NETWORKING ADMINSTRATION

BY

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

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APPROVAL

This Project titled "**NETWORKING ADMINISTRATION**", submitted by Tanjina Akter ID No: 172-15-9918 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 28-01-2021.

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DECLARATION

I hereby declare, this project has been done by me under the supervision of **Mst. Eshita Khatun, Lecturer, Department of CSE** Daffodil International University. I also declare that, I would be collect my report information from my Internship Company Logic and Thoughts (LT), This company are work on ISP base corporation, Cyber Security, Access Control, Network Security, Security Equipment.
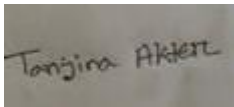
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ACKNOWLEDGEMENT

Alhamdulillah! All praise be to Almighty Allah the lord of the universe for her infinite mercy upon us. All thanks to His dedication for the completion of this final year internship and prepare my internship report successfully. I grateful God for all the hope, struggle and efficiency that have been showered on me to finish writing the report.

Primarily I would like to truthfully thank my teacher **Mst. Eshita Khatun, Lecturer, in Daffodil International University,** Dhaka for his instruction, considerate, abstention and most importantly. He has provided conclusive inspiration and a warm spirit to finish this internship. His suggestion and his instruction have served as the major contributor towards the completion of the project. I will also keen interest of my supervisor in the field of "**Internship on Networking Administration in Logic and Thoughts"** influenced me to complete this

Internship.

Then I would like to thank my parents and friends who have helped me with their valuable suggestions and guidance has been very helpful in various phases of the computation of the project. I offer my special thanks to all my entire course mate in Daffodil International University, who took part in this discuss while completing the course work. Finally, last but not the least I would like to thank my classmates who have helped me a lot.

ABSTRACT

MikroTik operating system is designed as a network router. It is the operating system and software that can be used to make a computer into a reliable network router, MikroTik Rooters operating system is a commercially developed operating system that is designed especially for embedded devices in function as active network components such as routers, wireless access points, client stations and applications and also by using the manufacturer's proprietary protocols using its specialized applications. The computer includes a variety of features for IP networks and wireless networks. These functions include many features. For this we studied on different MikroTik Router OS features- routing firewall, IP and bandwidth management, wireless access point, bridge, hotspot gateway, VLAN, NAT, Pool, DHCP and more. Finally, to manage and provide security in our network we use some special features of MikroTik Router.

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CHAPTER 1 INTRODUCTION

1.1 Introduction

An organization is a class of two of more PC frameworks conveyance benefits and associate somehow or another. This circulation is, capable through a common correspondence connect, with the shared elementals being information. Systems administration is presented as associating PCs electronically to share data. Systems administration is the act of appending at least two figuring gadgets together for the consider of sharing information. There are numerous interrelationships in the field of systems administration, as in most specialized fields. We go to a web address and up comes a page. As the speed of organization associations expanded, so did the multifaceted nature of information that individuals needed to download. The frameworks of systems administration: switches, switches, and remote passages. Switches, switches, and remote passages are the substance organizing nuts and bolts. Through them, gadgets appended to your organization can liken with each other and with different organizations, similar to the Internet.

MikroTik currently gives equipment and programming to Internet convey in the greater part of the nations. It can likewise be introduced on a PC and will waver it into a switch with all the fundamental highlights - directing, firewall, data transfer capacity the board, remote passageway, backhaul interface, hotspot door, VPN worker and the sky is the limit from there.

I dole out this temporary position since they exploit their neighborhood preparing materials and are exclusively answerable for the instructional courses gave. I need to settle on choices about PC systems administration and how it functions, how to plan a wide territory organization and organization, what attempts to plan a helpful organization, how to plan a commonsense organization and how to limit the personal time of an organization. I have chosen.

1.2 Motivation

"Push yourself, because no one else is going to do it for you."

I am presently seeking after in the last semester of my Bachelor Degree program in CSE. I pick my temporary position at Logic and Thoughts since I found that the Logic and Thoughts has beaten each consumer loyalty and administrations since they can be first assistance for beginning business on go. Yet, I know there are snapshots of huge anguish and in those there is no need of the real world. Inspiration is a major force for each man. On the off chance that you have a low intensity of inspiration you don't triumphs in your day-to-day existence. In the event that I know the full circumstance of an organization framework and a Mikrotik Router setup I should be change with the framework. On the off chance that I know the full climate of an organization framework and a Mikrotik Router Radius worker and Cash worker, design I should be change with the framework. I am as of now graduating in Computer Science and Engineering from Daffodil International University. I feel that with the assistance of rationale and figured associations I can effectively demonstrate my experience.

1.3 Internship Objectives

Temporary positions are in this way a bit of work or administration experience that is painstakingly administered in a work where an individual has intentionally educated and effectively considers what the person is concentrating across the emphaticness of the experience or expansion. Temporary positions will improve an understudy's work effect and great work propensities. The temporary position program is developing me as suitable in the work market. An impermanent occupation in programming is a stage towards making a superior occupation arrangement when the work is unfit. So this is exceptionally helpful of expertise improvement. I might want to MikroTik and perform network setup acknowledge some uncommon character to bear the cost of myself as experienced one. Entry level position in enacted sciences implies giving abilities to work ISPs, idealizing relational aptitudes, discussing admirably with individuals, demonstrating interest and strength, cooperating with other people, upgrading relational abilities. I desire to assemble my future vocation in the media area and any opportunity to hone my capacities or information on this industry would be amazingly useful. Self-roused and self-guided a craving to work.

1.4 Internship Goal

ultimately my entry level position program totally arranged myself as qualified in the merciless occupation market. So it is sufficient to create abilities. I need to gather some critical characteristics to give myself as gifted. Generally, a temporary position resembles a creative examination. As an encounter occurs outside the study hall, as an understudy you tend to assume liability for your initial learning. These ought to be set when you first beginning your entry level position so you understand what you need to devour and ensure you are effectively pursuing it. Understudies who make some unmistakable memories and energy in this cycle regularly find that they have a more important and grateful insight.

My principle objective for this entry level position is sincerely to acquire. To find out about Mikrotik Router as an organization, the individuals who work here, how I can contribute, and what will prompt my expert objectives and long haul individual accomplishment. I feel glad to have the option to work an incredible organization, Mikrotik Router Network. In future I need to work Networking.

1.5 Report Layout

First Chapter: I have speaked in this chapter, Introduction, Motivation internship, internship objective, internship goal, and report layout.

Second Chapter: I have identified the agency of my internship in this chapter. And this chapter sheds light on where the internship is attached to dedicating this program. Introduction to organization and micro tic systems, web hosting, web design, broadband, IT services and training programs, target groups, slot analysis and organizational structure.

Third Chapter: I have described about daily task and activities, Events and Activities, Project Task and Activities. Switch, Router, Learning and understanding About Network Components' Media converter, Design of network, Objective of network, LAN, MAN, WAN, Mikrotik Router of Summery, Basic of Win box.

Fourth Chapter: I have complete Competencies Earned, Smart Plan, Reflections.

Fifth Chapter:I have represented is this chapter Discussion and Conclusion, Scope for Further.

CHAPTER 2 ORGANIZATION 2.1 Introduction

Logic & Thoughts is the top service provider in Bangladesh since 2014. Logic & Thoughts is here to ensure your time in cyberspace safe and secured. We provide you world class cyber security solution to make your organization's support system work 100% efficient and resilient. No matter how malicious the cyber threat is, we guaranty your organizations security. For polishing and intermediate management of your technical system, Logic and Thought brings cyber security training services for your employees to perform technical activities so that they can manage the system quite well. The company has worked with many national projects and international organizations and gained a reputation. The company is using the latest technologies and upgrading services wherever it is needed. This enables the Corporate Network Solutions Division to provide network security with approved policies and practices for preventing and monitoring unauthorized access.

2.2 WHY CONNECT WITH US?

✦ We have 24/7 Tech Support.

✦ 75% Cyber Security.

✦ 80% Border Surveillance.

✦ 100% Access Control and Data Center.

✦ 100% Network Security.

✦ Best Network infrastructure.

2.3 Product and Market Situation

Computerized Insights Workspace to look and research experiences and draw in the business. Bits of knowledge Engine to associate all information and apparatuses. Business Assistant to discover bits of knowledge. Nonetheless, current and edified people these days have thoroughly considered with products were the center, and this promoting rationale is acquired from a monetary. The more formalized adaptation dispatching today brings a record of corporate accomplices and a more organized application survey measure.

Vulnerability Assessment & Penetration Testing:

To identify the level of risk that your company is currently exposed to, we offer your company a complete IT infrastructure vulnerability assessment and penetration test to create the appropriate set of solutions to this threat.

Cyber Security Operation Center

Payment Card Industry Data Security Standard (PCI DSS) is a universal accepted policy and agenda set for optimizing the security of debit and cash card transacting and protecting cardholders from misuse of their personal information.

Embedded System

An embedded system is a combination of computer hardware and software to make a mechanism.

MikroTik Academy

Daffodil assists International University (DIU) students in training and quality organizations. The labs are well-appointed and include the latest premium bundles of Cambium networking devices. Final year students in any self-regulated engineering department are eligible for this course. **IT Services**

- ✦ Corporate Internet Services ✦ Network Design and Solution ✦ Security solution.
- ✦ Threats solution.
- ✦ ITIL Foundation and ITIL v3 Service Operation.
- ✦ ITIL Practitioner
- ✦ COBIT 5 Foundation
- ✦ Security Operation Centre (SOC) (Level 1)

Professional Training Workshop

- ✦ Cisco Certified Network Associate(CCNA)
- • PRINCE2 PRACTITIONER
- • EC-Council Secure Programmer(ECSP)
- ✦ Project Management Professional (PMP)
- ✦ Certified Information Security Manager (CISM)
- ✦ Certified KPI Professional.

2.4 Target Group

The association encouraging group of people has made some amazing progress and has worked effectively with key government offices. Target promoting is the way toward building up your

item to be the most worthy and your accomplishment to meet their remarkable requirements by recognizing the sort of following individuals. The association actually proceeded as their essential objective and they put forth unremitting attempts to push ahead with them. Great publicizing is tied in with hitting where clients are. However, before you can create an incredible message, you need to understand what deliver to send. Here's a more profound thought: People are unique. A message that eliminates one individual can leave another virus. What's more, obviously, not every person is probably going to be misused for a thought, item or administration that your customer needs to sell. Web Solutions accepts that these commercial center sections need sensible costs and benefits and make more devoted, faithful clients. Directed market sections are understudies, experts, technologists. Advancing, creating, overseeing, overseeing and keeping up a data trade focuses.

2.5 SWOT Analysis

A SWOT examination is a factual judgment of information coordinated in a consistent request by the SWOT design that encourages getting, introduction, conversation, and dynamic. Consistent and smart inner investigation of an organization should consolidate its way of life, aptitudes, assets and extraordinary characteristics on the lookout. You ought to look at the viability of your innovative work in these zones. It is a vital instrument for breaking down the inside and outer climate of an association.

Strengths:

 Which offers a variation of circulation based on my requirements?

- Maintains a team that works.
- There are some people here who "speak a language" and improve technical skills, interests and skills.
- Works by maintaining a good relationship with the user
- The communication keeps in touch with customers while maintaining distance. (With at home).

- Respond quickly to customer requests.
- Offer to facilitate people to work with different skills and abilities.
- To collect information and giving offers low cost.

Weaknesses:

The category of weakening is given below in phases:

- Communication between departments is sometimes very bad.
- Influenced by the decision of individual department managers
- Customers who want multiple services need to work with multiple departments.
- New entrant underestimate levels of expertise needed.
- Systems can evolve in a variety of ways.
- The market is destructive repetitively.
- Higher prices and higher tariffs on service options.
- No skills including service guarantee.
- If the organization is not comfortable in each process, it may be necessary to maintain operational efficiency.

Opportunities:

Opportunities for comprehensive demand and organizational action.

- Increase the capability of the people.
- Conventional quality and abundance.
- Recover ethical behavior and customer service.
- Easy compensation on cloud standing.
- Our company uses to adopt new technology.
- We are also closely working with (NTMC)
- Low cost training for professional course.
- Multiple objective market.
- Our company is Cyber Security developing.

Threats:

We neglect their   threats and continue to do what we feel.

- Advancement became an item and all transmission became quite equivalent.
- Competitive opening system administration is close.
- Some perfectly dynamic and contributing works around.
- This level has reached our server, where it is difficult to create a group.
- Some clients left the service.
- Threat protection is a leading problem in the system.

2.6 Structure of Organizational

Logic & Thoughts is proud to be an inventor in Bangladesh. Illuminates a few growths as they meet the preconditions of the twenty-first century. Further, new contraceptives are developing. In recent years Logic & Thoughts has introduced new innovations in the IT and Cyber Security business.

Professional Courses:

Logic & Thoughts offers the most challenging and requested IT skilled professional courses to go against the days of globalization. Some specialist courses offered by DOL.

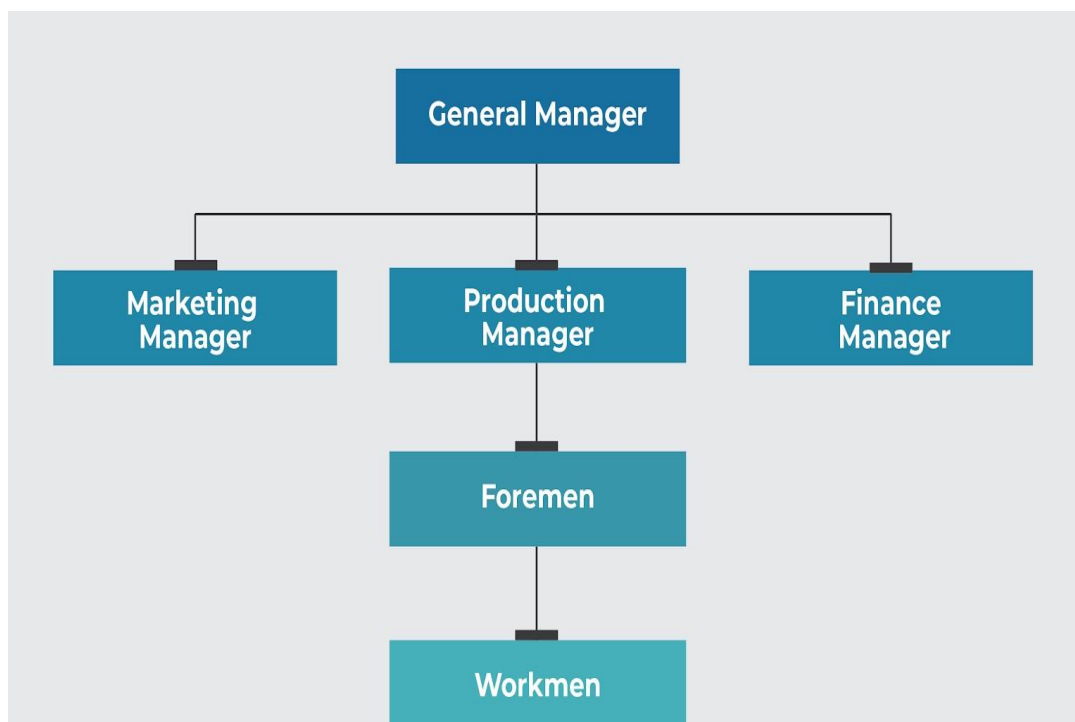Logic & Thoughts Organization Structure. Show in fig 2.6:

Figure 2.1: Logic & Thoughts

CHAPTER 3 TAKS, PROJECT AND ACTIVITIES

3.1 Daily task and activates

During my internship period, I was assigned some responsibilities. These responsibilities, I fulfilled profitably. Those responsibilities are as follows:

☐ Month - 1: In the first month of my internship at Logical and thoughtful I have studied and achieved the following tasks:

☩ Introduction of Networking ☩ Introduction of Networking cable ☩ About IP address.

- ✞ Introduction of Networking Device.
- ✞ Installation of necessary software and hardware.
- ✞ Configure your LAN, WAN, WAN Network.

☐ Month - 2: In this month I have studied and achieved the following tasks:

- ✞ Introduction of MikroTik.
- ✞ Configure ISP link.
- ✞ Configure Mikro-Tik Router with Commands.
- ✞ Firewall and NAT Configuration.
- ✞ Network Security.
- ✞ Router Software setup and Password setup.

☐ Month – 3: In this month of I have studied and achieved the following tasks:

- ✞ Design of a network.
- ✞ Planning of a network.
- ✞ Configuration of Mikrotik Router.
- ✞ Static Configuration in MikroTik.

☐ Month – 4: In this month of my internship at Logical and thoughtful I have studied and achieved the following tasks:

- ✞ File and Directory Permissions.
- ✞ User and Group Add and Modification.
- ✞ DNS server, Bandwidth Manage.

3.2 Events and Activities

Entry level position preparing is particularly fundamental if there are inside issues during the temporary job. The principle step in getting ready for a transitory area is to get ready for the issue when a little surface issues something in the section level position. The issue has been distinguished and the preparation can be tackled. Preparing aptitudes, ideas, temporary positions can be depicted in natural execution. How the readiness that is going on in rationale and believing was given.

In this internship at Logical and thoughtful I have performed and achieved the following tasks:

- • Learning & understanding About Network Component.
- • Network design, configuration and implementation, practical work.
- • Monitor and Maintain Computer Systems and Network.

- Setting up user accounts, permissions and passwords.
- New Concept
- Event Designing
- Troubleshooting local area networks and switches.
- Technical support for people using the network.
- Concept of IP Addressing.
- Configuring IP Address in CentOS.
- Learning & understanding Basics of MikroTik.
- Initial Step Configuration MikroTik.
- Installation WAN, LAN. Gateway.
- Configuration Bridge, DHCP with Bridge Mod
- Remote Login Service, Firewall.
- Domain hosting and maintain.
- Checking the fiber optic cable, fiber optic media converter and device problems.
- Promised to deliver security applications and services.

3.3 Project Task and Activates

Here I have mostly accomplished some work in the information administration network during the entry level position. This task was like companion degree practice, others state that any work is a work bundle that can encapsulate at least one practices and at last make more judicious issues, different colleagues of venture directors accept that the past assertion is just evident once the agreement overturns A work bundle that can represent one or numerous errands in a single movement.

3.3.1 Introduction to Networking

Networking is the process of connecting two or more measuring devices for the purpose of sharing data. Networks are a combination of computer hardware and computer software. A network is a computer and other hardware peripherals that are transformed by means of communication that allow resources and information to be shared. The most well-known computer network is the Internet.

3.3.2 Categories of Network

The Network allows computers to connect and communicate with different computers via any medium. LAN, MAN and WAN are the three major types of the network: -.
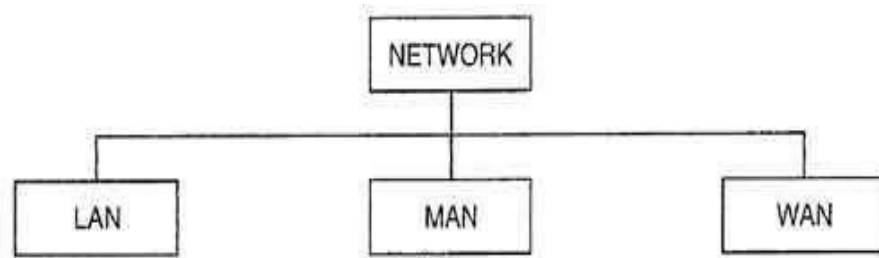
Figure 3.1: Network Categories

Local Area Networking

A combination of a local area network (LAN) device. Look for applicable together in a stable place like building, office or home. A LAN can be small or large, ranging from a home network with thousands of users of an officer or school and one user with a device to an enterprise network. It transfers data speed 10 Mbps.

Metropolitan Area Networking

A metropolitan territory organization (MAN) is an organization where clients are associated with PC pledges in a geographic district or district instead of ensured by a bigger neighborhood

(LAN) however more modest than the region secured by a wide region organization (WAN). It is utilized to imply the interconnection of a few neighborhood by spanning with hardness lines. The last use is at times additionally alluded to as the grounds organization. This public organization can spread 50-75 miles. Organization information move speed GPS.

Wide Area Networking

WAN is a type of LAN network. WANs are determined by organizations such as phone / cable companies, service providers or satellite companies. They organize large networks that spread throughout the city or zone and lease their networks the right to use to their customers. The WAN can be turned into a reality with the help of a public transmission system or a private network. The most well-known prototype of the Internet universal WAN. Network data transfer speeds range from 56 kbps to 1.544 Mbps.

3.3.3 Networking Device

Network devices are a sufficient number of devices that are recommended for communication and interaction between hardware on a computer network.

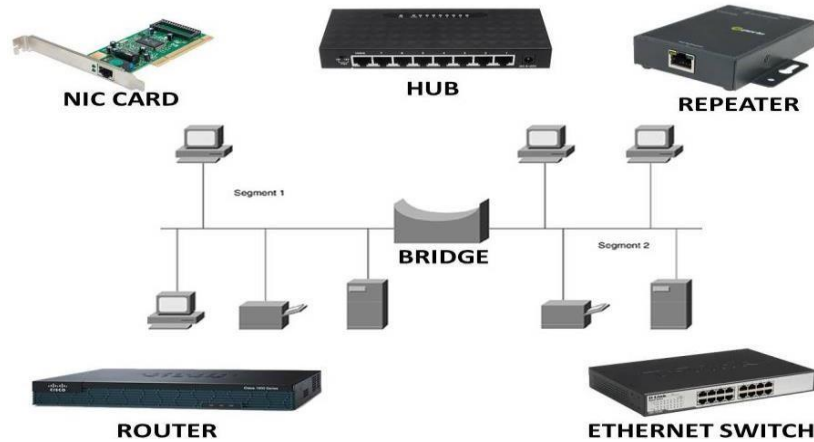**Network Devices**: There are different types of electronic devices are used in networking.

Figure 3.2: Network device

NIC card:

A computer hardware peripheral known as a network terminal checker (NIC, a network terminal card, network adapter, LAN adapter or physical network terminal and similar terms) that connects a computer to a computer network.

Hub:

Centers consolidate latitudinal PC organizing gadgets. Executes as a center point repeater so it intensifies signals that debilitate after significant distances from association links. A center point in the group of organization interfacing gadgets easily in light of the fact that it associates LAN peripherals to a similar convention since, in such a case that one gets it, one can undoubtedly comprehend a switch.

Ethernet Switch:

An organization switch is a gadget that works at the OSI model - level 2 information interface level. It gets parcels sent by gadgets that are associated with its actual ports and re-sends them, yet just through ports that lead gadgets to arrive at bundles.

Switch:

An organization switch is a sort of organization gadget in a PC organization and a switch is a systems administration gadget that propels information bundles inside a PC organization. These

two organizations can be private in a public's organization. On the off chance that we notice that the web cooperate with the house was given a link uphold.

Scaffold:

A scaffold adds components of sifting material to a repeater, perusing the source and aim Mac addresses. The critical component of an extension in organization engineering is to store outlines in various areas just as store If a switch joins two unique kinds of organizations, a scaffold consolidates two sub-networks as a feature of a similar organization.

Repeater:

The repeater is an electronic gadget that intensifies the Etba debris signal. Consider the repeater a gadget that pick-ups a sign and sends it to a more significant level or higher force so the sign can cover significant distances, in excess of 100 meters for standard LAN links. It has two Ethernet ports. The repeater pickup enhances the sign and re-communicates the signs to a similar organization before the sign turns out to be excessively feeble or misshaped to build the length at which the sign can be sent through a similar organization.

3.3.4 Networking link

Organization links are utilized to interconnect and change over information and data on irregular PC, switch, switch and capacity zone organizations. These links are definitely the transporter or media through which the information streams. Contorted pair links are utilized in numerous Ethernet organizations.

Networking cable types:
- Unshielded Twisted Pair (UTP) Cable.
- Shielded Twisted Pair (STP) Cable.
- Coaxial Cable.
- Fiber Optic Cable.
- Cable Installation Guides.
- Wireless LANs.

Unshielded Twisted Pair (UTP) Cable.

UTP standpoint for unshielded twisted pair cable. The UTP cable is a 100-ohm copper wire available in 2 to 1800 protected bent joints surrounded by an outer jacket. They have no metal shells. It provides a cable smaller than the diameter but protected against electrical interference.
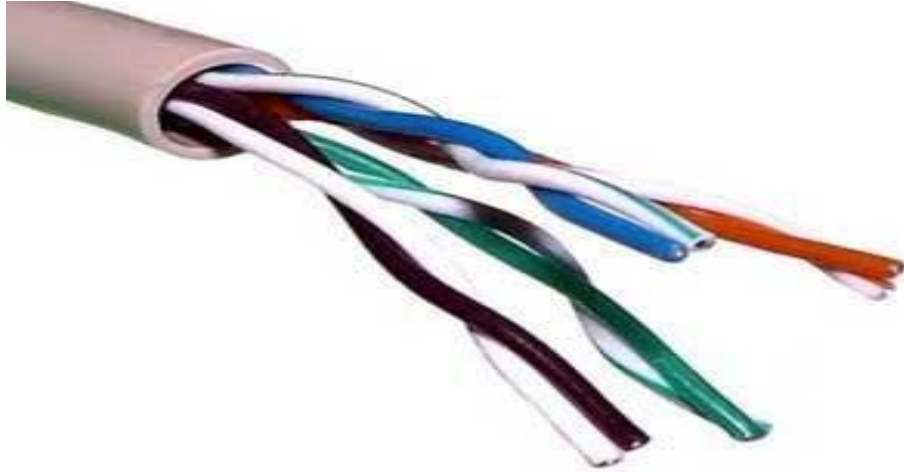

Figure 3.3: Unshielded Twisted Pair (UTP) Cable.

Fiber Optic Cable.

From its telecom network to fiber optics, the world of fast telecommunications is driven. Optical fiber is an express thin strand of pure glass that acts as a waveguide for long distance lighting. It uses a basic known as complete internal reflection.
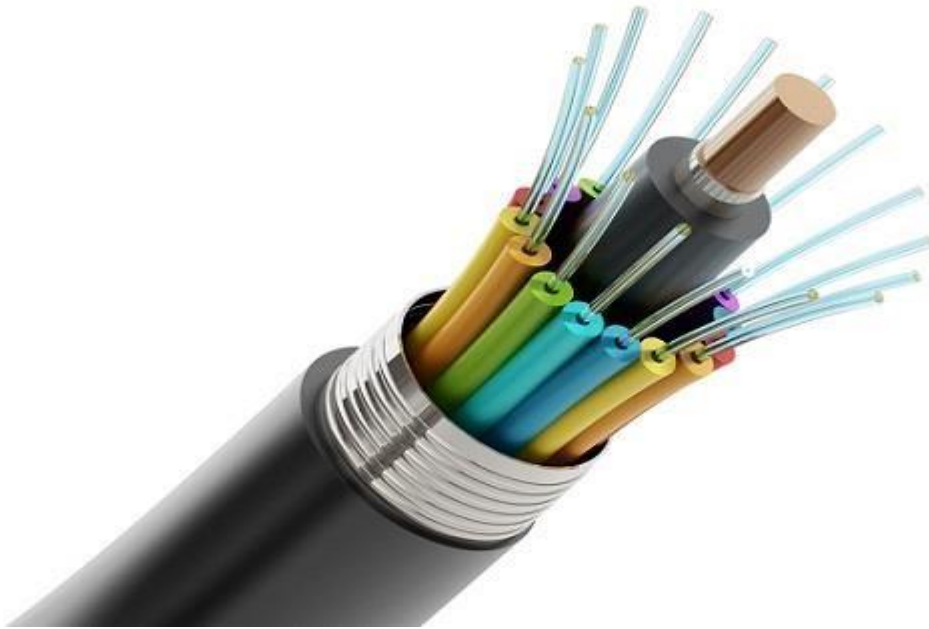
Figure 3.4: Fiber Optic Cable.

3.3.5 Networking Configuration for CentOS 7

After installing RHEL / CentOS 7 Minimal, we cannot connect to the network on that machine. The network configuration in CentOS 7 is automated and simplified using the Network Manager. The name of the first interface will also be Eth0.

IP address:

An Internet Protocol address (IP address) is a number mark that is applied to every gadget PC network that utilizes Internet Protocol for correspondence. An IP address serves two fundamental capacities: the portrayal of the host or organization interface and the area address. Most IP addresses are mathematically exact, however letters have gotten integral for a couple of addresses as Internet use has expanded. **IP address in interface:**

CentOS people group has delivered its Latest Operating System named as CentOS 7. A portion of the new highlights in CentOS 7 as contrasted and CentOS 6.X are recorded beneath:

Show the worker interface use to order: # ifconfig.

```
himanshu@ansh:~$ ifconfig
enp3s0     Link encap:Ethernet  HWaddr 70:4d:7b:70:d2:3e
           UP BROADCAST MULTICAST  MTU:1500  Metric:1
           RX packets:0 errors:0 dropped:0 overruns:0 frame:0
           TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
           collisions:0 txqueuelen:1000
           RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo         Link encap:Local Loopback
           inet addr:127.0.0.1  Mask:255.0.0.0
           inet6 addr: ::1/128 Scope:Host
           UP LOOPBACK RUNNING  MTU:65536  Metric:1
           RX packets:73925 errors:0 dropped:0 overruns:0 frame:0
           TX packets:73925 errors:0 dropped:0 overruns:0 carrier:0
           collisions:0 txqueuelen:1000
           RX bytes:7911049 (7.9 MB)  TX bytes:7911049 (7.9 MB)

wlx18a6f713679b Link encap:Ethernet  HWaddr 18:a6:f7:13:67:9b
           inet addr:192.168.2.6  Bcast:192.168.2.255  Mask:255.255.255.0
           inet6 addr: fe80::733f:7699:a8de:78ac/64 Scope:Link
           UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
           RX packets:598724 errors:0 dropped:5949 overruns:0 frame:0
           TX packets:481412 errors:0 dropped:20 overruns:0 carrier:0
           collisions:0 txqueuelen:1000
           RX bytes:390451501 (390.4 MB)  TX bytes:102506204 (102.5 MB)
```

Figure 3.5: Show command Configuration Network

Restring DNS Service:

DNS Server runs as a service, which means we can also use the Services snap-in to start and stop it. When you stop DNS Server, it will no longer respond to DNS queries. Click on Properties button and Look for Preferred DNS Server:

```
> net stop dns
> net start dns
```
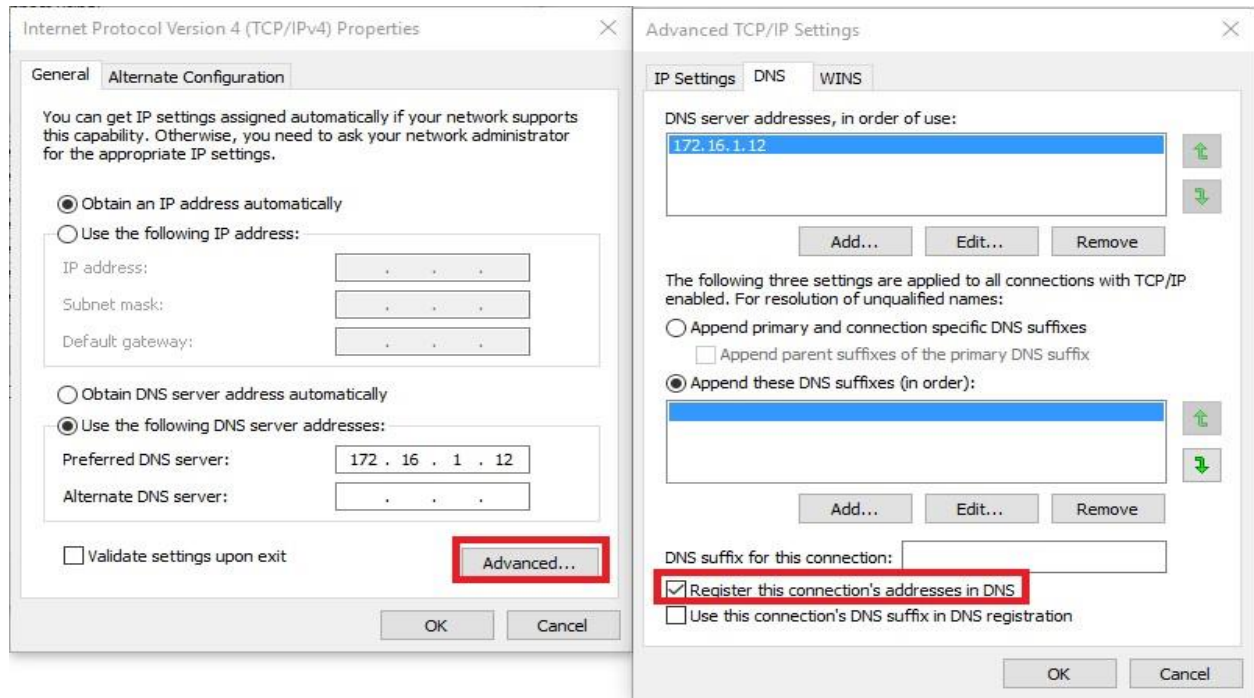
Figure 3.6: Show Restarting DNS Server

3.3.6 Networking Administration

Organization and PC framework administrators are responsible for the everyday developments of these organizations. They coordinate, introduce, and imitate an association's PC frameworks just as neighborhood, wide zone organizations, network fragments, intranets, and other information correspondence frameworks. As organizations develop, their organizations become bigger and more intricate, expanding the interest for individuals to strengthen them. An undergrad network temporary job degree permits you to get to section level areas in schools, government offices, charities, and private organizations.

We utilized constant occupation examination programming to inspect around 150,000 organization head occupations posted over the previous year. This finishes our enrollment of top specialized mastery:

Framework administration Linux®

Microsoft Active Directory®

VMware®

Specialized help

Windows Server®

Cisco®

Equipment and programming establishment

SQL

Client care

3.3.7 Introduction of MikroTik:

MikroTik:

MikroTik RouterOS is the working framework that can be utilized to change the PC framework into a solid organization switch, incorporates different highlights which made for IP organizations and remote organizations, reasonable for use by ISPs and hotspot suppliers. MikroTik is a Latvian organization which was established in 1996 to create switches and remote ISP frameworks. This should be possible utilizing a PC or gadget that can restrict the speed of the web. MikroTik.

Figure 3.7: MikroTik Router

Switch Features: - MikroTik Routers OS is the working arrangement of MikroTik Router BOARD equipment. It can likewise be introduced on a PC and will transform it into a switch with all the essential highlights - directing, firewall, data transfer capacity the board, remote passage, backhaul interface, hotspot entryway, VPN worker and that's just the beginning. MikroTik item accessibility has developed all through the world. Switch OS upholds numerous applications utilized by Internet specialist organizations.

DHCP Configuration:

Stage 1: Open an internet browser and type the IP address of the remote switch in the location bar.

Stage 2: The default username is administrator (all lower case) and the secret key is clear (nothing). Snap OK.

Stage 3: Click on the Home tab and afterward click on DHCP to one side.

Note: If you are interfacing with a DHCP worker, the DHCP worker on the remote switch ought to be set to Disabled.

Stage 4: By default, DHCP Server is set to Enabled. To impair it, click the Disabled radio catch. To empower it, click the Enabled radio catch.

Stage 5: Enter the Starting IP Address and Ending IP Address. To change the rent time, select an incentive starting from the drop list close to Lease Time.

Note: The incentive for Starting IP Address should be not exactly the incentive for Ending IP Address.

Stage 6: Click on Apply at that point click Continue to save the settings.
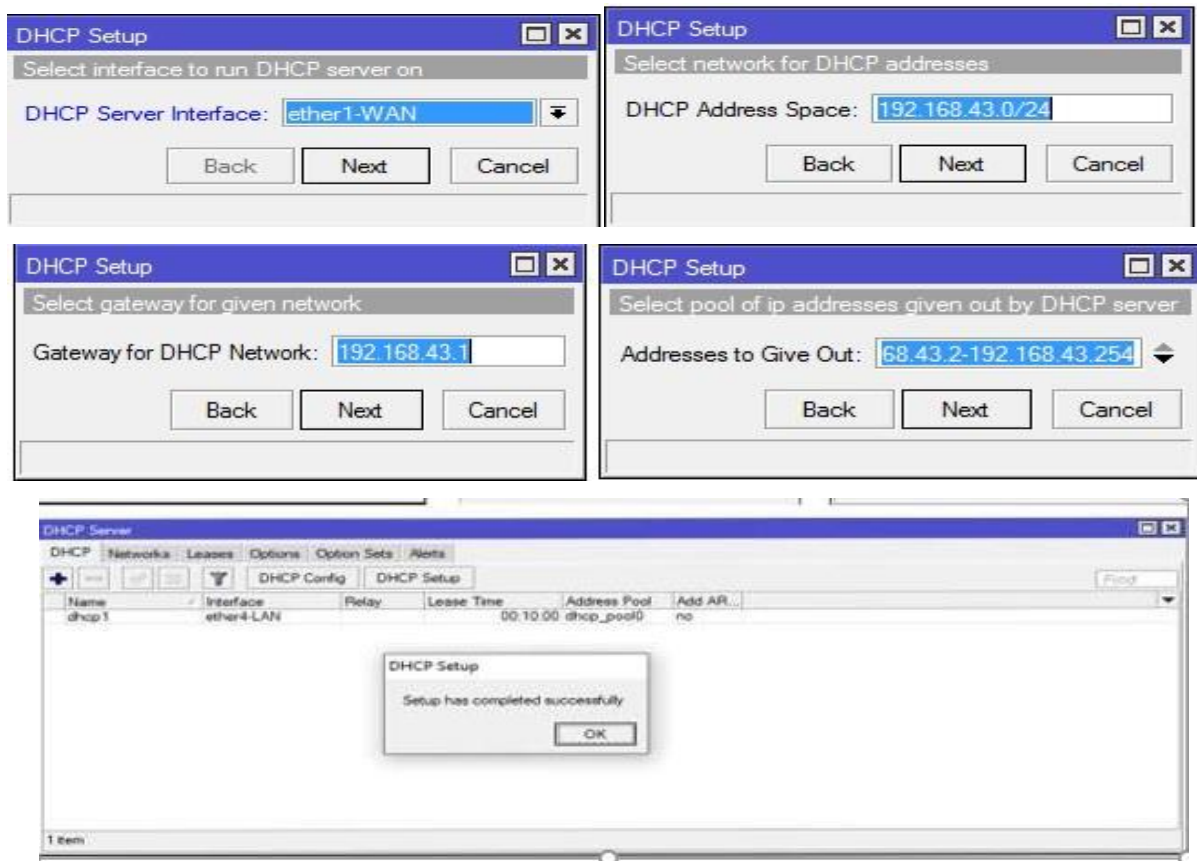

Figure 3.8: DHCP configuration Network

MikroTik Router IP Configuration:

Every router is factory pre-configured with the IP address 192.168. 88.1/24 on the ether1 port. The default username is admin with no password **Step-1:**
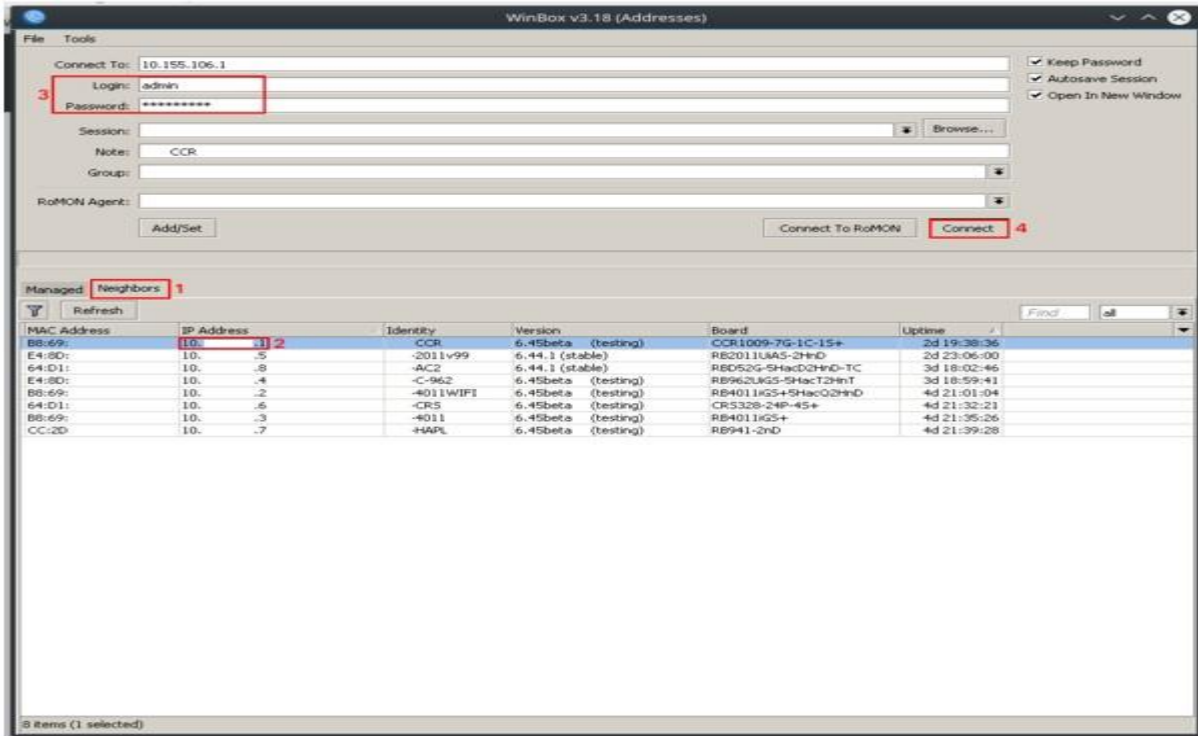

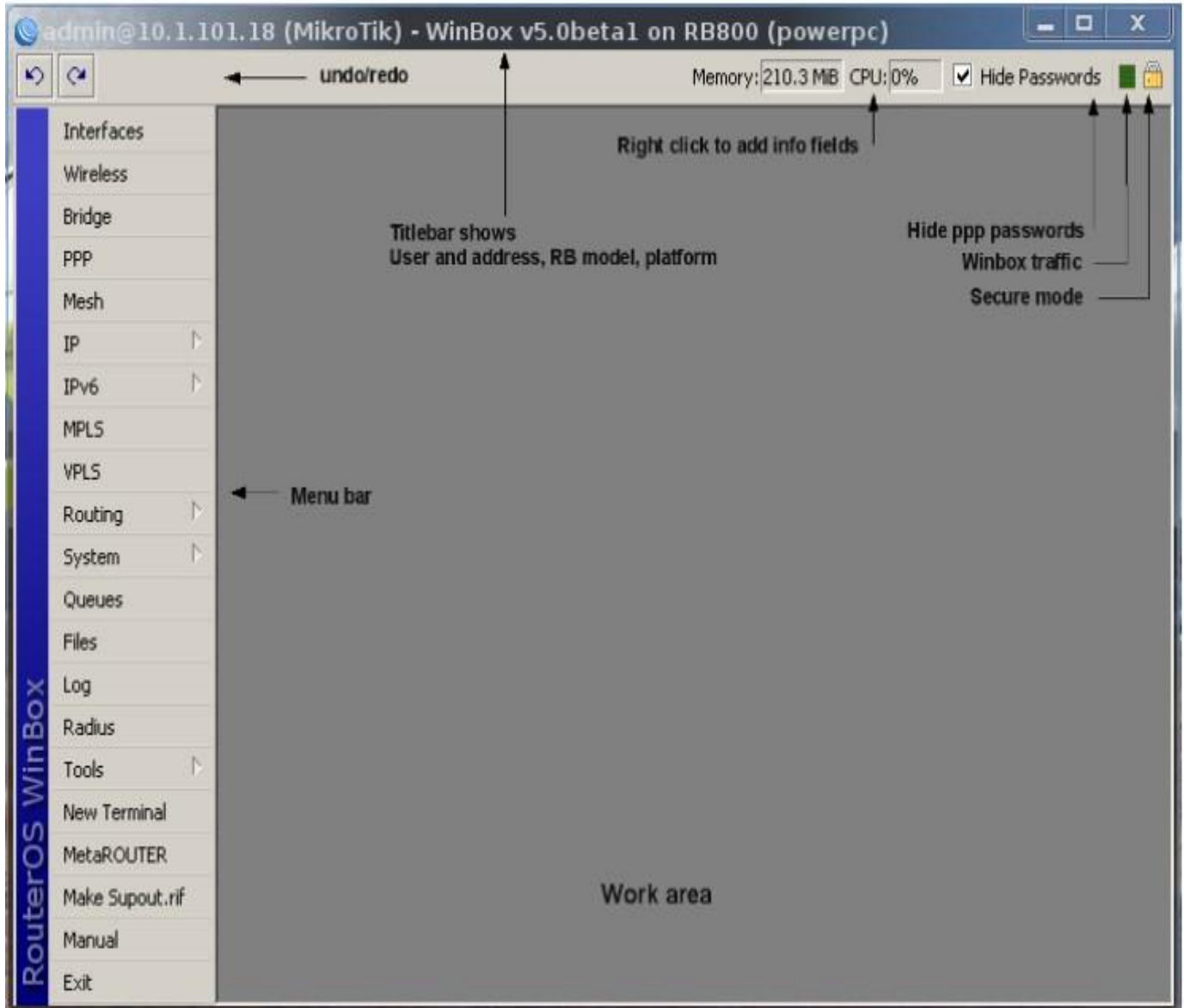Figure 3.9: Run the Winbox utility **Step-2**:

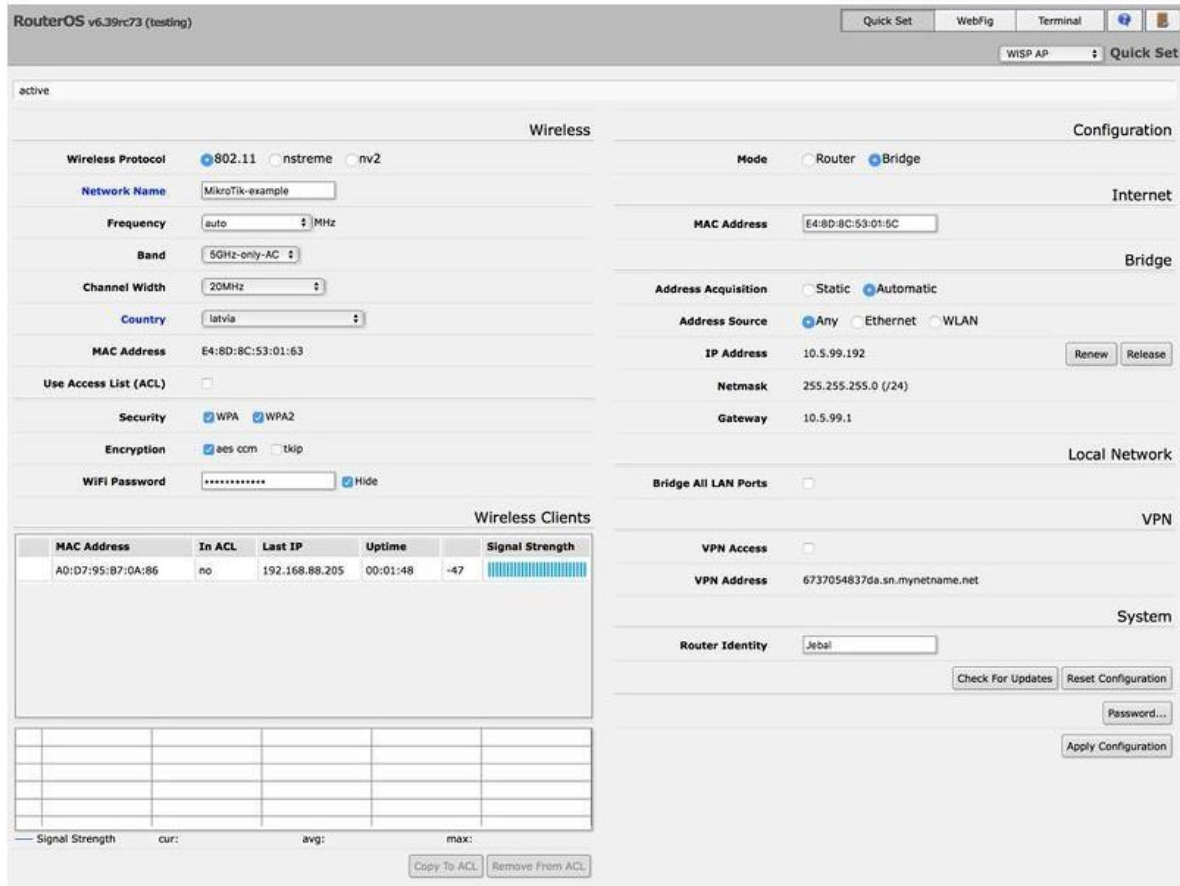Figure 3.10: Navigate to "Neighbors"

Step -3

Figure 3.11: QuickSet and WebFig

VLAN Configuration:

A VLAN (Virtual LAN) is a group of computers, servers, network printers and other network devices that behave as if they were connected to a single network. VLAN is a logical topology that divides a single broadcast domain into multiple broadcast domains. VLAN is a layer 2 method.
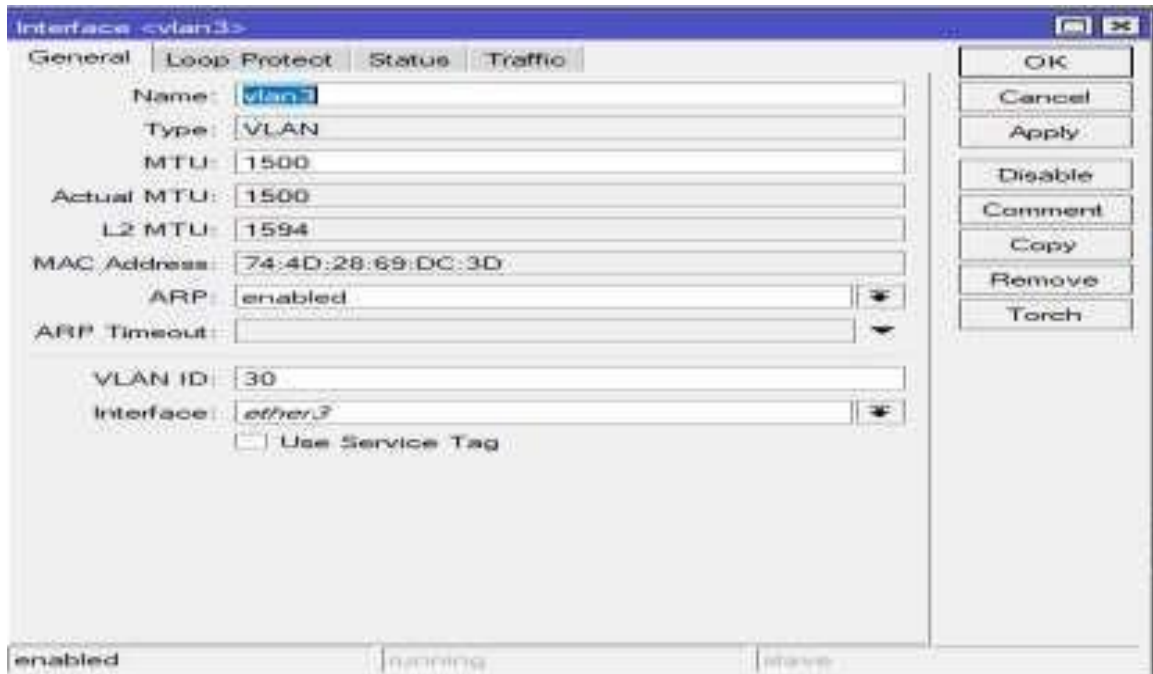
 Step-1: Interface > VLAN

Figure 3.12: VLAN Setup

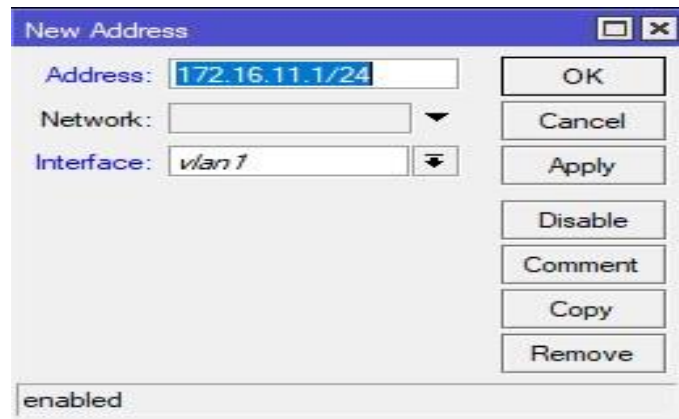**Step-2:** IP > address > + > set IP

Figure 3.13: Set new IP

Bridge Configuration with MikroTik:

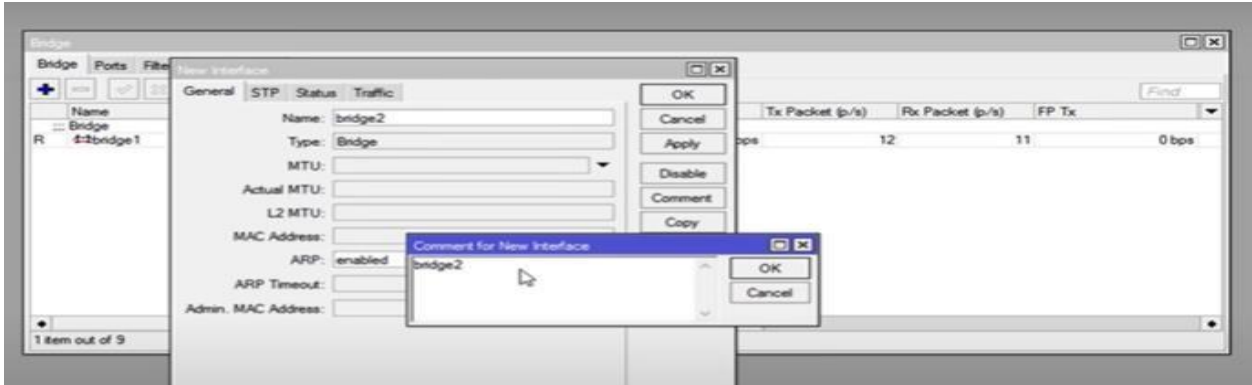**Step 1:** "IP>DHCP server >DHCP setup>Next>Apply Ok".
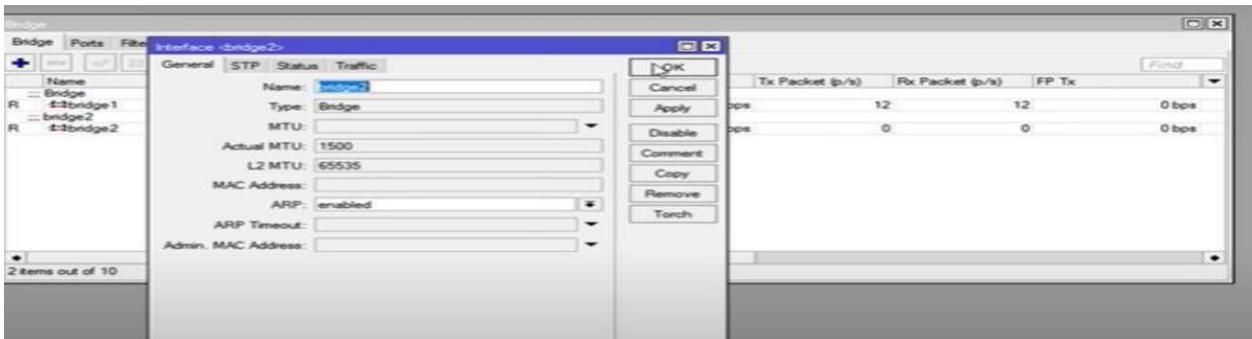
Figure 3.14: Create Bridge name **Step 2:**
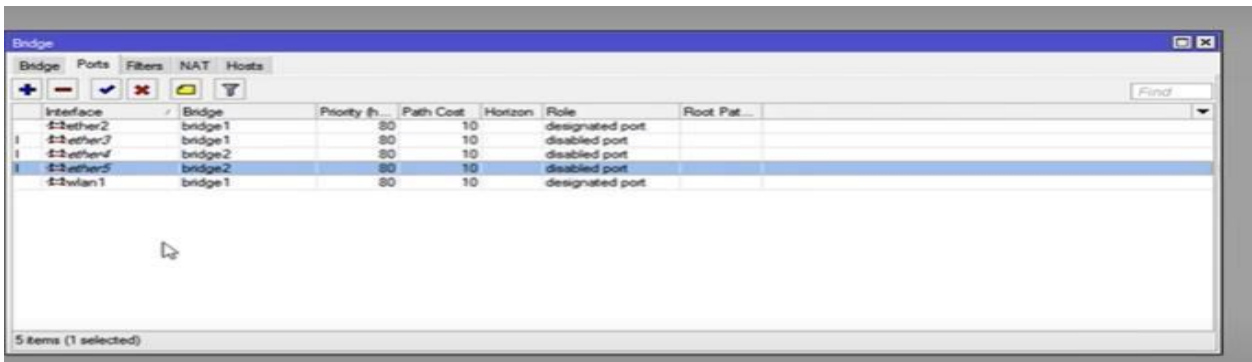

Figure 3.15: LAN of Bridge port **Step 3:**

Figure 3.26: LAN of Bridge

Configuration: MikroTik Router Interface

Step1: Open winbox> queues > simple queues > click on plus > call= queue1 > goal deal with=192.168.0.5 (n.b: your lan site ip in case you want to govern bandwidth against of unique

laptop or unique ip). target upload, max limit=512k, goal download, max restrict=512k > apply >good enough

Step2: open Winbox> queues > easy queues > click on plus > name= queue2 > target deal with=192.168.0.5 (and your lan website ip in case you want to manipulate bandwidth against of particular computer or unique ip). Target upload, max limit=512k, goal download, max restrict=512k>apply>adequate.

MikroTik Win box

Superior pleasant of service management with burst assist

State full firewall with p2p protocol filtering, tunnels, and IPSec

Step bridging with filtering competencies □ Words and virtual ape capabilities Hotspot for plugand-play access

Rip, OSPF, BGP routing protocols

Gigabit Ethernet ready

V.35, x.21, t1/e1 synchronous assist

IP telephony

Far-flung win box GUI admin

Telnet /ssh/ serial console admin

Real-time configuration and monitoring

3.4 Challenges

No work was taken as a test, however four months where I work my impact and companions don't share. At the point when I was about an hour Listening, I found that there are a few difficulties in characteristic direction. I accept that temporary jobs are 3 things: settling, incidentally and their unit region isn't an opposition for looking after productivity. Never enough work: ME allotment isn't sufficient work. I was irritated, irritated, the finger was lifting me over my table and convinced to look.

Inordinate work: because of the unit field running just inside the upbeat entryway for crisis learners, a few work environments may profit by youthful laborers being offered dreary work for quite a while.

Dread of the inquiry raised: Suddenly there was a progression of worker's guilds and I get an opportunity to substantiate myself eventually! In any case, I was reluctant about how I could manage X, Y, Z. Feel the pressing factor of being an independent colleague and worker independent, nonetheless, it was higher to explain the vulnerability!

Rival various understudies: Occasionally I had partner assistants; Each of us tends to bring up various issues and maybe the lone group who came here to work in a gathering that has a communitarian relationship Internships inside the hole would be exceptionally future work or the proposal for a genuine letter would be serious in an alternate work circumstance, it couldn't be so amicable.

- An inside might be experiencing the extraordinary challenges given underneath:
- Receive the workplace.
- Some coordinated capacity to achieve.
- Official principles and adornments changing.
- Document a few awards from foundation.
- Create equivalent ability totally unique level.
- Most elevated difficulties will be confronted
- Social relations with the officials.

CHAPTER 4 COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

My principle desire of temporary job is to acquire information and capability in equipment and systems administration related issue and finding the arrangements. I have drilled and found out about both in equipment and organization related works. What representatives do and say at these and a huge number of different points mirrors their degree of aptitude in relationshipbuilding and their capacity to add to the accomplishment of the association. An undertaking wide systems administration competency activity to urge workers to interface will empower associations to get brings about an assortment of territories that can affect the reality. Abilities Earned or learning result is a declaration of what an understudy is needed to know, appreciate or have the ability to do due to a learning technique. After fulfillment of my entry level position Classes range from a couple of days to seven days, contingent upon the course. Classes incorporate labs where you will design switches and fabricate networks. Talk the entirety of the material in the MikroTik official affirmation class materials in addition to considerably more substance added by me dependent on subject's understudies request most Introduce and decommission of both framework and worker machines at two server farms. They gained fitness given the size of the square beneath:

Gathering and organizing information on entry level position project subtleties.

Partake in organization labs and site refreshes.

Issues with equipment and programming frameworks toward the finish of a workstation and purchaser.

There are the executives switches for review and investigating.

Perform general framework upkeep and backing.

Discover an answer for the issue of optional level.

Create information that bodes well to confront drawbacks.

Exploration the organization site gives us a week after week report.

Learning Outcomes. Present and Configure programming and updates; Install, mastermind and test sort out Employer Services. Besides, solid with the learning results, the Internship On-Site Supervisor will give a presentation concerning definitive systems and strategy.

4.2 Smart Plan:

To a great extent orchestrate debilitation occurs. By then issues are found through researching and deal with the issue. That was obviously not the first run through my consideration had been attracted to this strong speculative chemistry yet as all new outsiders like to think, it was something important to those couple of naughty occupation trackers who cherished extended periods instead of being blunt in moving toward imminent businesses straightforwardly, which I generally thought was the briefest course to progress. In spite of the fact that I realized somewhere inside that going after jobs online was a far-fetched wager anyplace, let alone in the serious Toronto work market, I proceeded stubbornly for absence of information on anything better to do. What started my self important assurance was the plenty of exhortation on migrating to another city or returning to class, or surprisingly more dreadful; evolving occupation. I have some proposal or sensible orchestrate an agreeable degree of administration gave to customers.

A few hints for the higher help or a brilliant arrangement are given beneath:
Every switch should reinforcement worker and client documentation. Therefore, clients will be filled in as a second that should be possible. Speed up the web.

- Decrease in worth.
- Pointing gifted in IT or Business Management.
- Improvement of HR.
- Further exploration.
- Centralization and the portion plan appropriately.
- Understanding drawback customers and steps are expected to unwind the issue.
- Clients should whole illuminated advancement.
- Adds another alternative for the administration.
- Solid client security and keeping away from bogus.
- New special promoting exercises.
- Quick specialized administrations to purchasers.
- House to house variety bill by the association.
- Meeting with the purchasers for input.

4.3 Reflection:

Before my entrance level position, I had recently theoretical learning of frameworks organization contraptions, various shows and hardware. As of now I can without a very remarkable stretch layout a framework system and moreover can

CHAPTER 5 CONCLUSION AND FUTURE SCOPE

5.1: Discussion and Conclusion

Rehearsing, all things considered, satisfies any sort of training. The target of this transitory occupation is to get the data and aptitudes need to make ISP Setup. Me joined at Earth Online Limited and worked in there as a group according to our organization's vision to enhance my insight about systems administration. I should state I learned numerous significant things including

little focuses during my temporary position period. It was an extraordinary encounter for me in a work with genuine experience. Dedicative and outlook is the main thing to work in a particularly refined climate. It is past simple authority matter. For the majority of the designing or specialized organization, the architects need to working execution get appended with the working process.24x7 administration checking has shown me how to deal with specialized staffs and opening work in a proficient way. As there was a chance to serve Online restricted numerous ways.

I took in a great deal about systems administration that will me in future. I have accumulated a great deal of involvement with the (xenial broadband restricted) ISP all through the whole temporary job time frame. There was an extension in the field of PC network arranging and planning, Data availability, guaranteeing security, various kinds of utilization arrangement and keep up. In this report I have clarified my encounters and about Network Designing and Optimization.

I have taken in such countless critical systems from my managers and partners and directed a few undertakings consistently all through my whole Internship period and at last procured the certainty to manage Assignment myself. The MikroTik and Linux working framework give us an exhaustive presentation of consistent, solid and fruitful organization. It is an incredible chance to utilize the information and abilities that I had procured. I additionally figured out how to deal with basic blames and got the novel thoughts. Therefor a legitimate organization configuration is significant think about an association, without this it is absurd to expect to deal with all organization uphold.

5.2: Scope for Further Career

All things considered, getting a new line of work can be a major test of anybody of our nation, particularly on the off chance that we have no insight. PC organizing is the foundation of the Internet. IT-framework and IT Software go connected at the hip. Both are similarly indispensable for making our lives straightforward. Systems administration is evergreen, it's exclusively going to get bigger and a great deal of convoluted. That is the reason I pick temporary job, since it can assist me with improving my vocation opportunity into an encounter. The basic goal of my brief situation in a specialist setting, suitable responses for genuine issues is to apply the data gotten in

the homeroom. Add to facilitate with other master's executives and master associations. To fulfill the commitments of my entrance level position, I'm rehearsing proper business habits.

Profession openings square size was acquired in certain regions under the MikroTik framework. The vocation openings in the MikroTik framework square size referenced isn't exclusively stage MikroTik framework, notwithstanding, altogether covers various fields. Advancement right now supply open source programming designers colossal interest they open inventory programming and organization engineer. Yet, it isn't extremely simple to enter as a fresher, however on the off chance that I am enthusiastic about it, at that point I need to study and practice hard. Dissimilar to programming, where the work is more limited to just coding this region requests involved or useful information on various systems administration equipment, stages, network conventions and all the more critically critical thinking aptitudes. Along these lines, as a fruitful temporary job, my future will be the extension.

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9. learn about MikroTik : << https://mikrotik.com/ >>