NETWORK MANAGEMENT USING MIKROTIK ROUTER

BY

PRANAB KUMAR BARMON ID: 172-15-10096

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

Mr. Aniruddha Rakshit Senior Lecturer Department of CSE Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH 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*.

BOARD OF EXAMINERS

Dr. Syed AkhterHossain Professor and Head Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Lahin

Gazi Zahirul Islam Assistant Professor Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University Chairman

Internal Examiner

alford

Abdus Sattar

Internal Examiner

External Examiner

Assistant Professor

Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Baddam

Dr. Md. Saddam Hossain

Assistant Professor

Department of Computer Science and Engineering

United International University

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.

Supervised by:

Anin aldha Rakshit

Mr. Aniruddha Rakshit Senior Lecturer Department of CSE Daffodil International University

Submitted by:

pranab kumar

Pranab Kumar Barmon ID: -172-15-10096 Department of CSE Daffodil International University

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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

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 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.

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.

Company Name	Daffodil Online Limited
Type of Organization	Internet Service Provider(ISP)
Address	102, Shukrabad (3 rd 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/

Table 1.1 Information on the company

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 discuss on the Competencies Earned, smartly planned Reflections.**Chapter-5** I discussed details on the conclusion and Future Scope.

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

> 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.

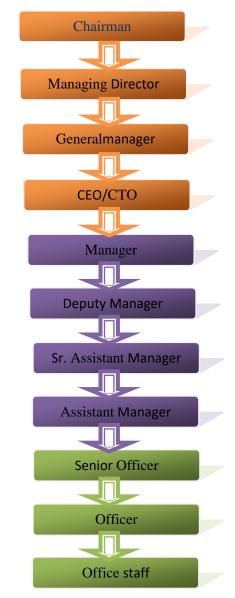
Opportunities

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

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

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
А	0-126	27=128	224=16777216
В	128-191	241=16384	216=65536
С	192-223	221=2097152	28=256
D	224-239	Multicast Address	
Е	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.

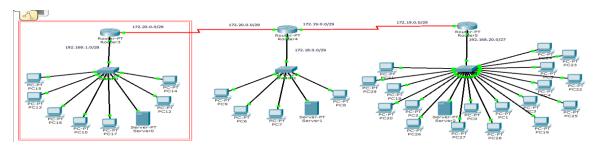


Figure 3.3.2.1 subnetting

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



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.

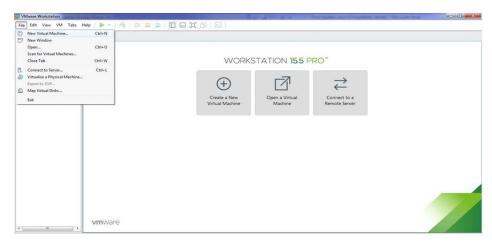


Figure:- 3.3.3.1 New Virtual Machine Create

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 (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

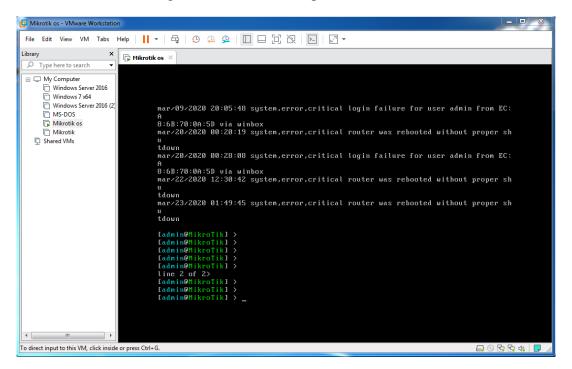


Figure 3.3.3.2 Mikrotik OS Installation

3.3.4 Mikrotik router Configuration

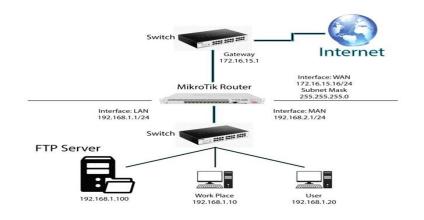


Figure 3.3.4.1 Network Topology for Mikrotik

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.

		Da		
	C Safe Mod	le	Session: 00:0C:29:A0:5E:B3	
1	Guick Set		Terminal	8 >
	CAPSMAN			-
9	m Interfaces			
4	T Wireless		NAW NAW KKK IIIIIIIII KKK	
3	🕰 Bridge		NOOM MOON KKK IIIIIIIIII KKK	
1	PPP		MANY MANY MANY III KKK KKK RRRRRR 000000 TTT III KKK KKK MANY MAN MANY III KKKKKK RRR RRR 000 000 TTT III KKKKKK	
•	😮 Mesh		MAN MAN HII KAK KAK RERER 000 000 TIT III MAK KAK	
18	1P	1	MMM MMM III KKK KKK RRR RRR 000000 TIT III KKK KKK	
3	2 MPLS	Γ	MikroTik RouterOS 6.46.2 (c) 1999-2020 http://www.mikrotik.com/	
5	⊈ IPv6	Γ		
2	Routing	P.	ROUTER HAS NO SOFTWARE KEY	
4	🕃 System	T:		
6	Queues		You have 4h48m to configure the router to be remotely accessible, and to enter the key by pasting it in a Telnet window or in Winbox.	
E	Files		Turn off the device to stop the timer.	
I	Log		See www.mikrotik.com/key for more details.	
3	& RADIUS		Current installation "software ID": T101-KB79	
3	Tools	1	Please press "Enter" to continue!	
8	New Terminal		feb/22/2020 15:22:11 system,error,critical login failure for user babu from 2C:60:	
3	🛲 LoRa		OC:64:A4:16 via winbox [admin8MikroTik] >	
	Dot1X		[admin@MikroTik] >	
4	S Dude	1	[admin@MikroTik] >	
1	KVM		[admin@MikroTik] > [admin@MikroTik] >	

Figure 3.3.4.2 WinBox Dashbord

Press user name admin> password Nun.

3.3.5 Static IP Configuration with Mikrotik Router

in@00:0C:29:49:5D:6D (MikroTik) - WinBox v6.46.2 on x86 (x86) Settings Dashl Safe Mode Session: 00:0C:29:49:5D:6D \sim Quick Set CAPsMAN Interface List Ethemet EoIP Tunnel IP Tunnel GRE Tunnel VLAN VRRP Bonding LTE Interfaces Actual
 Name
 Neme
 Vert
 Neme
 Vert
 Vert T Wireless Name FTP Server LAN WAN Actual MTU L2 MTU Tx Rx + 14.4 k 13.9 k 13.9 k 🐔 Bridge 0 bps 28.2 kbps 0 bps PPP Mes IPv6 🖹 Routina 85 Sveten 🗬 Queue Files Log 3 items RADIUS 💥 Tools New Te HI LoRa Dot1X 🕒 Dude Fast of all I KVM

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

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.

Address List		[IX
+ - * *	- 7	Find	
Address	 Network 172.16.15.0 192.168.50.0 	Interface WAN LAN	-
+ 192.168.60.1/		FTP Server	
Address	<192.168.50.1/24>		
Addres	ss: 192.168.50.1/24	ОК	
Netwo	rk: 192.168.50.0	▲ Cancel	
Interfac	e: LAN	Apply	
		Disable	
		Comment	
3 items (1 sel		Сору	
		Remove	
enabled			

Figure 3.3.5.2 IP Addressing

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

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

sion 3	Settings	-	ARP					
3	Safe Mod	e	Accounting	33				
Cui Qui	ick Set		Addresses		DNS Settings			
I CAR	PsMAN		DHCP Client		Servers:	0000	•	ОК
Wireless			DHCP Relay			0.0.0.0		
		DHCP Server		Dynamic Servers:			Cance	
Brid	dge		DNS			Allow Remote Reques	ts	Apply
PPR	P		Firewall		Max UDP Packet Size:	4096		Static
Ne:	sh		Hotspot			0.000		Cache
45일 IP		1	IPsec		Query Server Timeout:	P	s	
Ø MP	LS	1	Kid Control		Query Total Timeout:	10.000	s	
ve IPv	6	1	Neighbors		Max. Concurrent Queries:	100	1	
Routing Pac		Packing		Max. Concurrent TCP Sessions:	Reference.			
🛞 Sys	tem	1	Pool		Max. Concurrent TCP Sessions.	20		
👰 Que	eues		Routes		Cache Size:	2048	КIВ	
File:	s		SMB		Cache Max TTL:	: 7d 00:00:00		
Log	2		SNMP		Cache Used:	19 KB		
💁 RAI	DIUS		Services			1000000		
🗶 Too	ols	1	Settings					
Nev	w Terminal		Socks					
He LoF	Ra		TFTP					
<i>Dot</i>	1X		Traffic Row					
S Duo	de	1	UPnP					
KVI	M		Web Proxy					

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

ession Settings Da	ARP														
Safe Mode	Accounting	83													💻 👸
Quick Set	Addresses	Fire	wall												
I CAPeMAN	DHCP Client	Fit	er Ruk	es NAT	Man	igle i	Raw	Servio	ce Ports	Conn	nections	Add	iress Lists	Layer7	Protocols
Interfaces	DHCP Relay		-		*		7	00 F	leset Cou	nters	OO R	leset /	All Counte	ers	Find
1 Wireless	DHCP Server	#		Action			hain							Src. Port	
🔡 Bridge	DNS			≓ll masq	Jerade		ronat		0.0.7.00				11 IOLO MA		
PPP	Firewall				Rule <	1201									1
°IS Mesh	Hotspot			-			and the second	L	1	1 Auguston		-			
440 IP	IPsec			Ger	ieral []	Advan	ced	Extra	Action	Stati	stics		OK		
MPLS P	Kid Control					Chair	n; sn	cnat			Ŧ		Cano	el	1
👷 IPv6 🗈 Ի	Neighbors				Src. /	Addres	s: [-		App	ly .	
🗱 Routing 🗈	Packing				Dst.	Addres	s: [- +	-	Disat	1.	
System 1	Pool						C. Annu				_				2
Queues	Routes				\$	Protoco	ol:				-		Comm	ent	2
Files	SMB			_	S	ire. Po	rt:				-		Cop	y	
E Log	SNMP	•	em (1 :	nala	E	Det. Por	rt:				-		Remo	ve	
A RADIUS	Services		2011 (1)	2010		ny. Po	. [I		Reset Co	unters	_
💥 Tools 🛛 🏱	Settings						_				Η.	-	eset All C	au un trans	
New Terminal	Socks					nterfac	3	-				1	eset mill	ouncers	
LoRa	TETP				Out. In	nterfac	e: 🗆	ethen	net-2 (W)	AN)	Ŧ *				
Dot 1X	Traffic Flow			In	Interf	ana Lie					-				
🕙 Dude 👘	UPnP										≓				
RVM	Web Proxy			Out	. Interf	ace Lis	и; 🗌								

Figure 3.3.5.4 Firewall

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

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.

C* Safe M	lode	Session: 00:0C:29:A0:5E:B3								E 6
Quick Set			Frewall							
I CAPSMAN			Filter Rules	NA	T Mangle	Raw	Service Ports	Connections Ad	Idress Lists La	yer7 Protocols
Interfaces				-	* 0	7	00 Reset Cou	inters 00 Reset	All Counters	Find
1 Wireless			# Ac	tion	Lind Line	Chain	Src. Add	ress Dst. Address	Proto Src.	
Bridge					querade	srcnat				1
eta PPP										
°18 Mesh			NAT Rule <>					Î	×	
IP	1		General Ac	tuan	ad Extra	Action	Statistics	ОК		
MPLS	1		Action:		contraction procession		Freedowloader			
1Pv6	1				Action: masquerade accept add dst to address list add sor to address list			Cancel		
Routing	1							Apply		
💮 System	1		Log Pref	Log Prefix: dst-nat			Disable			
👰 Queues				le	amp			Comment		
E Files			To Port	ts: n	iasquerade etmap	8				
E Log				p	assthrough			Сору	_	
ARADIUS					edirect etum			Remove		
💥 Tools	1				ame rc-nat			Reset Counter	s	
Mew Termin	al			0	101101			Reset All Count	ers	
LoRa										
Dot1X										
🕒 Dude	1									
KVM										

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

Session Settings Das	D:6D (MikroTik) - WinBox v6.46.2 on x86 (x86)	
Safe Mode	Session: 00:0C:29:49:5D:6D	a
CAPeMAN CAPeMAN Imm Interfaces Wireless St Wireless	Route List Routes Nexthops Rules VRF Image: State of the state	Eind all T
e퀄 PPP °C Mesh	DAC ► 192.16.15 0/24 W/A reachable DAC ► 192.16.50.0/24 LAN reachable DAC ► 192.16.50.0/24 LAN reachable	0 172.16.15 0 192.168.5 0 192.168.6
IP N IPV6 N Routing N System N	Route <0.0.0.0/D General Attributes Dst. Address: [0.0.0.0/0] Gateway: 172.16.15.1	Canc ↓ Canc
Gueues Files Log	Check Gateway:Type: Unicast	
RADIUS Tools New Terminal Iona	Distance: 1 Scope: 30 Target Scope: 10	Copy Remo
CoRa	Routing Mark: Pref. Source:	

Figure 3.3.5.6 IP Routing

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

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

	Ce Safe Mod	e	Session: 00:0C-29:A0:5E:83
Ť	Quick Set		Terminal
1.5	T CAPSMAN		
1	m Interfaces		NOM NOM KKK TITITITIT KKK
	T Wireless		MOON NOON KKK TITTTTTTT KKK
3	Sindge		MAN MANN MAN III KKK KKK RRRRRR 000000 TIT III KKK KKK MAN MAN MAN III KKKKK RRR RRR COO 000 TIT III KKKKK
	PPP		MON MON III KAKK RERER 000 000 III III KAKKKKK
10			MMM MMM III KKK KKK RRR RRR COCCCCO TIT III KKK KKK
°	18 Mesh		
ų	19 IP	1	MikroTik RouterOS 6.46.2 (c) 1999-2020 http://www.mikrotik.com/
3	MPLS	1	
Ę	IPv6	1	ROUTER HAS NO SOFTWARE KEY
-	Routing	1	You have 4h9m to configure the router to be remotely accessible,
4	System	1	and to enter the key by pasting it is a Telnet window or in Ninbox.
1.5	Queues		Turn off the device to stop the timer.
-	Files		See www.mikrotik.com/key for more details.
	Log		Current installation "software ID": T101-KB79
1.2			Please press "Enter" to continue!
1.5	RADIUS	÷	[admin@MikroTik] >
1	Cools 🗧	лс.,	[admin@MikroTik] >
1	New Terminal		[admin@MikroTik] >
1	HI LoRa		[admin@MikroTik] > ping 172.16.15.1 SEO HOST SIZE TTL TIME STATUS
-	Dot 1X		0 172.16.15.1 56 64 7ms
		1	1 172.16.15.1 56 64 3ms
1	Dude	1100	2 172.16.15.1 56 64 3ma

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

Internet Protocol Version 4 (TCP/IPv4)	Properties 8 23
General	
You can get IP settings assigned autom this capability. Otherwise, you need to for the appropriate IP settings.	
Obtain an IP address automaticall	Y
O Use the following IP address:	
IP address:	192 . 168 . 50 . 70
Subnet mask:	255 . 255 . 255 . 0
Default gateway:	192 . 168 . 50 . 1
 Obtain DNS server address autom 	atically
O Use the following DNS server addr	resses:
Preferred DNS server:	8.8.8.8
Alternate DNS server:	· · ·
Validate settings upon exit	Advanced
-	OK Cancel

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

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.

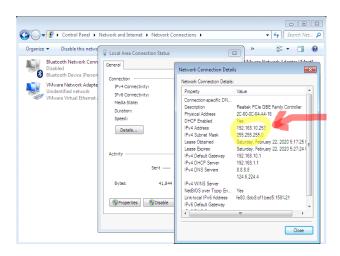
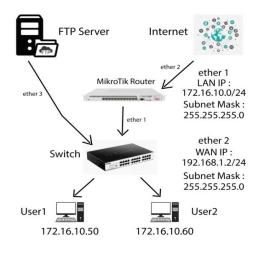
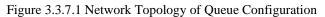


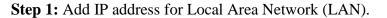
Figure 3.3.6.2 Dynamic Host Configuration Protocol

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

3.3.7 Queue Configuration







Address List				
+ × -	I T		Find	1
7 10 01 0 00	Network	Inter	face	-
🕆 172.16.15.16/24		WA	-	
🕂 192.168.50.1/24		LAN		
192.168.60.1/24	192.168.60.0	FTP	Server	
Address <19	2.168.50.1/24>			
Address:	192.168.50.1/24		ок	
Network:	192.168.50.0	-	Cancel	
Interface: [LAN	∓	Apply	
			Disable	
			Comment	
3 items (1 sel			Сору	
<u> </u>			Remove	
enabled				

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

Queue Li	ist								
Simple (Queues Interf	ace Queues	Queue Tree	Queue	Types				
+ -	- 🖌 🗙	- 7	oo Reset Co	ounters	oo Reset /	All Counters			Find
#	Name Rhasan	Target 192,168,50		Max Lin	iit Downloa 4M	ad Max Limit U	Ipload Avg. I	Rate Download Avg.	R Tota 🔻
1	🔒 raju	192.168.50	.30 10M		10M				
Sim	ple Queue <rajı< td=""><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></rajı<>	15							
		ced Statistics	Traffic To	tal Tot	al Statistics			ОК	
	Name:	raju						Cancel	
	Target:	192.168.50.3	0				₹ \$	Apply	
	Dst.:						•	Disable	
			Target Up	load		Target Downlo	ad	Comment	
•	Max Limit:	10M		₹ 1	OM	:	▼ bits/s	Сору	•
2 it	Burst							Remove	
	Burst Limit:				nlimited		▼ bits/s	Reset Counters	
Bu	urst Threshold:				nlimited		▼ bits/s	Reset All Counters	
	Burst Time:	0		0			s	Torch	
	- Time							L	

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.

Simple Queue	s Interface Queues	Queue Tree Queue Ty	pes		
+ - «	2 💥 🖆 🍸	00 Reset Counters	00 Reset All Counter	ns	Find
# Nam	e 🛛 🗠 Targe	t 🛛 🛆 Upload Mar	x Limit Download	Max Limit Packet Marks	Upload . 🔻
0 🔒 h	asan 192.1	68.50.20 4M	4M		
1 🔒 ra	aju 192.1	68.50.30 10M	10M		
ARP L	ist				
+		7	Fir		
	IP Address	MAC Address	Interface	-	
DC	172.16.15.1	6C:3B:6B:60:5E:D9	WAN		
DC	172.16.15.53	C0:4A:00:C2:98:DD	WAN		
DC	172.16.15.82	50:E5:49:1E:1C:02	WAN		
DC	172.16.15.142	18:D6:C7:AE:6F:37	WAN		
DC	172.16.15.193	EC:08:6B:F6:88:91	WAN		
	172.16.15.215	18:D6:C7:54:EA:1F	WAN		
DC	192.168.50.30	2C:60:0C:64:A4:16	LAN		+
DC		2C:60:0C:64:A4:16	LAN		
DC DC	192.168.70.252				
DC	192.168.70.252 192.168.70.253 192.168.70.254	9C:57:AD:AC:44:C0 0C:27:24:BC:9F:82	LAN		

2:Let's see the MAC address "Hasan"

Figure 3.3.7.4 Adders Regulation Protocol

IP> ARP list

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.

	. Natural and Interact	▶ Network Connections ▶	→ ■ ⊠
Local Area Connection Stat			
General	Network Connection Details		
Connection	Property	Value	VMware Network Adapter VMnet1 Unidentified network
IPv4 Connectivity: IPv6 Connectivity: Media State: Duration: Speed: Details	Connection-specific DN Description Physical Address DHCP Enabled IPv4 Address IPv4 Subnet Mask IPv4 Default Gateway IPv4 DNS Server IPv4 WINS Server NetBIOS over Topip En	Realtek PCIe GBE Family Controller 2C-60-0C-64-A4-16 No 192.168.50.30 255.255.255.0 192.168.50.1 8.8.8.8 Yes	VMware Virtual Ethernet Adapter
Activity	Link-local IPv6 Address IPv6 Default Gateway IPv6 DNS Server	C:\Windows\system32\cmd.exe Microsoft Windows [Vers: Copyright <c> 2009 Micro</c>	1.3
Bytes: 32,		Reply from 192.168.50.1 Reply from 192.168.50.1	

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.

Queue l	list															×
Simple	Queues	Interfa	ace Qu	eues	Queu	e Tree 🛛	Jueue T	ypes								
+ -	- 🗸	×		7	00 6	Reset Cour	nters	oo Rese	et All Counters						Find	
# 0 1	Name		Target 172.10 172.10	6.10.5		U) 51 81		ax Limit	Download Max 5M 8M	Limit Pack	ket Mark	S	Upload Queued B	. Downlo	ad Queue	•
		Sim	nple Qu	eue <l< td=""><td>Jser1></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>[</td><td></td><td></td><td></td></l<>	Jser1>								[
		Ge	eneral	Adva	nced	Statistics	Traffic	c Total	Total Statistics				OK			
		Pa	acket N	larks:								-	Cancel			
							Targe	et Upload		Target D	ownload		Apply			
			Lin	nit At:	unlimi	ted		Ŧ	unlimited		Ŧ	bits/s	Disable			
			Pr	riority:	5				5				Comment			
•			Bucket	Size:	0.100)			0.100			ratio	Сору			,
items	(1 selecte	d) (Queue	Type:	defau	lt-small		Ŧ	default-small		Ŧ]	Remove			
			P	arent:	none							Ŧ	Reset Counte	rs		
		-											Reset All Count	ers		
													Torch			
														_		İ
														_		
		ena	abled											_		

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

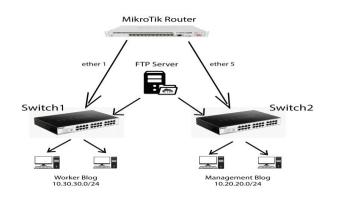


Figure 3.3.7.7 Network Topology of Parent Concept

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.

impie Q	ueues	Interfa	ice Queue	s Queu	e Tree	Queue	Types									
	•	×	- 7	00	Reset C	ounters	00 Reset All Count	ters					Fin	d		
ŧ	Name		1	Target			Upload Max Limit	Download M	Max Limit	Packet Marks	l	Upload Queued	B Dov	vnloa 🔻		
4	🚊 Man		nt Blog	10.20.2			5M	5M								
0		Jser1		10.20.2			2M	2M								
3		Jser2		10.20.2			1M	1M								
5	2 Wor			10.30.3			4M	4M								
1		Jser3		10.30.3			4M	5M								
2	<u></u>	Jser4		10.30.3	0.3		3M	3M								
mple Q	ueue <l< td=""><td>Jser1></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td>Ado</td><td>dress List</td><td></td><td></td><td></td><td></td></l<>	Jser1>								X	Ado	dress List				
General	Advar	nced	Statistics	Traffic	Total	Total S	tatistics			ОК	+		× 🖻	7		Find
Packet	Marks:							\$		Cancel		Address			Network	Interface
												+ 10.10.10.1	0/24		10.10.10.0	FTP Ser
															10 00 00 0	
				Target	Upload		Target Dow	nload		Apply		+ 10.20.20.1	/24		10.20.20.0	LAN
				Target	Upload		Target Dow					+ 10.20.20.1 + 10.30.30.1	/24 /24		10.30.30.0	LAN
L	.imit At:	unlimit	ed	Target	Upload T	i unlimite		nload Ŧ bits/s		Apply Disable		會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
	.imit At: Priority:		ed	Target								+ 10.20.20.1 + 10.30.30.1	/24 /24 1/24		10.30.30.0	LAN
		8	ed	Target		unlimit				Disable	-	會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke	Priority: et Size:	8 0.100		Target		unlimite 8 0.100	ed	vatio	(Disable Comment Copy	-	會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke	Priority:	8 0.100		Target		unlimite 8 0.100	ed	▼ bits/s		Disable Comment Copy Remove	-	會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke Queue	Priority: et Size: e Type:	8 0.100 defaul				unlimite 8 0.100	ed	vatio		Disable Comment Copy	-	會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke Queue	Priority: et Size: e Type:	8 0.100 defaul	t-small			unlimite 8 0.100	ed	 ➡ bits/s ratio ➡ 	Res	Disable Comment Copy Remove		會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke Queue	Priority: et Size: e Type:	8 0.100 defaul	t-small			unlimite 8 0.100	ed	 ➡ bits/s ratio ➡ 	Res	Disable Comment Copy Remove set Counters		會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN
Bucke Queue	Priority: et Size: e Type:	8 0.100 defaul	t-small			unlimite 8 0.100	ed	 ➡ bits/s ratio ➡ 	Res	Disable Comment Copy Remove set Counters at All Counters	+ 5 ite	會 10.20.20.1 會 10.30.30.1 會 172.16.10.	/24 /24 1/24		10.30.30.0 172.16.10.0	LAN LAN LAN

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:

Inten	ace Lis	A.										
Inte	face	Interface List	Ethemet	EoIP Tunnel	IP Tunnel	GRE	Tunnel	VLAN	VRRP	Bonding	LTE	
+ •			• 7	Detect Inte	emet						Fi	nd
	Name)	∇ Type		Actual	MTU	L2 MTU	Tx			Rx	•
R	<>et	hemet-3 (MAN)) Ethem	et		1500				0 bps		1
R	<pre>*et</pre>	hemet-2 (WAN) Ethem	et		1500				0 bps		1
R	<>et	hemet-1 (LAN)	Ethem	et		1500				0 bps		1
R	<>et	her7	Ethem	et		1500				0 bps		1
R	<>et	her6	Ethem	et		1500				0 bps		1
R	<>et	her5	Ethem	et		1500				0 bps		1
R	<>et	her4	Ethem	et		1500				0 bps		1

Figure 3.3.8.1: Interface List of Bridge

Click Interface list

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.

Bridge	New Interface	
Bridge Ports VLANs	General STP VLAN Status Traffic	ОК
+ - ~ ×	Name: bridge 1	Cancel
Name	Type: Bridge	Apply
	MTU:	Disable
	Actual MTU:	Comment
	L2 MTU:	Сору
	MAC Address:	Remove
	ARP: enabled	Torch
	ARP Timeout:	
	Admin. MAC Address:	
•	Ageing Time: 00:05:00	
0 items out of 7	□ IGMP Snooping	
	DHCP Snooping	
	✓ Fast Forward	

Figure 3.3.8.2: Create Bridge name

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

Bridge	Ports VLANs	MSTIs Port MST C	Overrides Filter	ns NAT	Hosts MI	DB		
+ -	- 🖌 🗙							Find
#	Interface	Bridge	Horizon	Trusted	Priority (h	Path Cost	Role	Root Pat
0	4±LAN	bridge1		no	80	10	designated port	
1	4±tether3	bridge1		no	80	10	backup port	10
2	1 =1ether4	bridge1		no	80	10	backup port	10
3	4⊐tether5	bridge 1		no	80		backup port	10
4	1 =1ether6	bridge 1		no	80		backup port	10
5	4=tether7	bridge 1		no	80		backup port	10
6	11ether8	bridge1		no	80	10	backup port	10
items ((1 selected)	Bridge: bridge1 Horizon: Leam: auto] •	Apply Disable	
		✓ Unkno	own Unicast Flo own Multicast Fl cast Flood				Copy lemove	

Step 3:Add Ports:

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".

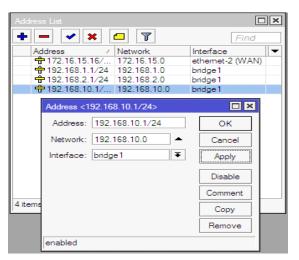


Figure 3.3.8.4: Change Interface

"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.

Firewall				
Filter Rules NAT Mangle Raw Servi	ice Ports Connections	Address Lists La	ayer7 Protocols	
+ 7				Find
Name 🛆 Regexp				-
 YouTube ^.+(youtube.com).*\$ 				
facebook ^.+(facebook.com).*\$				
Firewall L7 Protocol <youtube< td=""><td>e></td><td></td><td></td><td></td></youtube<>	e>			
Name: YouTube		ок		
	Regexp:	Cancel		
^.+(youtube.com).*\$	^ [Apply		
		Comment		
		Сору		
		Remove		
2 items (1 se	-			

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.

Filter Rules NAT	Mangle Rav	v Service Ports Con	nections Addre	es Lists	Layer7 Protoc	alo:			
+ - 🖌 🗙	- 7	00 Reset Counters	00 Reset Al			Find	all		
0 Xdrop f 1 Xdrop f	orward 1 orward 1	5rc. Address 92.168.16.50 92.168.16.50 92.168.16.50	Dst. Address	Proto	Src. Port D	ost. Port	In. Inter	Out. Int	In.
	Firewall Rul	e <192.168.16.50>				×			
	General	Advanced Extra Act	ion Statistics		ок				
		Chain: forward	Ŧ		Cancel				
	:	Src. Address: 🗌 192.1	68.16.50		Apply				
	1	Dst. Address:			Disable				
	_	Protocol:			Comment				
items (1 selected)	-	Src. Port:			Сору				
		Dst. Port:			Remove				
		Any. Port:		F	leset Counters				
		In. Interface:		Re	set All Counter	na i			
	0	Out. Interface:		·					
	In. I	nterface List:							

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.

Firewall							
Filter Rules NAT M	langle Raw Servic	ce Ports Connectio	ns Address Lists Lay	er7 Protocols			
+ - × ×	- 7				Find	all	Ŧ
Name 🛆 Ad	dress	Timeout	Creation Time				-
Not Block 19	2.168.16.50		Feb/27/2020 12:				
1 item (1 selected)		ot Block	▼ OK Cancel ▼ Apply B Disable Comment Copy Remove				

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.

Filter Rules N/	AT Mangle	Raw	Service F	orts Co	nnections	Add	ress Lists	Layer7	Protocols				
+	* 🗀	T	oo Rese	t Counter	s 00 R	eset /	All Counter	s			Find	all	3
# Action	Chain		. Address		Protocol		Layer7 Pr		Bytes		Packets	Rate	
0 X droj 1 X droj			2.168.16.0				facebook			5.9 KB		7 0 bps	
1 🗶 dro			2.168.16.0				YouTube			9.9 KB	16	9 0 bps	
	Firewall Ru	ule <192	.168.16.0/	24>									
	General	Advanc	ced Extra	Action	Statistic	8		ок					
	s	irc. Addr	ess List: [Not B	ock 🔻	•	(Cancel					
	Dst. Address List:				-		Apply						
		Layer7 F	Protocol:	facebo	ook 🔻	•	E	Disable					
						-	C	omment					
. 1	_		Content:			•		Сору					_
items (1 selecte		onnectio	n Bytes:			•	E	Remove					
		onnectio	on Rate: [-			-				_
	Per Conn	ection C	lassifier:			-	Rese	t Counte	ns –				
	Sn	Src. MAC Address:					Reset	All Count	ers				
		Out. Brid	ige Port:			-							

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

Address List		ation&Accounting				Find	-	
+ - < % @ 7	Find	Profile	Local Address	Remote Address	Last Logged Out			
Address / Network + 172.16.1.1/24 172.16.1.0	Interface LAN port							
192 168.0.2/24 192 168.0.0	WAN pot							
	freed							
	Fitter Rules NAT Mar	ngle Raw Service	Parts Connectio	ons Address Lists	Layer7 Protocols			
	Name / Addre	ss Tim	recut New	Rrewall Address List				
				Name: Tacebook Address: 45.113.12		OK		
				Timeout:	3.30/24 •	Cancel		
			Crea	don Time:		Apply		
						Disable		
2 items						Comment		
						Сору		
						Remove		
			enab	led				

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 .

Firewall																
Filter Rules	NAT	Mangle	Raw S	ervice Ports	Conne	ctions A	Address List	s La	ver7 Protocols							
+ -			7 00 Re	eset Counters	OO F	leset AI C	ounters							Find	al	
# Act	ion	Chain	New Man	igle Rule						In. Inter.	Out. Int	Src. Ad.	. Dst. Ad	Bytes	Packets	
			General	Advanced	Extra	Action	Statistics		OK							
			Г., С., С., С., С., С., С., С., С., С., С	Chain	prero	uting		Ŧ	Cancel							
				Src. Address				•	Apply							
				Dst. Address	-			•	Disable							
				Protocol	-			7-	Comment	6						
				Src. Port				-	Сору							
				Dst. Port				•	Remove							
				Any, Port] • [
				In. Interface	-			•	Reset Counters							
				Out. Interface]•	Reset All Counters							
			In	Interface List				-								
0 items			Out	Interface List				•								_
			-	Packet Mark				1.								
			Cor	nnection Mark				•								
				Routing Mark				•								
				Routing Table]•								
			Cor	nnection Type				•								
			Cor	nnection State				j•								
			Connect	tion NAT State				•								
				June 1 Julie												

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.

General Advanced Exter OK Sc. Address List Image: Connection Bytes: Cancel Dat. Address List Image: Connection Bytes: Comment Connection Datasifier: Convert Sc. MAC Address: V Sc. MAC Address: V Reset Counters Reset Counters Sc. MAC Address: V Reset Reset Counters V	s Lists Layer7 Protocols	
Genesil Advanced Exter OK Sic. Addees Lat:	s Find al	•
Sc. Address Litt Image: Address Litt	In. Inter Out. Int Src. Ad Dst. Ad Bytes Packet	s •
Dat. Address List. Technol. Apply Layer 7 Protocol. Daable Context. Comment Context. Comment Connexton Rate. Reset Countes Per Connexton Rate. Reset Countes Sir. MAC Address Per Connexton Rate. Out. Bridge Port. Per Countes No. Bridge Port. Per Countes No. Bridge Port. Per Countes Ingese Port. Per Countes Ingese Port. Per Countes Ingese Port. Per Countes Ingese Port. Per Countes Discher (TOS) Per Countes	istics OK	
Layer Protocol Daable Correction Bales Comment Correction Relate Comment Correction Relate Comment Correction Relate Renore Per Concrection Classifier Relat Al Counters Sic: MAC Address Out. Bidge Port N. Bidge Port List N. Bidge Port List If Insce Policy: If Insce Policy: DSCP (TOS):	Cancel	
Cortent: Comment Correction Ryte: Comment Correction Ryte: Comment Correction Ryte: Remove Per Connection Classifie: Remove Per Connection Classifie: Reset All Courtes Site: MAC Address: Out: In Bidge Port: N: Bidge Port: Out: In Bidge Port Lit: If lates Policy: If lates Policy: Ingress Priotity: DiscP (TOS):	T Apply	
Connection Base: Connection Base: Connection Reade: Per Connection Classfier: Sis: RMC Address: Out: Out: Out: N:: N:: Out: V: Brace Policy: TLS Hoat: Prostp: DiscP (rOs):	▼ Disable	
Connection Rate Per Connection Cassifier Str. MAC Address Out. Bridge Port In. Bridge Port List: Out. Bridge Port List: IPace Policy:	✓ Comment	
Per Connecton Classifier Rest Countes Rest Countes Rest Al Cautes /ul>	Сору	
Sic MAC Addess Peeed All Counters Out, Bridge Port Peeed All Counters Ditemes In. Bridge Port Peeed All Counters In. Bridge Port V Peeed All Counters Und. Bridge Port V Peeed All Counters Und. Bridge Port Lit: V Peeed All Counters Il-Paee Policy: V Pieed All Counters Il-Paee Policy: V Il-Paee Policy: V Il-Paee Policy: V DSCP (TOS): V	Remove	
Out. Bridge Port in. Bridge Port in. Bridge Port Out. Bridge Port Ibace Folor	Reset Counters	
Items In. Bidge Pot.	Reset All Counters	
In. Bridge Port List: Out. Bridge Port List: IPace Policy: TI.S Host: Ingress Profity: Photp: DSCP (TOS):	→	
Out. Bridge Pot List: IPace Policy: TLS Heat: Ingress Profity: Profity: DSCP (TOS):		
- IPace Policy: TLS Host: Ingress Postly: Phonty: DSCP (TOS):	· ·	
TLS Host. ▼ Ingress Plority. ▼ Phority. ▼ DSCP (TOS). ▼		
Ingress Protip: Protity: DSCP (TOS)		
Pixotig DSCP (TOS):		
DSCP (TOS):		
TCP MSS	→	
	·	
Packet Size:		
Random: ▼	▼	

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.

Frewall					
Filter Rules NAT Mangle Raw Service	Ports Connections Address Lists	s Layer7 Protocols			
🔸 🖃 🖉 🖉 🕜 Reset C	Counters 00 Reset All Counters			Find	al Ŧ
# Action Chain New Mangle Ru	ule		In. Inter Out. Int Src. Ad.	. Dst. Ad Bytes	Packets 💌
General Ad	vanced Extra Action Statistics	ОК			
	Action: mark connection	Cancel			
	🗌 Log	Apply			
L.	og Prefix:	Disable			
New Connecti	ion Mark: Facebook	T Comment			
Now Connect	Passthrough	Сору			
		Remove			
		Reset Counters			
		Reset All Counters			
		Troade Par Counters			
0 items					
			lu		

Figure:-3.4.1.4 mangle for fix site

IP>firewall>action : mark Connection> new connection : facebook> apply>Ok Step 5:You can cerates rules 2 for fix bandwidth on face book

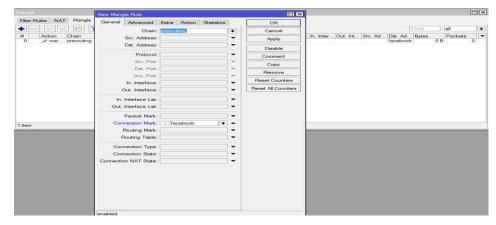


Figure:-3.4.1.5 mangle for fix site

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

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

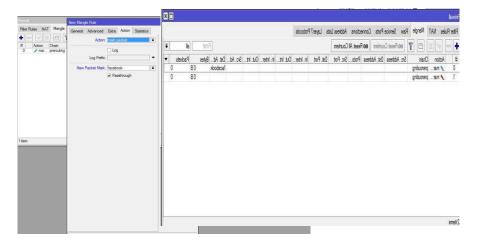


Figure 3.4.1.6 Bandwidth Assign for fix site

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

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

eue List mple Queues Interface Queues Queue Tree Queue Types		
Imple queues queues queue free queue free New Queue Type New Queue Type New Queue Type		
	: 10 MB Uplode	ОК
lefault pfifo Kinc	l: pcq	Cancel
lefault-small pfifo		Cancer
	: 10M bits	/s Apply
notspot-default sfg Queue Size	: 50 KiB	
later quede enternet del date initiq priro		Сору
only-hardware-queue none Total Queue Size	: 2000 KiB	Remove
pcq-download-default pcq		
vnchronous-default pcq Burst Rate	e: ▼ bits	/s
vireless-default sfg Burst Threshold	:	~
Contraction of the second s	: 00:00:10	
Classifie	r: Src. Address 🔽 Dst. Addre	SS
	Src. Port Dst. Port	
Src. Address Mask	:: 32	
Dst. Address Mask	:: 32	
items Src. Address6 Mask	:: 64	
Dst. Address6 Mask	: 64	

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

22	
	ок
	Cancel
- Constant	Cancer
bits/s	s Apply
KIB	
	Сору
KiB	Remove
▼ bits/s	
	6
st. Address	
	5
)st. Port	

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

Figure 3.4.2.2Queue type

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

lueue List			
Simple Queues Interface Queues Queue Tree Queue Types			
🛊 🕞 🧭 🖄 🖆 🍞 🛛 oo Reset Counters 🛛 oo Reset All Cou	New Simple Queue		
# Name Target Upload Max Limit Download Max	General Advanced Statistics Traffic Tota	Total Statistics	ОК
0 D 🚊 hs- <hots bridge1="" td="" unlimited="" unlimited<=""><td>Name: Facebook</td><td></td><td>Cancel</td></hots>	Name: Facebook		Cancel
	Target: 172.168.0.0/24	▼ \$	Apply
	Dst.:	•	Disable
Address List	Target Upload	Target Download	
	Max Limit: unlimited	unlimited F bits/s	Comment
Address / Network Interface ▼	-▲ Burst		Сору
음 192.168.0.2/24 192.168.0.0 WAN port	Burst Limit: unlimited 두	unlimited 🛛 🔻 bits/s	Remove
	Burst Threshold: unlimited	unlimited 🐺 bits/s	Reset Counters
	Burst Time: 0	0s	Reset All Counters
	- • Time		Torch
	enabled		
	s queued		

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.

	🖉 🕅 🍸 oo Reset C	Counters 00 Reset All Co	New Simple Qu	eue		3				
# 0 D	Name Target Upload N hs- <hots bridge1="" th="" unlimited<=""><th></th><th>General Adv</th><th>ranced Stat</th><th>istics Traffic</th><th>Tota</th><th>al Total Statistics</th><th></th><th>1</th><th>OK</th></hots>		General Adv	ranced Stat	istics Traffic	Tota	al Total Statistics		1	OK
00	A ris-knots bridge i uniimited	uriimited	Packet Marks:	facebook					₹ \$	Cancel
					Target L	lpload	Target I	Downloa	d	Apply
Add	Iress List			unlimited		₹	unlimited	Ŧ	bits/s	Disable
+		Find	Priority:	8			8			Comment
	Address / Network	Interface	Bucket Size:	0.100			0.100		ratio	Сору
		LAN port	Queue Type:	10 MB Uploo	de	₹	10MB Downlode	Ŧ]	Remove
	192.168.0.2/24	WAN port	Parent:	none					Ŧ	
			T Grone.	Inone						Reset Counters
										Reset All Counters
										Torch
			enabled							
te		e e	ets queued			- 1	1			

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.

Queue List					×	
Simple Queues Interface Queu	ues Queue Tree	Queue Types	Queue Type <10_MB	Downl_Day>		
+ - T			Type Name:	10_MB Down _Day		OK
Type Name /	Kind		Kind:	pcq	₹	Cancel
5_MB Down[_Night	pcq					
5_MB Up_Night	pcq		Rate:	10M	bits/s	Apply
10_MB Down _Day 10_MB Up_Day	pcq]	_
* default	pcq pfifo		Queue Size:	50	KiB	Сору
* default-small	pfifo		Total Queue Size:	2000	KiB	Remove
* ethemet-default	pfifo					
* hotspot-default	sfa		Burst Rate:		bits/s	
* multi-queue-ethemet-default	mg pfifo		Duist Hate.		Dita/a	
* only-hardware-queue	none		Burst Threshold:		•	
* pcq-download-default	pcq		D T	00.00.10		
* pcq-upload-default	pcq		Burst Time:	00:00:10		
* synchronous-default	red		Classifier:	Src. Address V Dst. A	ddress	
* wireless-default	sfq			Src. Port Dst. F	Port	
14 items (1 selected)			Src. Address Mask:	32		
			Dst. Address Mask:	32		
			Src. Address6 Mask:	64		
			Dst. Address6 Mask:	64		

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.

Simple Queue <10)_MB_Day>				
General Advan	ced Statistics	Traffic Total	Total Statistics		ОК
Name:	10_MB_Day				Cancel
Target:	192.168.16.0/2	24		₹ \$	Apply
Dst.:				•	Disable
		Target Upload	d Target Dov	vnload	Comment
Max Limit:	unlimited	Ŧ	unlimited	➡ bits/s	Сору
-A- Burst					Remove
Burst Limit:		•	unlimited	➡ bits/s	Reset Counters
Burst Threshold:		Ŧ		➡ bits/s	Reset All Counters
Burst Time:	U		0	S	Torch
	06:00:00		- 18:00:00		
Days:	💌 sun 🔍 ma	on 🗹 tue 🔽	wed 🗹 thu 🔽 fri 🗸	sat	
enabled					

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.

Simple Queue <5_	MB_Night>		•			
General Advance	ced Statistics	Traffic Total	Total Statistics			ОК
Name:	5_MB_Night					Cancel
Target:	192.168.16.0/2	24			∓ ≑	Apply
Dst.:						Disable
		Target Uploa	d Target Dov	vnload	ł	Comment
Max Limit:	unlimited	Ŧ	unlimited	₹	bits/s	Сору
- ≜ - Burst			1			Remove
Burst Limit:		Ŧ		₹		Reset Counters
Burst Threshold:		Ŧ] [=	₹	bits/s	Reset All Counters
Burst Time:	0		0		s	Torch
- ≜ - Time Time:	18:00:01		- 05:59:59			
Days:	✓ sun ✓ mo	n 🗹 tue 🔽	wed 🗸 thu 🖌 fri 🗸	sat		
enabled						

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

Queue List		-				
Simple Queues Interface Queue	es Queue Tree Queue	lypes				
+ - 🖌 🗶 🔽 🏹	00 Reset Counters	00 Reset All Cou	unters			Find
# Name 🗡 Targ	jet	Upload Max Limit	Download Max Limit	Packet Marks	Download Queue	Total Max Limit (bi. 🔻
		unlimited	unlimited			
		unlimited	unlimited			
2 🚨 Use 1 192.	.168.16.50	unlimited	unlimited			
3 items (1 selected)	0 B queued		0 packets qu	eued		

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.

Interface List		Interface <ether2></ether2>						
Interface Interface	List Ethemet EoIF	General Ethernet Loop P	Protect Status Traffic		ОК			
+ >		Name:	ether2		Cancel			Find
Name ::: WAN	∠ Туре		Ethemet		Apply	-	Rx Packet (p/s)	FP 🔽
R <>ether1	Ethemet	MTU:			Disable	0		9
R * Pether2	Ethemet	Actual MTU:			Comment	13		9
R 4 >ether3	Ethernet	L2 MTU:	00:0C:29:F4:11:00		Torch	0		9
			reply-only	Ŧ	Cable Test			
		ARP Timeout:	disabled		Blink			
			local-proxy-arp proxy-arp		Reset MAC Address			
			reply-only		l			
items (1 selected)								٠
Jonenia (1 selected)								

Figure 3.4.3.1: Interface to General Setting

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

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

cal Area Connection Statur Local Area Connection Properties	vork Connections	• • Search Net
letworking	nnection Rename this connection	» 👘 🖛 🚺 🔞
Connect using:		twork 5
Realtek PCIe GbE Family Controller		altek PCIe GbE Family Controller
Configure	Internet Protocol Version 4 (TCP/IPv4) Prop	perties 8 23
This connection uses the following items:	General	
Image: Client for Microsoft Networks Image: Withware Bridge Protocol Image: Bridge Protocol Image: Bridge Bridge Protocol Image: Bridge Bridge Protocol Image: Bridge Bri	Subnet mask: 25	ally if your network supports your network administrator 12 . 168 . 16 . 50 15 . 255 . 255 . 0 12 . 168 . 16 . 1
across diverse interconnected networks.	Obtain DNS server address automatica Obtain DNS server addresse Obtain DNS server addresse	es:
OK Cancel	Preferred DNS server: 8 Alternate DNS server:	3 . 8 . 8 . 8
	Validate settings upon exit	Advanced

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.

🔀 Routing		_							
∰ System ►	BTest Server	IP Scan] ;
Queues	Bandwidth Test								2112
Files	Email	Interface:	ether2			Ŧ	•	Start	
Log	Flood Ping	Address Range:	192.168.16.50				^	Stop	
A RADIUS	Graphing							Close	
¥ Tools ►	IP Scan							New Window	
New Terminal	MAC Server								-
LoRa	Netwatch		/ MAC Address	Time (ms)	DNS	SNMP	N	letbios	
Dot1X	Packet Sniffer	192.168.16.50	EC:A8:6B:70:0A:5D	C					
S Dude	Ping								
KVM	Ping Speed								
And Angel Make Supout.nf	Profile								
Marce Support in	RoMON								
New WinBox	SMS								
Exit	Telnet								
	Torch								
	Traceroute								
	Traffic Generator								
	Traffic Monitor	1 item							

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".

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

on Settings Dash												
C* Safe Mode	Session: 00.0C 29 F4 11:00											
CAPSMAN CAPSMAN I CAPSMAN I Wreless C Bridge PPP	ARP	Accessor IP Addre		Y	Find + - Rter							
t <mark>© Mesh</mark> ≦E IP ♪	Accounting			/ MAC Address	Interface							
MPLS P	Addresses	DC	C 192 168 1.1	14:59:C0:C7:13:03	ether1							
st IPv6 P	DHCP Client		New ARP			IP Scan						1
Routing	DHCP Relay			192.168.16.50	ОК	Interface:	ether2			• • [Start	1
B System	DHCP Server			EC-A8-68-70-0A-5D	Cancel	Address Range:					Stop	
Queues	DNS		Interface:			Abbrees hange.	132,190,10,50			-11		
Files	Firewall		interface:	etnerz +	Apply						Close	
Log	Hotspot			Published	Disable						New Window	
& RADIUS	IPsec Kid Control				Comment	Address	/ MAC Address	Time (ma) DNS	SNMP	Ne	atbios 💌	
K Tools 🗈	Neighbors				Copy	192.168.16.50	EC:A8:68:70:0A:5D	0				
New Terminal	Packing				Remove							
🖛 LoRa	Pool											
4 Dot1X	Routes				Make Static							
🖲 Dude 🛛 🎦	SMB				Ping							
KVM	SNMP				MAC Ping							
Make Supout If	Services				Teinet							
Manual	Settings				MAC Teinet							
New WinBox	Settings				and a construction of the second							
Eat	TETP				Torch							
	Traffic Flow		enabled	ublished complete	DHCP	1 item						1
	UPnP	1 item							_	_		1
		_										

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.

Add	ress List								×
÷	- 🗸	× 1		T			1	Find	
	Address			etwork		Interface			-
	172.16.15	5.16/24	1	72.16.15.0		WAN			
	· 🕆 192.168.1	100.1/24	1	92.168.100.0)	LAN			
	ms (1 selecter								

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

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.

Sadmin@00:0C:29:49:5D:8B (MikroTik)	- WinBox v6.46.2 on x86 (x86)	- F -
Session Settings Dashboard	9:49:5D:8B	■
Quick Set PPP		
CAPsMAN Interface P	PPoE Servers Secrets Profiles Active Connections L2TP Secrets	
🛲 Interfaces 🛛 🛖 👝	× × T	
Z Wireless Service	/ Interface Max MTU Max MRU MRRU Default Profile Authentication	
Sig Bridge		
PPP	New PPPoE Service	
°t8 Mesh	Service Name: PPPoE Server OK	
IP D	Interface: LAN	
Ø MPLS	Max MTU: Apply	
IPv6 D	May MPH	
🔀 Routing 🗅	Disable	
∰ System ►	Сору	
Queues	Keepalive Timeout: 10	
Files	Default Profile: default	
Log 0 items	One Session Per Host	
A RADIUS	Max Sessions:	
X Tools	PADO Delay: ms	
New Terminal	Authentication; 🗹 mschap 2 📝 mschap 1	
Continue Con	Chap pap	
Dot1X	enabled	

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.

ion Settings Da	ARP					
C4 Safe Mode	Accounting	B				
🖀 Quick Set	Addresses					
CAPsMAN	DHCP Client					
Interfaces	DHCP Relay					
👔 Wireless	DHCP Server	IP Pe	ool		[
🖁 Bridge	DNS	Poo	Used Addresses			
🛍 PPP	Firewall	+	7		Find	
t <mark>8</mark> Mesh	Hotspot	Nar	me / Addresses	N	ext Pool	•
₽ IP ト	IPsec					
🖉 MPLS 🛛 🗅	Kid Control		New IP Pool			
je IPv6 ►	Neighbors		Name: 5_MB_P		OK	
🕏 Routing 🛛 🗅	Packing		Addresses: 192.168.100.2-192.168.100.254	\$	Cancel	
₿ System ト	Pool		Next Pool: none	₹ ▲	Apply	
Queues	Routes		Hono I con		7000	
📄 Files	SMB				Comment	
Log	SNMP				Сору	
🔒 RADIUS	Services				Remove	
🗧 Tools 🛛 🖒	Settings					
New Terminal	Socks	0 ite	ims			
🖬 LoRa	TFTP					
Dot1X	Traffic Flow					
Dude 🗈	UPnP					

Figure 3.4.4.3: Internet Protocol Pool Configure for Queue 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".

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

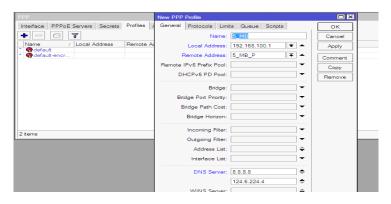


Figure 3.4.5.4: Queue for point to Point Profile

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.

Interface PPPoE Sen	New PPP Secret				K
		Pranab		ок	1
Name / Passwo	Password:	****	-	Cancel	te Address Last Logged
Indilie I doowo	Service:	pppoe	Ŧ	Apply	
	Caller ID:		-	5	3.5
	Profile:	default-encryption	-	Disable	
				Comment	
	Local Address:	L		Сору	1
	Remote Address:				1
	Remote IPv6 Prefix:			Remove	
	Routes:		-		
	Limit Bytes In:		•		
	Limit Bytes Out:		-		
	Last Logged Out:				
	enabled				

Figure 3.4.5.5: Queue for point to Point Secret

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

Queue List				
Simple Queues Interface Queu	ies Queue Tree	Queue Types		
+ - T				Find
Type Name /	Kind	Queue Type <5_MB_0	Q_UP>	
5_MB_Q_Down	pcq	T 11		
5_MB_Q_UP	pcq	Type Name:	5_MB_Q_UP	ОК
* default	pfifo	Kind:	pcg Ŧ	Cancel
* default-small	pfifo			Canoci
* ethemet-default	pfifo	Rate:	5M bits/s	Apply
* hotspot-default	sfq	nale.	DIUS/S	
* multi-queue-ethemet-default	mq pfifo	Queue Size:	50 KiB	Сору
* only-hardware-queue	none	-		
* pcq-download-default	pcq	Total Queue Size:	2000 KiB	Remove
* pcq-upload-default	pcq			
* synchronous-default * wireless-default	red	Burst Rate:	▼ bits/s	
wireless-default	sfq			I
		Burst Threshold:	•	
		Burst Time:	00:00:10]
12 items (1 selected)		Classifier:	Src. Address Dst. Address	
			Src. Port Dst. Port	İ
		Src. Address Mask:	32	
		Dst. Address Mask:	32	
		Src. Address6 Mask:	64	
		Dst. Address6 Mask:	64]

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.

ion Settings								
C Safe Mod	e Se	eeion: 00:0C:29:49:5	D:88					
Guick Set		ueue List						
CAP\$MAN	5	Simple Queues Inter	face Queues Que	ue Tree Que				
mm Interfaces	- I F	22	CT 7 00	Beset Counte	rs 00 Reset All 0	Counters		Find
Wireless		# Name	Target	Upload M		d Max Limit F	Packet Ma	
🐔 Bridge		H Mane	raiget	Toplodd III		in max anni fr	acher ma	Total max bit
PPP		New Simple Queue						
18 Mesh		General Advance	ed Statistics Tra	affic Total	Total Statistics			OK
E IP	1	Name:						Cancel
2 MPLS							Ŧ¢	
IPv6	1	_	192.168.100.0/24				Ŧ \$	Apply
Routing		Dst.:					-	Disable
System			т	arget Upload	Ten	get Download		Comment
Queues Files		Max Limit:		Ŧ	unlimited		bits/s	Copy
			Con minite o		(or minited	1 -	Ditoro	Bemove
Log	0		unlimited	Ŧ	unlimited	Ŧ	bits/s	
Tools	- E	Burst Threshold:	unlimited	Ŧ	unlimited	-	bits/s	Reset Counters
New Terminal	· ·	Burst Time:			0			Reset All Counters
LoRa	_	Time						Torch
In Dot 1X	_							
Dude	1							
KVM		enabled						

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."

Simple Queue <5	5_MB>			
General Adva	nced Statistics Tr	affic Total		ОК
Packet Marks:			\$	Cancel
	Target Upload	Target Download		Apply
Limit At:		unlimited Ŧ	bits/s	Disable
Priority:	8	8		Comment
Bucket Size:	0.100	0.100	ratio	Сору
Queue Type:	5_MB_Q_UP Ŧ	5_MB_Q_Dow ₹		Remove
Parent:	none		₹	Reset Counters
				Reset All Counters
				Torch
enabled				

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".

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.
- \succ 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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