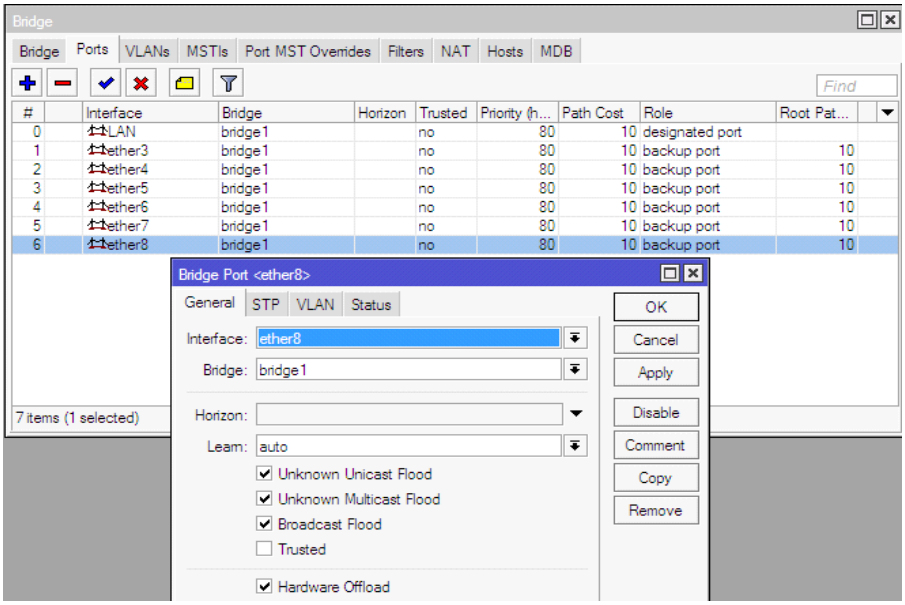


Figure 3.3.8.2: Create Bridge name

Click on, “Bridge>Bridge>Add>General>Name: bridge 1>Type: Bridge>Apply>Ok".

Step 3: Add Ports:



© Daffodil International University

Figure 3.3.8.3: LAN configure of Bridge port

Now click, “Bridge>Ports>Add>General>Interface: Select>Bridge: bridge 1>Apply>Ok".

Now I am select on bridge and which interface are you interconnect that interface are you connect.

Step 4 : Final Step, “Address list to select interface and apply ok".

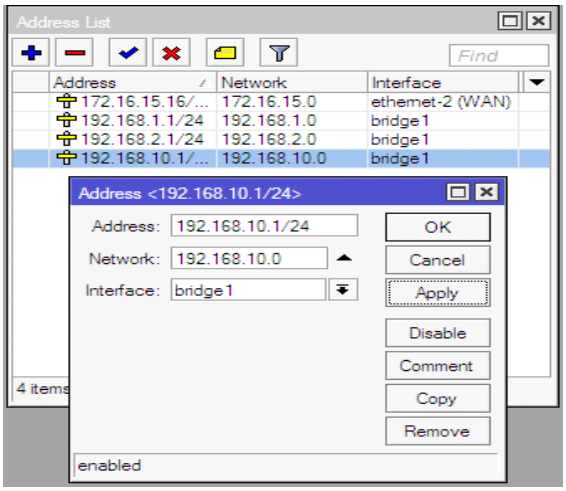


Figure 3.3.8.4: Change Interface

"Address list to select interface and apply> Ok"

3.3.9 Site Blocking Configuration:

Step 1: You can block any website. Suppose you create a network on Organization that time you block YouTube, Face book etc that why your user don’t wastage bandwidth.

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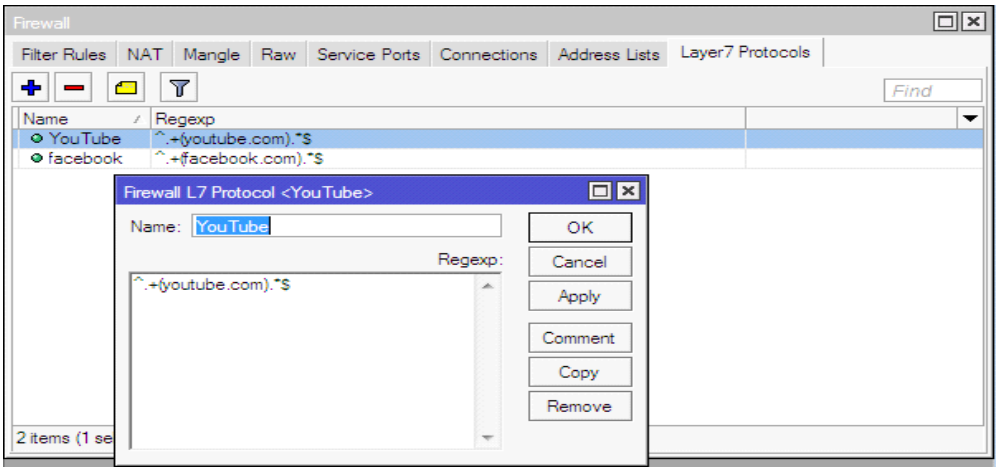

Figure 3.3.9.1: Block IP configure and create rule

Click on, "IP>Firewall>Layer7Protocols>Add>Name: Example: Face book >Regexp: Example: ^.+ (facebook.com).*$ >Apply>Ok".

Step 2: You can drop this Website any one cannot browse site.

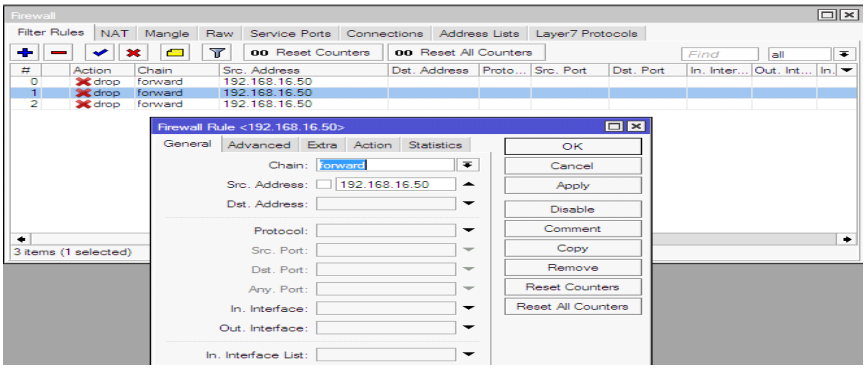

Figure 3.3.9.2: IP source configure, drop and forward

Next,"IP>Firewall>Filter Rules>General>Src. Add: Example: 192.168.16.50>Advanced>Layer 7 Protocol: Example: face book >Action>Action: drop>Apply>Ok".

Not Site Block:

Step 1: This user is permeation on this site.

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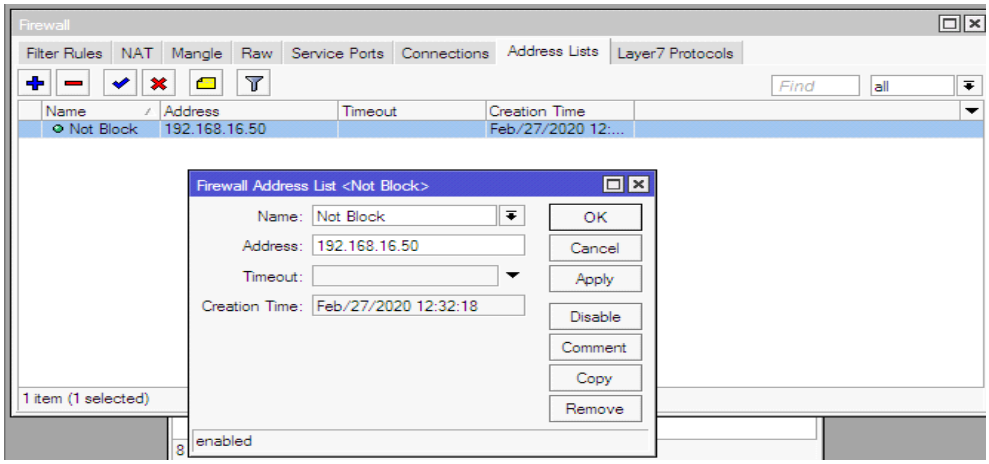

Figure 3.3.9.3 Result of Not Site Block

Clack on, "IP>Firewall>Address Lists>Name: Example: No Block>Address: 192.168.16.50>Apply>Ok."

Step 2: You can select not block and select or protocol.

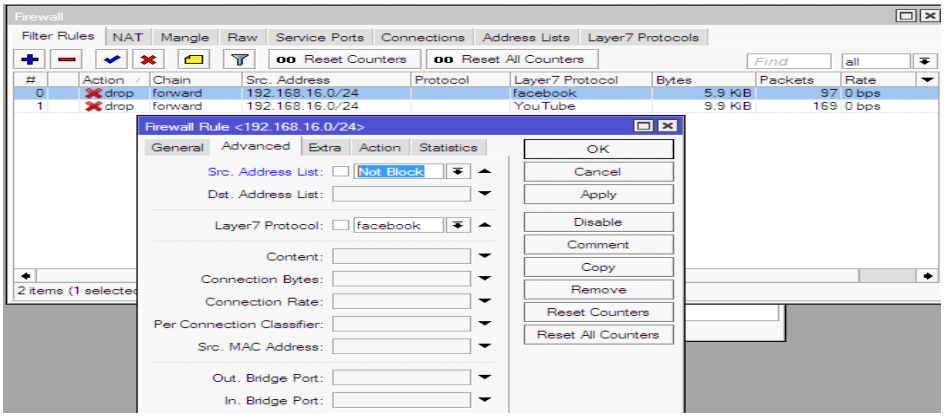

Figure 3.3.9.4: Result of Not Site Block

Next, "IP>Firewall>Filter Rules>Select Rules (Double click)>Advanced>Src. Address List :(Select) Not Block>Apply>Ok."

3.4.1 Bandwidth Distribution fix site

Step 1: Suppose you create a cash server on face book that time you add on address list on cash server IP

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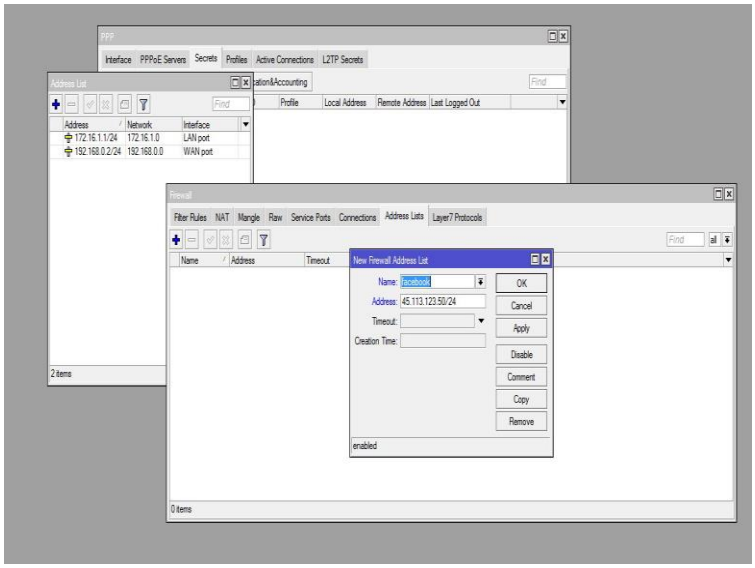

Figure:-3.4.1.1 Mangle for fix site

IP>firewall>address list>+add>name>address>Apply>Ok

Step 2: You can create a rules for fix bandwidth on site .

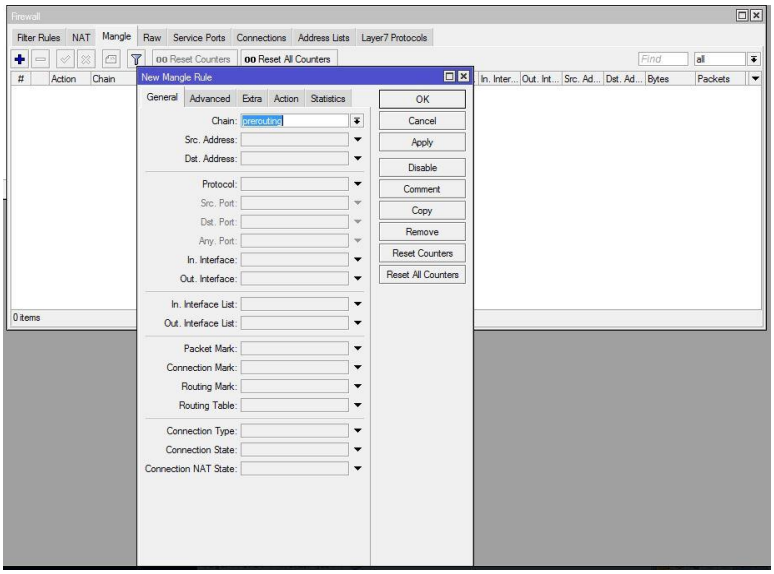

Figure:-3.4.1.2 Mangle for fix site

IP>firewall>Mangle>general: chain>apply>Ok

Step 3: You can select on destination address and select which you create on cash server.

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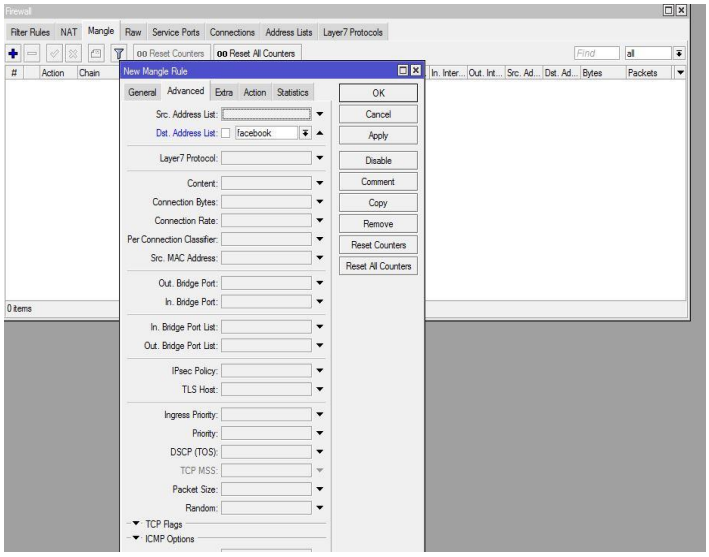

Figure:-3.4.1.3 mangle for fix site

IP>firewall>Advanced: dst address list : face book>apply>Ok

Step 4: You can create a rules for fix bandwidth on site for connection mark.

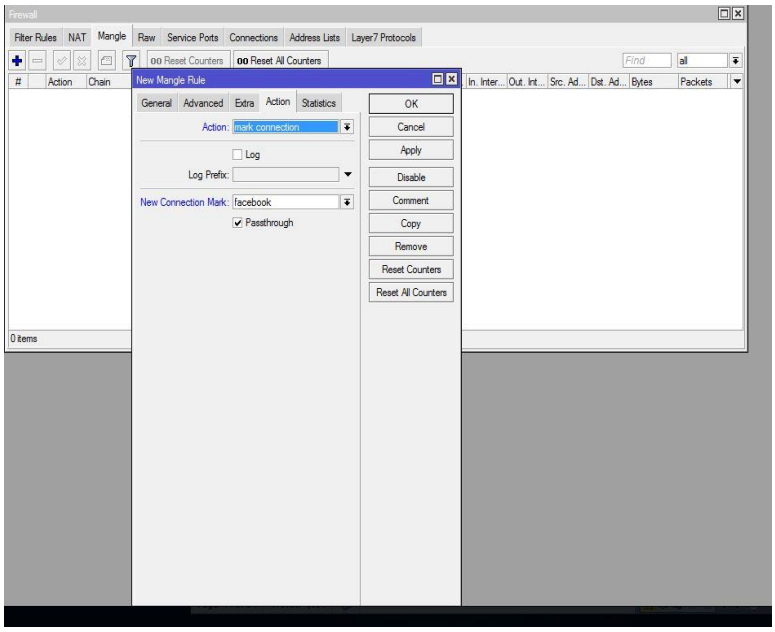

Figure:-3.4.1.4 mangle for fix site

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IP>firewall>action : mark Connection> new connection : facebook> apply>Ok

Step 5: You can cerates rules 2 for fix bandwidth on face book

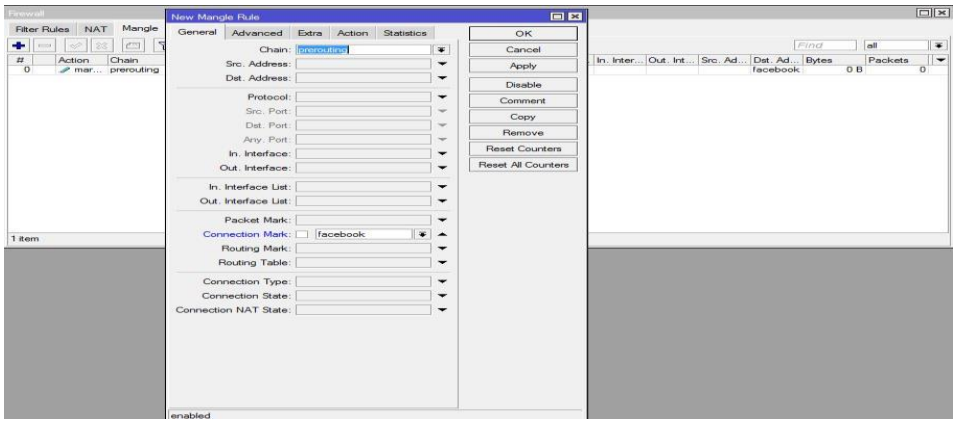

Figure:-3.4.1.5 mangle for fix site

IP>Firewall>general : chain >connection mark: facebook>apply

Step 6: You can cerates rules 2 for fix bandwidth on face book

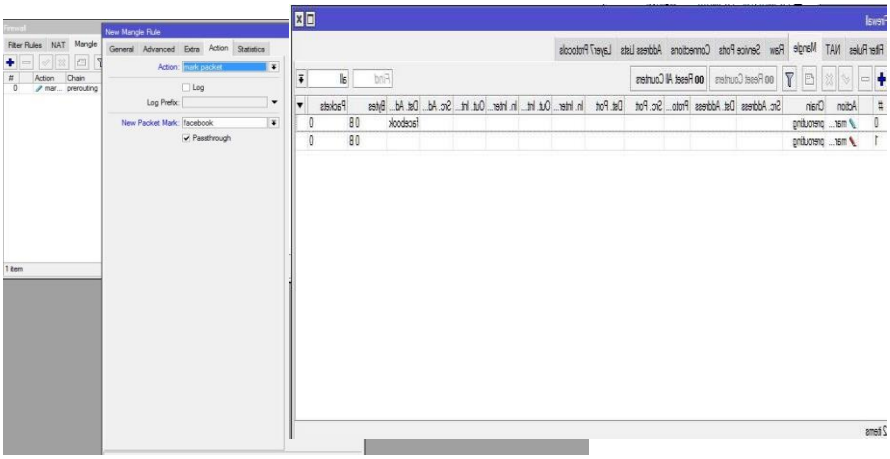

Figure 3.4.1.6 Bandwidth Assign for fix site

IP > firlwall>action>mark packet>new packet : facebook>apply > Ok

Step 7: You can create a rules for Upload Bandwidth on facebook.

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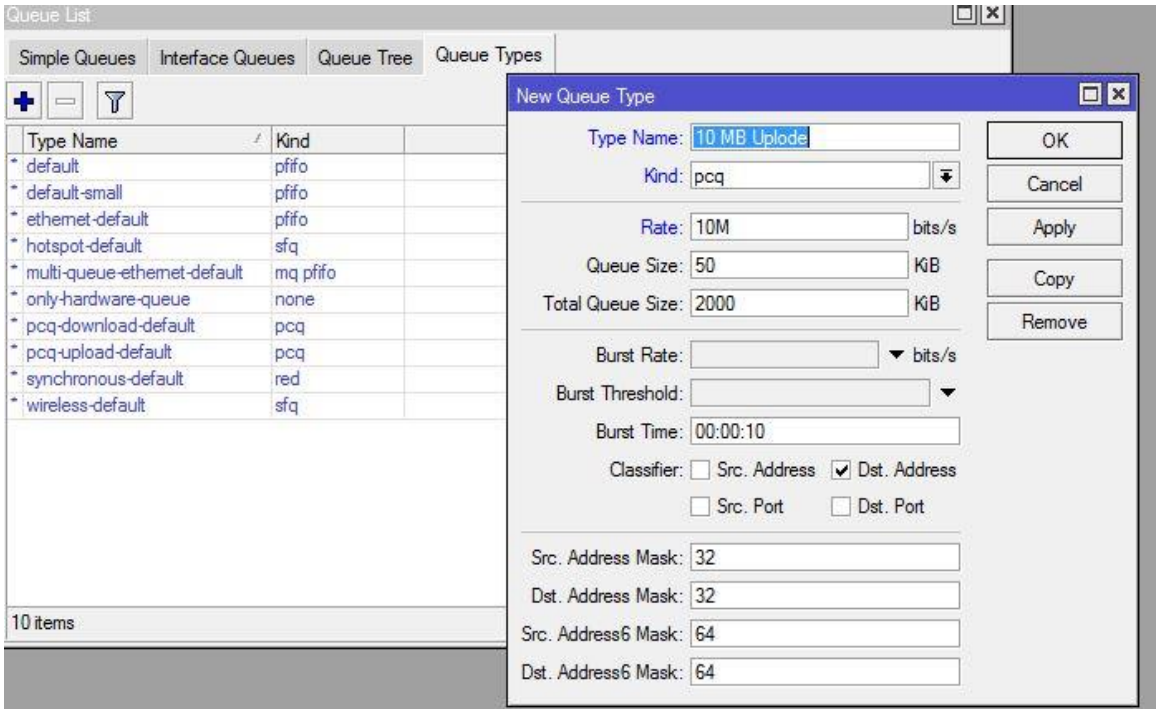

Figure 3.4.2.1 Queue type

Queue list>Queue types>+ add>name 10 MB Uplode>Kind: PCQ>rate:10M>cheek src address>apply>Ok

Step 8: You can create a rules for Download Bandwidth on facebook.

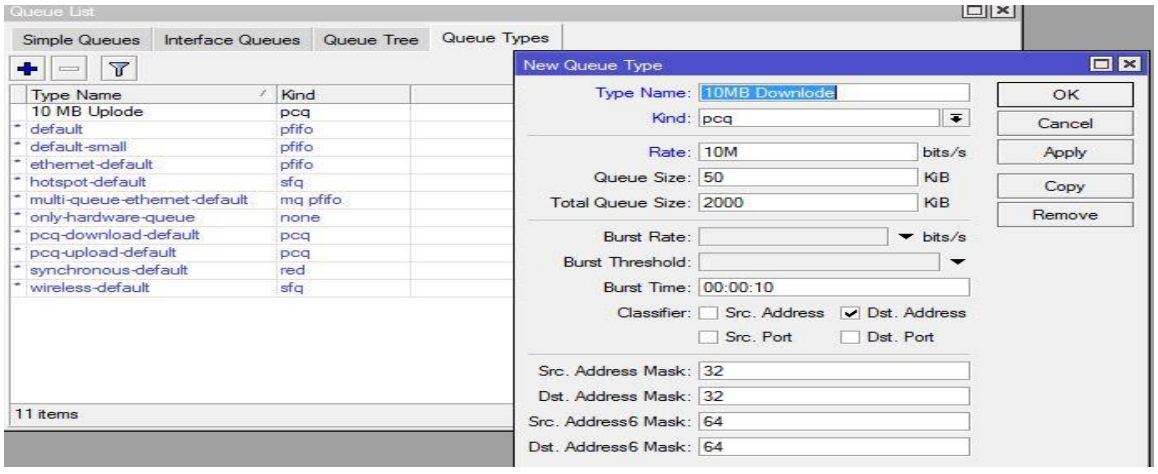

Figure 3.4.2.2Queue type

© Daffodil International University

Queue list>Queue types>+ add>name 10 MB Download>Kind: PCQ>rate:10M>cheek dest address>apply>Ok

Step 9: Which Network are assign the policy that's IP use

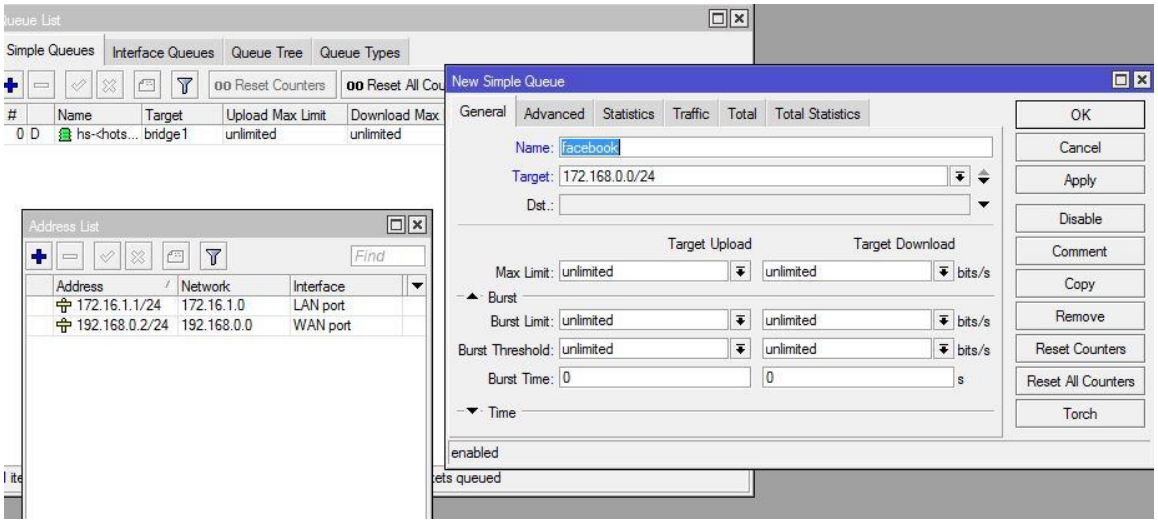

Figure 3.4.3.1 Simple Queue on fix Network

Queus>general>name:facebook>target:172168.0.0/24>apply

Final Step: You create before 2 rules that rules are assigning and select packet mark.

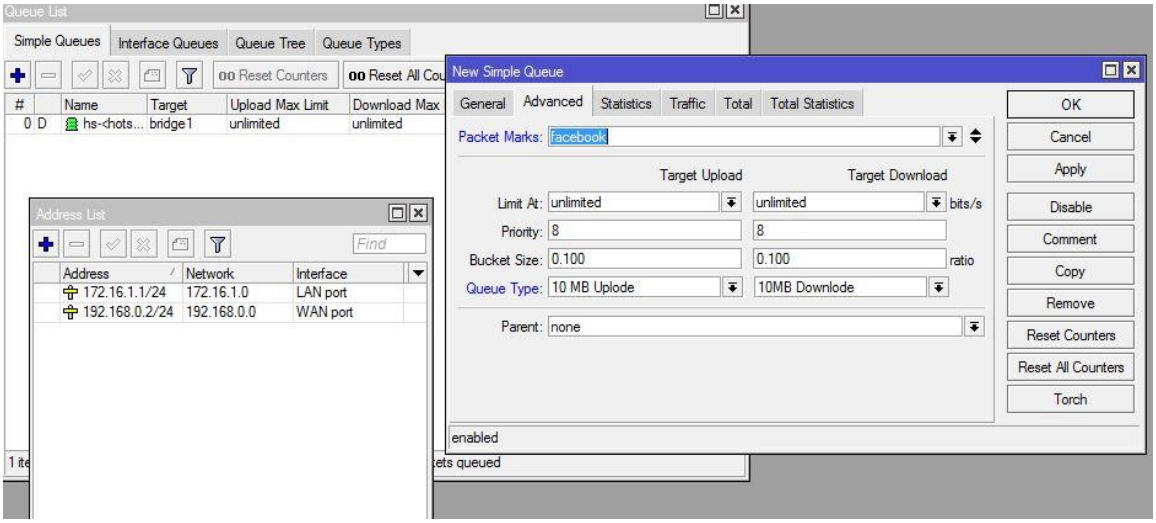

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Figure 3.4.3.2 Simple Queue on fix Network

Queus>general>name:facebook>target:172168.0.0/24>advance>packet marks : facebook>target Upload>Queue type :10MB Upload >target Download>queue type: 10MB Download>Apply>Ok.

3.4.2 Day/Night Bandwidth Configure:

Step 1: Same as above you can create 2 rules for day night package. You can assign for time which time user are use bandwidth.

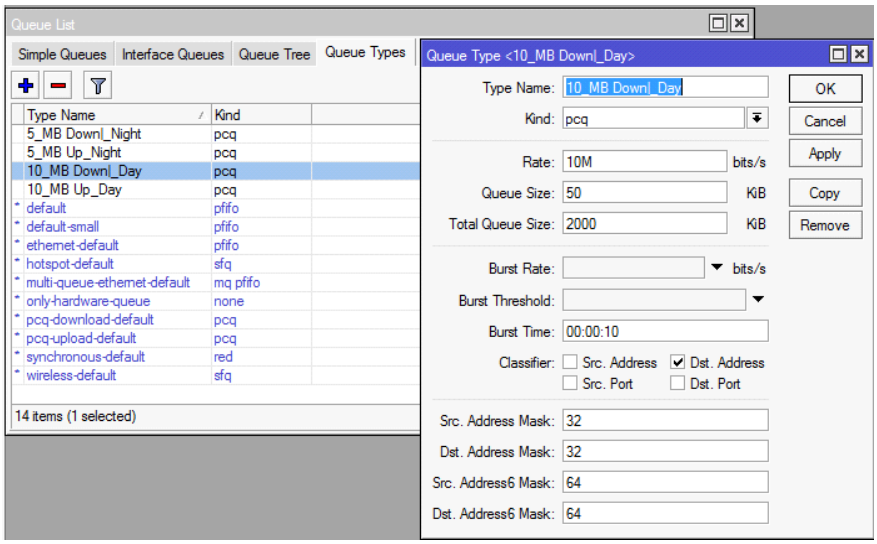

Figure 3.4.2.1: Queue Types for This Day/Night Pack

Click on, "Queues>Queue Types>Add>Type Name: Example:10_MB_Down_Day>Kin:pcq>Rate:10M>Classifier:Select Dst. Address>Apply>Ok".

Next, "Queues>Queue Types>Add>Type Name: Example:10_MB Up_Day>Kin:pcq>Rate:10M>Classifier:Select Src. Address>Apply>Ok".

Next, "Queues>Queue Types>Add>Type Name: Example: 5_MB_Down_Night>Kin:pcq>Rate:5M>Classifier:Select Dst. Address>Apply>Ok".

Next, "Queues>Queue Types>Add>Type Name: Example:5_MB Up_Night>Kin:pcq>Rate:5M>Classifier:Select Src. Address>Apply>Ok".

Step 2: You are select no time that user can be use bandwidth day package.

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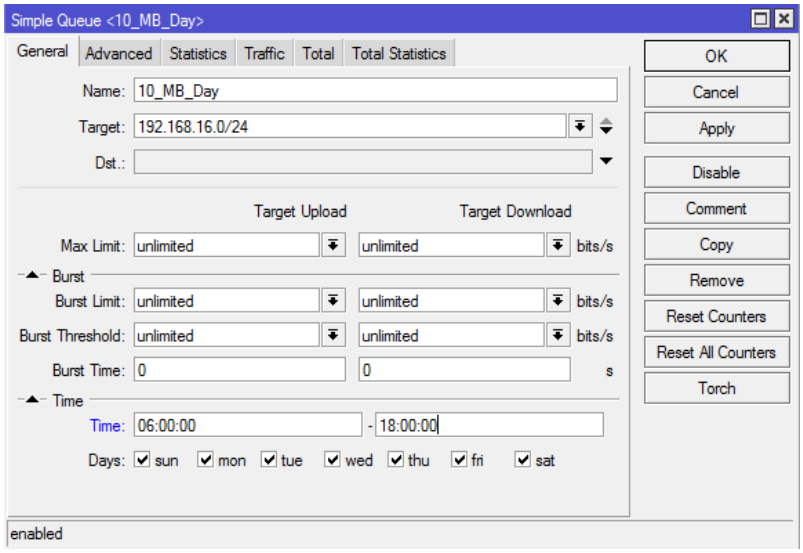

Figure 3.4.2.2: General Setting (Day) For This Day/Night Pack

Click on, "Queues>Simple Queues>General>Name: Example: 10_MB_Day>Target:Example:192.168.16.0/24>Time>Time:06:00:00-18:00:00>Apply>Ok"

Step 3: You are select no time that user can be use bandwidth night package.

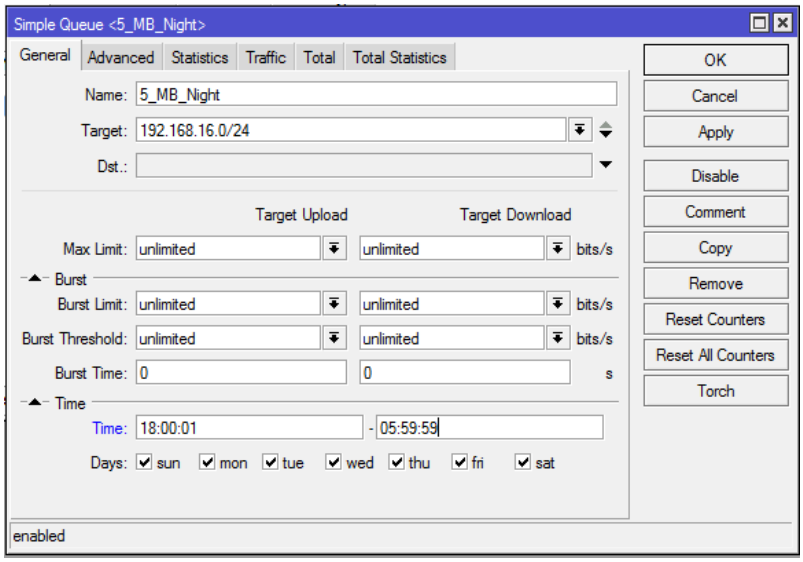

Figure 3.4.2.3: General Setting (Night) For This Day/Night Pack

Click on, "Queues>Simple Queues>General>Name: Example: 5_MB_Night>Target:Example:192.168.16.0/24>Time>Time: 18:00:01-05:59:59>Apply>Ok".

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Step 4: When time up on Day package that time this package are rate.

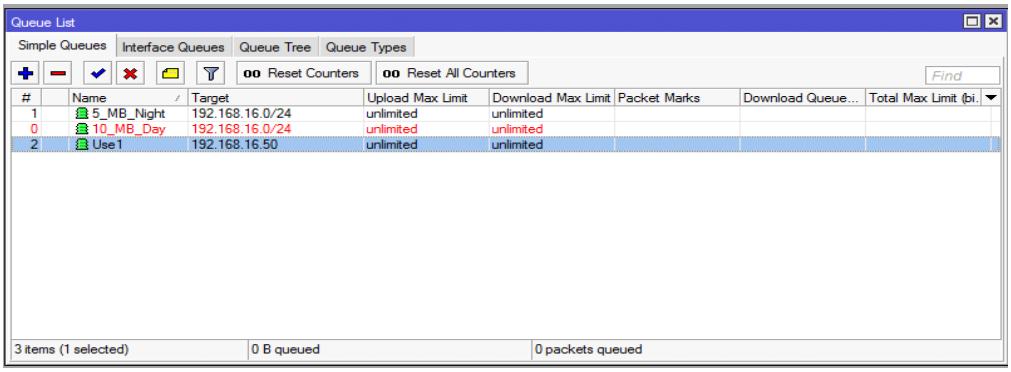

Figure 3.4.2.4: Simple Queues for This Day/Night Pack

Click on, "Queues>Simple Queues>General>Name: Example: User1>Target: Example: 192.168.16.50>>Apply>Ok".

3.4.3 Bind MAC Address:

Step 1: User can bind MAC address. This user are connect on computer and access Internet.

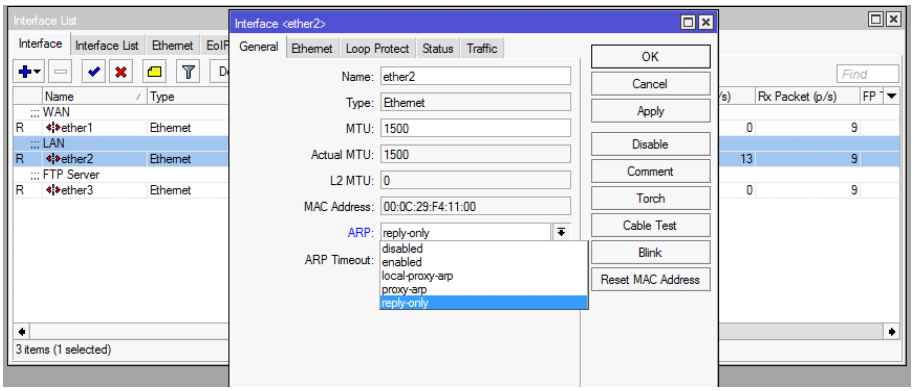

Figure 3.4.3.1: Interface to General Setting

Click on, "Interfaces>Select ether2(LAN) And (Double click>General>ARP:reply-only>Apply>Ok".

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Step 2: You can assign Static IP address On network Adapter and use subnet mask and use default gateway

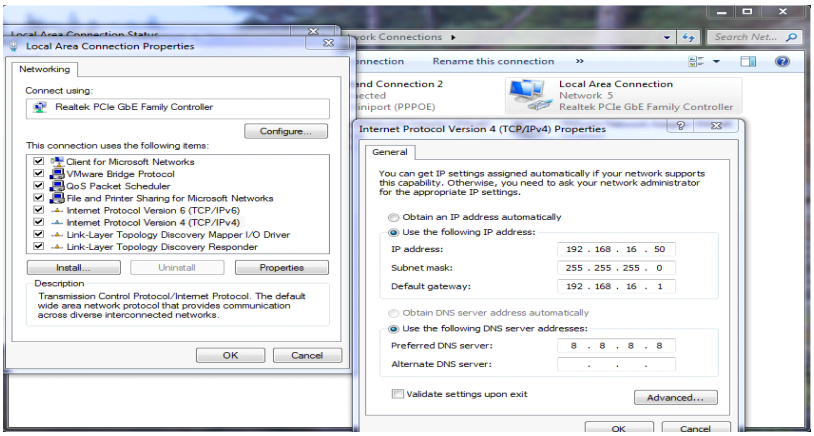

Figure 3.4.3.2: TCP/IPv4 Configuration withInternet protocol

Now connect pc with static IP click on “PC Setting>Network>Change adapter setting>Local Area Connection>Properties>IPv4=Use your static IP address, gateway, subnet mask and DNS server>Apply OK”.

Step 3: You can scan on your Ethernet Port and show this LAN is connecting Device IP address and MAC address.

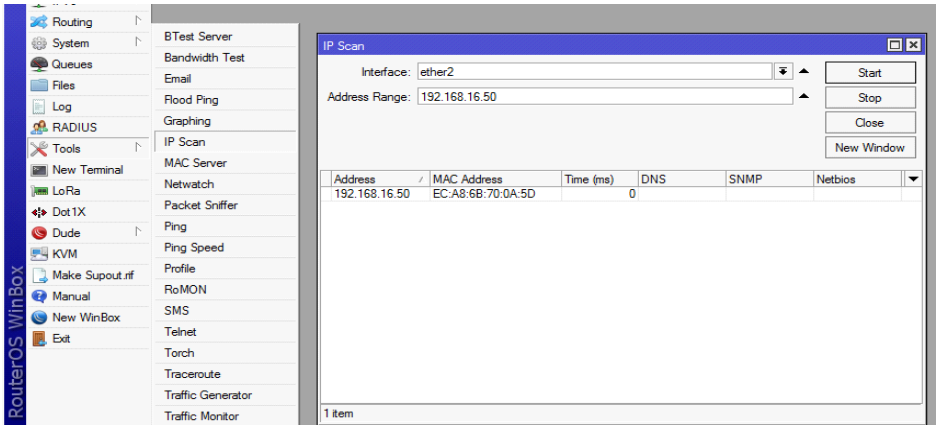

Figure 3.4.3.3: Internet Protocol Scan

Click on, "Tools>IP Scan> Interface: Select LAN Example: ether2>Address Range:192.168.16.50>Start".

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Step 4: You can fix on IP address for device.

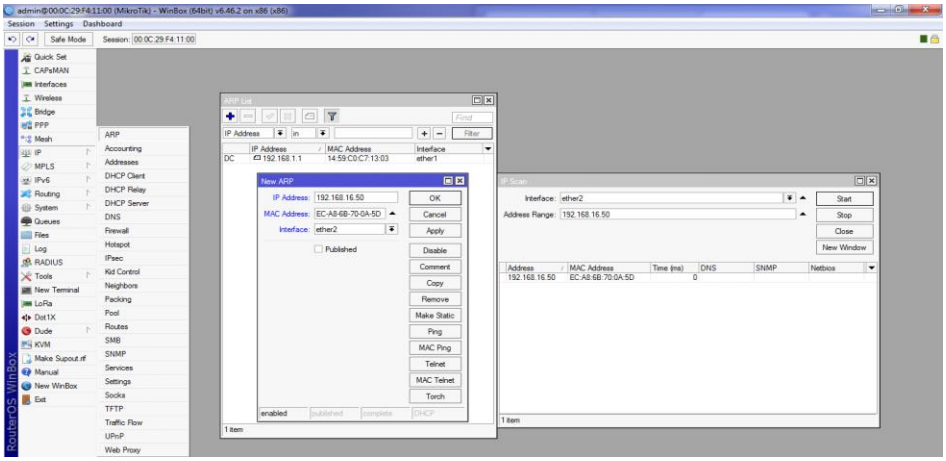

Figure 3.4.3.4: Add MAC Address

Click on, "IP>ARP>Add>IP Address: 192.168.16.50> MAC Address: EC-A8-6B-70-0A-5D>Interface: LAN Example: ether2>Apply>Ok".

3.4.4Queue for point to Point over EthernetServer Configuration in MikroTik Router:

Step 1: Show on Address list and you can add your network address.

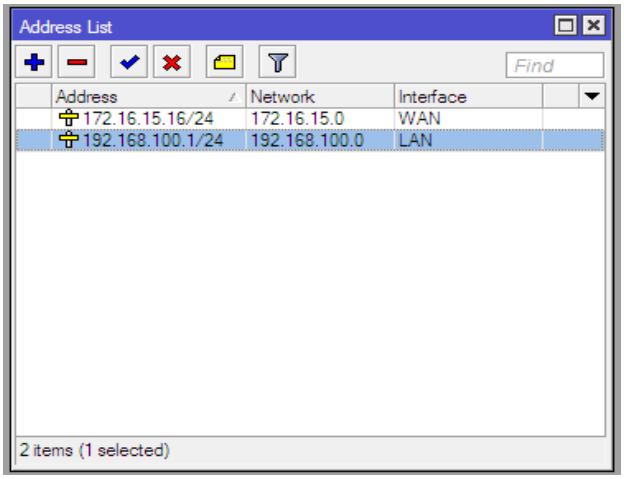

Figure 3.4.4.1: Address List for Queue for point to Point over Ethernet Server

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At first Click on “IP>Addresses>Add>Address: Example: 192.168.100.1>Network: Example: 192.168.100.0>Interface: Example: LAN>Apply>Ok".

Step 2: Now I am create PPPOE server and select On LAN Interface.

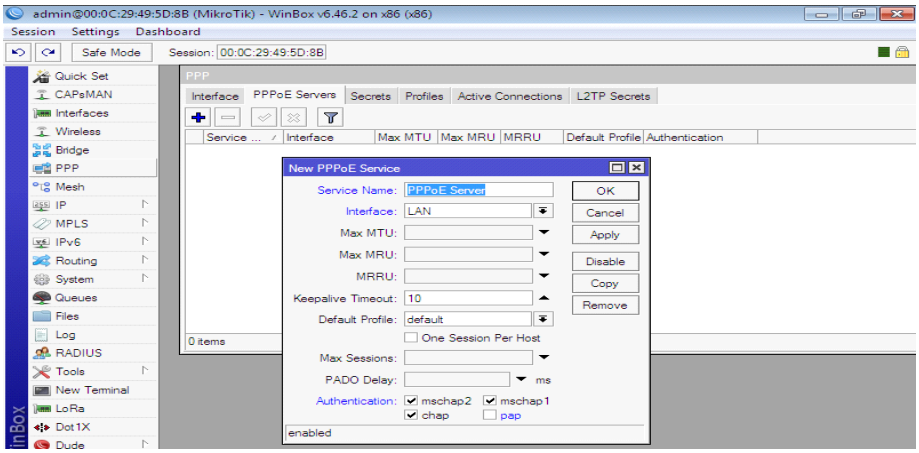

Figure 3.4.4.2: Queue for point to Point over Ethernet Server

Now, Click on: "PPP>PPPoE Server>Add>Server Name: Example: PPPoE Server>Interface>LAN>Apply>Ok".

Step 3: Now I am create 5MB packages and this package are provide on IP range.

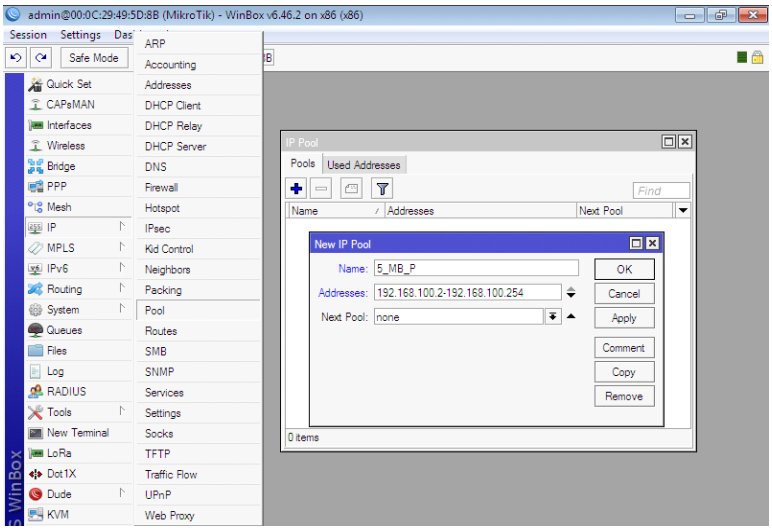

Figure 3.4.4.3: Internet Protocol Pool Configure forQueue for point to Point over Ethernet Server

Click on,"IP>Pool>Add>Name: Example: 5_MB_P>Address: Example: 192.168.100.2-192.168.100.254>Apply>Ok".

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Step 4: Now I am create a Profile On 5 MB package.

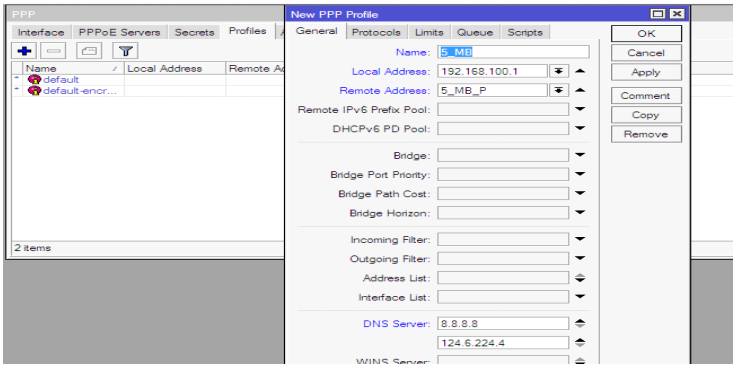

Figure 3.4.5.4: Queue for point to Point Profile

Clock on ,"PPP>Profiles>General>Name: Example:5_MB>Local Address: Example:192.168.100.1>Remote Address: Example:5_MB_P>DNS Server: Example:8.8.8.8 and 124.6.224.4>Apply>Ok".

Step 5: Now I am create user name and password.

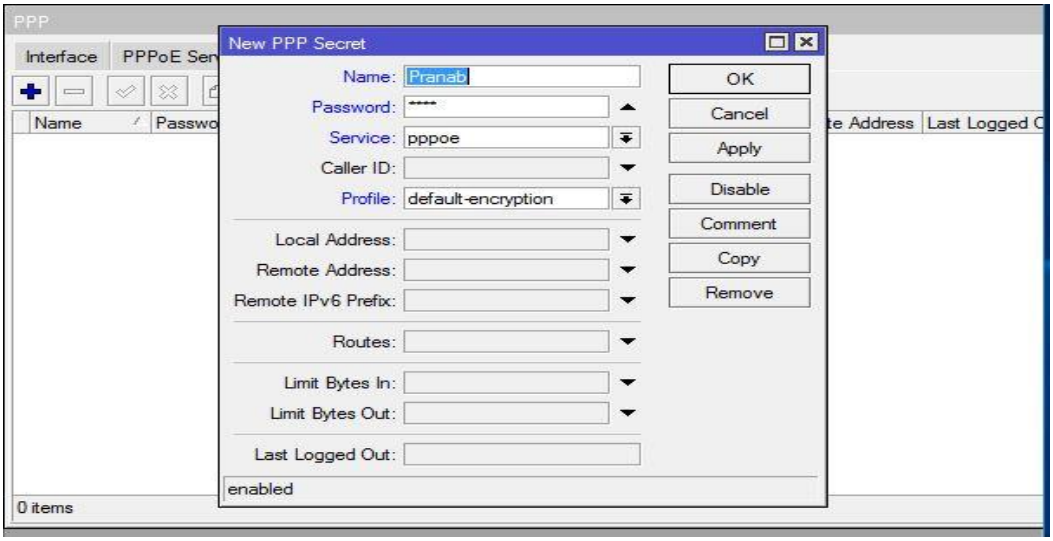

Figure 3.4.5.5: Queue for point to Point Secret

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Next on, "PPP>Secrets>Name: Example: pranab >Password: Example: 12345>Service :pppoe>Profile:5_MB>Apply>Ok".

Step 6: Same as avobe I am create pcq queues for 5 MB Upload

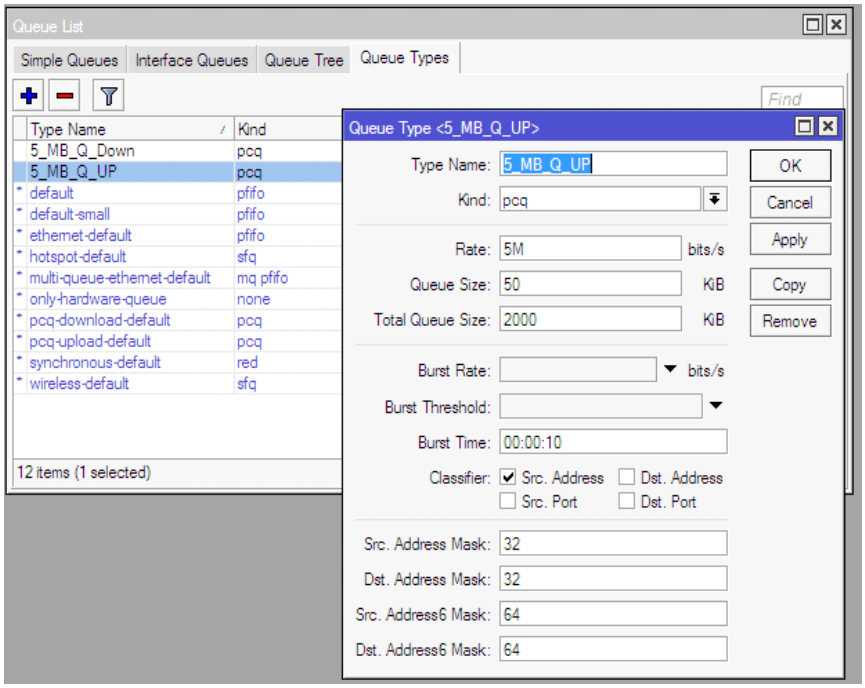

Figure 3.4.5.6: Queue Type for Queue for point to Point over Ethernet Server

Clock on, "Queues>Queue Types>Add>Type Name: Example: 5_MB_Q_UP>Kind: pcq>Rate>5M>Classifier: Select Src. Address>Apply>Ok.

Agine Add>Add>Type Name: Example: 5_MB_Q_UP>Kind:pcq>Rate>5M>Classifier: Select Dst. Address>Apply>Ok."

Step 7: Now I am assign Package name.

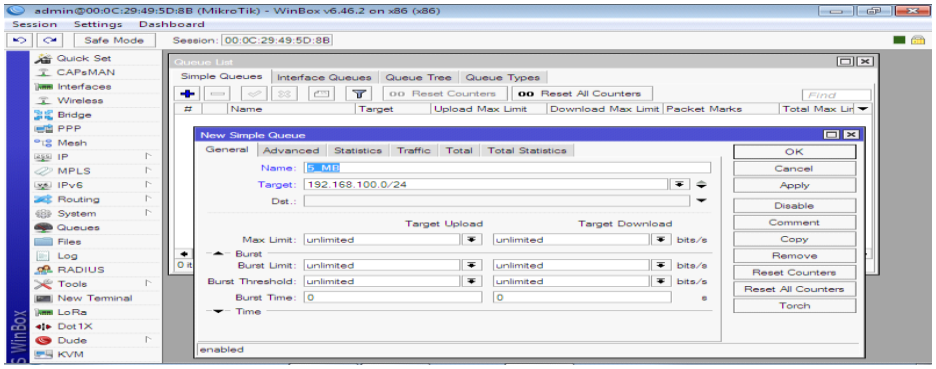

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Figure 3.4.5.7 Queue Type for Queue for point to Point over Ethernet Server

Clock on, "Queues>Simple Queues>General>Add>Name: Example:5_MB>Target: Example:192.168.100.0/24>Advanced>Queue Type:5_MB_Q_UP/5_MB_Q_DOWN>Apply>Ok."

Final Step: Now I am select Bandwidth Target Upload and target Download.

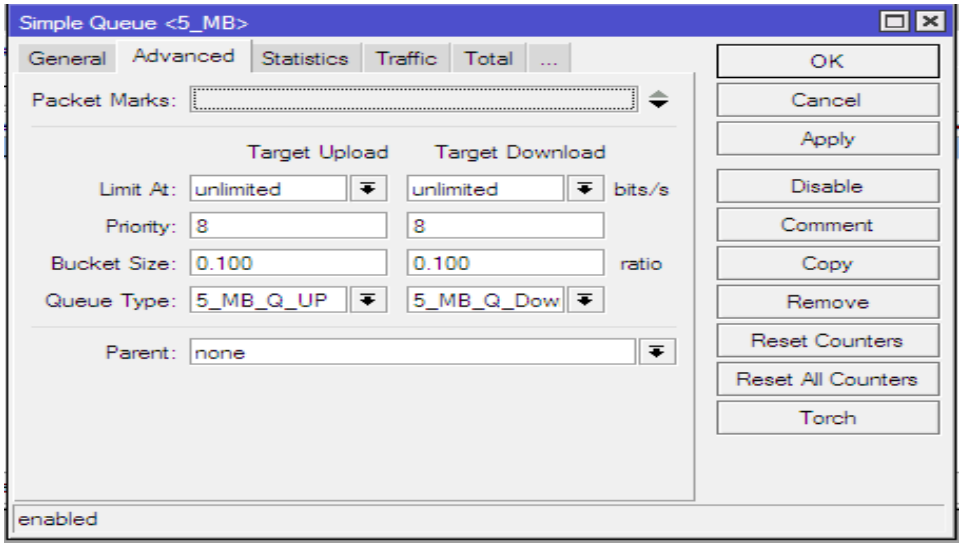

Figure 3.4.5.8 Queue Type for Queue for point to Point over Ethernet Server

Next, "Queues>Simple Queues>Advanced>Queue Type: 5_MB_Q_UP/ 5_MB_Q_Down >Apply>Ok".

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CHAPTER 4

Conclusion and Discussion

4.1 Conclusion and Discussion

This Temporary Job aims to increase information and skills to create ISP setup and Provide Internet service. Mikrotik provide a comprehensive is introduction of reliable, steady and successful Administration. Today most Organization are highly dependent on their work on the Internet It is not Possible to manage service but without proper Network Design. Network Fully manage their networks and achieve the goals of the Organization. As a result, a network Designers should have Knowledge about network Design. Mikrotik is a Low cost router then can be use for small or Big Network. Through Access Through is a very Win Box As a result, Mikrotik routers can be easily managed Provide considerable security for the network. Mikrotik can provide Powerful wireless Access. Point and web proxy server Management. We need to learn the basic network design and primarily learn the Internship.

4.2 Future Career and Scope

Finding jobs can be a real challenge, if I have no Experience. A successful Internship can help me to my career Opportunity into an experience

- Configuration and maintenance FTP and DNS server for our real life.
- To work in ISP platform.
- To be a network administrator into the job environment.
- To be work IT company.
- To be a computer network expert.
- To be a network engineer.
- To be an information technology (IT) manager.
- To be able technical support.
- Bank Job for IT

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