

INTERNSHIP ON COMPUTER NETWORKING

BY

Milon Chandro Ray
ID: 213-15-4431

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

Supervised By

Ms. Naznin Sultana
Associate Professor
Department of CSE
Daffodil International University

Co-Supervised By

Mr. Raja Tariqul Hasan Tusher
Assistant Professor
Department of CSE
Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JULY 2024

APPROVAL

This Internship titled “**Internship on Computer Networking**”, submitted by **Milon Chandro Ray and ID: 213-15-4431**, 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 **16-07-2024**.

BOARD OF EXAMINERS



Dr. S.M Aminul Haque (SMAH)
Professor & Associate Head
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Board Chairman



Dr. Arif Mahmud (AM)
Associate Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner 1



Md. Sazzadur Ahamed (SZ)
Assistant Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner 2



Dr. Md. Arshad Ali (DAA)
Professor
Department of Computer Science and Engineering
Hajee Mohammad Danesh Science and Technology University

External Examiner

DECLARATION

I hereby declare that, this project has been done by us under the supervision of **Ms. Naznin Sultana, Associate 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 or diploma.

Supervised by:



Ms. Naznin Sultana
Associate Professor
Department of CSE
Daffodil International University

Co-Supervised by:



Mr. Raja Tariqul Hasan Tusher
Assistant Professor
Department of CSE
Daffodil International University

Submitted by:



Milon Chandro Ray
ID: 213-15-4431
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First I want to express my heartiest thanks and gratefulness to almighty God for His divine blessing makes possible to complete the final internship successfully.

I really grateful and wish my profound our indebtedness to **Ms. Naznin Sultana, Associate Professor**, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of “*Networking*” to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

I would like to express our heartiest gratitude to Professor Dr. Sheak Rashed Haider Noori, Professor and Head, Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

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

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

ABSTRACT

It's a reality that in the present or in the future, especially with any kind of work, people cannot think without the internet. Therefore, for the sake of this future life, it should not be taken too lightly and attempts should be made to achieve it. Its course curriculum is quite relevant in today's world. This course brings the modern technology network into the class with maximal assistance in expounding network skill and apart from this, this course will have the capacity to satisfy the growing Global demand for multinational firms. CCNA Security Certification encompasses the areas of security such as installation of networks, troubleshooting among others. The report mainly described Routing, switching, and addressing, RIP, EIGRP, OSPF and VLAN. A context include; connecting to a WAN, and network security, types of networks, network media, routing & switching, TCP/IP & OSI, IP addressing & services, WANs, operating & configuring and IOS devices, extending switched networks with VLANs, determining IP routes, managing IP traffic using ACLs, point to point internet connectivity. And can layout all kinds of communication system or else any kind of networking. Thus, I need to know how an actual project would manage. Exp. while working in **One Sky Communication Limited (OSCL)** I got great experiences that is useful in my future or next careers. Another aspect to get experiences was to work with the real problems of the client, which was the fourth organizational strength. In the following report, the author guides the reader through all aspects of an example project and experience of these internship periods.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
 CHAPTER	
 CHAPTER 1: INTRODUCTION	 1-2
1.1 Introduction of Internship	1
1.2 Objective of Internship	1
1.3 Motivation of Internship	1
1.4 Report Layout of Internship	2
 CHAPTER 2: INTERNSHIP ORGANIZATION	 3-5
2.1 Introduction to the Company	3
2.2 Service of (OSCL)	3
2.3 The Mission & Vision of (OSCL)	4
2.4 SWOT Analysis	4
2.5 Structure of the Company	5
 CHAPTER 3: TASKS, EVENTS & ACTIVITIES	 6-34
3.1 Daily Task and Activities	6
3.2 Basic Network	6
3.3 Cables	8
3.4 OSI Model & TCP/IP Model	10
3.5 IP Addressing and Sub-netting	13
3.6 Routing Protocol Information	18
3.7 Static Routing Protocol	19
3.8 Default Routing Protocol	20
©Daffodil International University	v

3.9 RIP version 1(Routing Information Protocol 1)	23
3.10 RIP version 2 (Routing Information Protocol 2)	24
3.11 EIGRP (Enhanced Interior Gateway Routing Protocol)	25
3.12 VLAN (Virtual Local Area Network)	27
3.13 OSPF (Open Shortest Path First)	29
3.14 MikroTik Router Setup	31
3.15 MikroTik Router WAN Configuration	32
3.16 MikroTik Router LAN Configuration	33
3.17 Challenges	34
CHAPTER 4: COMPETENCIES AND SMART PLAN	35-37
4.1 Competencies Earned	35
4.2 Smart Plan	35
4.3 Reflections	36
CHAPTER 5: CONCLUSION AND FUTURE CAREER	38-38
5.1 Conclusion	38
5.2 Future Scope	38
REFERENCES	39-39
APPENDICES	40-40
Appendix A: Internship Reflection	40
Appendix B: Company Details	40

LIST OF FIGURES

FIGURES	PAGE NO
Figure 2.1.1: One Sky Communication Ltd Official Logo	3
Figure 2.4.1: Swot Analysis	5
Figure 2.5.1: Structure of Organization	5
Figure 3.2.1: Basic Networking	7
Figure 3.3.1 Arrange twisted pair cable	8
Figure 3.3.2 Insert RJ-45 Connector twisted pair cable	9
Figure 3.3.3 Successfully Complete twisted pair cabling	9
Figure 3.3.4 Identification of various part by optical-fiber cable	10
Figure 3.4.1: OSI Model with Communication Two Host	10
Figure 3.4.2: TCP/IP Model	13
Figure 3.5.1: Subnetting Example	16
Figure 3.6.1: Type of Routing	18
Figure 3.7.1: Static Router	19
Figure 3.7.2: Static Routing Router 1 Configuration	20
Figure 3.8.1: Default Routing	21
Figure 3.8.2: Default Routing Router 1 Configuration	22
Figure 3.9.1: RIP version1	23
Figure 3.9.2: RIP version1 R1 router configuration	23
Figure 3.10.1: RIP Version 2	24
Figure 3.10.2: RIP v2 Router 1 Configuration	24
Figure 3.10.3: RIP v2 Router 1 rip command	25
Figure 3.11.1: EIGRP Router 1 configuration	26

Figure 3.11.2: EIGRP Router 1 configuration	26
Figure 3.11.3: EIGRP Router 1 rip command	27
Figure 3.12.1: VLAN Example	28
Figure 3.12.2: VLAN Switch 1 configuration	28
Figure 3.12.3: VLAN switch2 Trunk access mode	29
Figure 3.13.1: OSPF Configuration	30
Figure 3.13.2: OSPF Router 1 Configuration	30
Figure 3.14.1: MikroTik Router	31
Figure 3.14.2: MikroTik Router Setup	32
Figure 3.15.1: MikroTik Router WAN Configuration	33
Figure 3.16.1: MikroTik Router WAN Configuration	34
Figure 4.3.1: One Sky Com. Ltd. Support Team	36
Figure 4.3.2: One Sky Com. Ltd. Support Team	37

LIST OF TABLES

TABLE 3.5.1: CLASS-A: Host Bit & Network Bit	14
TABLE 3.5.2: CLASS-B: Host Bit & Network Bit	15
TABLE 3.5.3: CLASS-C: Host Bit & Network Bit	15

CHAPTER 1

INTRODUCTION

1.1 Internship of Introduction:

I need to write a thesis or do a project or internship to finish my B. Sc in computer science & engineering. I decided to make an internship in parallel with my further education. I already finished doing the internship in One Sky Communication Limited (OSCL). Networking part is one of the fundamentals of the CCNA certification in computer network engineering. Technicians of the networks, administrators, network support engineers as well as networking specialists need to have knowledge in the CCNA. At the Internship I realized how to work in support team, and how to manage network operations through 24hours. The only thing I need to pay attention is the way senior associates perform their work. How they manipulate all kind of operations and how they escalate divergent network alarms to the field. In this case, I got to know how to see alarm, different types of network alarms, when they do appear, and why certain alarms are displayed on the system monitor.

1.2 Internship of Objective:

Without any qualification it is very difficult one to get up a job opportunity these days. Internships help to be successful professionals in the future and better recognition by their qualification. As for the internship, it just came from networking. The passionate target for my internship is to lead as a professional in the line with the specific position I shall interest in. To put it another way, it will really enhance the event and make it truly extraordinary. I gained a lot of new skills through this internship, and that will help me to achieve my career goals fully. Through the internship I have experienced the meetings and the events which I have been attending in a real-life office environment. This is when I learned to deal as well as chat with professional people, and how to interact in such work-related places.

1.3 Internship of Motivation:

As a CSE student first of all everyone wants to be a software engineer or programmer. But I chose to be a network engineer. I am at present in my final semester of Bachelors Program

in Computer Science & Engineering. I choose my Internship at One Sky Communication Limited (OSCL) because I found that the One Sky Communication Limited (OSCL) should address each customer satisfaction & excellent service. It is flexible so that I can learn how they work and how their network functions. This internship will enable me to working experiences and gain more ability in working this will give me a chance to enhance my working experiences. Therefore, in the future, I can get documentary evidence of this experience with any other ISP network company in Bangladesh for an honorable job position. If I have a chance to be an intern within the company. I will be able to better speak for myself and will be able to kindly and professionally defend myself as a professional business man. The fact that internships aid us by explaining more about the career path that we concerned most with is clear idea.

1.4 Internship of Report Layout:

This internship report comprises of five chapters. Here Each chapter in the report is written with the following detailed. Here I Summarizing the chapter with proper details. The following is a brief synopsis:

1. In this chapter, I talk about introduction to internship, the objective of internship and the motivation of internship.
2. In chapter 2, I overview of organizational information, history of One Sky Communication Limited (OSCL) basic info One Sky Communication Limited (OSCL) Establish good relations with One Sky Communication Limited (OSCL), company.
3. In chapter 3, I delivered about my duty and events of internship time, activities and challenges of my everyday work, Features and functionality of Devices.
4. In chapter 4, In this, I have expressed my understanding of the Competencies Earned, Smart Plan, and Reflections that are there in this.
5. In chapter 5, I discussed the conclusion and a bright full future and a permanent job placement in this company.

CHAPTER 2

INTERNSHIP ORGANIZATION

2.1 Introduction to the Company:

Well appointed One Sky Communication Limited (OSCL) is a one stop IT solution and Nationwide ISP company providing a different kind of connectivity, solution and power. When the company began, it was established with these original 3 Strategic Business Units. It running its operation through innovation, respect, accountability, reliability and many more. Some of the projects of One Sky Communication Limited are related to the government projects of Bangladesh. Its connectivity arm guarantees the internet and Data connectivity across the country, though it focusing on the enterprise segment than achieving more than 99. 98% up time with the option of 24/7 call center in addition to the highly specialized support and solution technical backgrounds. Laid down right technologies means that One Sky Communication Limited can easily guarantee high quality of connectivity for scalability, less bother of identifying problems and subsequent maintenance.



Figure 2.1.1: One Sky Communication Ltd Official Logo

This is one sky communication limited official logo. This ISP company is known by one sky communication limited logo.

2.2 Service of (OSCL):

One Sky Communication Limited (OSCL) doing an affirmed assurance to provide comfortable and satisfactory service to the customer within the Zone. Air Voice One Sky Communication Limited now celebrates its 10 Years of journey, primarily in the best ISP in Paltan, considering its Network & Number of Customers but they own the best facility when it comes to being an ISP company in Bangladesh. Some of the services of our Some are mentioned below.

- ✓ Corporate Internet
- ✓ Local/Home Internet
- ✓ Layer 2 Layer 3 Connectivity
- ✓ GPS Vehicle Tracing Solutions
- ✓ Industrial Attachment Training
- ✓ Corporate Training
- ✓ Network Server Solutions

2.3 The Mission & Vision of (OSCL):

The Mission:

The mission purpose is to give aspiring tech enthuse the best practical experience through our specialized education system. One of our goals is to be the pathway to equip people with the latest information about the developments of IT industry as well as practical skills and a solid IT foundation. The main thing that our aim in is to make an interesting learning environment where creativity, adaptability, and an insight into all the changes which can be found in the high technology world are developed.

The Vision:

At One Sky Information Technology we boast of ourselves to be visionaries of future who strive to build and sustain a generation of IT leaders of tomorrow. The vision goes beyond education, as it promotes the establishment of a worldwide network of tech thinkers that are moving the world forward and implementing innovations. Having decided to focus on education and environment which work in conjunction favoring exploration and growth, we wish to be a dominant force in information technology industry and lead the market in IT.

2.4 SWOT Analysis:

SWOT is an acronym of strengths, weaknesses, opportunities and threats SWOT analysis calculates internal and external factors, present and future possibilities Strengths and weaknesses are internal evaluations of an organization. When any organization get its first project with us, we analyze its SWOT analysis. Then we discuss with each other and analysis about its weakness until one day we get the solution of the problem.

The figure shows Swot Analysis Example



Figure 2.4.1: SWOT Analysis

SWOT analysis refers to the evaluation of a business's competitive environment in an organization, and it is applied when addressing strategic management and planning.

2.5 Structure of the Company:

The Organization Structure of One Sky Communication Limited (OSCL), given below this figure.

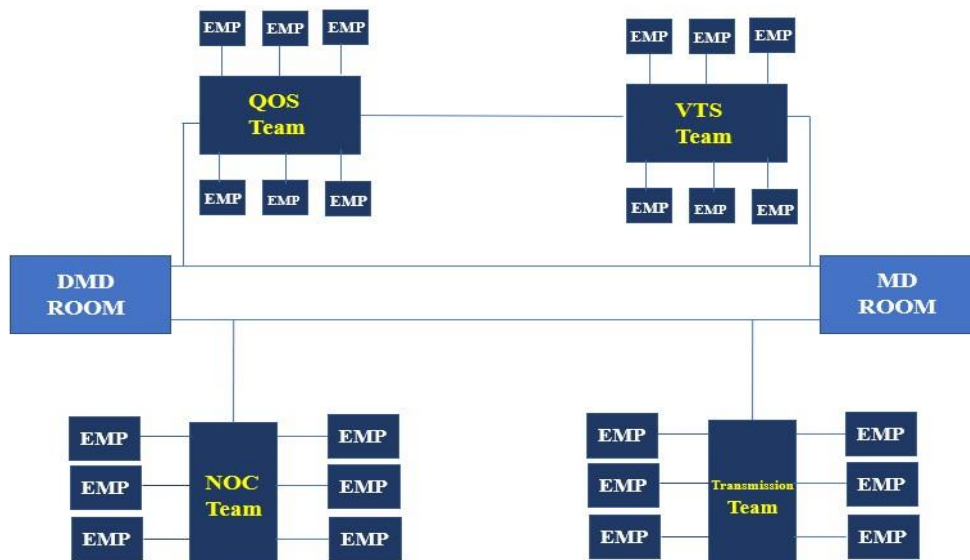


Figure 2.5.1: Structure of Organization

The One Sky Communication Limited (OSCL) is a combined IT and Nationwide ISP company with its service operations of connectivity, solution and power.

CHAPTER 3

TASKS, EVENTS & ACTIVITIES

3.1 Daily Task and Activities:

1st - month: From the first month of my internship in One Sky Communication Limited, I have received many valuable lessons starting from the basic concepts of networking. topics bellow:

- OSI & TCP/IP Model
- IP Addressing & Subnetting
- Routing protocol Information

2nd - month: This part of networking I learn during the second month of my internship in One Sky Communication Limited and get knowledge of this.

- Static & Default Route
- Routing Information Protocol
- Enhanced Interior Gateway Routing Protocol
- OSPF (Open Shortest Path First)

3rd - month: During the third month of my internship in One Sky Communication Limited, I learn this part.

- MikroTik Router Configuration
- Data Server Rack Configuration

3.2 Basic Network:

Networking, also called networking (computer networking), is a procedure that deals with transmitting and sharing information across nodes of the data system or network over a mutual channel or line. Switchers, routers, and wireless access extensions are the basic networking elements. These are access points that allow interoperability among gadgets in the same network and with others, for instance, the Internet.

Network Types:

Local Area Network (LAN): A network of computers, which are inter-connected computer system, installed in the same building is called Local Area Network. The speed at which data is transferred on this particular network is at the rate of 10Mbps.

Metropolitan Network (MAN): This network Length size of the 50- 75, miles. The data transfer speed now on these links exceeds 1000 times the previous speed as it is measured in gigabits per second.

Wide Area Network (WAN): In the remote LAN a wide area network is developed and the resultant network of the remote LAN is the extended network. This type of network's data transfer rate falls in the range of 56 kbps to 1. 544 Mbps.

The figure shows Basic Networking Example

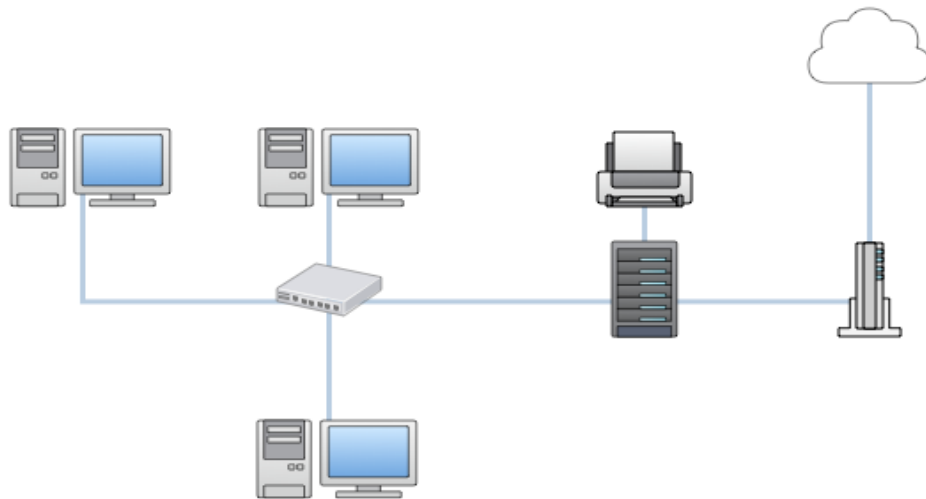


Figure 3.2.1: Basic Networking

A network involves joining of more than one computer through a connection enabling access to use of the same resources like the printers or CDs, file sharing or even the ability to communicate electronically.

3.3 Cables:

Twisted Pair Cable:

A system of twisted pairs is a form of cable that is made up of one or more pairs of copper wires as used in cabling. These cables comprise a steel conductor and a polymeric composite dielectric sheath that coils around each other. Twisting minimizes the amount of electromagnetic radiation emitted and ensures that other sources do not pass through this interference.

Here following is an example of patching a twisted pair cable:

I started by choosing a twisted pair cable, removing the cover, then classifying the cables according to color subs: (1). Orange-white, (2). Orange, (3). Green-white, (4). Blue, (5). Blue-white, (6). Green, (7). Brown-white, (8). Brown.

The figure shows Arrange twisted pair cable Example

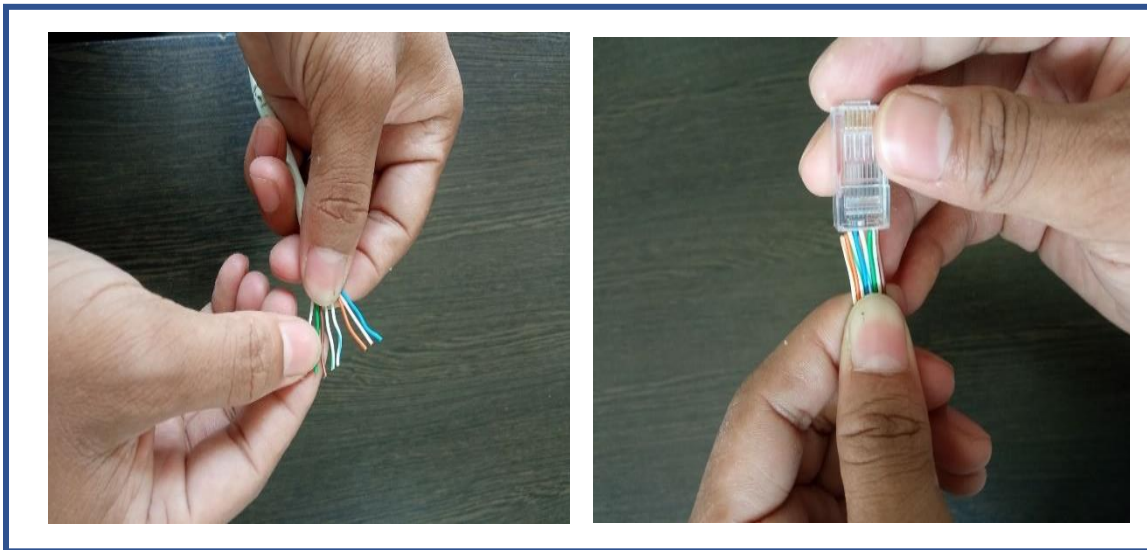


Figure 3.3.1 Arrange twisted pair cable

And with those I'll cut them neatly, and then make sure that I fit them well into the RJ45 connector. Then use the RJ45 clipping tool and place the connector in this tool and clasp down. Lastly, with great precision place the tool and voila the patch is done.

The figure shows Insert RJ-45 Connector pair cable Example



Figure 3.3.2 Insert RJ-45 Connector twisted pair cable

I enter the RJ-45 connector using the tool, then I use the cable tester to make sure the cable is in the right place. After that, successfully finish the cabling.

The figure shows cabling check Example

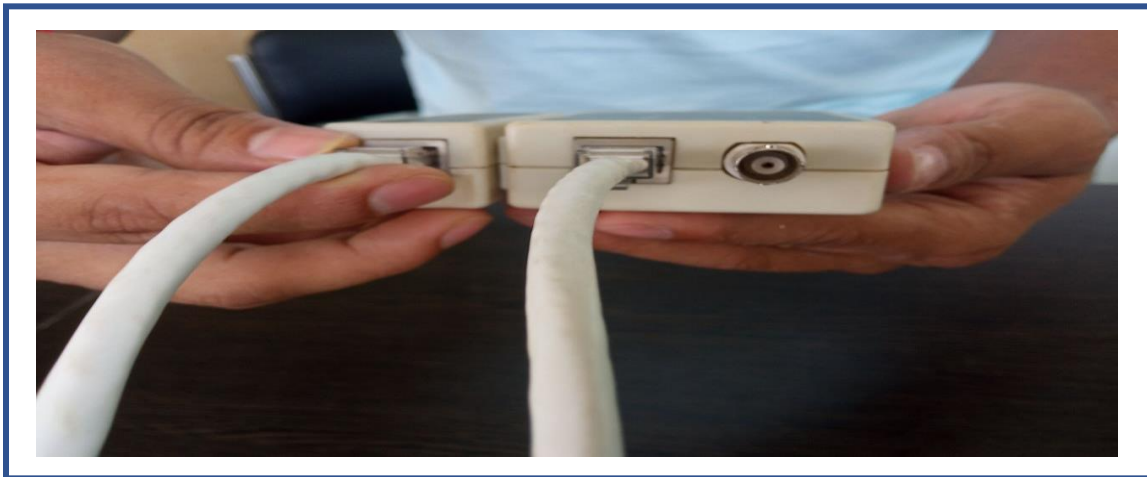


Figure 3.3.3 Successfully Complete twisted pair cabling

Here is figure showing an example of cabling check with a cable tester and confirming that it is right.

Optical Fiber Cable:

An optical-fiber cable is a combination of optical fiber and a cable that resembles electrical cable and is employed for the transmission of light signals.

The figure shows optical-fiber cable Example

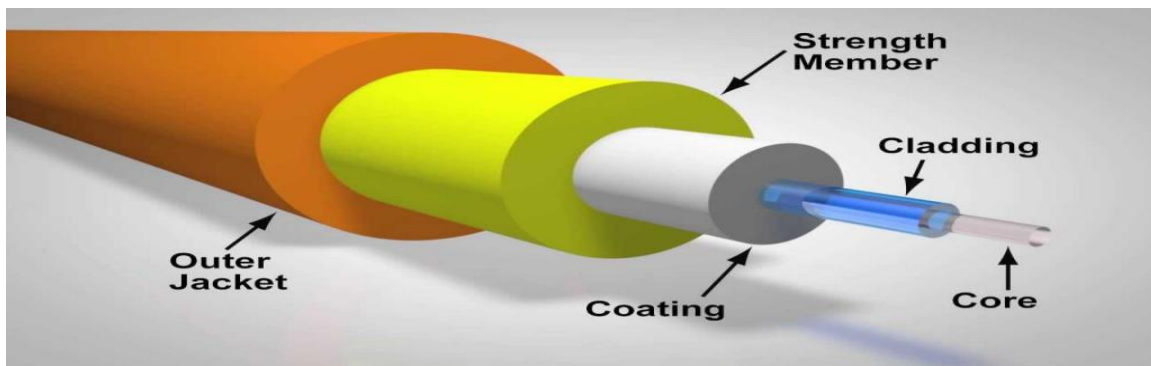


Figure 3.3.4 Identification of various part by optical-fiber cable

The fiber is made of dielectric materials the core and a layer of cladding run through the entire fiber.

3.4 OSI Model & TCP/IP Model:

OSI Model:

Organization for Standardization (OSI) which was formulated into an open substrate and offered the Interlocking known as OSI. It lays the first legally enforceable framework of how data should or should not have been managed in a system.

The figure shows OSI Model Example

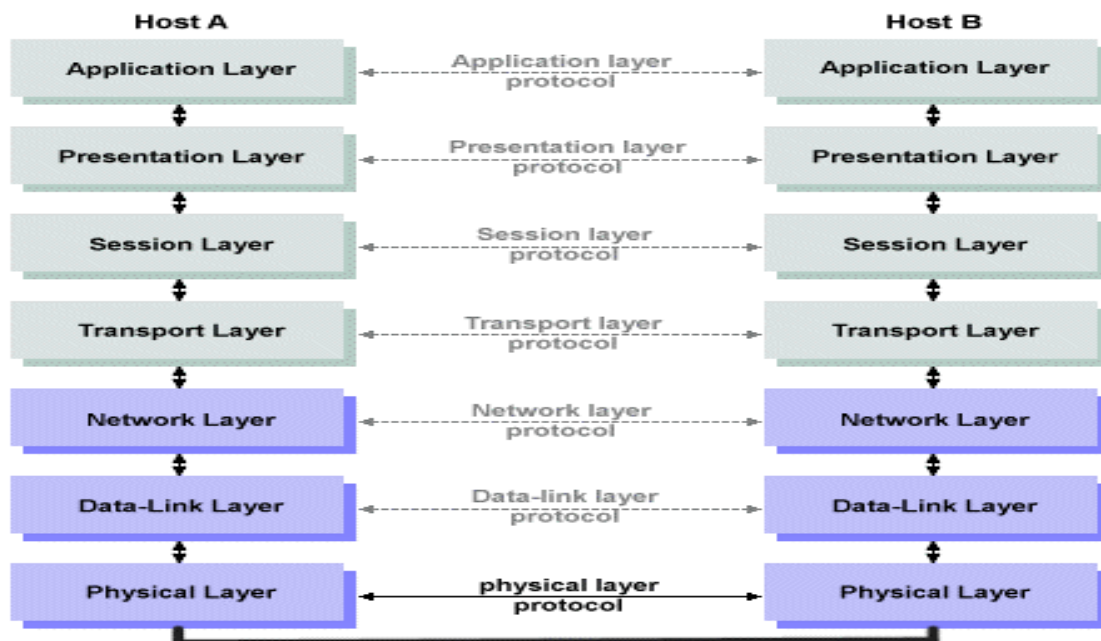


Figure 3.4.1: OSI Model with Communication Two Host

It is based on the concept of splitting up a communication system into seven abstract layers, each one stacked upon the last.

There are 7 layers-

1. Application Layer:

Application layer tasks are mentioned below:

- Resource sharing and device redirection.
- Remote file access
- Remote Procedure Call (RPC) support
- Network Management
- Electronic messaging

2. Presentation Layer:

The presentation layer performs the following functions:

- Character code translation, such as converting from ASCII to EBCDIC format.
- Data conversions, such as integer to floating point conversion.
- Data aggregation, so that data can be transferred faster over the network.
- Data encryption and decryption, so that data transmitted over the network is secure.

3. Session Layer:

The Session layer performs the following functions:

- Inter-have correspondence mode.
- Establishment, oversees information.
- And terminates the communication between applications.

4. Transport Layer:

The Transport layer performs the following functions:

- Information and stream control.
- Establishes, keeps up, and ends virtual creation
- Data transport unwavering quality framework
- Fault discovery

5. Network Layer:

The Network layer performs the following functions:

- Focuses on the proper approach to transfer
- Best availability and way choice regarding two start for end frameworks
- Conventional framework of steering domain

6. Datalink Layer:

Functions of datalink layer are:

- Creating a logical link or virtual circuit between two devices.
- Controls frame flow.
- Controls the order in which frames can flow one after the other.
- Data Encapsulation marks where the frame starts and ends.

7. Physical Layer:

- Binary data transfer
- Data rates
- Encoding and signaling
- By means of cables

TCP/IP:

(TCP/IP) stands for Transmission Control Protocol /Internet Protocol. This is important to remember, as UDP is a connectionless unreliable datagram transport service IP While the Network Layer only provides a connectionless unreliable delivery, some applications still require a more reliable service. To offer link-oriented application a different protocol is integrated in the TCP/IP suite to offer connection-oriented transport.

The figure shows TCP/IP Model Example

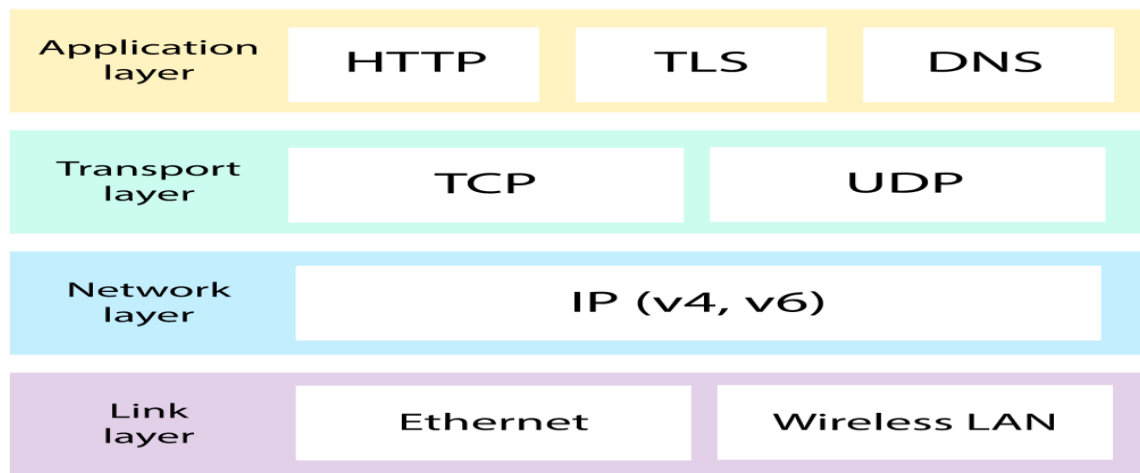


Figure 3.4.2: TCP/IP Model

TCP/IP model comprises four layers refers to that the network communications are divided into four different types or categories.

3.5 IP Addressing and Sub-Netting:

Each host in a TCP/IP network is designated by a number. This number is the IP address which is 32 bits. These 32 bits are divided into 4 parts of 8 bits. It is a 32 binary bits string and can be divided into the network portion and the host portion if it is separated by a subnet mask. The 32 binary bits are divided into four octets where an octet is a group of 8 bits. To the end of each octet, it is converted to decimal and is separated by a period (dot). For this reason, when we talk of an IP address, we refer to this format for instance 172. 16. 81. 100. The numbers in each octet range from 0 to 255 decimal or 00000000-11111111 binary.

Here is how binary octets convert to decimal: The right most bit, or the least significant bit, of an octet is 2⁰. The bit just to the left of that is equal to 2¹. This goes on until the last bit in the left, or the most significant bit, which is equal to 2⁷. So, if all binary bits are a one, the decimal equivalent would be 255 as shown here:

1 1 1 1 1 1 1 1

128 64 32 16 8 4 2 1 (128+64+32+16+8+4+2+1=255)

Here is a sample Bit and octet bellow:

Bit (32) = 11111111. 11111111. 11111111. 11111111
 (1 octet = 8 bits) = 8(bit). 8(bit). 8(bit). 8(bit)

Here is a sample octet conversion when not all of the bits are set to 1.

0 1 0 1 0 0 0 1

0 64 0 16 0 0 0 1 (0+64+0+1+0+0+0+1=81)

And this sample shows an IP address represented in both binary and decimal.

10. 11. 12. 1 (decimal)

00001010.00001011.00001100.00000001 (binary)

They are-5 different classes of networks:

- Class-A
- Class-B
- Class-C
- Class-D
- Class-E

Class A: Network bit 8 and host bit 24 is used in class A.

TABLE 3.5.1: CLASS-A: Host Bit & Network Bit

First Octet (8 bit)	Second Octet (8 bit)	Third Octet (8 bit)	Fourth Octet (8 bit)	RANGE OF IP 0-128
Network Part	Host Part	Host Part	Host Part	
NNNNNNNN	HHHHHHHH	HHHHHHHH	HHHHHHHH	

Class B: The network bit 16 and the host bit 16 is for the Class B.

TABLE 3.5.2: CLASS-B: Host Bit & Network Bit

First Octet (8 bit)	Second Octet (8 bit)	Third Octet (8 bit)	Fourth Octet (8 bit)	RANGE OF IP
Network Part	Network Part	Host Part	Host Part	
NNNNNNNN	NNNNNNNN	HHHHHHHH	HHHHHHHH	

Class C: Class C uses host bit 8 and network bit 24.

TABLE 3.5.3: Class-C: Host Bit & Network Bit

First Octet (8 bit)	Second Octet (8 bit)	Third Octet (8 bit)	Fourth Octet (8 bit)	RANGE OF IP
Network Part	Network Part	Network Part	Host Part	
NNNNNNNN	NNNNNNNN	NNNNNNNN	HHHHHHHH	

Class-D

This is a special type of class called multicast network. Such IPs are used to locate all routers on a host network. This class is from 224 to 239.

Class-E

IPs in this class are generally used for scientific research. This class is 240 to 255.

One thing to be aware of is that there are 2 types of IP.

- Private IP
- Public IP

The range of private IP is:

For Class A - 10.0.0.1 to 10.255.255.254

For Class B-172.16.0.1 to 172.31.255.254

For Class C - 192.168.0.1 to 192.168.255.254

Sub-Netting:

By creating a subnet, you can limit the number of routers the traffic must pass through. An engineer could therefore easily optimize route length in a large network by ensuring that traffic travels the shortest possible distance in small mini-routes. Implementation and establishment of a suitable network is very important for large organizations and individuals wishing to attain technological development.

Given IP: 192.168.100.0/24

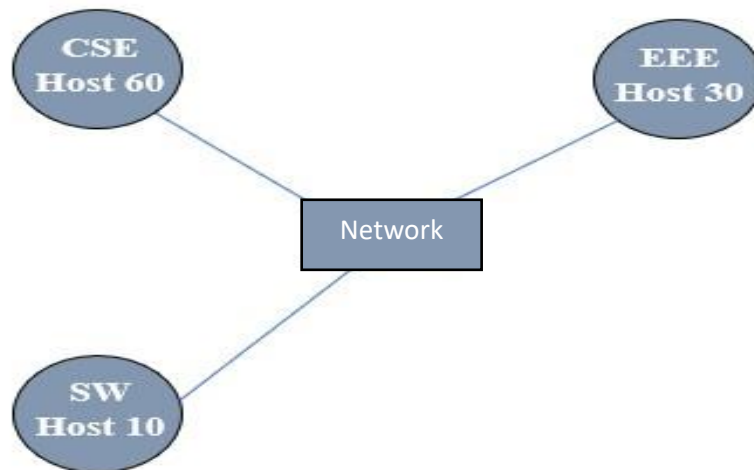


Figure 3.5.1: Subnetting Example

This figure illustrates that a given IP is divided into many host IPs through the process called subnetting.

Given IP: 192.168.100.0/24

Here,

▪ **CSE Host-60**

Number of host = $2^6 - 2$

= 62

Network Address = 192.168.100.0/26

Subnet Mask = 11111111. 11111111.11111111. 11000000

255.255.255.192

1st Subnet = 192.168.100.1

Last Subnet = 192.168.100.62

Broadcast Add= 192.168.100.63

▪ **EEE Host-30**

Number of host= $2^5 - 2$

= 30

Network Address = 192.168.100.64/27

Subnet Mask = 11111111. 11111111.11111111. 11100000

255.255.255.128.224

1st Subnet = 192.168.100.65

Last Subnet = 192.168.100.94

Broadcast Add= 192.168.100.95

- **SW Host-10**

Number of host = $2^4 - 2$

= 14

Network Address = 192.168.100.96/28

Subnet Mask = 11111111. 11111111.11111111. 11110000

255.255.255.128.240

1st Subnet = 192.168.100.97

Last Subnet = 192.168.100.110

Broadcast Add= 192.168.100.111

3.6 Routing Protocol Information:

The process of choosing the best route through one or more networks is known as routing. Routing is carried out on several network types, such as packet-switched and circuit-switched networks on the internet, in which a packet forwarding system is used to forward packets from one node to another. A router is the apparatus or process that forwards packets from source to destination. Using the routing database as a guide, the routing mechanism routes the packets. Routing table has the functions of maintaining records of every route associated with varying networks. Routing, algorithm is just a fancy way of saying the program that helps determine the shortest route for routing packets.

Types of Routing

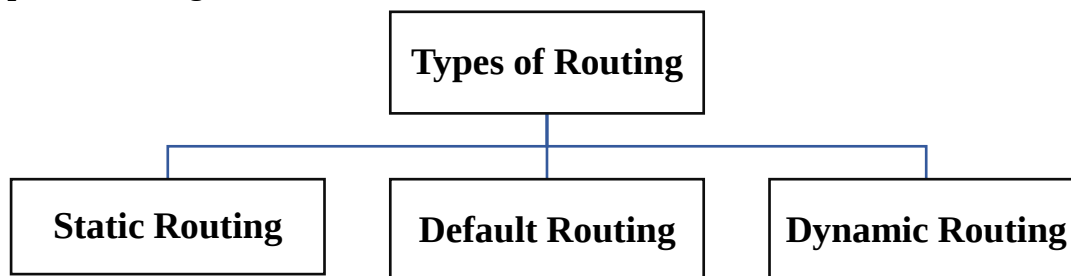


Figure 3.6.1: Type of Routing

The following figure represents classifications of routing protocols.

3.7 Static Routing:

Static routing is a type of routing whereby a router employs a routing entry that is configured manually and not as a result of received routing messages. Static routes are usually set by a network administrator by adding entries into a routing table and this may not be always so.

This figure shows Static Router. Static Router Configuration for 50,10, And 2 host:

The figure shows Static Routing Example

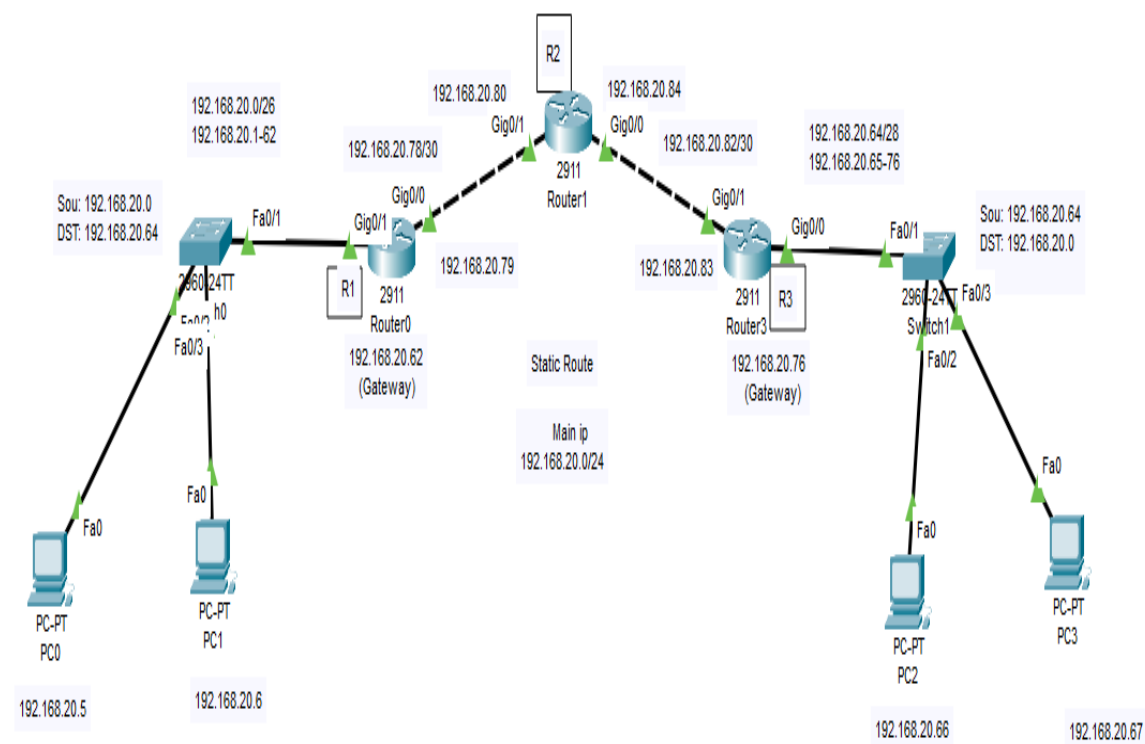
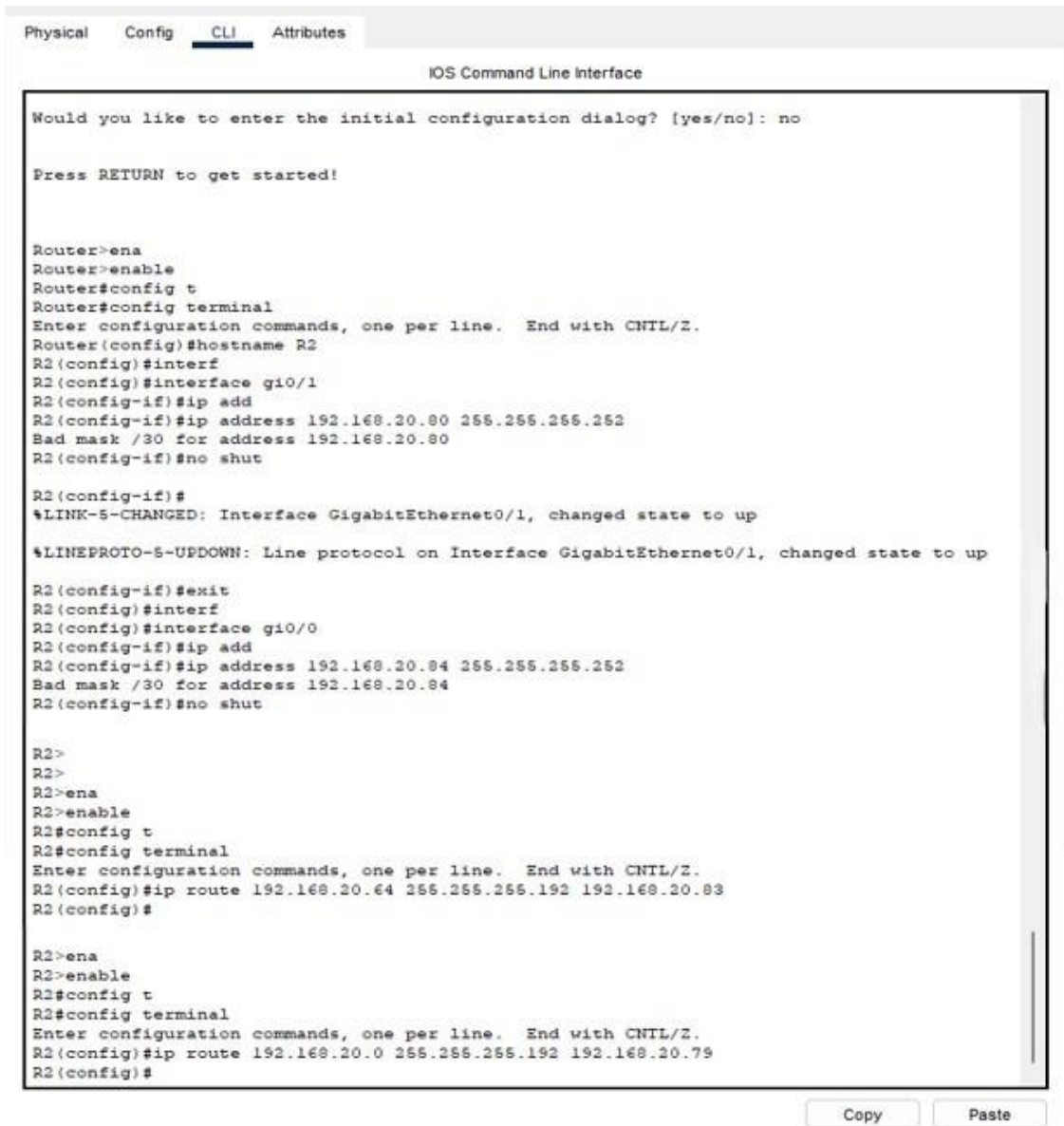


Figure 3.7.1: Static Router

From this have learnt how a router finds a path to a remote network, we have also practiced in configuring of a static route using the routing table concept, we have also come across the concept of recursive lookup and the summary and default static routes. The network security and the bandwidth usage will also be enhanced.

This figure shows Static Routing router 1 configuration. During Configuration in static router using with IP route in R1 Router:

The figure shows Static Router Configuration Example.



```
Physical Config CLI Attributes
IOS Command Line Interface

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>ena
Router>enable
Router#config t
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R2
R2(config)#interf
R2(config)#interface gi0/1
R2(config-if)#ip add
R2(config-if)#ip address 192.168.20.80 255.255.255.252
Bad mask /30 for address 192.168.20.80
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

R2(config-if)#exit
R2(config)#interf
R2(config)#interface gi0/0
R2(config-if)#ip add
R2(config-if)#ip address 192.168.20.84 255.255.255.252
Bad mask /30 for address 192.168.20.84
R2(config-if)#no shut

R2>
R2>
R2>ena
R2>enable
R2#config t
R2#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.20.64 255.255.255.192 192.168.20.83
R2(config)#

R2>ena
R2>enable
R2#config t
R2#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.20.0 255.255.255.192 192.168.20.79
R2(config)#
```

Copy Paste

Figure 3.7.2: Static Routing Router 1 Configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then static routing configuration syntax.

3.8 Default Routing Protocol:

When a router does not have a directly associated destination, a default route is established from one hop to the next hop count is given. This method is known as default routing. The

main intention of default router is that the packets should be sent equally in each hop. In the figure below, Default Router is illustrated. Default Router configuration for DNS server and WEB server connecting with:

The figure shows Default Routing Example

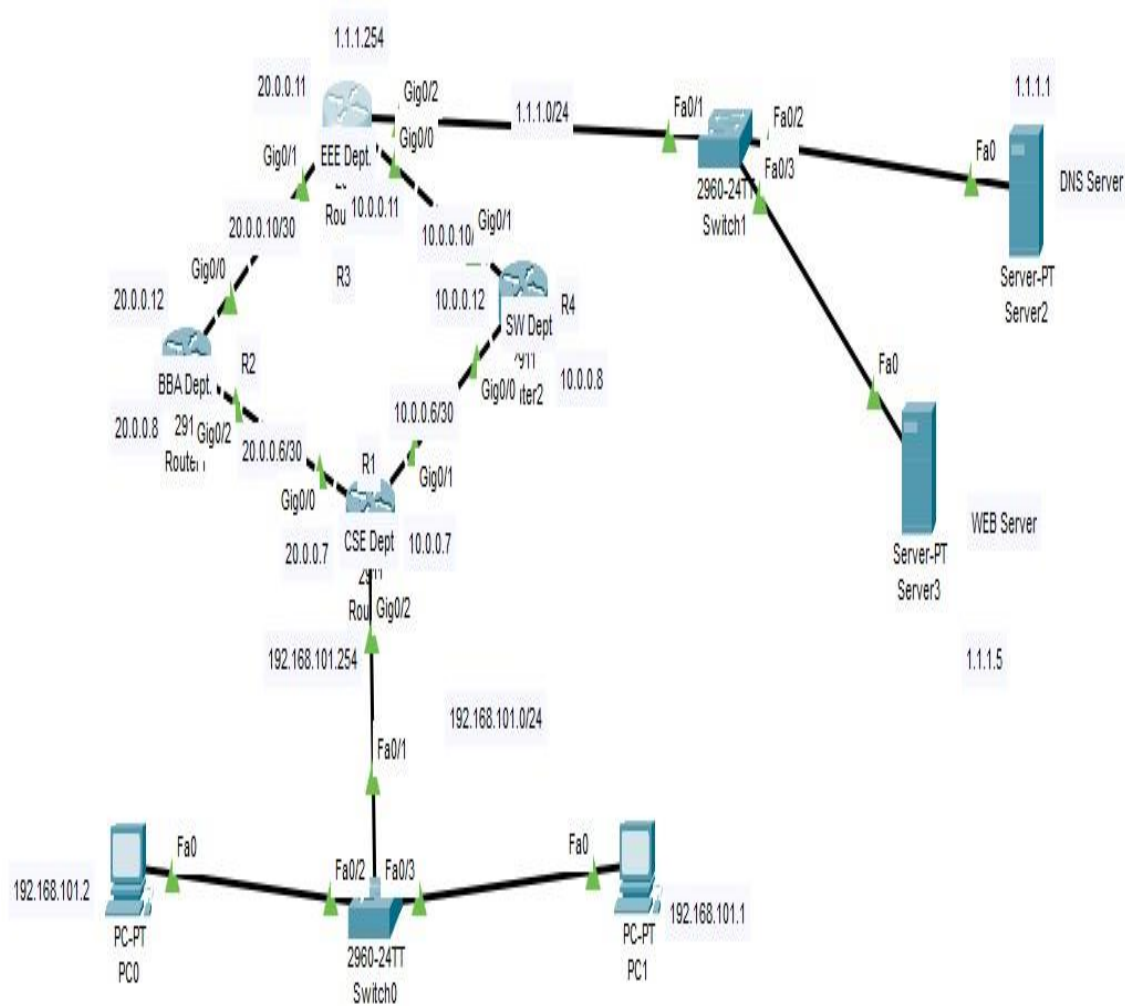
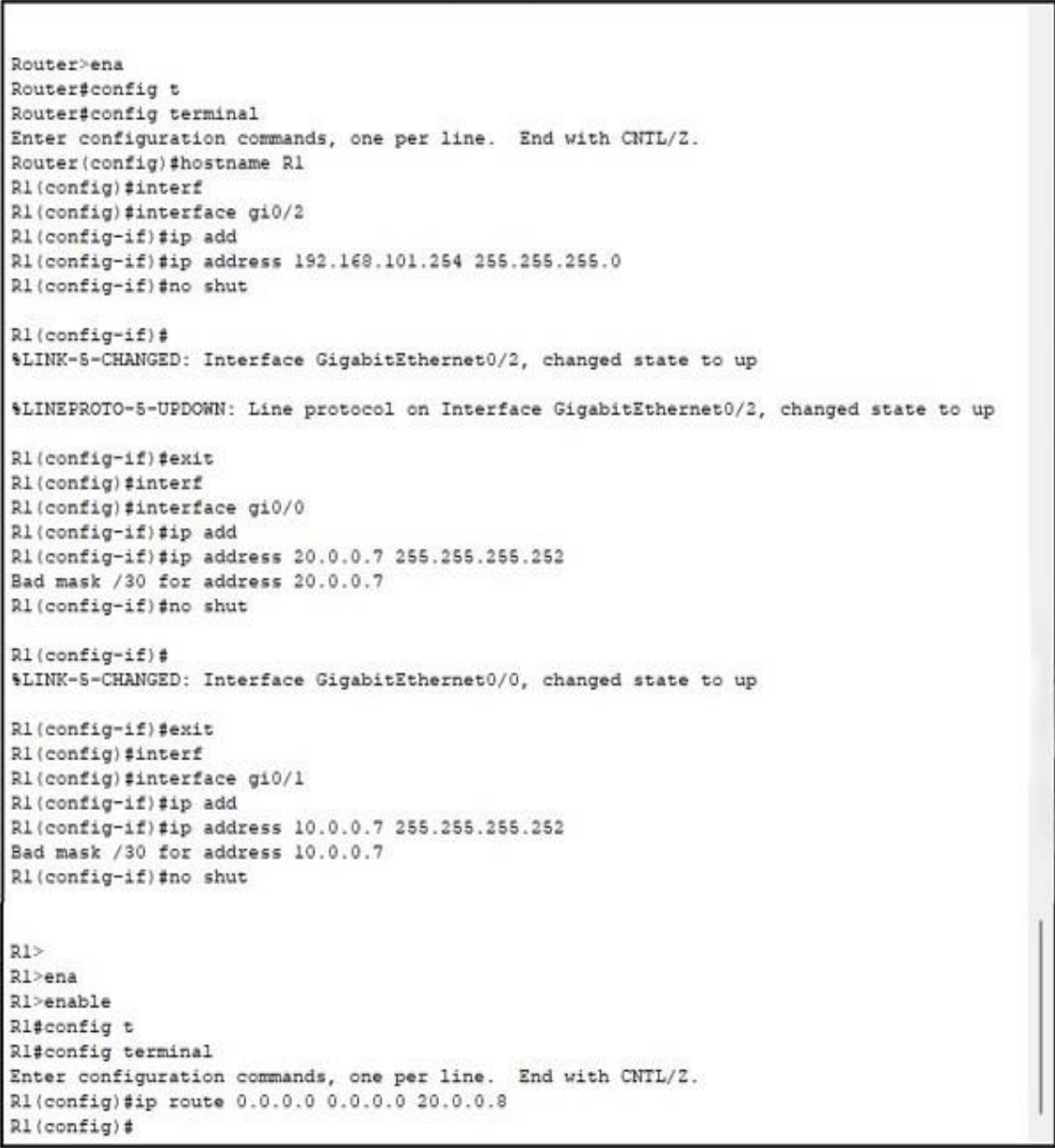


Figure 3.8.1: Default Routing

When there isn't another route available for an IP destination address, the default route is used. This figure shows Default Routing router 1 configuration. During Configuration in Default Router using with IP route in R1 Router:

The figure shows Default Routing configuration Example



```
Router>ena
Router#config t
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#interf
R1(config)#interface gi0/2
R1(config-if)#ip add
R1(config-if)#ip address 192.168.101.254 255.255.255.0
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

R1(config-if)#exit
R1(config)#interf
R1(config)#interface gi0/0
R1(config-if)#ip add
R1(config-if)#ip address 20.0.0.7 255.255.255.252
Bad mask /30 for address 20.0.0.7
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

R1(config-if)#exit
R1(config)#interf
R1(config)#interface gi0/1
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.7 255.255.255.252
Bad mask /30 for address 10.0.0.7
R1(config-if)#no shut

R1>
R1>ena
R1>enable
R1#config t
R1#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 0.0.0.0 0.0.0.0 20.0.0.8
R1(config)#
```

Copy Paste

Figure 3.8.2: Default Routing Router 1 Configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then default routing configuration syntax.

3.9 RIP version1 (Routing Information Protocol 1):

Rip version 1 is a type of classful routing protocol information that doesn't specify the subnet of a hierarchical router. The following figure shows RIP version1 configuration. During Configuration in RIP version1 using with Router R1:

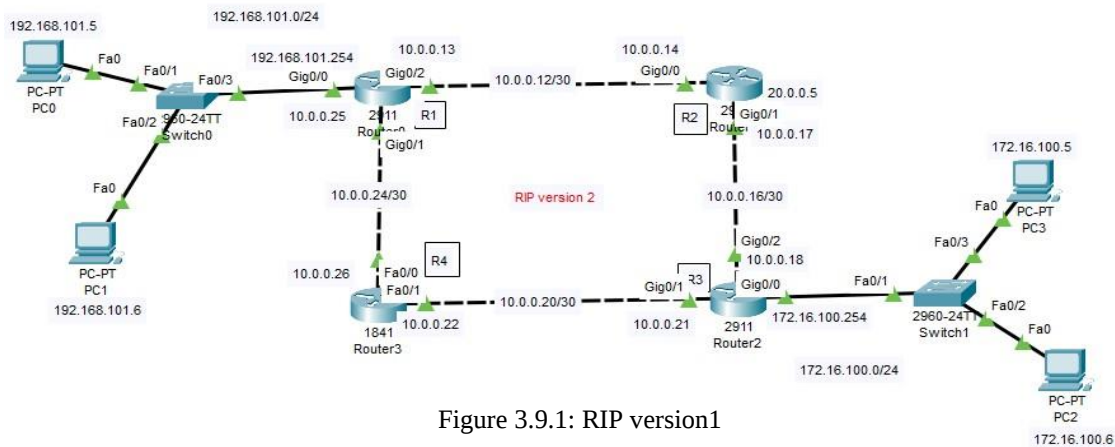


Figure 3.9.1: RIP version1

This figure shows how Rip version 1 do work is a classful routing protocol information that does not support the subnet of a hierarchical router.

The following figure shows RIP version1 router 1 configuration. During Configuration in RIP version1 using rip command in R1 router:

```
Physical Config CLI Attributes
IOS Command Line Interface

R1>enable
R1#config t
R1(config)#terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface
R1(config)#interface gi0/0
R1(config-if)#ip add
R1(config-if)#ip address 192.168.101.254 255.255.255.0
R1(config-if)#no shut
R1(config-if)#
R1(config-if)#exit
R1(config)#interface
R1(config)#interface gi0/2
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.13 255.255.255.252
R1(config-if)#no shut
R1(config-if)#
R1(config-if)#exit
R1(config)#interface
R1(config)#interface gi0/1
R1(config-if)#ip address 10.0.0.24 255.255.255.252
Bad mask /30 for address 10.0.0.24
R1(config-if)#no shut
R1(config-if)#
R1(config-if)#exit
R1(config)#
R1(config)#router rip
R1(config-router)#no a
R1(config-router)#no auto-summary
R1(config-router)#net
R1(config-router)#network 192.168.101.254
R1(config-router)#network 10.0.0.13
R1(config-router)#network 10.0.0.24
R1(config-router)#pas
R1(config-router)#passive-interface gi0/0
R1(config-router)#
```

Figure 3.9.2: RIP version1 R1 router configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then RIP version 1 configuration syntax.

3.10 RIP version 2 (Routing Information Protocol 2):

RIP version 2 is a classless and distance vector routing protocol that includes all subnet masks with update to router on the network. The following figure shows RIP version1 configuration. During Configuration in RIP version1 using with Router R1:

The figure shows RIP version 2 Example:

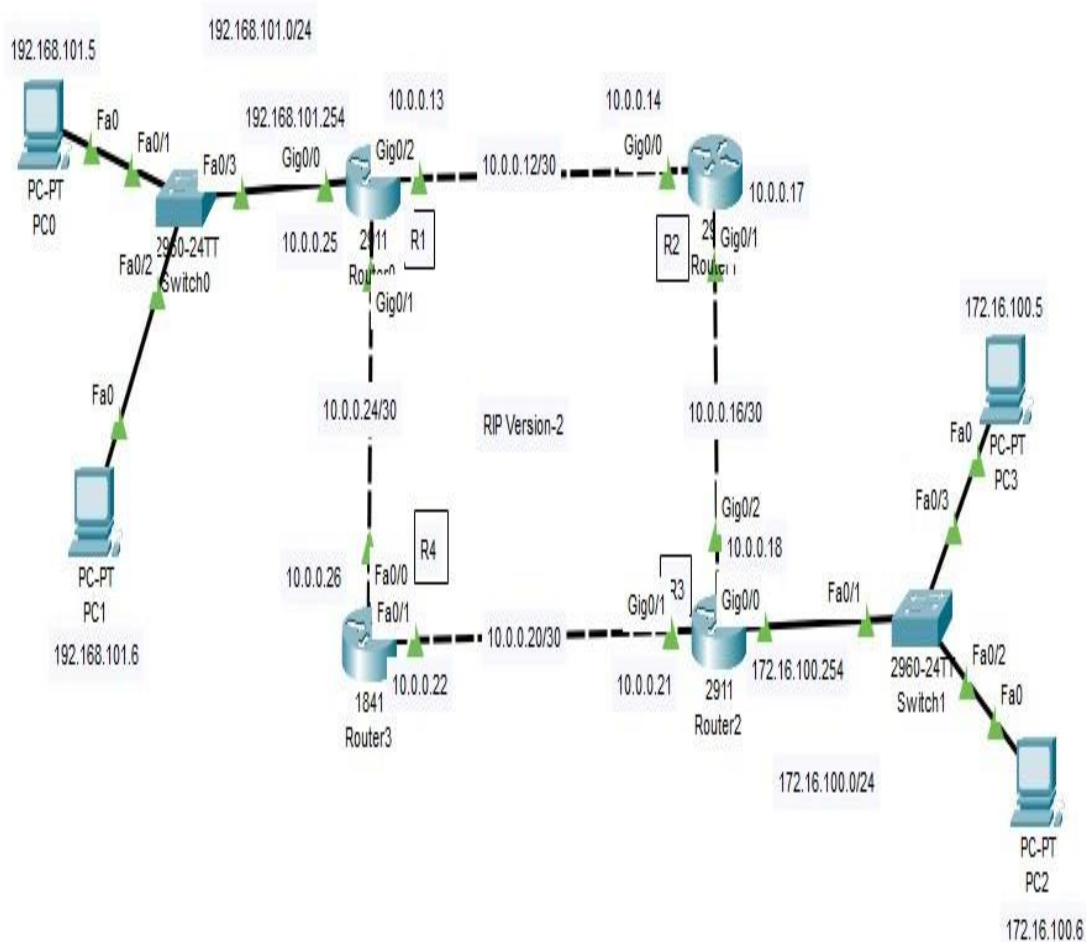


Figure 3.10.1: RIP Version 2

This figure shows how RIP version 2 do work is a classless distance vector routing protocol in which all subnet masks are included in the update the routing sent on the network.

The following figure shows RIP version1 router2 configuration. During Configuration in RIP version2 using rip command in R1 router:

The figure shows RIP version 2 router-1 configuration Example:

```
Router>ena
Router>enable
Router#config t
Router(config)#hostname R1
R1(config)#interface gi0/0
R1(config-if)#ip add
R1(config-if)#ip address 192.168.101.254 255.255.255.0
R1(config-if)#no shut

R1(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
R1(config-if)#exit
R1(config)#interface gi0/2
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.13 255.255.255.252
R1(config-if)#no shut

R1(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/2, changed state to up
R1(config-if)#exit
R1(config)#interface gi0/1
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.25 255.255.255.252
R1(config-if)#no shut
%SYS-5-CONFIG_I: Configured from console by console
```

Figure 3.10.2: RIP v2 Router 1 Configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then RIP version 2 configuration syntax.

The figure shows RIP version1 router2 configuration and rip version 2 command:

```
R1>
R1>ena
R1>enable
R1#config t
R1(config)#router rip
R1(config-router)#ver
R1(config-router)#version 2
R1(config-router)#no auto
R1(config-router)#no auto-summary
R1(config-router)#net
R1(config-router)#network 10.0.0.12
R1(config-router)#network 10.0.0.24
R1(config-router)#network 192.168.101.0
R1(config-router)#pas
R1(config-router)#passive-interface gi0/2
R1(config-router)#
R1#
%SYS-5-CONFIG_I: Configured from console by console
```

Figure 3.10.3: RIP v2 Router 1 rip command

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then RIP version 2 configuration syntax.

3.11 EIGRP (Enhanced Interior Gateway Routing Protocol):

Enhanced Interior Gateway Routing Protocol is a new Cisco invention where wild card masks are used to eliminate the complexity of using subnet masks and establish connections from one router to its neighboring routers. EIGRP cranes the characteristics, of both distance vector and link state simultaneously. EIGRP is widely used in enterprise level networks.

The figure shows EIGRP Example:

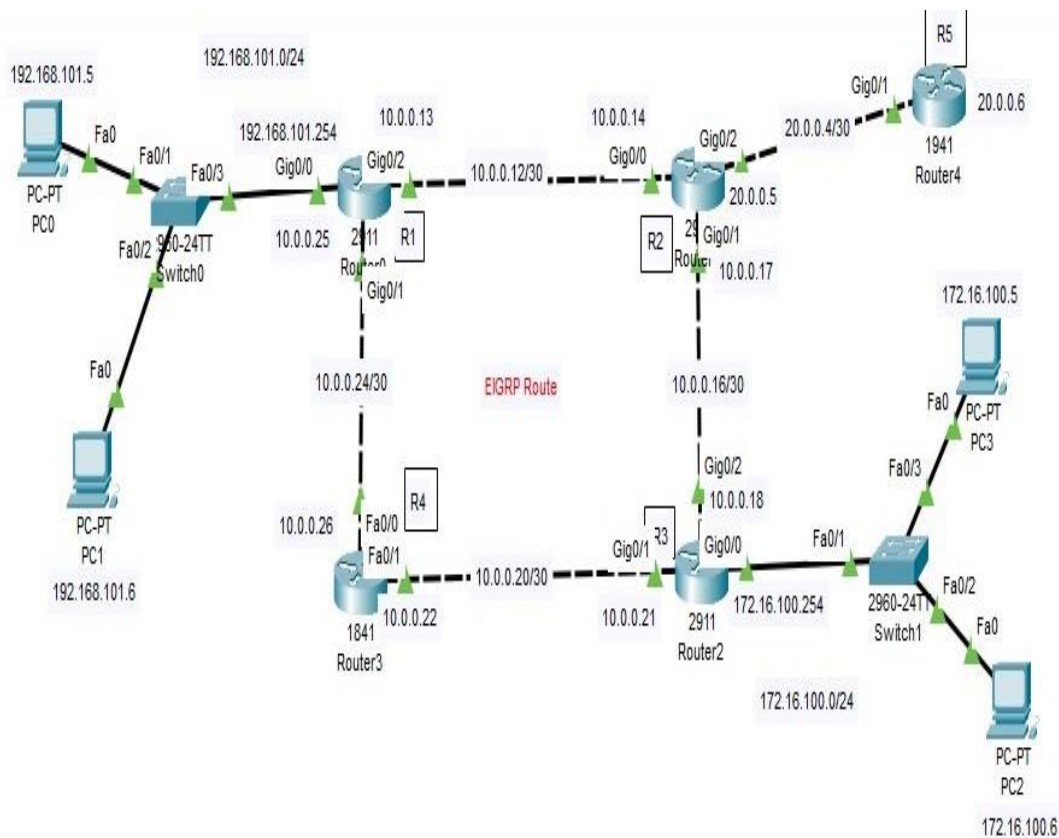
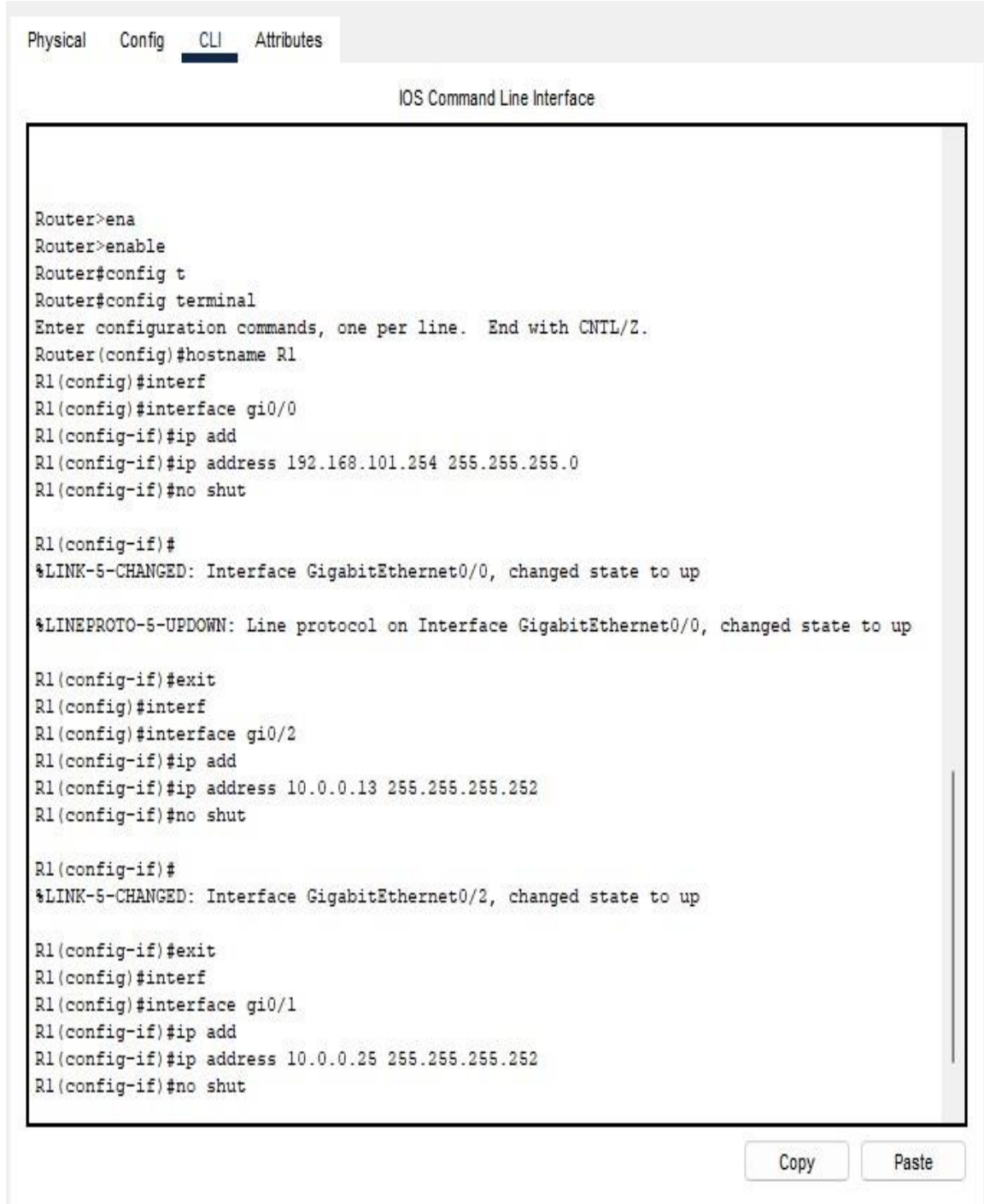


Figure 3.11.1: EIGRP routing protocol

Each router based on EIGRP maintains the routing table of its neighbors. If it cannot discover the route to a destination in any of such tables, it will ask its neighbors about the route and they will also ask other neighbors until the route is found.

This figure shows EIGRP router 1 configuration. During Configuration in EIGRP using with IP in R1 Router:

The figure shows EIGRP R1 configuration Example:



```
Router>ena
Router>enable
Router#config t
Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname R1
R1(config)#interf
R1(config)#interface gi0/0
R1(config-if)#ip add
R1(config-if)#ip address 192.168.101.254 255.255.255.0
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

R1(config-if)#exit
R1(config)#interf
R1(config)#interface gi0/2
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.13 255.255.255.252
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up

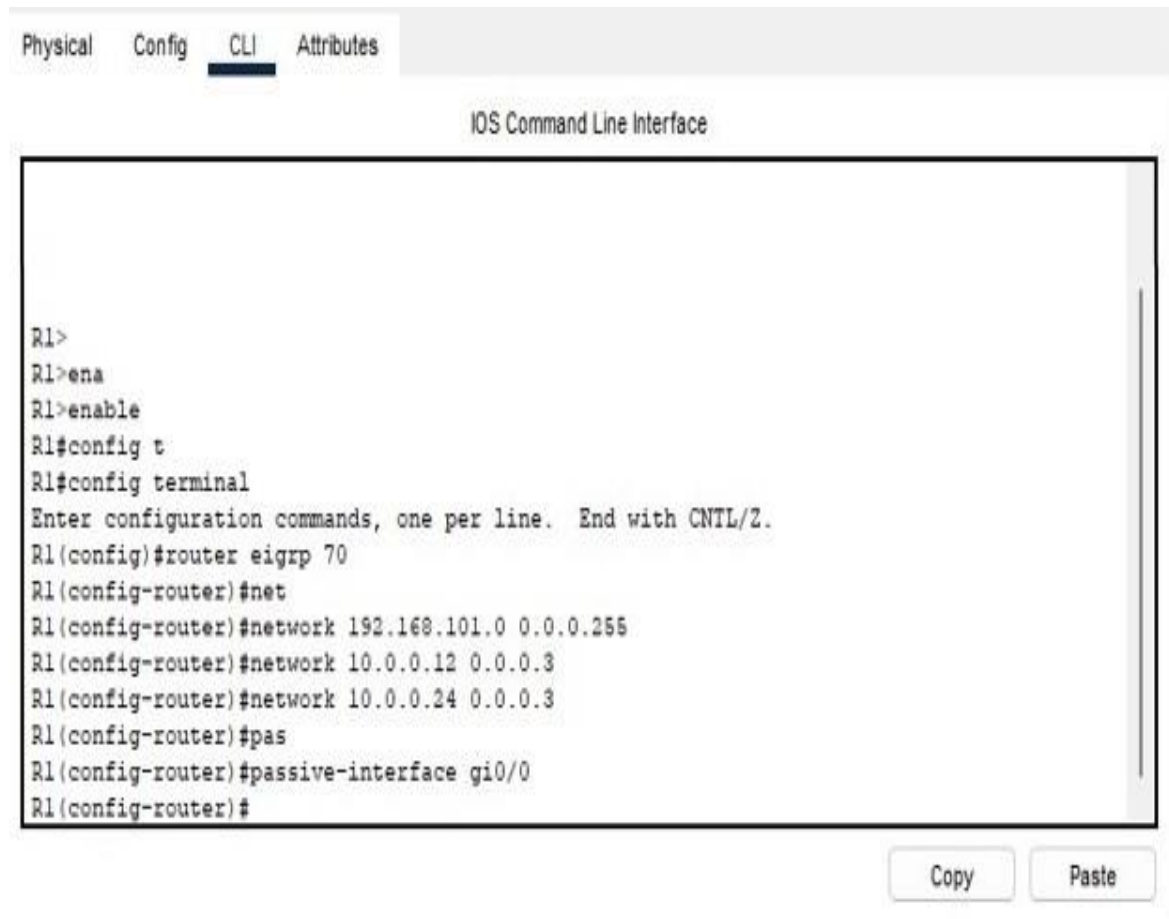
R1(config-if)#exit
R1(config)#interf
R1(config)#interface gi0/1
R1(config-if)#ip add
R1(config-if)#ip address 10.0.0.25 255.255.255.252
R1(config-if)#no shut
```

Figure 3.11.2: EIGRP Router 1 configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then just EIGRP configuration syntax.

This figure shows EIGRP router 1 configuration. During Configuration in EIGRP using with EIGRP command in R1 Router:

The figure shows EIGRP R1 configuration Example:



The screenshot displays the IOS Command Line Interface (CLI) for Router 1. At the top, there are tabs for 'Physical', 'Config', 'CLI' (which is selected), and 'Attributes'. Below the tabs, the title 'IOS Command Line Interface' is visible. The main area shows the following commands and prompts:

```
R1>
R1>ena
R1>enable
R1#config t
R1#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router eigrp 70
R1(config-router)#net
R1(config-router)#network 192.168.101.0 0.0.0.255
R1(config-router)#network 10.0.0.12 0.0.0.3
R1(config-router)#network 10.0.0.24 0.0.0.3
R1(config-router)#pas
R1(config-router)#passive-interface gi0/0
R1(config-router)#
```

At the bottom right of the CLI window, there are 'Copy' and 'Paste' buttons.

Figure 3.11.3: EIGRP Router 1 EIGRP command

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then just EIGRP command configuration syntax.

3.12 VLAN (Virtual Local Area Network):

Generally, the idea of the network being customized for the specific area or shared between several local areas is known as VLAN. The procedure of collaborating through broadcast domain switches on layer 3 devices is VLAN.

The figure shows VLAN Example:

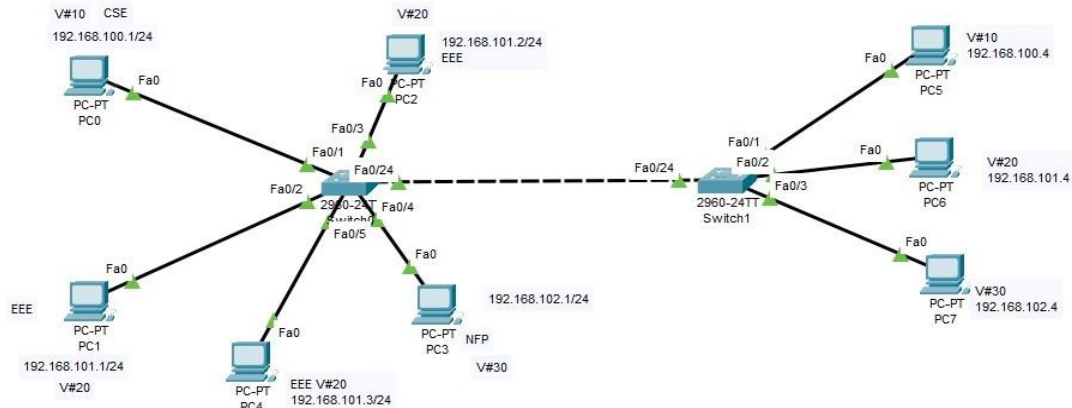


Figure 3.12.1: VLAN Example

During Configuration in VLAN CSE under 10 VLAN, EEE under 20 VLAN and NFE under 30 VLAN for Switch 1:

The figure shows VLAN Switch no-1 configuration Example:

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch(config)#hostname SW-1
SW-1(config)#vlan 10
SW-1(config-vlan)#name CSE
SW-1(config-vlan)#exit
SW-1(config)#int fa0/2
SW-1(config-if)#des
SW-1(config-if)#description CSE
SW-1(config-if)#sw
SW-1(config-if)#switchport m
SW-1(config-if)#switchport mode a
SW-1(config-if)#switchport mode access
SW-1(config-if)#sw
SW-1(config-if)#switchport a
SW-1(config-if)#switchport access vlan 10
SW-1(config-if)#exit
SW-1(config)#vlan 20
SW-1(config-vlan)#name EEE
SW-1(config-vlan)#exit
SW-1(config)#int fa0/6
SW-1(config-if)#des
SW-1(config-if)#description EEE
SW-1(config-if)#sw
SW-1(config-if)#switchport m
SW-1(config-if)#switchport mode a
SW-1(config-if)#switchport mode access
SW-1(config-if)#sw
SW-1(config-if)#switchport a
SW-1(config-if)#switchport access vlan 20
SW-1(config-if)#exit
SW-1(config)#vlan 30
SW-1(config-vlan)#name NFE
SW-1(config-vlan)#exit
SW-1(config)#int fa0/5
SW-1(config-if)#des
SW-1(config-if)#description NFE
SW-1(config-if)#swit
```

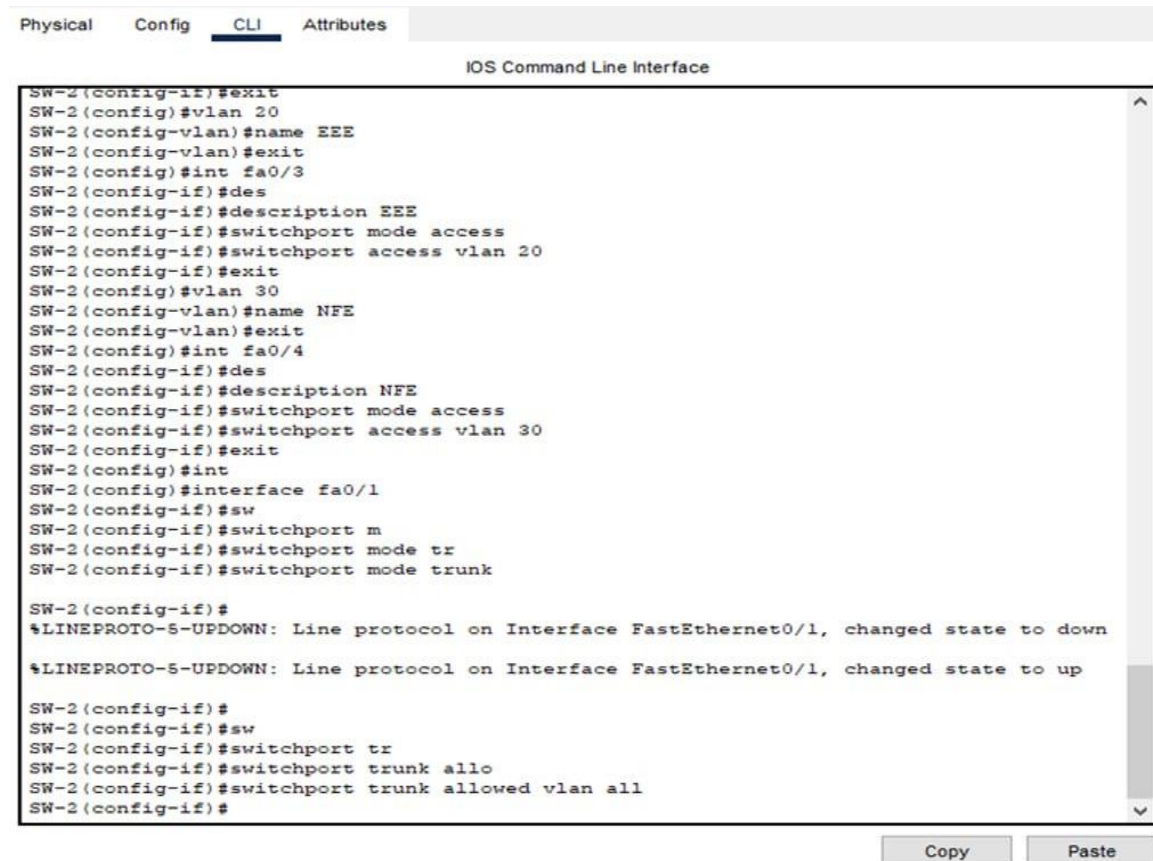
Copy Paste

Figure 3.12.2: VLAN Switch 1 configuration

To configure the Switch 1, go to the CLI by clicking on the switch. Then yes/no from here write no and enter to start switch configuration. Then just VLAN configuration syntax.

During Configuration in VLAN CSE under 10 VLAN, EEE under 20 VLAN and NFE under 30 VLAN for Switch 2, During Configuration in VLAN Trunk access mode use in Switch 2.

The figure shows VLAN Trunk access mode configuration Example:



```
SW-2(config-if)#exit
SW-2(config)#vlan 20
SW-2(config-vlan)#name EEE
SW-2(config-vlan)#exit
SW-2(config)#int fa0/3
SW-2(config-if)#des
SW-2(config-if)#description EEE
SW-2(config-if)#switchport mode access
SW-2(config-if)#switchport access vlan 20
SW-2(config-if)#exit
SW-2(config)#vlan 30
SW-2(config-vlan)#name NFE
SW-2(config-vlan)#exit
SW-2(config)#int fa0/4
SW-2(config-if)#des
SW-2(config-if)#description NFE
SW-2(config-if)#switchport mode access
SW-2(config-if)#switchport access vlan 30
SW-2(config-if)#exit
SW-2(config)#int
SW-2(config)#interface fa0/1
SW-2(config-if)#sw
SW-2(config-if)#switchport m
SW-2(config-if)#switchport mode tr
SW-2(config-if)#switchport mode trunk

SW-2(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

SW-2(config-if)#
SW-2(config-if)#sw
SW-2(config-if)#switchport tr
SW-2(config-if)#switchport trunk allo
SW-2(config-if)#switchport trunk allowed vlan all
SW-2(config-if)#
```

Figure 3.12.3: VLAN switch2 Trunk access mode

To configure the Switch 2, go to the CLI by clicking on the switch. Then yes/no from here write no and enter to start switch configuration. Then just VLAN Trunk access mode command configuration syntax.

3.13 OSPF (Open Shortest Path First):

The OSPF stands for Open Shortest Path First protocol (OSPF). It is depends on Link state routing algorithm having a two-step process that the first step is to identify router domain and the second step is to find the shortest path. His customary role is LSA-sending to other routers LSA.

The figure shows OSPF Example

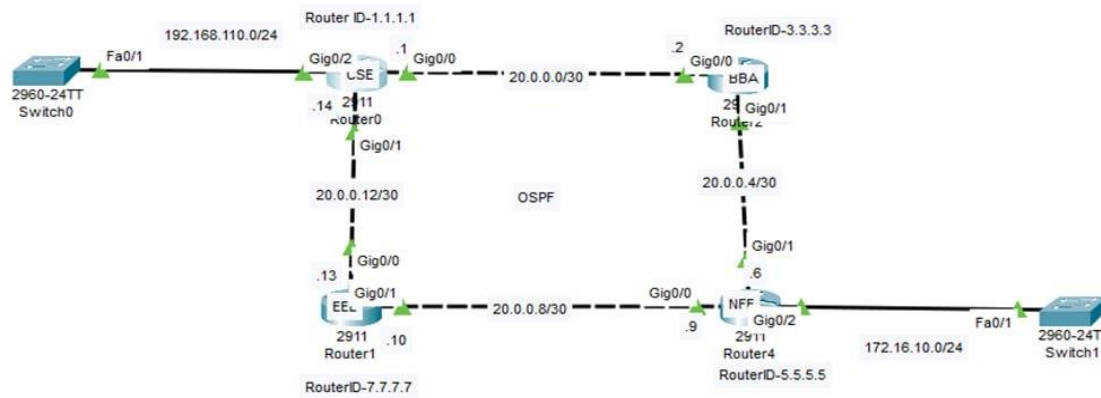


Figure 3.13.1: OSPF Configuration

This figure shows OSPF how do work Which depends on Link state routing algorithm, the first step in this process is to identify the router domain and the second step is finding the shortest path.

During Configuration in OSPF Router 1 a single area is add with the network address:

The figure shows OSPF router 1 Example,

```

Physical  Config  CLI  Attributes
-----
IOS Command Line Interface

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname CSE
CSE(config)#interface gi0/0
CSE(config-if)#ip address 172.16.100.31 255.255.255.0
CSE(config-if)#no shut

CSE(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
CSE(config-if)#exit
CSE(config)#interface gi0/2
CSE(config-if)#ip address 10.0.0.5 255.255.255.252
CSE(config-if)#no shut

CSE(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/2, changed state to up
CSE(config-if)#exit
CSE(config)#interface gi0/1
CSE(config-if)#ip address 10.0.0.18 255.255.255.252
CSE(config-if)#no shut

CSE(config-if)#
%LINK-S-CHANGED: Interface GigabitEthernet0/1, changed state to up
CSE#conf t
Enter configuration commands, one per line. End with CNTL/Z.
CSE(config)#router eigrp 60
CSE(config-router)#no auto
CSE(config-router)#no auto-summary
CSE(config-router)#network 172.16.100.0 0.0.0.255
CSE(config-router)#network 10.0.0.4 0.0.0.3
CSE(config-router)#network 10.0.0.16 0.0.0.3
CSE(config-router)#passive
CSE(config-router)#passive-interface gi0/0
CSE(config-router)#

```

Figure 3.13.2: OSPF Router 1 Configuration

To configure the router, go to the CLI by clicking on the router. Then yes/no from here write no and enter to start router configuration. Then just OSPF command configuration syntax.

3.14 MikroTik Router Setup:

The Idea MikroTik is a firm that provides hardware and software solutions for networks. Its flexibility, security, scalability or even the option of working on an update is its main advantage. The devices of MikroTik have the capability of running a number of network protocols and standards, thus, they are compatible with a long list of environments and equipment. The role of a support engineer must be familiar with Mikrotik Configuration. Routers that are suitable for home use or for large industrial factories, if there is a need to let the company know that they are drawing less load, they always inform the company, and we are always ready to do so.

The figure shows Mikrotik Router Example



Figure 3.14.1: MikroTik Router

First, I took a Mikrotik router, then I took a cable and did the cabling, now I connected the Mikrotik router with pc through cabling.

The means of connecting my office, data center and cache memory to each other is known as a Wide Area Network or Wan, which is a shortened term for a wide area network. We are granted a kind of proxy IP from the ISP. This is the company's own IP which means that we use the company's MD to all the employees. Discover how to set up IP static with the use of a company's own IP and a gateway using the One configuration. The network extending from one company to different locations is the first step of one configuration.

The figure shows Mikrotik Router configuration Example,

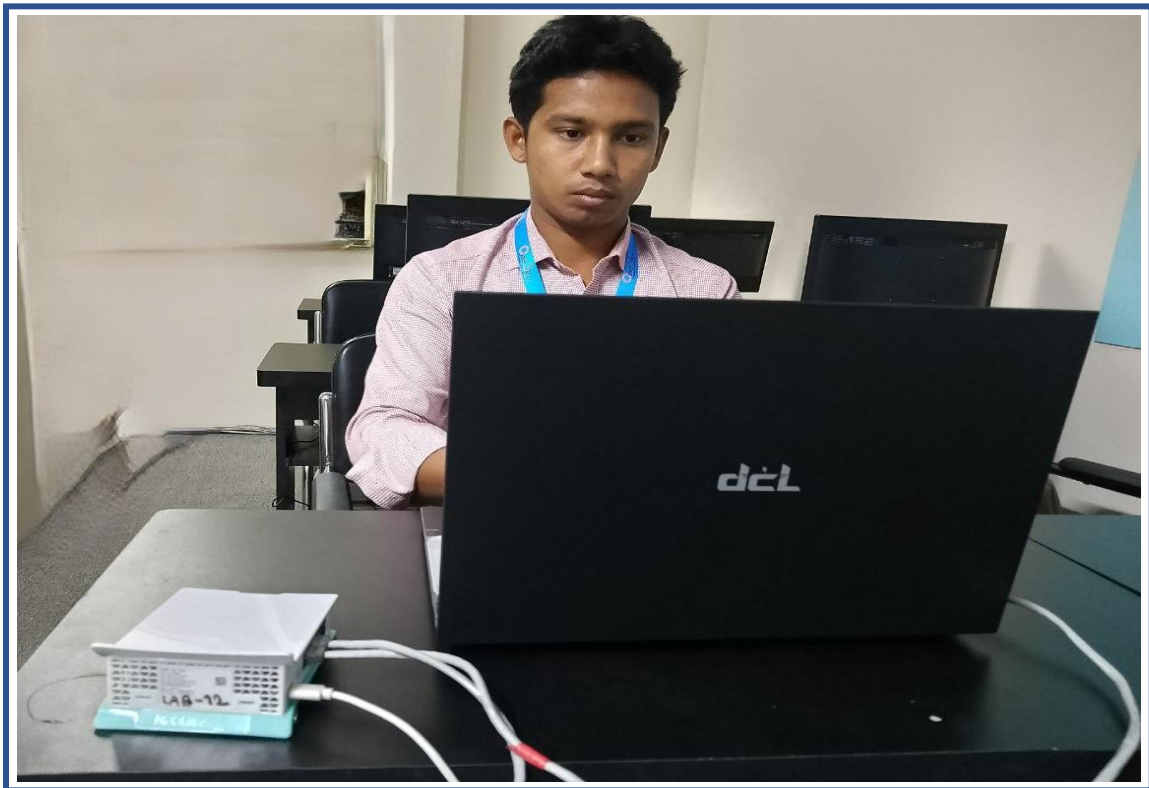


Figure 3.14.2: MikroTik Router Setup

First, I took a Mikrotik router, then I took a cable and did the cabling, now I connected the Mikrotik router with pc through cabling. And with the help of the PC, I completed the configuration and set-up of the Mikrotik router.

3.15 MikroTik Router WAN Configuration:

The tools that are utilized to link my office, data center and cache memory all together is called a wide area network or Wan which is short for Wide Area Network. We acquire a

sort of auto IP from the ISP. This is our organizational own IP which guarantees the use of company's MD sir to all employees. Find out how to set up IP static using your own company's IP and a gateway using a One configuration. The single company is the bearer of the network that is spread across the several locations in different locations is the basic principle of the one configuration.

The figure shows the WAN configuration with MikroTik Router connect.

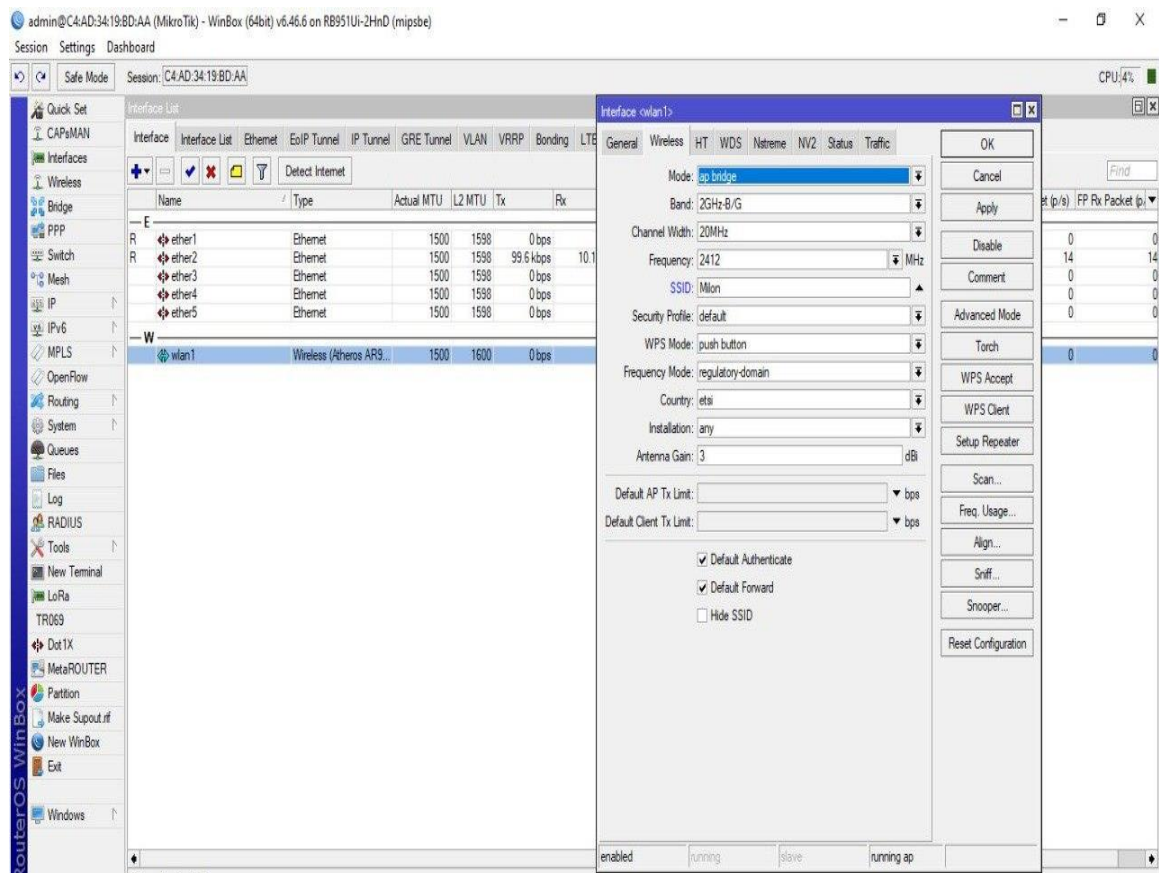


Figure 3.15.1: MikroTik Router WAN Configuration

First, I turned on the PC, then opened the win-Box software and completed the step by step configuration according to the syntax to configure the WAN.

3.16 MikroTik Router LAN Configuration:

IP distribution from server to client can be performed both by the static and wireless way.

The figure shows the LAN configuration with MikroTik Router connect.

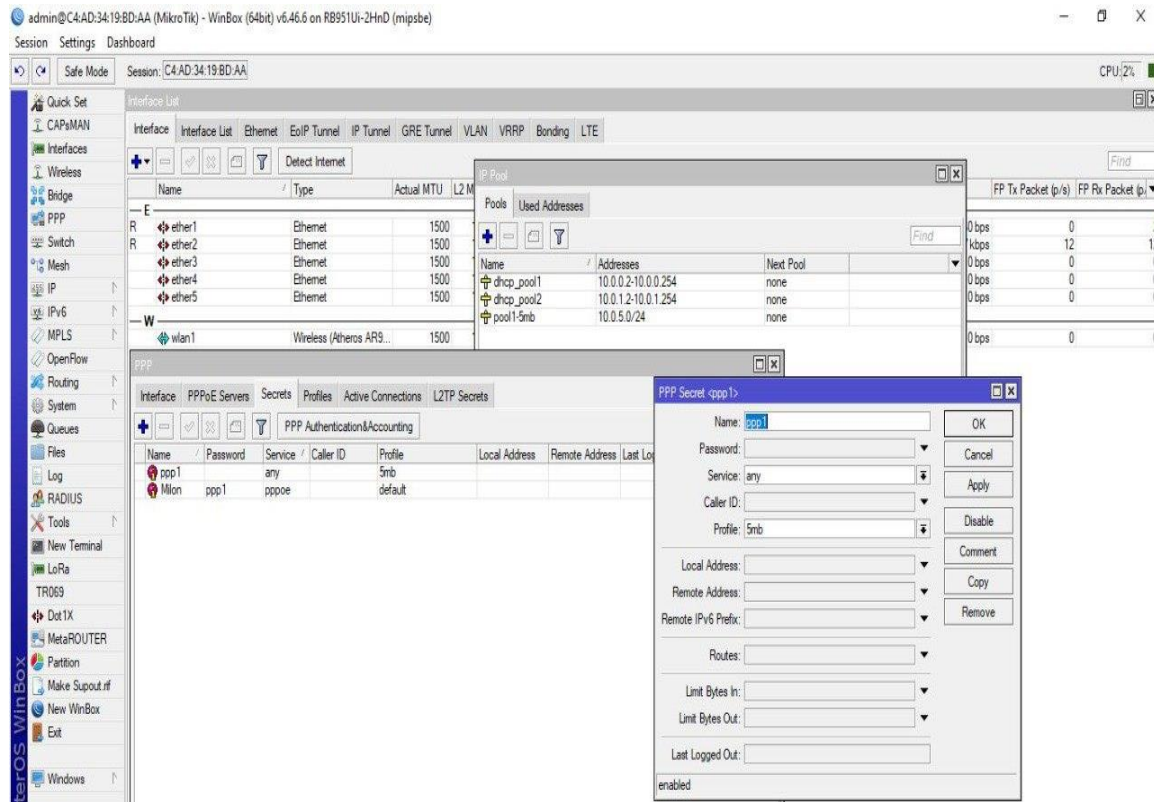


Figure 3.16.1: MikroTik Router WAN Configuration

First, I turned on the PC, then opened the win-Box software and completed the step by step configuration according to the syntax to configure the LAN.

3.17 Challenges:

Peculiar difficulties that I encountered during beginning of my internship are of interest. Like first I have attended office at 09 AM. It really cuts me when you put it like that. First, I do internship classes, then I try to learn from my seniors by watching the work and also work in support team till office hours. Regarding that I have never worked in any office before that was rather very very difficult for me because I have to learn lots of office rules within a very short time. I meet and have to talk to a lot of people. I learn how the operate and how best I can to deal with them. Indeed, it was really a very big challenge for me.

CHAPTER 4

COMPETENCIES AND SMART PLAN

4.1 Competencies Earned:

At this situation, All employment center or anywhere is full of talents or full of people with potentials. That is why we need to keep being practical here as well keeping the pertaining knowledge handy. It is very crucial for one to be capable of acquiring a skill to get a better job in the strongly competitive job market hence, a career is a must. The same is also true for the work-load as you cannot be a filler for the network quality-reducing environment in the network market competition. If you are not capable to transform yourself with the help of technology, you will be losing your position, but if you can change yourself with the help of technology, your position will be improved. The first part of the task is where I will demonstrate how to configure and administer the network equipment's. This introductory position will show how I can set up and manage the network infrastructure, and also install and use such features as VLANs, OSPF, Multicast, and RIP configuration. In addition to this, I will also have a talk with you on the ways of VLAN applications and VLAN usage. The internship which I got the most learning out of was the one that has given me the skills that I will use in the future career. I can for sure say that I have done the things of my internship.

4.2 Smart Plan:

Create a schedule in advance, even the most smart person sometimes makes a wrong plan, but the person who wants to succeed in life has to plan, so everyone can fail. Since I joined the Intern team at One Sky Communication Ltd. and now, I am aspiring to have a good future as far as my jobs are concerned. What I am getting out the intern period is the real knowledge that I will be helpful for my future career in Networking. It is very much wanted in the modern technology. I got some useful experience in my stage time in an actual office situation. Thus, I will try my best to grow more and more knowledge, and practice more and more. My future plan consists of the total learning about Network Engineering, then

its real implementation. Thus, my career brightens and I can achieve a successful life. This internship is a great way to get exposed to different areas and thus planning can be done smarter.

4.3 Reflections:

The Internship on One Sky Communication Ltd is a place where we can apply the theory and at the same time learn on practically the real world of Network Engineering. It develops the experience which is useful for the engineering job. While I was interning, I had the chance of working in the Support Team which was a helpful experience for me since it provided me with Practical knowledge. This Internship will be a great opportunity for me to get good jobs in the future. Internship is a great invention which is the primary reason to have a great idea from the tips of the tricks and trips of a skilled person.

The figure shows the Support Team and NOC Team Working Zone.

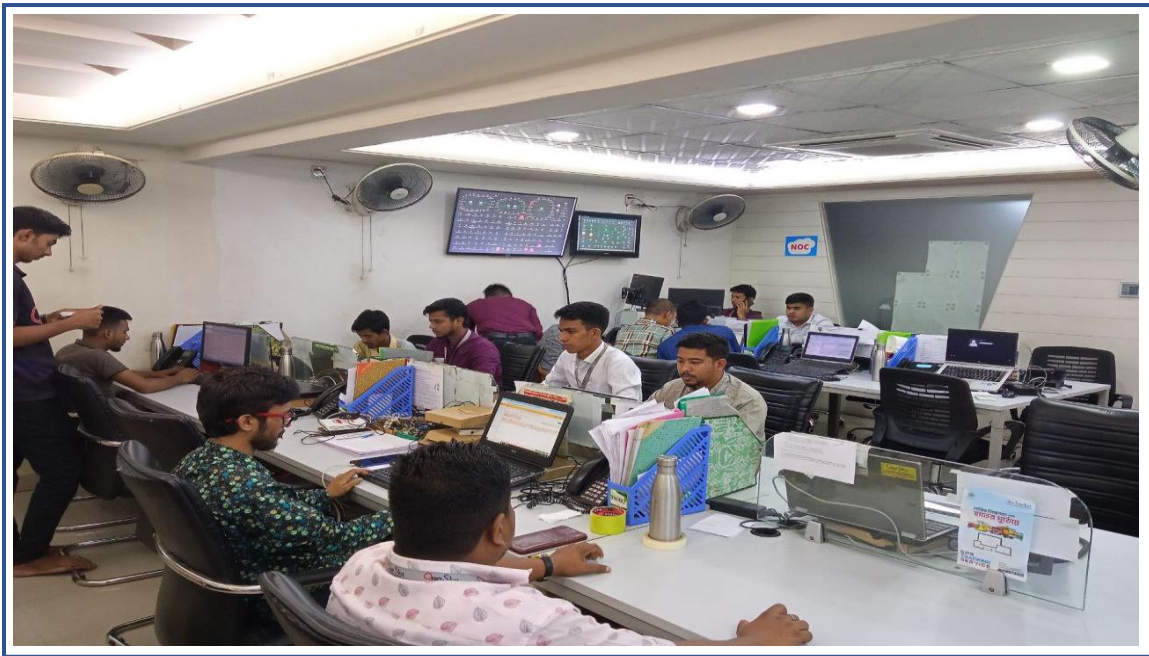


Figure 4.3.1: One Sky Com. Ltd. Support Team

This figure shows One Sky Communication Ltd. the Support Team and NOC Team working zone. They help each other during office hours and solve any problem. I first sit with the support team and try to learn by watching their works, (OSCL).

The figure shows the Support Team working zone Example.



Figure 4.3.2: One Sky Com. Ltd. Support Team

I first sit with the support team and try to learn by watching their works. Then I proceed step by step based on what I learn.

CHAPTER 5

CONCLUSION AND FUTURE CAREER

5.1 Conclusion:

My internship on One Sky Communication Ltd. has been finish. This internship is very important in the process of learning the practical knowledge. Besides, the improvement of the abilities to do the work and to solve the problems is the self-motivation. The internship gives me the chance to learn a lot of things that are apparently discussed in the previous chapter. This internship, which has been on for a long time, has supported the habit of working for 7-8 hours a day, 6 days a week. From this internship, I learn when and how I have to be in office for 8 hours of work. As for the opportunities, working with the team members and dealing with different problems, thinking well and learning how to manage tasks can be mentioned. I have particular gained more profitability by doing an internship as well as improving my work in a team; I have enhanced my understanding on teamwork especially aspect of respecting the planning and decision of other team members. This job has been the cause of my honesty and the reason why I am now working hard. This internship is an opportunity for me to acquire the specific career knowledge before I make the commitment. I am very lucky to be selected to work as an intern with one sky communication ltd.

5.2 Future Scope:

The sector of computer networking at the moment is a concerned area for professionals. In our Bangladesh, there are a plenty of companies. In this companies a company One Sky Communication Ltd. is among companies one of the popular companies. During this period a skilled worker is needed in any place; therefore, I have to build a competent job first before proceeding on to another stage in my life. I think the learning I have had from my internship which will help me to scale new heights. Most likely, it will help me to start the future life and the career also, if there is any path to choose.

- ✓ For this internship experiences assist me for got a good job.
- ✓ On the same context, I can start a ISP business.
- ✓ I accumulate information about this subject so that, I can try to work on this field such like a professional.

REFERENCES

- [1] Follow this report paper to get idea, available at <<<http://dspace.daffodilvarsity.edu.bd:8080/bitstream/handle/123456789/8334/191-15-12501.pdf?sequence=1&isAllowed=y>>>(Last accessed on 10-03-2024 at 10:20 PM)
- [2] Basic Networking concepts, available at <<<https://www.javatpoint.com/fundamentals-of-computer-networking>>>(Last accessed on 19-03-2024 at 1:20 PM)
- [3] One Sky Communication Limited Website, available at << <https://onesky.com.bd/about-us>>>(Last accessed on 28-03-2024 at 09:40 AM)
- [4] Learn about OSI model & TCP/IP, available at <<<https://www.geeksforgeeks.org/difference-between-osi-model-and-tcp-ip-model/>>>Last accessed on 02-04-2024 at 03:10 PM)
- [5] Learn about IP addressing and subnetting, available at <<<https://www.techtarget.com/searchnetworking/tip/Introduction-to-IP-addressing-and-subnetting>>> (Last accessed on 12-04-2024 at 1:20 PM)
- [6] Get help about Routing protocol, available at<< <https://www.scaler.com/topics/computer-network/routing-protocols/>>>(Last accessed on 17-04-2024 at 1:20 PM)
- [7] MikroTik router Configuration help learn, available at <<<https://www.youtube.com/playlist?list=PLIXRP9ryuaFDROCwIHbnra8bLsbzJuplh>>>(Last accessed on 05-05-2024 at 02:00 PM)

APPENDICES

Appendix A: Internship Reflection:

By doing Internship on One Sky Communication Ltd. I obtain the practical experience and knowledge in the field of Network Engineering. I am able to gather more on the job experiences after getting into this engineering field. Being an intern, I gained Practical knowledge concerning Support team. Networking sector is one of the intelligent and enthusiastic jobs at this time. This Internship will enable me to be get a smart job. Internships provides the advanced tricks and tips that skilled by the professional.

Appendix B: Company Details:



One Sky Communication Limited

S.A Bhaban (6th floor),

115/23 Motijheel Circular Road,

Dhaka, Bangladesh

Cell: +8801711-312770

Email: info@onesky.com.bd

INTERNSHIP ON COMPUTER NETWORKING

ORIGINALITY REPORT

14%	13%	2%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	dspace.daffodilvarsity.edu.bd:8080 Internet Source	3%
2	Submitted to Daffodil International University Student Paper	2%
3	pdfcookie.com Internet Source	1%
4	www.scribd.com Internet Source	1%
5	Submitted to Informatics Education Limited Student Paper	1%
6	www.geekinterview.com Internet Source	1%
7	slideplayer.com Internet Source	1%
8	Submitted to Al Musanna College of Technology Student Paper	1%
9	documents.mx Internet Source	<1%