

**INTERNSHIP ON NETWORKING AND COMMUNICATION
ENGINEERING**

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

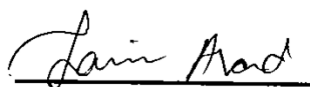
DHAKA, BANGLADESH

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APPROVAL

This Internship titled “**INTERNSHIP ON NETWORKING AND COMMUNICATION ENGINEERING**”, submitted by “**Mosaddek Hossain**” and ID:213-15-4463 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 “**16, July, 2024**”

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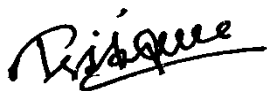
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DECLARATION

I hereby declare that, this internship has been done by me under the supervisor of Raja Tariqul Hasan Tusher, Assistant Professor, Department of CSE Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree diploma.

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ABSTRACT

That means if there are two and more computers linked together and are capable of retrieving as well as transmitting data or information then it can be referred to as network. When we want to increase the number of PC's or exchange data or information from one to another that time, we require some special type of PC it is known as Server. So, for this type of work in the network, there is also different type of servers have it. For Example –Network design, Network servers, configuration of routers, assigning an IP address, routers and configuration among others. It is therefore the aim of participation in the internship program to obtain practical experience in networking. This internship project aims to delve into the realm of advanced networking technologies with a primary focus on optimizing performance and bolstering security measures. Security will be a key facet of the internship, involving the exploration of modern cybersecurity frameworks, intrusion detection and prevention systems, and the deployment of encryption protocols. An emphasis will be placed on identifying vulnerabilities and implementing countermeasures to fortify the network infrastructure against potential cyber threats. I decided to complete my internship at Atova Technology. I appreciate addressing many kinds of problems. Through my report, I went into great detail about everything and my experiences.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Internship is a great learning opportunity where we can gain experience for some useful and relevant development for academic or career. Internships give us an opportunity to develop new skills and advance our careers. The internship gave me the opportunity to infuse new ideas into the workplace, which I started learning about networking at Daffodil International University while pursuing my bachelor's degree in computer science and engineering. That was my only academic education. And from here I intend to do the internship in imitation so that it will be useful in my career, and that's why I decided to do the internship in networking.

1.2 Motivation

I was motivated towards the internship by considering the future career. Looking for an experienced person in all IT sectors in Bangladesh or outside the country which is very necessary in the field of work. It was easy for me to form a network within a few days when I learned basic networking. But my range of knowledge was very limited, and so I wanted to increase it. I believed I would get such an opportunity. And for these I go for internship. And in internships I can expand my knowledge base and learn more from others' successes and mistakes.

1.3 Internship Goals

- Exploring Different Spheres and Employment Possibilities!!!
- Strengthen Your Resume
- Aha, about the goal to study at least once a week, to read something, to think about the new networking idea and tools.
- Besides, is it possible to be informed about the most fundamental characteristics of the networks, such as the TCP/IP or DNS, DHCP, etc.?
- Suggesting the sequence of actions for managing feedbacks that should be put into practice during skills' internment?
- It considers a possibility to receive the information concerning the principles of the network security and the most widespread standards of security.

- This means making preparation for the acquisition of practical experience to plan and deploy networks
- Collaborate with team members on networking projects and learn to work in a team-oriented environment.
- If the networking projects involve having to work closely with other members of the team, then the benefits include getting to understand.
- Training and experience regarding the necessity to produce clear and concise working documentation, particularly of networking formats, troubleshooting processes, and/or solutions.
- To harness the strengths of the particular approach or to increase the flexibility in the networking environments and technologies?

In this sense, my purpose for this entry level position is to seek for pragmatic details honestly. To be aware of atova technology as an organization and who all are there in this organization, how I can be useful for this organization and what sounds out the voice of my professional goals and the long-term self-success. It gives me immense pleasure to announce that I am working for one of the most prestigious organization's CCNA Router Network. Networking In the future I will have to practice Networking Basically the term 'Networking' has a very literal meaning because it is the creation of a link between two PCs or a number of PCs.

1.4 The Company's Introduction

On my internship I was placed at Atova technology. They just created new and unique products and services. When considering their business model, it is also important to note that the theme of client satisfaction has remained at the forefront. All of them are very friendly and positive and respect all members of the employees of the firm.

1.5 Layout of Report

The document presents a brief of the most vital concepts I have come across while studying networking for the past four months. It has captured all the vital domains of my internship. The way I attempt to narrate a trip generally involves trying to partition it into chapters so that others can easily follow and comprehend the events. In the said chapter, I highlighted my concern about internship, how I managed to look for reasons to do internships, my personal and professional goals towards this internship, as well

as the summary of my firm. Information about my business was highlighted in chapter two. This paper is therefore focused on section three what they offered where they were and who they want to reach in the future. In this chapter, all the activities conducted by me and all roles I took in the past four months are described. It includes all I do, all that I accomplish, and even all that I fail to accomplish. In the fourth chapter, the overall performance of the internship, new problems faced, and action taken were described in detail. The conclusion is done in the fifth chapter which is the final chapter of this research. According to Event and Activities, Challenge & Router OS, regarding this Cisco, the work and activities of this daily routine have been described in this chapter Conclusion & Scope for Future Career, I have stated some conclusion and scope for future career.

CHAPTER 2

ORGANIZATION

2.1 Introduction

An ISP, or web benefit supplier, is an organization that can offer its clients Internet and other web-based administrations. This is the company of data communication and technology to provide the services such as Rocket Speed Web, Information Network, Intranet (LAN), Camera Solution, Web Development, Ecommerce, Web Hosting, Space, SMS Services, SEO Solutions, E-mail Services, Wi-Fi services, Program, Server, Co-location, and Consultancy Etc. In order to maintain an immediate connection with the www (World Wide Web), this company generally maintains web servers. Our company offers an important computer program, a password-protected client login or method through which a client could access the world wide web and communicate mail with other individuals, which ISPs grant their clients. ISP also provides other services as well. ISPs can vary in measure, some are small, being managed by one person, while others are large companies. They may also differ in terms of radius, some as it were help users in a certain city while others have territorial or national features. Infolink Limited serve the domestic consumers and targeted corporate consumers in a particular city. They too provide Domain and Facilitating benefit, FTP benefit and so on.

2.2 Mission of Atova technology

- To compel the community, increase its confidence in quality learning by assuming state of the art methods.
- To open new fields and horizons for potential leaders of the future through expanding the possibilities for them.
- To attract the right talents for the implementation of standard values that allow leaders to succeed.
- Their vision is to capture the spirit of youth in serving and equally in responding to emerging needs in both the national and global context.
- Forming an international top talent organization to reduce disparities for the greater benefit of society.

2.3 Vision of Atova technology

By attaining the vision of the institute, to be recognized as an institute that offers a wide range of knowledge to the society.

CHAPTER 3

ACTIVITIES, TASK, AND PROJECTS

3.1 Daily Task

As an assistant I learned many things from them that were not taught or taught in my class. I learned a lot from my seniors and my teachers. Many a times I have had to work shifts that are longer than my mandatory hours. I recently worked 54 hours a week or more. I had to go to work by 9 am or earlier and leave work by 6 pm. The things I had to do were check my attendance, check my to-do list, check my organized list, and more. I have learned countless things in the months since I became a down to earth encoder. Which I think will come in handy later in my career. It was important to create some new situations to try the neglected method of doing something. In an organization I was dependable to keep all network competent and IT gadgets. It was mandatory or necessary for me to check each device. Provide support for all networking devices and check that computer framework programs are up-to-date. All computer or network devices were displayed in front of me and it was my responsibility to check them properly in the evening if they were working. The most important challenge among them is that I have many clients in Computer and Computer Related and Network Limited. All of them spent most of their day in their offices on these computers and portable stations. I ran into trouble with these garages now and then trying to level them up correctly. I have carefully completed the operation and maintenance work as per the requirements of my company.

3.2 incident and Activities

Even in my internship year I followed all the activities and training sessions of the organization. These are the events I have worked closely with my body and my mind, and they affected my career and the process of becoming a professional. I was able to get practical experience that enabled me understand how to meet tasks, and how to approach many different challenges. She was in a position of explaining me all that concerns the router and on how we could guide it in order to be assisting everyone with the internet. I also know how offices are constructed and how well they could too be

arranged. It's really something that every intern should know once he or she applies for an internship. I was able to gain a first-hand experience on what going on in an office and operating in a business institution during this internship. This is because by referring it as "Atova technology", a company can offer several trainings to its interns, conduct numerous event programs. As pertaining to my educational goals, I was expecting to identify courses that involved installing and repairing computer issues, Operating system, Local Area Network, Metropolitan Area Network, Wide Area Network, Wireless-fi Networks, Client and System Servers and Storage servers. Somewhat that did catch me off guard was on how to manage the CCTV system that was as a sign of what all it entails. The organization is maintained in a way that each assistant assembles as much information about the given task as possible. They will also as well be able to familiarize with the office since they will be attending it every day with the intention of being wise and prepared in case their services are required.

3.3 Activities and Project Task

Being an intern allowed me to have my hands full in working on numerous projects, and exposing me to much information. After that was done, I was asked to participate in other projects and was given a copy of my development appraisal in advance. The activities have been altered and I have done most of the exercises from The assignments were changed and I have all of them. My exercises have been dictated by the chores that have been assigned to me alone. First, there are certain things which I get to know at the beginning of my internship that is I got to know a parcel of things.[1]



Figure 3.1: CAT 6 cable and connector

Figure 3.1 shows two connectors and cat6 cable used for networking. The cable has six wires and they are blue violet yellow orange.

3.3.1 patch a CAT 6 cable:

To do the work I consider CAT6 cables then strip the cable and identify it by color of sphere green white blue white brown white orange white orange blue green brown.

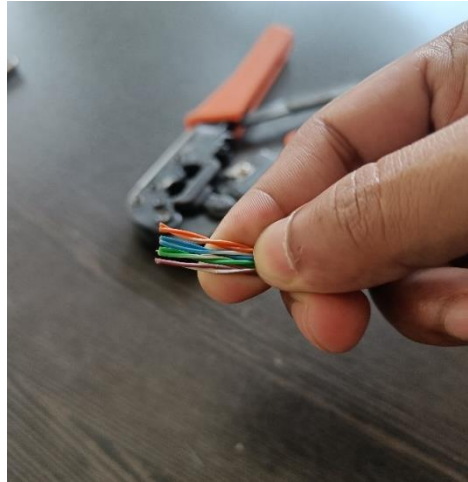


Figure 3.2: CAT 6 cable

Cut the RJ45 wire neatly then carefully insert it into the connector. Figure six cables will be inserted into a punch machine and fed into a converter that will connect to a router or other device.



Figure 3.3: press RJ45

By taking the RJ45 connector tip and inserting the tool into it easily, press the tool carefully while inserting the tool and the patch is complete.



Figure 3.4: Put CAT 6 cable into RJ45 connector

Figure shows a complete R45 connector. It has a cross over connector that goes from a layer two device to a layer three device.

3.3.2 How to configure a Tenda router:

In my communication LAN Arrange association, I got to know about how to design a Tenda router. To begin with, I shall need a Tenda switch to I interconnect with electricity. Upon interfacing the control of the system, I connected one of the cables to the Faded harbor of the router. Then the properties can be further utilized by creating the web association. Then the switch has to be placed in its position. I am able to type this report using my portable workstation, in particular through accessing the Wi-Fi menu, click on Tenda then type.[2]



Figure 3.5: Tenda router

Above image shows tender router which is very popular router for internet use it is layer three device.



Figure 3.6: Configure Tenda router and give the access password

Figure shows tender router and its IP address (192.168.0.1) the tender router IP that a user will use to access the tender router's interface.

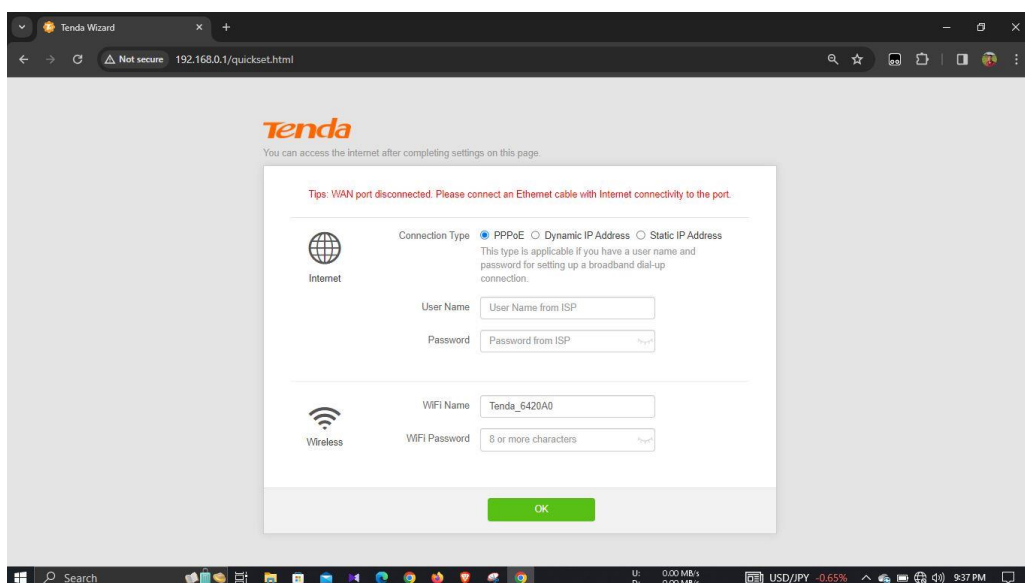


Figure 3.7: Login page

Tenda router login page is shown. And their router password and Wi-Fi password are given. It can be called homepage of tender router. A user enters the login page and gives his user password and Wi-Fi name.

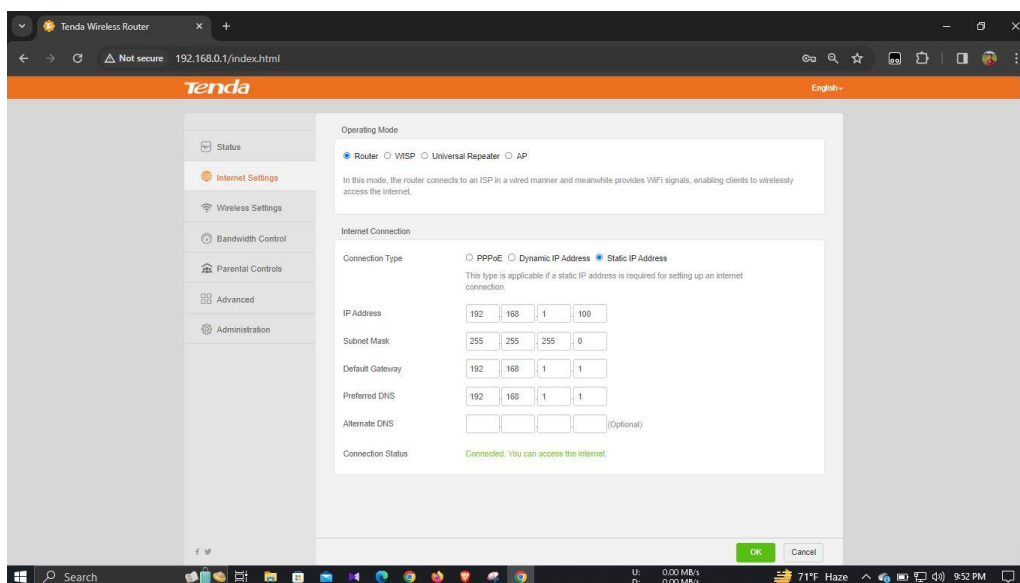


Figure 3.8: Internet Setting page

Tenda router's internet setting options show the router's IP address, subnet mark, default gateway, etc. After entering the free interface, here the user will give his WiFi IP address, subnet marks and default path.

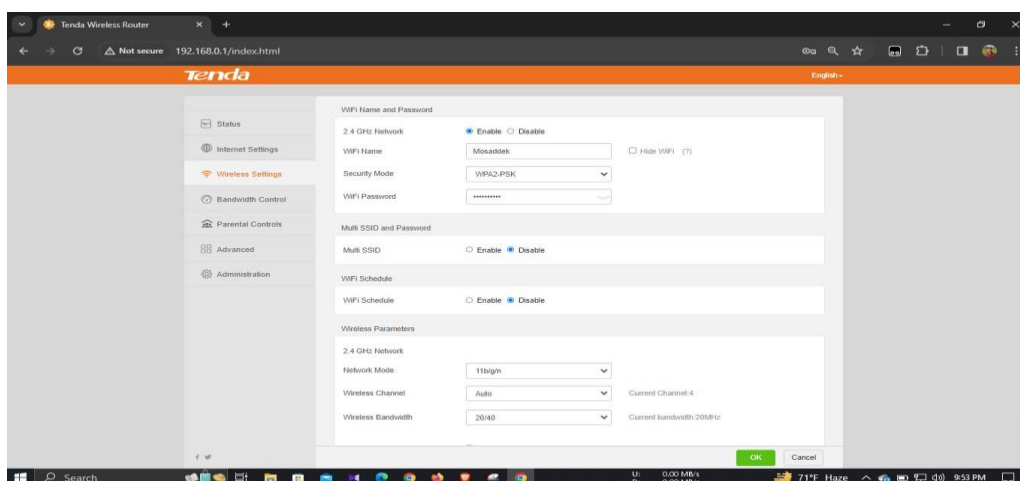


Figure 3.9: Wireless Setting page

The function of wireless settings is to enter the name of the wifi, password and select the security mode, which is shown in this image. Here user his password no wifi and enable ssd and why enable wireless subnet mask.

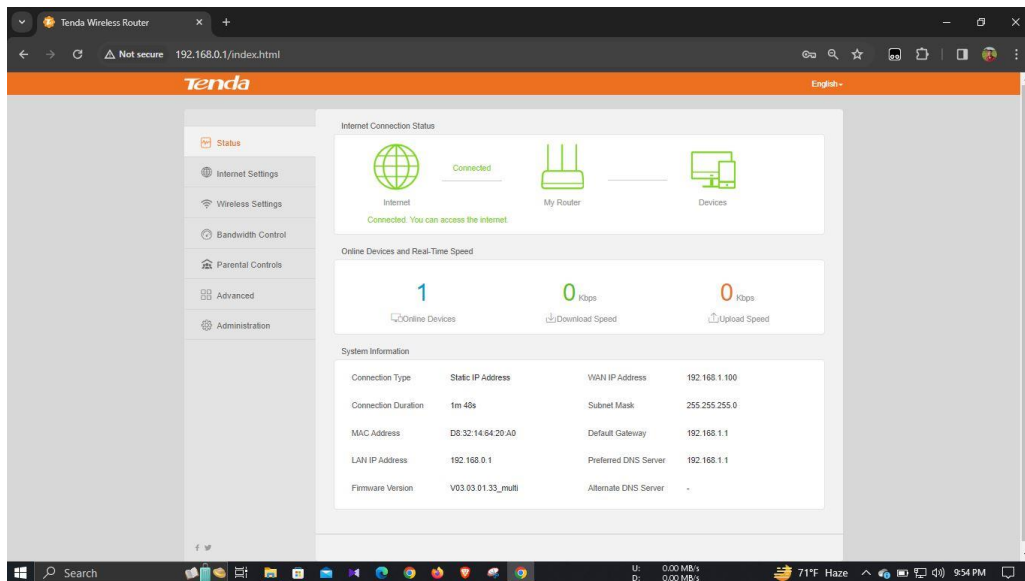


Figure 3.10: status page

Shown is the status bar where Internet routers and devices show. And here it also shows how much speed the internet is uploading and downloading.

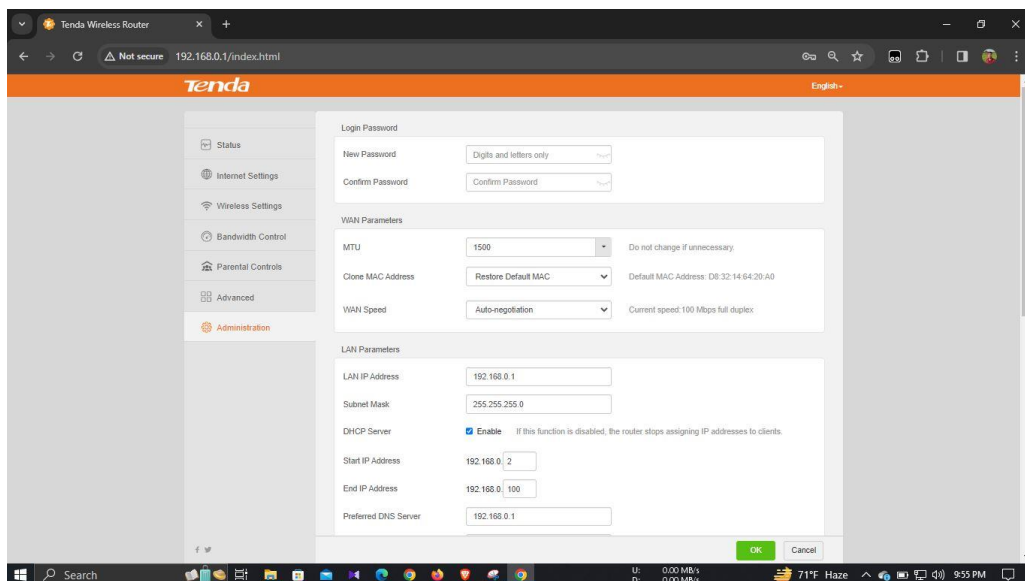


Figure 3.11: Administration Setting page

Figure shows the administration option where the DHCP server is enabled. It will complete wireless setting after enabling DHCP in advanced settings

3.3.3 Categories of Network

A computer network allows connecting and communicating with other computers. the three major types of the network are LAN, MAN and WAN.

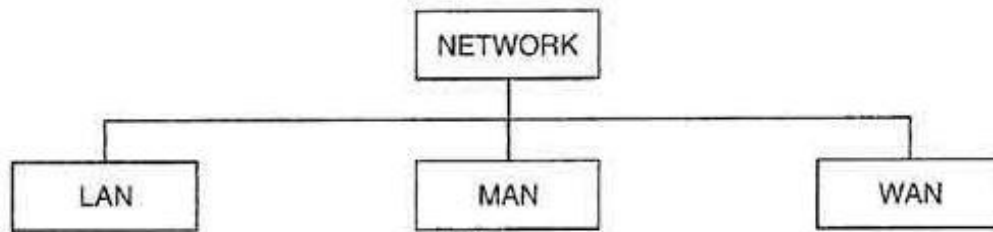


Figure 3.12: Network Categories

Local Networking:

LAN Device are Local Area Network device. Search for its use where it is needed together with other relevant items such as in an office, building or at house. LAN are small even very long ranging from few users in a homely network to thousands of users in an officer or a school to one's user a device in an enterprise network. It provides data transfer rate of 10 Mbps. [3]

MAN:

MAN (Metropolitan Area Networking) Metropolitan range organize means a computer arrange to larger than a single building nearby zone organize (LAN) though is established in a single geographical area that is smaller than a wide ranging organize. For the most part, it includes a few LANs connected using specific spine affiliations. It may be used given allude to open utilize organizing foundation in a district or locale.

WAN:

WAN (Wide Area Networking) are same type of LAN network They connect large networks that cover city or zone and ask for rent their networks the right to use from their clients undefined It may still be made a possibility through a public transmission system or through the formation of a private network. In this segment, the best known of all, the Internet universal WAN is described. Network data transfer speed ranges from 56 kbps to 1 Mbps depending with the network type to be used.

3.3.4 LAN Network Create:

I am learning how to setup a Local area network (LAN) organize. First of all, to setup LAN arrange one requires CAT 5 or CAT 6 cable. To complement this assignment, we need to solder a Organize switch and use a clipping device for RJ45. Depending on the associations needed we buy one or more Network switches. This is true because a 16 port or 24 port arrange switch is required if 15 PCs are to be connected.



Figure 3.13: CAT 5/CAT 6 cable, Network switch, PC

Very quickly we gathered all the equipment and started working. And in this way, we realized that the electrical cables that will be connected to our computers can be cut to our needs, patch cables and connect the network of all computers through today's RJ45 connectors. And this is how we complete our LAN network.

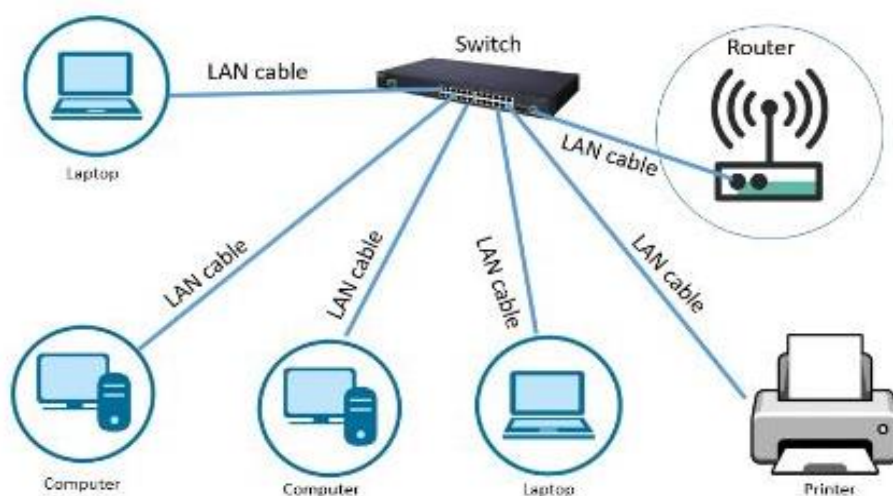


Figure 3.14: LAN Network

3.3.5 Create MAN Network:

Concerning a MAN range of a metro community, it is possible for the customer to access PC promises in a geographical location instead of being privileged by a broader area (LAN) but not more extensive than the region that a vast area organization (Faded) covers. It is also used with regard to relative or proposed bearing relationship to hardness lines in order to portray the level of integration of a several neighborhoods. The last utilize is at times furthermore insinuated to as the ground's organization This simply terms refer the kind of organization or set up of the ground to support all the mentioned utilizes or uses of the ground. Due to this the organization is an open one and therefore can stretch from between fifty to seventy-five miles in radius. Larger goals evoke quicker transports of data in organizations GPS.

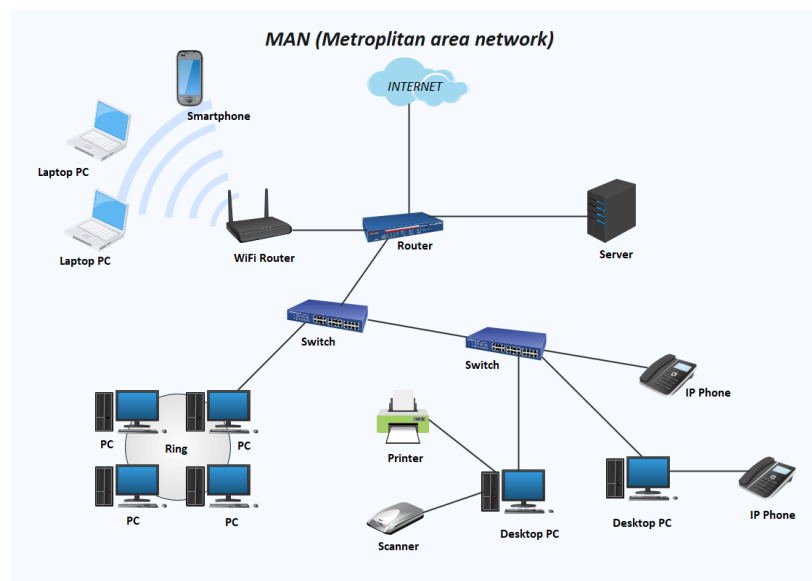


Figure 3.15: Metropolitan area network

A metropolitan area network is shown where various devices are connected to the Internet.

3.3.6 Create WAN Network:

Defining Needs: Even more, WAN needs and wants for are to be delimited explicitly because it is imperative as regards such a network. These include; Bandwidth: Network capacity: the amount of bandwidth available in the system for networks Data latency:

time taken the data to pass through the network to a given destination

System Security: feature that improves the security of the network to allow better communication between computers among computer systems

Scalability: the ability of a network system to accept or accommodate a greater number of user accounts in the network.

Site Examination: Examine the aspects of the WAN that needs to be connected, for example; network topology to be interconnect, problems and location.

Select WAN Technologies

Choose Connection Types: Consequently, patrons should go for leased lines, MPLS, VPMs or any other that they prefer according to their desire and cost.

Thinking about Redundancy: This led to development of a plan that would afford high availability by adopting redundancy forms. This can encompass users' multiple ISPs, probable paths of transmission between end points, or even backup scenarios.

Members needed for connection

Normally as working on any assignment there is a requirement to connect members have to be selected in order to make connection and compile data from different sources available on the internet.

Implement Firewalls and Safeguarding Measures: Ensure that every information that has been sent or conversely, received through the cyberspace is protected by firewalls as well as other means of protecting the exchanged data.

Choose routers and switching devices

The WAN Opi routers and switches must support the necessary services and traffic patterns in this WAN Opi

Map the WAN Opi

addresses to the devices. administer and try to make sure that other people do not use materials that belongs to another person.

Encipher the Traffic: The encrypt sketches will be represented by e and decrypt sketches will be represented by d. g. Some of the following options are available

secures, The Internet Protocol safeguarding which is known as IPsec to secure the data in transit for the Virtual Privy Networks (VPNs).

To monitor and/or restrict the amount of traffic that is passing through a specific section, utilize WAN sections that include ACLs.

Routing Protocols. The next process is to police or routing protocols that are necessary for the site interconnection using the common routing protocols such as OSPF, BGP, etc. among others.

Perform tests that aims at finding out whether WAN has the capability of supporting the entire network's traffic as the current traffic demand and as it continues to scale up.

Failover Testing: It should also be deemed if a failure will have an influence on the interconnectivity by analyzing HO and redundancy.

Explain WAN and the type of designs used in it and whether or not it has any characteristics that are different from other networks.

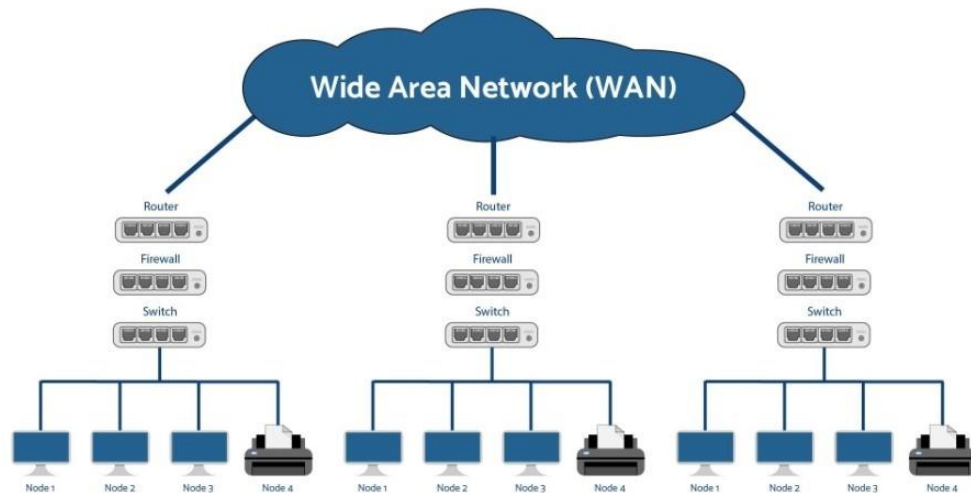


Figure 3.16: Wide Area Network

Develop a support structure that will help the user in case of any problems they encounter or any arising issue with the network. Identify step-by-step procedures for computer networks troubleshooting frequently occurring issues.

3.3.7 Configure a CISCO:

Later when I was done with a few tasks they assigned me an assignment wherein they gave me a CISCO router. The assignment proved to be quite challenging to me, but my supervisor provided assistance. [4]



Figure 3.17: CISCO

To configure (CISCO) therefore, we have to make sure that CISCO router is connected to mt computer. Then we try to log CISCO router.

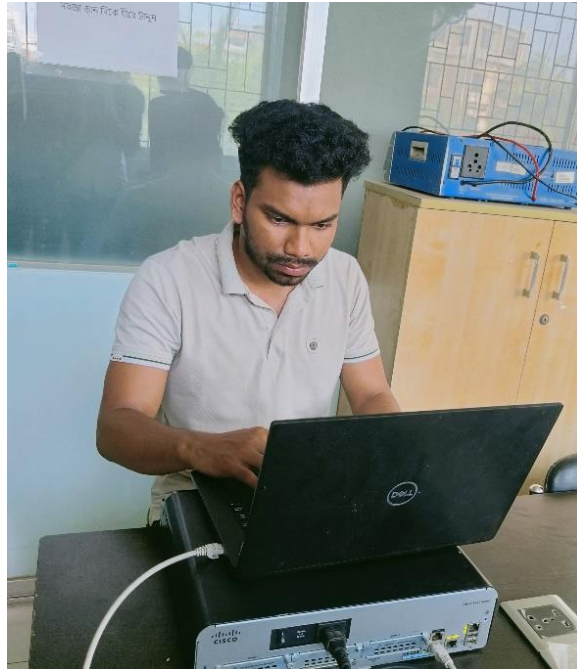


Figure 3.18: Configuration CISCO

There is a set of procedures that one is supposed to follow in order to configure a Cisco 1941 router. As for the specifics, my CISCO Router model is 1941.

3.3.8 Virtual configure a Cisco Packet Tracer:



At first i open a Cisco Packet Tracer, then i select 2901 series router and configure the router

3.3.9 Virtual configure a Cisco Packet Tracer:

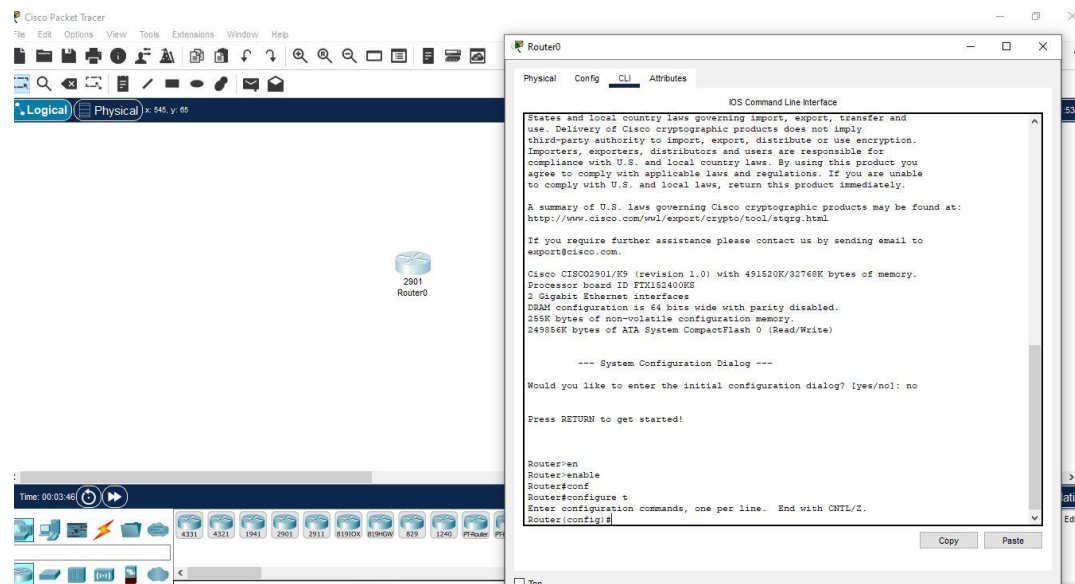


Figure 3.19: Configuration CISCO router

3.3.10 Virtual configure Statics router:

Here it is a lesson on IP routing. This author will discuss static routing and dynamic routing before delineating the advantages and the disadvantages of each. You then just get the opportunity of configuring and also monitoring static routes on IOS routers through CLI including special scenarios like the default routes.

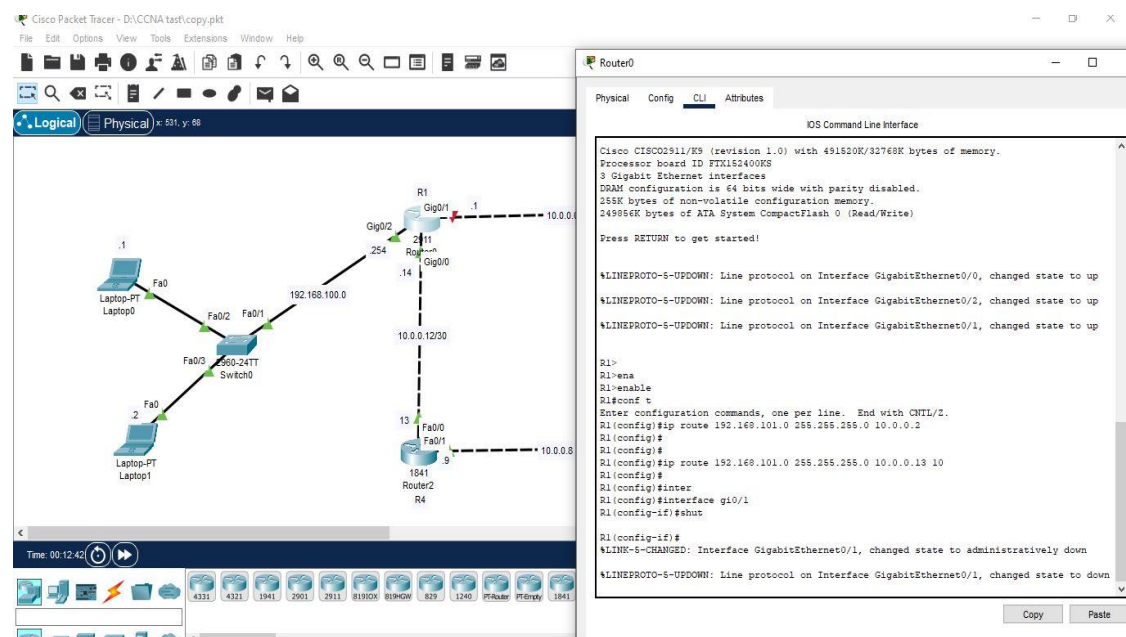


Figure 3.20: Statics router configuration

I then arrange Static network on the router. The first command sets the hostname by typing the hostname command. All the IP addresses should be assigned on the interfaces. To check static routes, we should use the command show Ip route. Test connectivity between devices. Set a default route. As you recall, static routes are most appropriate in simple networks that never change.

3.3.11 Virtual configure RIP router:

Enable RIP: To set up global configurations, type in configure terminal to enter the global configuration mode. Activate the RIP routing protocol with the command router rip. Specify RIP Version: To include RIP version 2, send version 2.

Advertise Networks: The network parameter is the following:

It allows to define the networks that must be advertised. Type in your network number in this field. Assign RIP to Interfaces:

To facilitate RIP on specific interfaces, use the network command each for the intended interface.

Assign RIP to Interfaces: If you want to include specific interfaces in the RIP process, use the network command for each interface

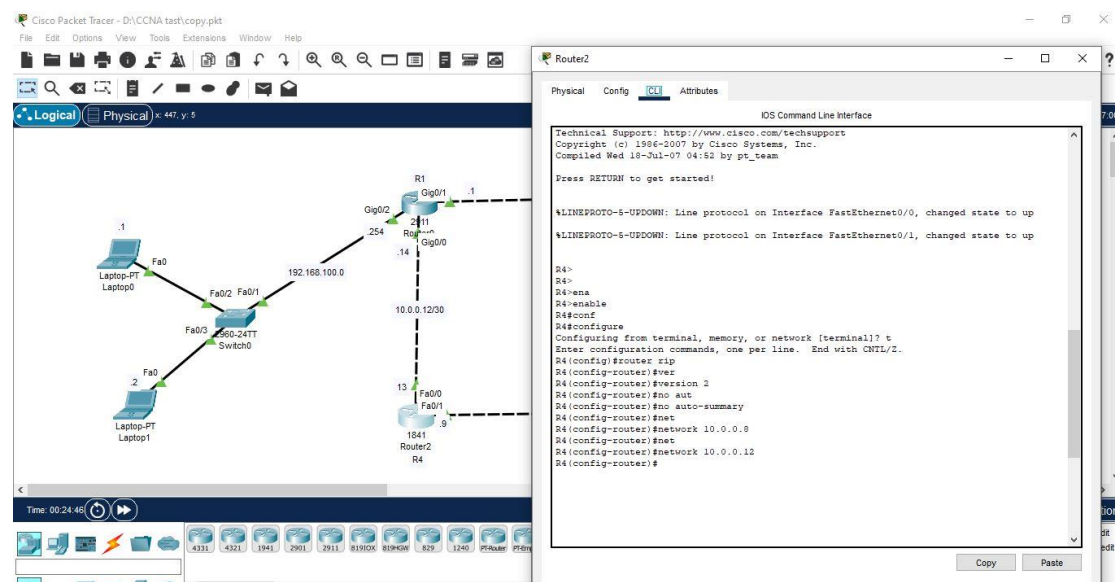


Figure 3.21: RIP configuration

This example configures RIP on a router with two networks, 10.0.0.0 and 192.168.1.0. Remember to replace the network numbers with the ones applicable to your network

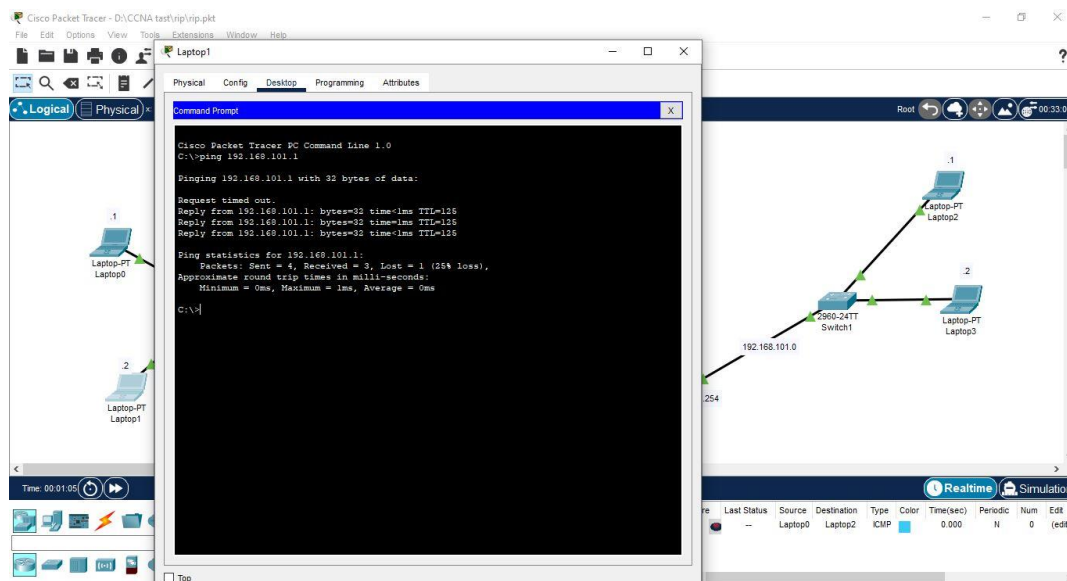


Figure 3.22: Ping for confirm the network

setup. After configuration. In the detailed report, parts include the RIP, explanation of configurations, course of action and probable ramifications of configured RIP. Another important command that needs to be executed is show Ip route, this will help in verifying that RIP routes are properly advertised. If there is anything else that needs to be configured or in the event of encountering some issues to fix, one can do well to read through the official cisco documentation or any other reputable networking forums.

3.3.12 Virtual configure EIGRP router:

The **Enhanced Interior Gateway Routing Protocol (EIGRP)** is a comparatively advanced routing protocol which has been designed by Cisco and it is called as Enhanced Interior Gateway Routing Protocol. Being an improvement over EIGRP, it provides efficient routing in an autonomous system.

EIGRP also supports a much larger network with the network having a with up to a maximum of one hundred. EIGRP is similar to IGRP in that the EIGRP metric may reach the thousands of hops. Compared to other IGP protocols, EIGRP uses the Diffusing Update Algorithm (DUAL), which in turn makes its convergence faster. Convergence speed is as fast as some of the other contemporary routing protocols. However, unlike other protocols where the routing table update is propagated, EIGRP updates the entire routing table only in case of a change in the status of the destination.

The screenshot displays two windows from Cisco Packet Tracer. The main window shows a network diagram with three devices: Laptop-PT Laptop0 (Fa0), Laptop-PT Laptop1 (Fa0), and a 260-24TT Switch0 (Fa0/2, Fa0/3). Laptop0 is connected to Switch0 Fa0/2, and Laptop1 is connected to Switch0 Fa0/3. Switch0 Fa0/2 is connected to Router1 R1 GigabitEthernet0/2. Router1 R1 has interfaces GigabitEthernet0/0, GigabitEthernet0/1, and GigabitEthernet0/2. A dashed line indicates a connection between Router1 R1 GigabitEthernet0/0 and Router2 R2 Fa0/0. Below the diagram is a command console showing the time as 00:15:10 and various status icons. An inset window titled "Router0" shows the "Config" tab with the "IOS Command Line Interface". The interface displays the following commands and their outputs:

```
Press RETURN to get started!  
  
$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up  
$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up  
$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up  
  
R1>  
R1>  
R1>  
R1>ena  
R1>enable  
R1#conf  
R1#config t  
Enter configuration commands, one per line. End with CNTL/Z.  
R1(config)#router eigrp 100  
R1(config-router)#no aut  
R1(config-router)#no auto-summary  
R1(config-router)#netw  
R1(config-router)#network 192.168.100.0 0.0.0  
R1(config-router)#netw  
R1(config-router)#network 10.0.0.14 0.0.0  
R1(config-router)#netw  
R1(config-router)#network 10.0.0.1 0.0.0  
R1(config-router)#  
$DUAL-5-NBCHANGE: IP-EIGRP 100: Neighbor 10.0.0.13 (GigabitEthernet0/0) is up: new adjacency  
$DUAL-5-NBCHANGE: IP-EIGRP 100: Neighbor 10.0.0.2 (GigabitEthernet0/1) is up: new adjacency
```

Enabling EIGRP:

Access the router's global configuration mode:

Router(config)# configure terminal

Enable EIGRP with your desired Autonomous System (AS) number:

Router(config)# router eigrp AS number

EIGRP Autonomous System Configuration:

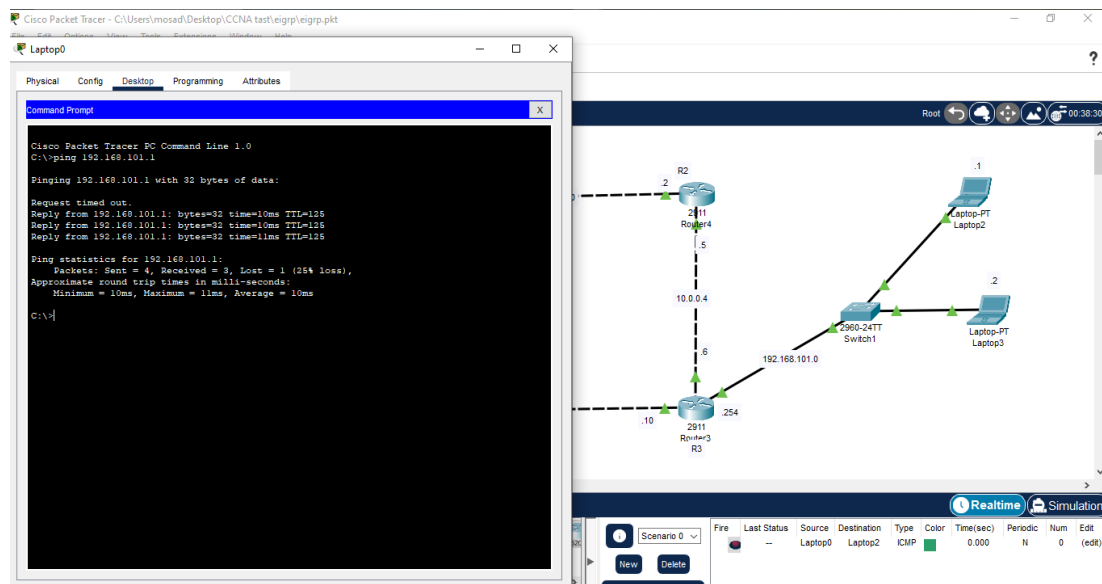


Figure 3.24: Ping for confirm the network

The router `eigrp` command with the AS number argument creates the EIGRP configuration (EIGRP classic mode).

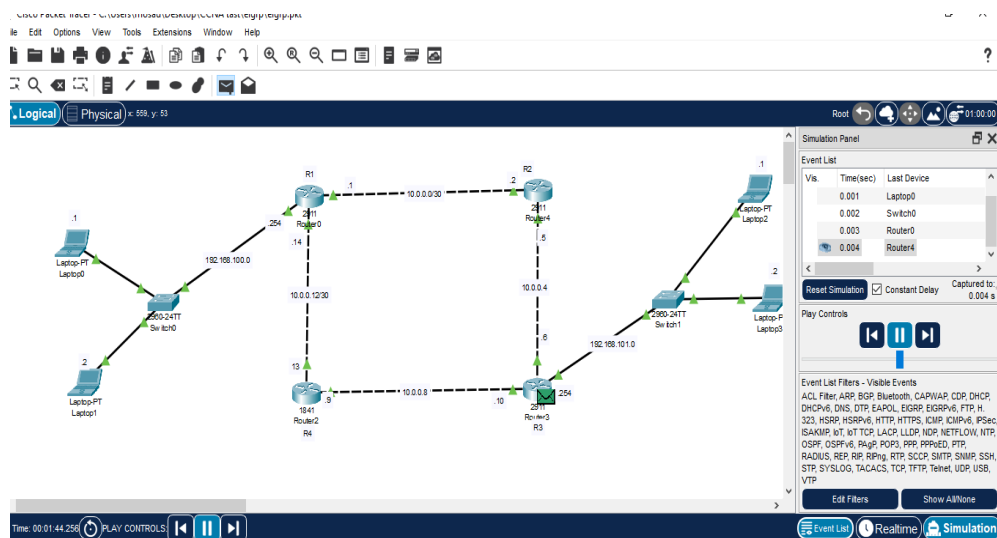


Figure 3.25: Simulation for confirm the network

3.3.13 MikroTik Router Configure:

When I was over with several chores, they offered me a job that was to set up a MikroTik router. Nevertheless, the assignment seemed to be rather problematic as far as I was concerned, and I required my supervisor's assistance. The following are the details of the carried-out operations. [5]

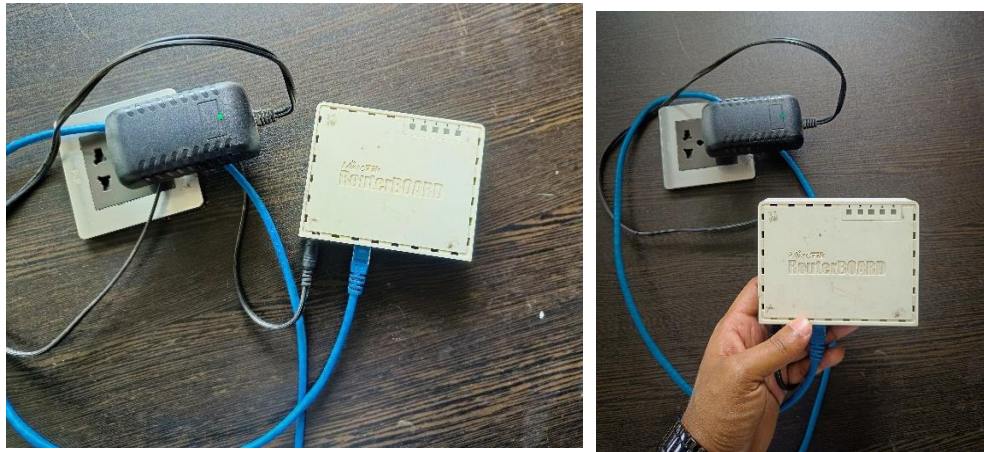


Figure 3.26: MikroTik Router

Let's start configuring the MikroTik router. First, we plug in our MikroTik router. After plugging in we login to the MikroTik feeding router.

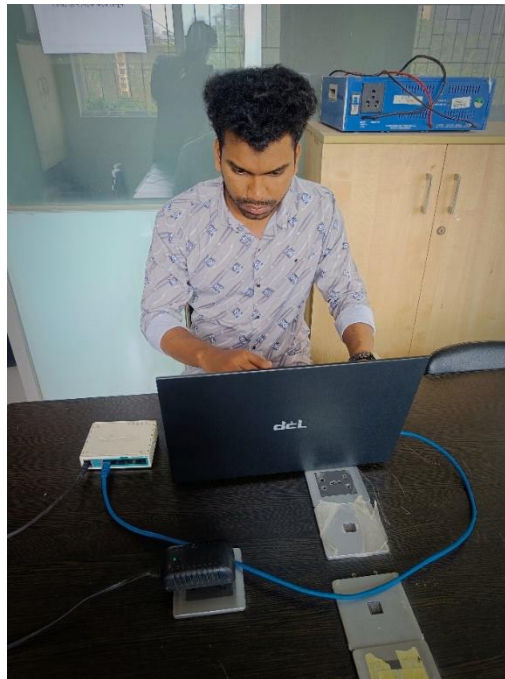


Figure 3.27: MikroTik Router Configuration

Alternatively, this means that Win Box maybe described as tool this facilitates convenient operation of the MikroTik routers for the user. The pending west with user friendly is written for the access as well as the optimized network security, it is as follow: In one way or the other, many network engineers depend on either using Win Box frequently every other day. Yes, I think the process I did is setting up a MikroTik router through the Win Box. The direct link to the Win Box Login Page is given below. Clicking on this link will take you to the webpage needed.

3.3.13 Virtual Configure a MikroTik Router:

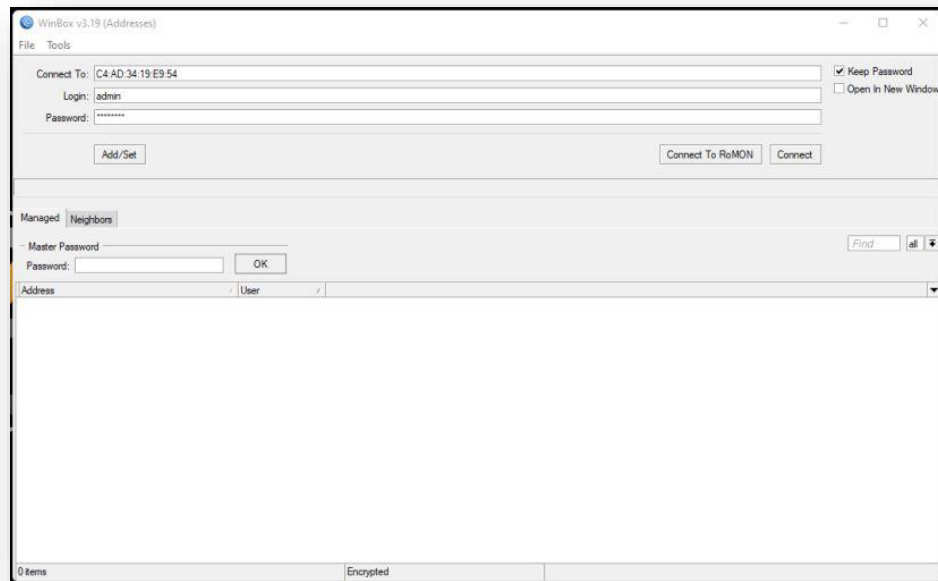


Figure 3.28: Win Box login page

Some tips for cataloguing winning methods Whereas one may be inclined, sometimes the ‘win box’ might be rather useful in informing our strategies as contained on the subsequent page are helpful hints for the cataloguing of winning methods to get at the methods of being and., we then type the password and also, the login name or identification number with the IP or Mac of the MikroTik router. To begin with, when one logs into the MikroTik router, they are initially welcomed by the first page, which is called the Dashboard. Below is the summary of the extended dashboard highlighted by the writer.



Figure 3.29: Win Box Dashboard page

The Quick Set utilized to perform fewer configurations. If the user clicks on the menu of the project, the dropdown list with notifications will be appear. When watching modes or lights in view, there is a message that connection may not be possible. Click "yes" to proceed. It will now be our turn to choose WISP AP or home AP Selecting which will create a notification pop up that says home AP notifications Selecting Home AP will create this Home AP Notifications. Next, select "Yes." The SSID or the name of the wireless network is now defined. Internet address acquisition method is then set to "Automatic, emphasizing its ease of use to the users in terms of accessing resources on the internet. Complete the Local Network settings; in the 'IP Address,' key in an IP address, in the 'Netmask' section enter the sub-network mask, and in the final selection area type 'DHCP Server.' Once you are done inputting the DHCP server range, for example 192: After that, click on the "NAT" button. 168. 5. 10 - 192. 168. 5. 254. To confirm these changes and apply them at the same time you will need to press on the 'Apply' option then the 'OK' button.

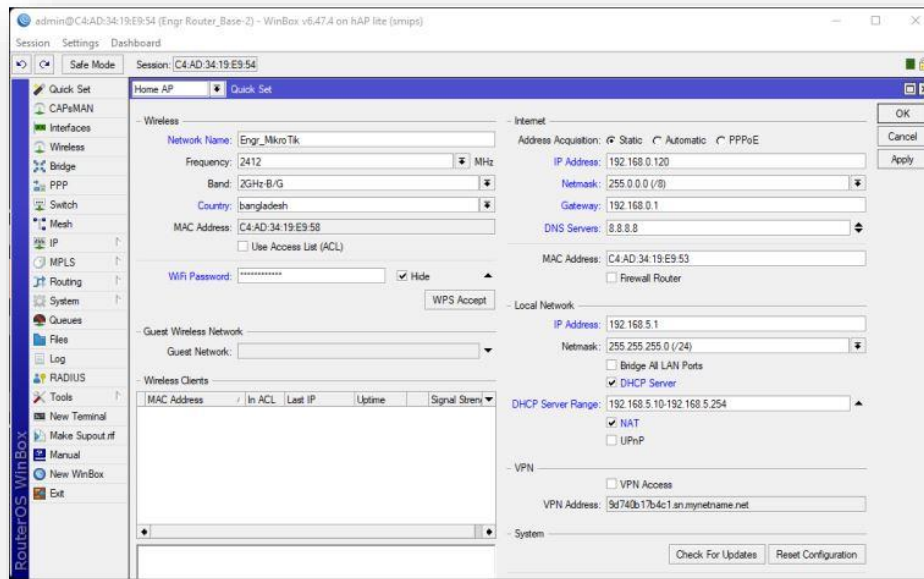


Figure 3.30: Configure Quick Set menu

The next thing is to connect to a wireless station. To do so, go a wireless icon and look for wlan 1. Then, right click and choose “ap bridge” as the mood the next typing “frequency” and choosing “auto”. In the screen that is displayed next, the SSID option, which dem symbolises the wireless access point’s IP address, has to be entered. As soon as you’re done, click the “OK” button. Security Profiles must then be configured for the devices. When you click, that security profile, you’ll be able to see one default security profile. Dou-bie-click it and the last item will have the word “dynamic keys” appear beneath it; choose the associated mood. Then under option “Authentication Types” select “WPA2 PSK”. Then click on the “Ok” button and then enter a password in the WPA2 pre-shared Keyword field.

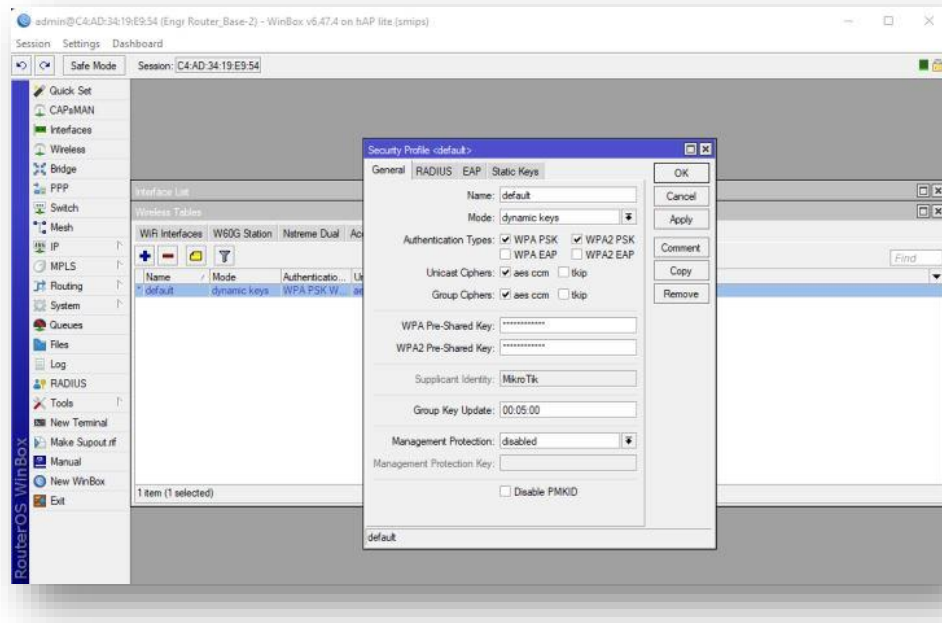


Figure 3.31: Set Password into “WPA2 pre-shared key

Now, after configuring configuring Configure Wireless Option and Configure Security profile your tasks, please navigate to the left pane of the Telecoms DHCP and choose ‘System’ then ‘Reboot’ and you get a notification alert. This router policy also helps me to ask Is it safe for me to reboot this Router? Then press "Yes" again

“So whole procedure is How to Basic Configuring in a MikroTik Router” In addition, I have understood what basic configuration is about and how to go about solving problems related to networks and routers. An example of a task I once had to carry out was diagnosing a problem throughout the router of a building. I therefore checked the other routers, only to ascertain that the central router was the one that was affecting the internet connection. Here more details and still it is brief explanation of the steps that I have followed

3.4 Challenges

I don’t accept any work as a test anyway four months that I work my affect and companions don’t share. It is within this way that I observed that there are some things that occur in the course of characteristic heading whenever I am nearly an hour Tuning in. I acknowledge that brief employments are 3 things: Thus, it would be inconvenient to refer to settling, by chance and their unit locale, as practical reasons for keeping

efficiency. Never sufficient work: The issue can be formulated based on the observation that ME allocation is not proper/ sufficient work. In any case, at least me, for a fact, was conjoined, riled up, as the finger was lifting me over my table and demanded to look. Inordinate work: However, having regard to the ‘unit field’ exploiting ‘fair interior’, the happy-tasting door for the part-time students, some work environments may or may not need young employees to be given gloomy work for very a long time. Dread of the request raised: Then suddenly they drop the temperature indicating that they were getting tired.

What it implies is that anytime there is a point about the worker’s societies and I get a chance to explain even myself I must do so by necessity! Still as to how I would be in a position to do X, Y, Minium I was equally a trifle worried. The pressure of being an independent colleague and specialist, nonetheless, was apparently coming from above had to assert the helplessness! Rival different understudies: Now and again, there were co-actors; Each of us could generate countless issues and maybe the single blooming cluster been who arrived here to make existence in an organization that has a chord with communitarians Internships within crevice would be especially future work or the endorsement for a veritable piece would be bona fide in an encounter work setting, it could not be too joyful.

- An interior might be encountering the exceptional challenges given underneath, this is how an interior might be facing the exceptional challenges as described:
- Population: Although not as drastic, rhymes and ornamental features shift the fashion pendulum.
- Therefore, make same capacity a special level.
- Thus most lifted challenges will be stood up to Firmware and perhaps for other aspects as well.
- Report a few grants from establishment.
- Contact with authorities can be described as a social behavior in people’s interaction with attitudes in their routine interactions with each other and representatives of authorities.

CHAPTER 4

COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

The primary purpose of temporary job is to gain knowledge and skills in equipment and systems management concerning its issue and options. I have also practiced and learned a little thing about both in equipment and organization works regarding to drilling here. At it is necessary to know what representatives do and say at such and a great number of other points proving their efficiency in building relationships and their readiness to assist in increasing the successes of the organization. An understanding of the broad systems administration competency activity for the improvement of the workers to interface will assist associations to achieve different results in various fields that may influence the reality in an organization. SACE or learning achievement is a statement of what an understudy is required to be able to learn, appreciate or perhaps achieve because of a learning process. Upon the completion of my entry level job Classes can last from a few days up to a week depending on the class. Programs include labs where you will design switches and assemble networks.

They became fit considering the yard space below this square.: Collecting and categorizing information about general and specific aspects of entry level position project. Engage especially in organization labs and site refreshes. Concerns with regards to equipment and programming frameworks at the conclusion of a workstation and purchaser.

These are the executive switches for review and investigation. To perform general maintenance and support of the framework. Find a solution as to the issue of optional level. Manufacture knowledge which fits well to address disadvantages. Observing the organization site provide weekly report to us. undefined Organize and present programming & update; implement and coordinate and test sort out Employer Services installation and plan. Besides that, corresponding to the learning outcomes, Internship On-Site Supervisor will give a presentation on such point as definitive systems and strategy.

4.2 Smart Plan:

Thus, to a to some extent organize debilitation happens. By then, problems are discovered after asking and handle the problem. That was certainly not the first time Through my first thought had been drawn to this solid theoretical chemistry but as all unused untouchables are always would like to think, it was something important to that couple of malicious occupational spies who preferred longer sessions, instead of being confined in approaching the next businesses directly. which I mostly believed was the shortest way to growth. Despite the fact that I knew somewhere past my psyche that chasing occupations online was a long-shoot wherever, not to speak of in the real Toronto work advertise, I stayed at it doggedly out of amazement of what could be better thing to do. But the amount of urging began myself important affirmation on moving to another city or returning to course, or even worse; advancing occupation. Below, I have a few propositions or some sensible: organize a pleasant degree of organization gave to clients.

- Every switch must be capable of handling and storing documents for the workers and clients. As a result, clients will be positioned as a second that can be filled in. Speed up the web. Decrease in worth.
- Accusing gifted in IT or Business Management.
- Improvement of HR.
- Further exploration.
- Centralization and the portion plan as required.
- Drawing from the discussion on drawback customers and steps it is hoped that the issue will be unraveled.
- Thus, clients should act in such way that they are fully illuminated advancement.
- Another option for the administration is expanded in this link.
- Client protection and staying away from fake and untruthful.
- New special promoting exercises.
- Fast turnaround of specialized administrations to purchasers.
- House to house variety bill contributed by the association.
- Seek the opinions of the purchasers.

4.3 Reflection:

Prior to my elementary level job, I was merely receiving socialization of theoretical frameworks of organizations gadgets, different shows and equipment. All things considered, I believe I can without much difficulty propose a framework system and more to the point, I can.

CHAPTER 5

CONCLUSION AND FUTURE SCOPE

5.1 Discussions and Conclusions

The report above glued me in having a number of important things that may be useful during my internship as follows; During my course of study at the university, I had the privilege to do my practical at Atova technology company which specialized in networking. This is a very large network and most of the things were obtained here and anyone would wish to take a course being offered here. I also got more knowledge about the routers that I had configured during my virtual practical session. Beside the above evolved areas, I also have acquired other related skills also.

And other skills that I have developed: These skills can be applied always as they can be described as transferable skills that are helpful in all occupations. It proved to be of great advantage to me every time I had to do a job or follow orders. Looking for a job right now as a computer scientist and this will be very useful for me. I firmly believe that, by gaining an internship, I will be one step ahead of all other students. The institute which I have established is known as – “Creative IT Institute” and it has proved to be beneficial in numerous ways. Over the time I have observed an enormous enhancement in my approach to working and other aspects of living as well. Some other useful suggestions that have also been provided by the ‘Atova technology’ tutors on how to go about selecting an option and a career. To them I express my gratitude for the support I received from them to enable me produce this work.

5.2 Scope for the future Career

This division has growth potentials There are many opportunities for the growth of this division. To my mind, as to many people, I am in an indefensible situation. Most of the learners in their learning and working experiences. Oh, then it is very high indeed. As their classmate, I understand that I will fit in the class and provide detailed work as required. Some organizations may wish to offer me a work surface on which to conduct the research on. Bangladesh is at present a making nation which has spacious number of employments available; I would like to work in the networking field here. During the internet I got a chance to make few close friendships with different people and

therefore get to where I want to be. As for my future, I feel quite sure about what I would like as how far it may be.

References

- [1] How to make a cat5 patch cable at available :<<<https://www.lanshack.com/make-cat5E.aspx>>>, last accessed on 29 February 2024 at 11:30 AM.
- [2] Tenda Router Quick Setup YouTube, 2020 [Online] at available: <<<https://www.youtube.com/watch?v=MZBI4vijBt8>>> last accessed on 10 March 2024 at 12:30 PM.
- [3] LAN, How to Set Up LAN Network at available: << [LAN, How to Set Up LAN Network? – Router Switch Blog \(router-switch.com\)](https://router-switch.com/lan-how-to-set-up-lan-network/) >>, last accessed on 15 March 2024 at 10:00 AM.
- [4] CISCO Basic Configuration at available: << <https://atovatech.com/> >> and <<https://www.youtube.com/watch?v=YZRQpZPp4E4&list=PLB57s6OrG8LjS4rXfvYZd95H5oHPabDcF>>> YouTube, 2020 [Online] available last accessed on 25 March
- [5] "MikroTik Tutorial 1 - Getting Started Basic Configuration", YouTube, 2020 [Online], at available: <<[MikroTik Tutorial 1 - Getting Started Basic Configuration \(youtube.com\)](https://www.youtube.com/watch?v=YZRQpZPp4E4&list=PLB57s6OrG8LjS4rXfvYZd95H5oHPabDcF) >>, last accessed on 2 April 2024 at 10:30 PM.



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