#### INTERNSHIP ON NETWORKING IN BANKING SYSTEM

BY

### NAME: SOJIB DAS

#### ID: 191-15-12449

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

Supervised By

# Zerin Nasrin Tumpa

Senior Lecturer Department of CSE Daffodil International University

Co-Supervised By

### Aniruddha Rakshit

Assistant Professor Department of CSE Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH 2 February , 2023

### **APPROVAL**

This Project/Internship titled **"INTERNSHIP ON NETWORKING IN BANKING SYSTEM"**, submitted by SOJIB DAS, **ID No 191-15-12449** 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 **02/02/2023**.

### BOARD OF EXAMINERS

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

Dr. Sheak Rashed Haider Noori Professor and Associate Head Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Md. Sazzadur Ahamed Assistant Professor Department of Computer Science and Engineering Faculty of Science & Information Technology Daffodil International University

Dr. Md. Sazzadur Rahman Associate Professor Institute of Information Technology Jahangirnagar University Chairman

**Internal Examiner** 

Internal Examiner

**External Examiner** 

#### **DECLARATION**

I hereby declare that, this project has been done by me under the supervision of Zerin Nasrin Tumpa, Senior Lecturer, **Department of CSE**, Daffodil International University. We also announce that neither this project nor any piece of this undertaking has been submitted somewhere else for grant of any degree or diploma.

Supervised by:

Zerin Nasrin Tumpa Senior Lecturer Department of CSE Daffodil International University

Submitted by:

Sojib Das

Sojib Das Id : 191-15-12449 Department of CSE Daffodil International University

# ACKNOWLEDGEMENT

First of all, I offer my heartfelt thanks and gratitude to Almighty God and my parents.

I would like to express my sincere gratitude to **Zerin Nasrin Tumpa**, Senior Lecturer in his CSE department at Daffodil International University, Dhaka, for his deep knowledge and enthusiasm.

Supervisor interest in the area of "Networking" to carry out this project. His constant patience, his scientific guidance, his constant encouragement, his constant energetic supervision, his constructive criticism, his valuable advice, his reading of many poor quality drafts and correcting them every step of the way, made this possible. I was able to complete the project.

I would like to express of my respect to honorable professor **Dr. Touhid Bhuiyan,** CSE Faculty Professor and his CSE Dean, sincerely thanked his thoughtful support in completing our project, as well as other staff and collaborators in his CSE Faculty at Daffodil International University. It means I would like to thank all my classmates from Daffodil International University for participating in this discussion while completing the coursework.

Finally, we should give due respect to the people's constant help and patients.

## ABSTRACT

This phase represents the operation of the network. The primary purpose and purpose of this report is to learn more about computer networks, ISP network equipment such as servers, computers, cables, routers and connections through hands-on experience.

During my internship, I will work at CISCO, NETGEAR, WINDOWS SERVER, etc. Working with them gives me a lot of knowledge about how to set up networks and how to solve large scale network problems.

During my four-month internship, I was able to gain a lot of knowledge about the work environment.

# CONTENTS

# **TABLE OF CONTENTS**

CONTENTS	PAGE
Board of Examiners	i
Declaration	ii
Acknowledgement	iii
Abstract	iv
CHAPTER	
<b>CHAPTER 1: INTRODUCTION</b>	1-3
1.1 Introduction	1
1.2 Motivation	1-2
1.3 Internship Objectives	2
1.4 Introduction to the Company	2-3
1.5 Report Layout	3
<b>CHAPTER 2: ORGANIZATION</b>	4-5
2.1 Introduction	4
2.2 Product and Market Situation	4
2.3 Target Group	4
2.4 SWOT Analysis	5
2.5 Organizational Structure	5

<b>CHAPTER 3: Task, Projects and Activities</b>	6-11
3.1 Daily Work & Activities	6
3.2 Basic knowledge	6
3.3 Knot End device	6
3.4 Topology of Network	6-7
3.5 Categories of Network	7-9
3.6 Media Converter	10
3.7 FTTx Network	11
CHAPTER 4: About CISCO	12-29
4.1 IP Address	12
4.2 IP Address Class	12
4.3 IP Subnet class C	13
4.4 Sub-netting musk class B	13-14
4.5 VLSM	14-15
4.6 Routing protocol	15
4.7 Administrative Distance	16
4.8 OSPF(Open shortest path first protocol Basic)	17-21
4.9 EIGRP	22-24
4.10 Inter VLAN Routing	25-27
4.11 DHCP Server	27-29

<b>CHAPTER 5: Competencies and Smart Plan</b>	30
5.1 Competencies Earned	30
•	30
5.2 Smart Plan	30
5.3 Reflections	
<b>CHAPTER 6: Conclusion &amp; Future Career</b>	31
6.1 Conclusion	31
6.2 Future Scope	31
Appendixes	32
References	33

# **LIST OF FIGURES**

FIGURES	Page
Figure 2.1: ISP Network Diagram	6
Figure 3.1: Local Area Network	8
Figure 3.2: Metropolitan Area Network	9
Figure 3.3: Wide Field Network	10
Figure 3.4: Media Converter	11
Figure 3.5: FTTx Network	12
Figure 4.1: IP Related	18
Figure 4.2: OSPF Single-Area	20
Figure 4.3: OSPF Multi-Area	22
Figure 4.4 EIGRP	25
Figure 4.5: Inter VLAN Routing	27
Figure 4.6: DHCP Server	30
Figure 4.7: NAT	32
Figure 4.8: ACL	36

# CHAPTER 1 INTRODUCTION

### **1.1 Introduction**

An internship is a kind of opportunity to express someone's perfect gift. If you haven't completed your training yet, you should record useful information for all of us. Internships are for students who are strong and successful enough to have the opportunity to receive support from faculty and mentors for a bright future. Either way, they always succeeded despite unimaginable obstacles. Above all, it's also about choosing a better internship or internship agency than any other company. You can learn a lot from good clubs. As a computer science and engineering student, reading this book doesn't change my interest much, but it's important to understand how associations and networks work from this book. The language of the book is not so simple, but the inner language. I mainly teach networks, configurations, servers, etc. related to these effects. He also learns how people support networks and work all night to support networks. It helps him to know the effects after the engagement. This experience will help you make an impact after participating in an activity. overall experience and performance. I network, communicate, find problems and try to solve them. Couldn't learn the text. B. Setting up and researching points, running servers, etc. Ideal for future work in network services with Network Director.

### **1.2 Motivation**

A PC network is the method involved with interfacing a PC framework to different PCs. A correspondence network that permits a PC to move information starting with one gadget then onto the next. That is advanced association two or various further than two gadgets. That is can associate through line or remote association among each and different gadgets .However, that doesn't mean we're done at this point, If we can interface our gadget actually. For arrangement an organization which moves information, we really want to set the convention of how to send the information every second by means of string or remote organization framework. Presently a day's web is the most famous for correspondence framework.

Organization can interface I realize that Internet can associate effectively one country to one more country all around the world through by strong web framework. The Internet is similarly as simple, yet it's excessively hazardous on the off chance that you don't have any idea how to safeguard and utilize your organization. Most issues with the Internet are programmers. In some cases programmers can hack our PC and different gadgets over the web. Hence we want to make a solid security framework for banking and office organization. Office network arrangement framework is vital these days, in light of a wide range of office (Public or Private) every one of them involving web and other systems administration gadget for their correspondence and keeping up with the workplace work.

# 1.3 Objectives of Internship

My motivation for training is to gain a good professional understanding of the field or industry. Available for future calls.

Either way, the entry-level position is primarily to meet the requirements for a Bachelor of Science degree in his CSE program.

There is something else -

- Collecting information on ISP network systems
- Provide information on router and server setup, routing through your ISP
- Set up your organization-wide mappings. Configure organization-wide organization for affiliation.

#### **1.4 Introduction to the Company**

I want to fulfill this need to pursue my Bachelor of Science degree. In addition, temporary employment with the Institute is a prerequisite for her four-year qualification in scientific research. So I can choose AB bank to do temporary work. Because it is one of the most famous and best internet providers. I receive dosage types TR 1 and TR 2. The Bangladesh government, BCB and BFF have internet control from them. There are many branches nationwide. They are

independent companies. And most importantly, offer them the chance to show themselves first, and then take a temporary job with them organization.

# **1.5 Report Layout**

The main cell of this report is the prologue of my preparation and a short story about my Energizer. Another section basically deals with my belonging to an entry-level position. It shows some of my clubs, items and contact areas, target accumulation, geek surveys, and club structure. Section 3 briefly presents my daily work and what I learned from the course. Part 4 also helped me understand what I got from this facility. before the last section. The final section about the ending and my life hereafter.

# CHAPTER 2 ORGANIZATION

### 2.1 Introduction

Like an intern student, I want to work for a recognized Networking sector that provides internet access while also supporting the client's organizational network. I thought it would be beneficial to me and that I could work with them. I looked into my trainer and discovered that it failed to give me with essential information. After learning that they do not teach me from beginning, I begin to consider which organizations will do so. A few days later, I discovered it. I'm looking for an internship opportunity with AB Bank Network Limited. Then I had a conversation with them. I'm looking into them and discovered that they have the independent networking sector.

### 2.2 Product and Market Situation

During your internship you will work with Cisco, Mikrotik routers, DHCP and DNS servers, TPLINK, cloud networking and other technologies. But I learned the most about Cisco packages. Used by Commercial & Industrial Network Corporation. Our product line includes switches, routers, WAN accelerators, unified fabrics, wireless systems, warehouse networks, and pole computing services. We know there are many needs in the networking industry. Every type of group in every industry needs its own network. This company offers great employment opportunities.

## 2.3 Target Group

The purpose of my training organization was to become a networked institution. My training bandages are presented by the governing board that reviews applications and you will also find client advertisements on social media. The Association cannot address individual customers individually without the consent of the consumer. If I wanted to start a business or group, I would first find out who my competitors are and who their customers are. I have to. Both service and customer perception are key points. Also, I treat my customers in my own way.

# 2.4 SWOT Analysis

The first thing you should do when you obtain a clothes design is determine its strengths, drawbacks, potential, and threats. Look at its shortcomings until you've discovered out what the problem is once you've figured out what it is.

# 2.5 Organizational Structure

You must first assess the partnership's qualities, flaws, chances, and dangers before deciding on a partnership structure. After you've grasped that, examine its flaws until you've arrived at a solution.

# CHAPTER 3 Tasks, projects & Activities

# 3.1 Daily Work and Performances

Every day as an intern, I put in a lot of effort and deliver a lot of results. AB Bank Limited was the name of the internship firm where I saved my knowledge. Every day, I chat with my squad, and they tech me throughout the term.

# 3.2 Introductory knowledge

- 1. End the ruse with a knot
- 2. Network Setups
- 3. Topology of the network
- 4. Different modes of transmission
- 5.. Ethernet Cabling

# 3.3 End the ruse with a knot

Laptop computers, desktop computers, mobile phones, scanners, and any other associated equipment that can shoot and admit data are all acceptable.

# 3.4 Topology of Network

This is a communication network component. Type of network topology:

- a. Topology of the mesh
- b. Topology of stars
- c. Topology of the bus
- d. The topology of rings and
- e. Topology of Mongrels
- Mesh Topology: Mesh topology is a type of point-to-point connection that connects several bumps at the same time. This network contains n (n1) / 2 anchors at altitude n.

- Star Topology: The most common network is the Star network. Each star network design has a primary network device, such as a switch, computer, or hub. The main network device functions as a server.
- Bus Topology: A big cable connects each node. It's known as Bus topology.
- **Ring Topology:** A point-to-point link (P to P) connects the ring topology, which has only two bumps on each side.
- Hybrid Network: The term "hybrid network" refers to a network that combines different topologies. That is, the advantages of multiple topologies are shared.

### **3.5 Network Categories**

- a. Local Area Network(LAN)
- b. Metropolitan Area Network(MAN)
- c. Wide Area Network(WAN)

#### Local Area Network (LAN):

- a. That is, in general, unique and personal
- b. LAN Structures are used in places like residences, schools, colleges, and homes.
- c. Ring, Bus, and Star topologies are used.

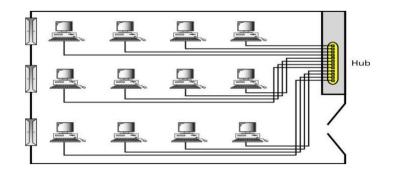


Figure 3.1: LAN

# Metropolitan Area network (MAN):

- a. This is a city-wide design.
- b. Internet Service Provider (ISP) and Cable Television Network (Cable TV),
- c. It could be personal or public.

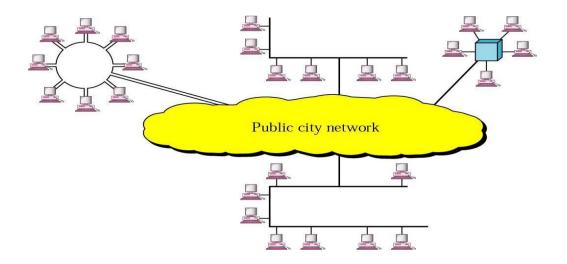


Figure 3.2 : Metropolitan Area

# Wide Field Network:

- a. For long distance transmissions, use this method
- b. A single firm owns and implements a WAN

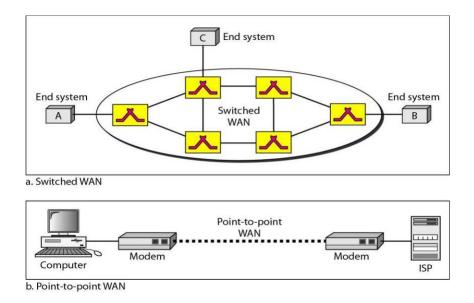


Figure 3.3: Wide field Network

# **3.6 MEDIA CONVERTER**

A fiber optic network device is a media converter. Electrical signals used in copper UTP (unshielded twisted pair) network cables are converted to light waves in fiber optic cables in this device. Fiber optic connections are required when the distance between two network devices is greater than the transmission distance of copper cable.

Connect both sides of the fiber optic patch cord to this device. Fiber optic cable cores are also connected via patch cords. ISPs use different types of fiber optic cables such as 4-, 12-, 24-, 48-, and 96



Figure 3.4: Media converter

### **3.7 FTTx NETWORK**

The most significant portion of an ISP's network is the FTTx network. It cuts down on the amount of optical fiber optic cable used. Fiber optic cable will be connected to an OLT and a PON module in the center, as well as a Fiber Splitter. There are various types of fiber splitters. 1:4, 1:8, and 1:16 are the ratios. 1:32; 1:64; 1:72; 1:72; 1:72; 1 2:16: 2:4, 2:8 2:00, 2

**3.7.1 ONU**: ONU stands for optical network unit. The optical impulses transferred across fibers are converted to electrical signals by the ONU. These electrical impulses are subsequently distributed to individual subscribers. There are frequently a distance or to get connection on network between ONU and the end user's location.

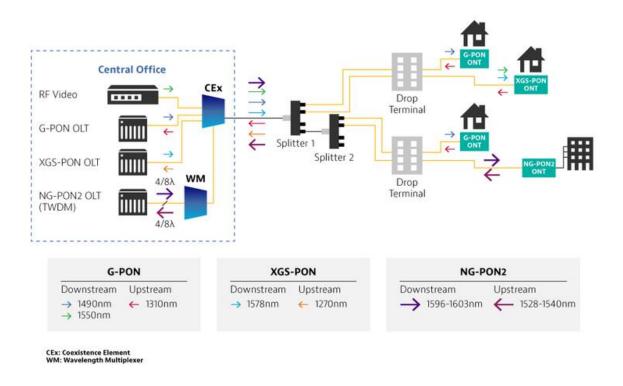


Figure 3.5: FTTx Network

# Chapter 4 ABOUT CISCO

### 4.1 IP Address

The term "IP" is short for "Internet Protocol". The two IP types currently in use in the Universal Internet (IPv4) and (IPv6) are: IPv4 addresses are 32 bits, while IPv6 addresses are 128 bits. Both have a switch from IPv4 to IPv6. These two protocols are incompatible, but a "dual stack" system can send data over his IPv4 and IPv6. The most important semantics in IP addressing is TCP/IP. Numbers are written in sharp decimals. A period divides 4 octaves (192.168.10.1). Each quintet is assigned a number from 0 to 255. Internet communication requires the use of protocols. This preserves the international protocols of the Internet.

### 4.2 IP address classes

Class	Address range
Class A	1.0.0.1 to 126.255.255.254
Class B	128.1.0.1 to 191.255.255.254
Class C	192.0.1.1 to 223.255.254.254
Class D	224.0.0.0 to 239.255.255.255

### 4.3 IP Subnet Class C

192.168.1.0/26

Block Size =256-192=64 Block size

 $2^{n}=2^{2}=4$  Network

Host

2<sup>n</sup> - 2

2<sup>6</sup>-2=64-2=62

Subnet Mask: 255.255.255.192

Network	Host	B/A
192.168.1.0	1-62	63
192.168.1.64	63-126	127
192.168.1.128	127-190	191
192.168.1.192	193-254	255

# 4.4 Sub-networking musk, B-class

# 173.17.0.0/19

Subnet Mask = 255.255.224.0

Block Size= 256-224=32

2<sup>n</sup>=2<sup>3</sup>=8 Network

2<sup>13</sup>-2=8192-2=8190 Host

Network	k Host	B/A
173.17.0.0	173.13.0.1-173.17.31.254	173.17.31.255
173.17.32.0	173.17.32.1-173.17.63.254	173.17.63.255
173.17.64.0	173.17.64.1-173.17.95.254	173.17.95.255
173.17.96.0	173.17.96.1-173.17.127.254	173.17.127.255
173.17.128.0	173.17.128.1-173.17.159.254	173.17.159.255
173.17.160.0	173.17.160.1-173.17.191.254	173.17.191.255
173.17.192.0	173.17.192.1-173.17.223.254	173.17.223.255
173.17.224.0	173.17.224.1-173.17.255.254	173.17.255.255

### **4.5 VLSM**

It shows how many networks can be built from a single network using different length subnet masks for different types of network configurations. VLSM Network is the name of this system. Specified IPs:

173.10.0.0 The request host is: HR= 509 hosts IT= 1015 host Sales = 220 Marketing = 1020 Need Marketing=1020 173.10.0.0/22  $2^{10}-2=1024-2=1022$ Subnet: 255.255.252.0 IT: 1015 Host 173.10.0.0/22  $2^{10}-2=1024-2=1022$  Subnet: 255.255.252.0

Requires HR 509 host 173.10.0.0/23 29-2=512-2=510 Subnet: 255.255.254.0 Sales 220 hosts 173.10.0.0/24 28-2=256-2=254 Subnet: 255.255.255.0

# **4.6 Routing Protocols**

- 1. Distance vector routing protocol using Bellman-Ford Algorithm RIP V-1
- 2. Connection state OSPF, IS-IS
- 3. Hybrid EIGP RIP V-2

### Link state routing protocol

- A. Next neighbor table
- B. Neighbor information in the topology table
- C. Routing SP

# 4.7 Administrative Distance

Connected	0
Static	0/1
EIGRP	90
EIGRP	100
OSPF	110
RIP	120
EIGRP EX	170



Figure 4.1 : IP Related

# 4.8 Open Shortest Path First Protocol Basic

- 1. Version 2 is a published standard.
- 2. Convergence
- 3. Update by trigger
- 4. LSAs are used to connect to other routers.
- 5. Classless
- 6. Manual route summarization is supported by VLSM.
- 7. Good day! DR to other router in DR 224.0.0.5
- 8. DRs other than DR&BDR 224.0.0.0.6
- 9. Indicators used:
- 10. 10s dead timer 40s

11. Multicast updates to the interface bandwidth of the multicast address 108 bits per second (bps).

12. Area is a term used in OSPF to describe how a large network is divided into smaller networks.

- 13. OSPF
- 14. Area 0 (spine)
- 15. Range 1-65535 Implement two layers, Hierarchy

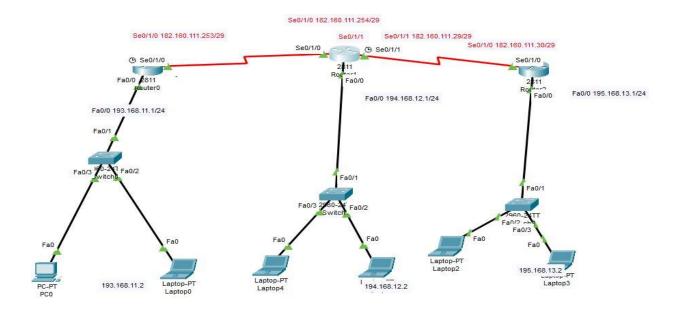


Figure 4.2: OSPF Single Area

# **Configuration of OSPF Single Area**

Router1>ena
Router1>enable
Router1#show ip rout
O 182.160.111.24 [110/128] via 182.160.111.254, 00:20:53, Serial0/1/0
C 182.160.111.248 is directly connected, Serial0/1/0
C 193.168.11.0/24 is directly connected, FastEthernet0/0
O 194.168.12.0/24 [110/65] via 182.160.111.254, 00:20:53, Serial0/1/0
O 195.168.13.0/24 [110/129] via 182.160.111.254, 00:20:53, Serial0/1/0
Router_2#
C 182.160.111.24 is directly connected, Serial0/1/1
C 182.160.111.248 is directly connected, Serial0/1/0
O 193.168.11.0/24 [110/65] via 182.160.111.253, 00:23:39, Serial0/1/0
C 194.168.12.0/24 is directly connected, FastEthernet0/0
O 195.168.13.0/24 [110/65] via 182.160.111.30, 00:23:39, Serial0/1/1
Router_3#
C 182.160.111.24 is directly connected, Serial0/1/0
O 182.160.111.248 [110/128] via 182.160.111.29, 00:25:47, Serial0/1/0
O 193.168.11.0/24 [110/129] via 182.160.111.29, 00:25:37, Serial0/1/0
O 194.168.12.0/24 [110/65] via 182.160.111.29, 00:25:47, Serial0/1/0

C 195.168.13.0/24 is directly connected, FastEthernet0/0

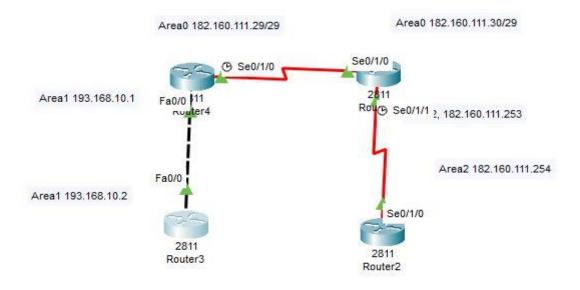


Figure 4.3: OSPF Multi Area

# **OSPF** Multi area Configuration Output

Router\_1# 182.160.0.0/29 is subnetted, 2 subnets C 182.160.111.24 is directly connected, Serial0/1/0 O IA 182.160.111.248 [110/128] via 182.160.111.30, 00:03:51, Serial0/1/0 C 193.168.10.0/24 is directly connected, FastEthernet0/0

Router\_2#show ip rou

182.160.0.0/29 is subnetted, 2 subnets C 182.160.111.24 is directly connected, Serial0/1/0 C 182.160.111.248 is directly connected, Serial0/1/1 O IA 193.168.10.0/24 [110/65] via 182.160.111.29, 00:07:35, Serial0/1/0

Router\_3>ena Router\_3>enable Router\_3#show ip rout O IA 182.160.111.24 [110/128] via 182.160.111.253, 00:10:23, Serial0/1/0 C 182.160.111.248 is directly connected, Serial0/1/0 O IA 193.168.10.0/24 [110/129] via 182.160.111.253, 00:09:43,

Router\_4# 182.160.0.0/29 O IA 182.160.111.24 [110/65] via 193.168.10.1, 00:10:46, FastEthernet0/0 O IA 182.160.111.248 [110/129] via 193.168.10.1, 00:10:46, FastEthernet0/0 C 193.168.10.0/24 is directly connected, FastEthernet0/0

## 4.9EIGRP

- 1. Improvements to the internal gateway
- 2. It is based on the EIGRP.
- 3. .Cisco's patented technology
- 4. Protocol for hybrid routing
- 5. Accelerated convergence
- 6. Encourage VLSM
- 7. IP and AppleTalk support
- 8. The RTP reliable transport protocol is used to communicate between EIGRP routers.
- 9. EIGRP is the process of determining the optimum way by combining two or more paths (diffusion update algorithm).
- 10. This is a topology with no loops.
- 11. Automatic and manual route summary by default Summarization is done automatically.
- 12. The MTU is used to measure bandwidth, delay, load, and dependability.
- 13. Multicast and Incremental Multicast Address Updates.

#### 4.9.1 Three tables are maintained by his EIGRP.

- 1. Side table.
- 2. Hello message after 5 seconds
- 3. K value (mean value)

# 4.9.2 Troubleshooting Command

# Given in Appendix

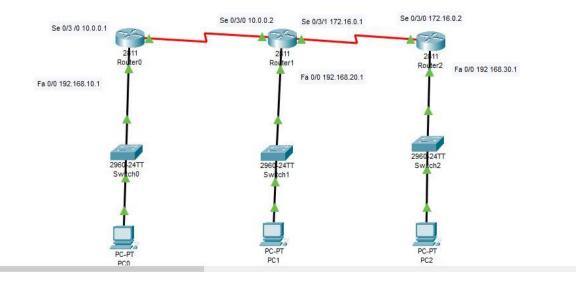


Figure 4.4: EIGRP

# **Configuration of EIGRP Output**

Router0#show ig route Gateway of last resort is not set C 10.0.0.0/8 is directly connected, Serial0/3/0 D 172.16.0.0/16 [90/2681856] via 10.0.0.2, 00:07:26, Serial0/3/0 C 192.168.10.0/24 is directly connected, FastEthernet0/0 D 192.168.20.0/24 [90/2172416] via 10.0.0.2, 00:06:48, Serial0/3/0 D 192.168.30.0/24 [90/2684416] via 10.0.0.2, 00:04:11, Serial0/3/0

#### Router1#show ip route

Gateway of last resort is not set C 10.0.0.0/8 is directly connected, Serial0/3/0 C 172.16.0.0/16 is directly connected, Serial0/3/1 D 192.168.10.0/24 [90/2172416] via 10.0.0.1, 00:14:37, Serial0/3/0 C 192.168.20.0/24 is directly connected, FastEthernet0/0 D 192.168.30.0/24 [90/2172416] via 172.16.0.2, 00:10:59, Serial0/3/1

#### Router2#show ip route

Gateway of last resort is not set D 10.0.0.0/8 [90/2681856] via 172.16.0.1, 00:14:10, Serial0/3/0 C 172.16.0.0/16 is directly connected, Serial0/3/0 D 192.168.10.0/24 [90/2684416] via 172.16.0.1, 00:14:10, Serial0/3/0 D 192.168.20.0/24 [90/2172416] via 172.16.0.1, 00:14:10, Serial0/3/0 C 192.168.30.0/24 is directly connected, FastEthernet0/0

## 4.10 The Inter VLAN Routing

A VLAN is a logical grouping of network users and resources connected to administratively controlled switch ports. When building VLANs, you can create small broadcast domains within a Layer 2 switch network by mapping different ports on the switch to different subnets. Only frames sent into the network as if they were on their own subnet or broadcast domain can be logically switched between ports on the same VLAN. Are you saying the router is not an option? The answer could be yes, but it could also be no. It's entirely up to you to decide what you want or need. By default, the server is hosted at a specific location. A VLAN cannot talk to hosts on another VLAN, so it cannot communicate with hosts on another VLAN. You need to use a different VLAN to communicate with them.

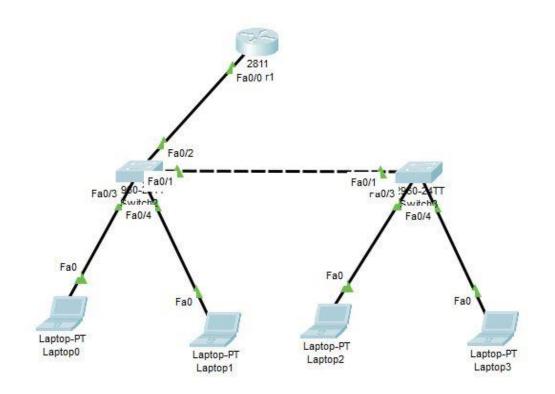


Figure 4.5: Inter VLAN Routing

# **Configuration of InterVlan routing Output**

```
Switch_1#show running-config
Building configuration ...
hostname Switch_1
ŧ.
interface FastEthernet0/1
switchport mode trunk
.
interface FastEthemet0/2
switchport mode trunk
r.
interface FastEthernet0/3
switchport access ylan 10
switchport mode access
ŧ.
interface FastEthernet0/4
switchport access ylan 20
switchport mode access
Switch_2#show running-config
```

```
Building configuration...
hostname Switch_2
interface FastEthemet0/1
switchport mode trunk
!
interface FastEthemet0/2
!
interface FastEthemet0/3
switchport mode access
interface FastEthemet0/4
```

switchport access ylan 20 switchport mode access Router#show run Router#show running-config Building configuration...

interface FastEthemet0/0.1 encapsulation dot1Q 10 ip address 192.168.10.1 255.255.255.0 ! interface FastEthemet0/0.2 encapsulation dot1Q 20 ip address 10.10.10.1 255.0.0.0

## 4.11 DHCP SERVER

DHCP Name Overall Dynamic Host Configuration Protocol. A network server to be exact. Automatically assign IP addresses to clients such as PCs, laptops, and mobile servers. Routes and other network properties are removed from the customer's device. As such, consumers can rely on the convenience protocol DHCP to respond to broadcast requests. A DHCP server knows to provide the settings necessary for clients to communicate automatically and correctly over the network. Otherwise, network administrators would have to manually set up every new client entering the network. This can be difficult, especially in large networks. Each client is typically assigned a dynamic IP address that changes when the IP address expires.

DHCP reduces the complexity and amount of administrative work by providing automatic TCP/IP configuration.

TCP/IP configuration by manually:

The IP address of each client machine is manually entered.

It's possible that you'll key in an incorrect or invalid IP address.

As a result of wrong setting, communication and network issues may emerge.

There is an administrative overburden on networks where PCs are often transferred.

TCP/IP configuration is done automatically:

IP addresses are given to client computers automatically.

Assures that clients are always working with the most recent configuration data.

The client configuration is changed as soon as the network structure changes.

Eliminates a typical source of network problems.

			Pesktop Programming Attributes
		IP Configuration	
	(P)	Interface Fast	Ethernet0
	2011 Rottor1 Fa0/0	DHCP	◯ Static
	1 4070	IP Address	192.168.20.3
		Subnet Mask	255.255.255.0
	Fa0/1	Default Gateway	192.168.20.1
	Tawr	DNS Server	1.1.1.1
	60-21 Fa0/3 a0/2 Fa0	IPv6 Configuration	Auto Config 💿 Static
Fa0		Link Local Address	FE80::206:2AFF:FE1E:8A82
		IPv6 Gateway	
	Laptop-PT	IPv6 DNS Server	
op-PT top2	Laptop3		

Figure 4.6: DHCP Server

# **Configuration of DHCP Server Output**

DHCP\_Router#show DHCP\_Router#show ru DHCP\_Router#show running-config hostname DHCP\_Router ip dhcp pool DHCP\_New\_Server network 192.168.20.0 255.255.255.0 default-router 192.168.20.1 dns-server 1.1.1.1 interface FastEthemet0/0 ip address 192.168.20.1 255.255.255.0 duplex auto speed auto

# **CHAPTER 5**

# **COMPETENCIES AND SMART PLAN**

# **5.1 Competencies Earned**

I learned a lot of new skills during my internship that are very useful in the networking industry. I've gained job experience in organizations by cooperating with a team there. My internship experience allowed me to learn these things. items, which are listed below:

- IP addressing
- DHCP server
- NAT
- PAT
- Static Routing
- Dynamic Routing
- ARP
- Firewall

# 5.2 Smart Plan

Good networking skills are required for employment in the IT industry. I am now putting these skills I learnt throughout my internship into practice. Additionally, I am trying with my own networking equipment so I can troubleshoot problems.

## **5.3 Reflections**

This internship benefited me in a variety of ways. I had the opportunity to learn about the organizational setting and to hone my networking skills. I was able to configure and apply my learning using my network equipment on my own. I've worked with a variety of hardware and learned new technologies.

# CHAPTER 6 Conclusion & Future Outcome

# 6.1 Discussion & conclusion:

I had several opportunities to work for AB Bank Limited. During my training, I have several opportunities and experiences. There are many fields of activity in this area of computer office network planning and design. Data and internet connectivity, network security, configuration and maintenance of different types of applications are all part of the job. The paper also included information on setting up, configuring, and optimizing workplace networks.

During my internship, I learned a lot of useful practices from my manager, did certain tasks as usual, and finally gained the courage to start my own business. think. I also learned how to deal with big setbacks and come up with new ideas every day. This kind of work will greatly benefit my future career. So, I will try this style again.

# 6.2 Future Outcome:

Through this internship, I was able to gain a lot of understanding about networks. It was beneficial to me. It can be useful in your future life and career.

1. These internship experiences will help you achieve a suitable career.

2. I am collecting information on this subject in order to test myself as a skilled worker in this field.

3. This internship may help you in your bank job.

- 4. I am ready to take the CCNA exam.
- 5. Help create a network design.

# Appendixes

# **Appendix A: Internship Reflection**

The real knowledge is that the length of work is over. I admired the people I worked with and reflected on the observations I made and the gifts I gave them. Think about how you can interact with your primary caregiver and others by acting efficiently with the help of your customers. A specialist group and a master teacher. button is pressed. An entrepreneurial spirit, how to collaborate with others, how to improve resources, and some expertise in orchestration and decision-making. Trading company environment, organizational work, individual work Internship feedback The person in charge of the internship knitted it for me. An evaluation medium that allows you to search for a specific assembly. Identifies the master.

## **Appendix B: Company Details**

AB Bank took a aware effort to regenerate its past oneness; that is rowed as Arab Bangladesh Bank Limited for 25 overlong years. Then it chose as AB Bank Limited to rename itself & our Bangladesh Bank entrust its favourable stamp on 14 November, 2007.

### **References:**

[1] Networks, available at << https://www.cisco.com/>>, last accessed on 23th December 2020 at 10:11am.

[2] Learn about Wikipedia, available at <<https://en.wikipedia.org/wiki/IPv4>>, last accessed on 27th December 2020 at 10:11pm.

[3] Learn about Wikipedia, available at <<https://en.wikipedia.org/wiki/IPv6>>, last accessed on 29th December 2020 at 12:11am.

[4] Studying about Networking knowledge, available at <<www.cisco.com>>, last accessed on 10th January 2021 at 9:11am.

[5] CCNA Routing and Switching, available at << https://www.cisco.com>>, last accessed on 12th January 2021 at 12:11am.

[6] Mir, N.F, "Enabling IPv6 within a campus network," Prentice Hall, pp. 630-651, march 24, 2003.

[7] Manual: IP/Firewall/NAT available at <<https://wiki.microtic.com/wiki/Manual:IP/Firewall/NAT>> 12-4-2021 3:30 PM.

[8] Todd Lammle, Cisco Certified Network Asociate, Sixth Edition, Wiley publishing 2007, page, 115-134, 417-482, 552-607.

[9] Cisco Packet Tracer, available at <<https://www.netacad.com/courses/packet-tracer/introduction-packet-tracer>>, last accessed on 18th February 2021 at 10:11pm.

[10] Studying Routing & Switching, available at <<https://ptgmedia.pearsoncmg.com/>>, last accessed on 10th November 2020 at 2:11pm.

# Final Defense Report 2023

ORIGINALITY REPORT

SIMIL	ARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT	PAPERS
PRIMAR	RY SOURCES				
1	Submitt Student Pape	ed to Daffodil Ir	nternational Un	iversity	16
2	dspace.	daffodilvarsity.e	edu.bd:8080		12
3	Submitt Student Pape	ed to AlHussein	Technical Univ	ersity	1
4	Fiber O	ptics Standard D	ictionary, 1997		<1
5	Submitt Student Pape	ed to University	of Sunderland	1	<1
6	www.sli	deshare.net			<1
7	WWW.M	anpages.cz			<1

Exclude quotes Off Exclude bibliography Off Exclude matches Off