

INTERNSHIP ON CCNA ROUTING AND SWITCHING

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

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APPROVAL

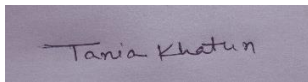
This Internship titled “**INTERNSHIP ON CCNA ROUTING AND SWITCHING**”, submitted by Kazi Taijul Islam, ID No: 183-15-11979 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial and fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on---/----/ --.

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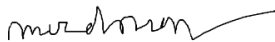
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DECLARATION

I sincerely hope that, this internship report is prepared by me, **Kazi Taijul Islam**, ID: 183-15-11979 to the department of Computer Science and Engineering, Daffodil International University. Under the supervision of **Mr. Riazur Rahman, Sr. Lecture, Department of CSE**, Daffodil International University. I further declare that neither this report will concentrate nor any part of this capstone project has already been submitted to any other institution for the award of a bachelor of science in science and engineering.

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Finally, I must express my gratitude for my parents' unwavering understanding and encouragement.

ABSTRACT

In the present or the future, we can no longer think without the internet. As a result, for the sake of our future life, we should take it too seriously and endeavor to attain it. That is why I picked "Internship on CCNA Routing and Switching" as the topic for my Computer Networking report. This context covers the following topics: connecting to a WAN, establishing a partnership, trying to implement network infrastructure, number of influential, tracking and switching fundamental concepts, IP addressing, TCP/IP and OSI models, WAN techniques, able to operate and configuring IOS phones, expands tried to switch networks with VLANs, evaluating IP routes, able to manage IP traffic with gateways, and establishing step internet connections. It also configures any type of communication or networking system management .

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CHAPTER 1

Introduction

1.1 Introduction:

Computer network administration is the most difficult profession in the IT business.

The most basic function of computer networking is to connect people so that they may interact. Many organizations are now recruiting network experts to set up or repair their networks. Computer networking is a constantly growing and complex field that can give an excellent career opportunity for students. The CCNA is a fundamental certification in computer network engineering. Network technicians, administrators, network support engineers, and network specialists all need to learn CCNA. It is one of the most widely used and secure. The majority of networking companies throughout the world are seeking for CCNA-certified professionals. This qualification not only enhances professional advancement opportunities, but it also qualifies applicants for higher pay scales. By earning the CCNA certification, technicians not only improve their networking abilities and knowledge, but they also increase their wage potential.

1.2 Motivations:

I've gathered a lot of theoretical knowledge as a computer science and engineering student. However, I am not an expert in this sector. Practical knowledge is more crucial in real life than academic knowledge. To improve my skills, I need more practical knowledge. Which will assist me in my career. I'm passionate about networking and aspire to be a professional network engineer in the future. The motivation of this internship is to learn about the working environment of IT companies and to acquire networking skills. Before starting my job, I was just a student who actually want to gather something new. This internship would allow me to improve my skills, obtain real-world experience, and provide me with an excellent opportunity to advance my career.

1.3 Internship Objectives:

Without sufficient and adequate abilities, it is quite difficult to get a solid job in current competitive employment market. Internships are critical for our professional success in the future. It's a requirement for skill improvement. As a result, I completed my internship based on the CCNA certification. My internship's primary purpose is to help me grow as a network engineer. This internship has taught me a lot of new things that will help me shape my career.

1.4 Introduction to the Company:

Atova Technology Ltd. is responsible for the whole training program. They deal with hardware, network devices, and software and is one of Bangladesh's leading ICT distribution organizations. Atova Technology Ltd. is an authorized distributor for a number of well-known companies, including Cisco, Micro-Tik, Fortinet, Acer, HP, Gigabyte, Adobe, and Microsoft, to name a few. Atova Technology Ltd.'s technical staff is made up of highly skilled and experienced experts. Atova Technology Ltd. is a customer service and control organization with a high level of strictness. Our technical team is capable beyond your wildest dreams. They've previously demonstrated their abilities in areas such as computer networking, programming, design, hardware, and networking tools.

1.5 Report Layout:

There are five chapters in this internship report. Each chapter in the report is detailed. I attempted to summarize each chapter. The following is a summary:

In Chapter 1, I talked about the internship's aim, the training's objective, and a quick description of the company.

in Chapter 2, I mentioned the firm wherever I did my internship.

In Chapter 3, during the internship term I covered the task, events, and activities.

In Chapter 4, Skills, wise planning, and observations were among topics I discussed.

In Chapter 5, I discussed the conclusion as well as my future goals.

CHAPTER 2

INTERNSHIP ORGANIZATION

2.1 Company Introduction:

The entire training program is conducted under Atova Technology Ltd. They deal with hardware, network devices, and software and is one of Bangladesh's leading ICT distribution organizations. Atova Technology Ltd. is an authorized distributor for a number of well-known companies, including Cisco, Micro-Tik, Fortinet, Acer, HP, Gigabyte, Adobe, and Microsoft, to name a few. Atova Technology Ltd.'s technical staff is made up of highly skilled and experienced experts. Atova Technology Ltd. is a customer service and control organization with a high level of strictness. Our technical team is capable beyond your wildest dreams. They've previously demonstrated their abilities in areas such as computer networking, programming, design, hardware, and networking tools.

2.2 Product and Market Situation:

Atova Technology Ltd. is a kind of company that provides computer and communication technology services. It offers a variety of IT and other services to its clients. In Bangladesh, Atova Technology is the largest distributor of networking gear. They're seeking for a long-term company strategy that would allow them to provide their best services. Atova Technology Ltd. also offers a variety of IT-related services.

These are given below:

- a wide range of networking products
- network support in the event of an emergency
- A computer security solution.
- all computer peripherals
- open-source application solution.
- CCTV surveillance, etc.

2.3 SWOT Analysis:

The SWOT assessment is a useful technique for determining our strong and weak points. I'll use it in every company to better grasp their strengths and weaknesses, as well as opportunities and threats.

Strength:

- High barrier to entry.
- Highly experienced owner operator.

Weakness:

- Limited flexibility in pricing.
- Competitors can offer quickly.

Opportunities:

- For all sorts of people, there are training options.
- There is an opportunity to work as a full-time employee.

Threats:

All business vulnerable to failure. Atova Technology Ltd, on the other hand, appears to be in solid financial shape. They have made good progress in business. At the moment I don't see any threat in their business.

2.4 Organizational Structure:

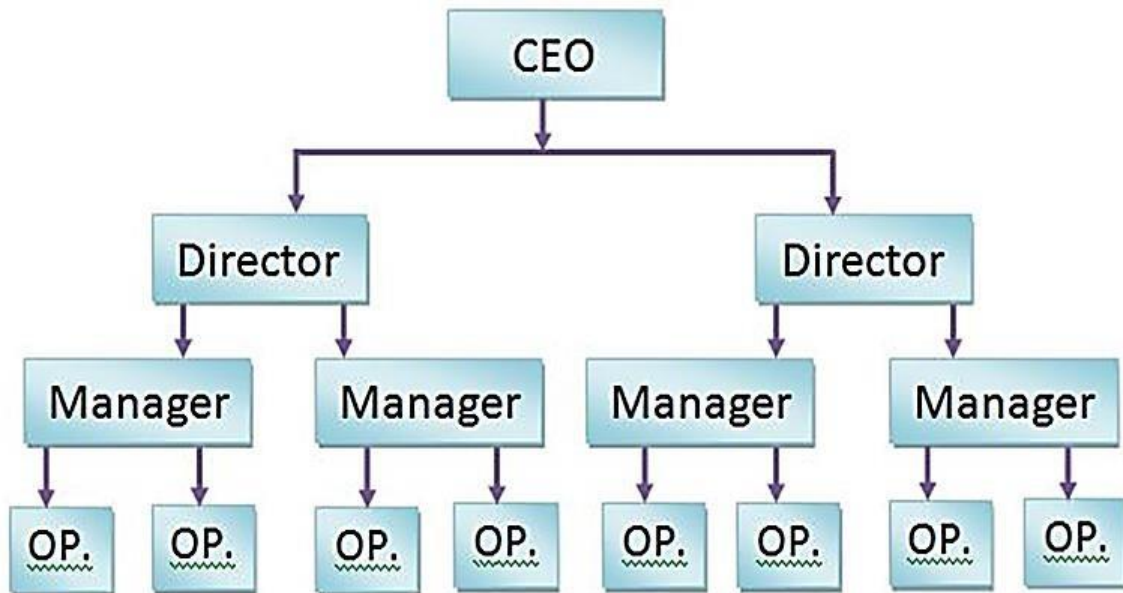


Figure 2.1: Organization Structure

CHAPTER 3

TASKS, EVENTS AND ACTIVITIES

3.1 Responsibilities, Events, and Activities:

1st Month: In my 1st month as an intern at Atova Technology Ltd, I learnt and practiced the relevant points:

Internetworking Technology

- All of OSI Model
- IPv4 Network & Sub netting
- Information on the Routing Algorithm

2nd Month : In the 2nd internship for a month on Atova Technology Ltd The following subjects were successfully taught and completed by me:

- Default & Static Routing
- RIP
- ETGRP
- OSPE

3rd Month: During my third month of internship at Atova Information Ltd, I was able to correctly study and accomplish the following topics:

- NAT ant PAT
- Introduction to Switching
- VLAN
- Wi-Fi Infrastructure

3.2 Network:

A computer network is basically all of the components involved in connecting computers across small & large Distances. Users' productivity by improving by using networks to enable simple access to the data.

3.3 OSI & TCP/IP Model:

OSI: The International Organization for Standardization (ISO) developed and produced the open substrate Interlocking (OSI) model (ISO). It establishes the first structure for governing how data should have been managed in a system.

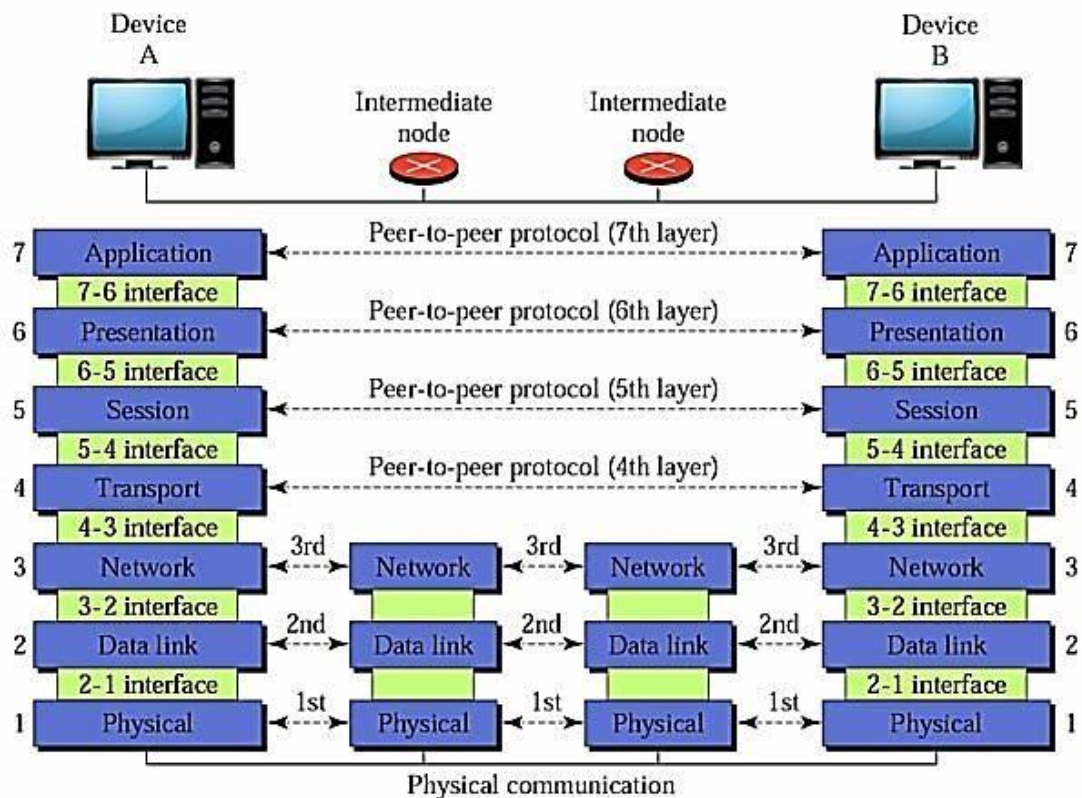


Figure 3.1: OSI model with communication between two host

OSI model:

There are 7 layers-

1. Application Layer:

- Provides system administrations and application
- File Transfer and Terminal Emulation.

2. Presentation Layer:

- Ensures information is entirely coherent and by getting framework
- Format of information present
- Data portrayal

- Data structure
- Negotiates with application layer in layer 6
- Compression information, decompression information, encryption, etc.

3. Session Layer:

- Inter-have correspondence mode
- Establishment, oversees information
- And ends sessions between applications

4. Transport Layer:

- Data transport unwavering quality framework
- Establishes, keeps up, and ends virtual creation
- End to end association unwavering quality for vehicle
- Fault discovery
- Information and stream control.

5. Network Layer:

- Addresses the best way for impart
- Provides the best availability and way choice between two start to finish frameworks
- Domain of steering convention framework

6. Data Link Layer:

- Access to media Provides dependable exchange of information.
- Use for sent messages.
- Physical tending to, On topology.
- error notice and control the stream.

7. Physical Layer:

- Binary transmission data
- Encoding & signaling
- Through wires
- Connectors
- Voltages
- Data rates

TCP/IP:

(TCP/IP) is the Transmission Control Protocol and Internet Protocol (IP).

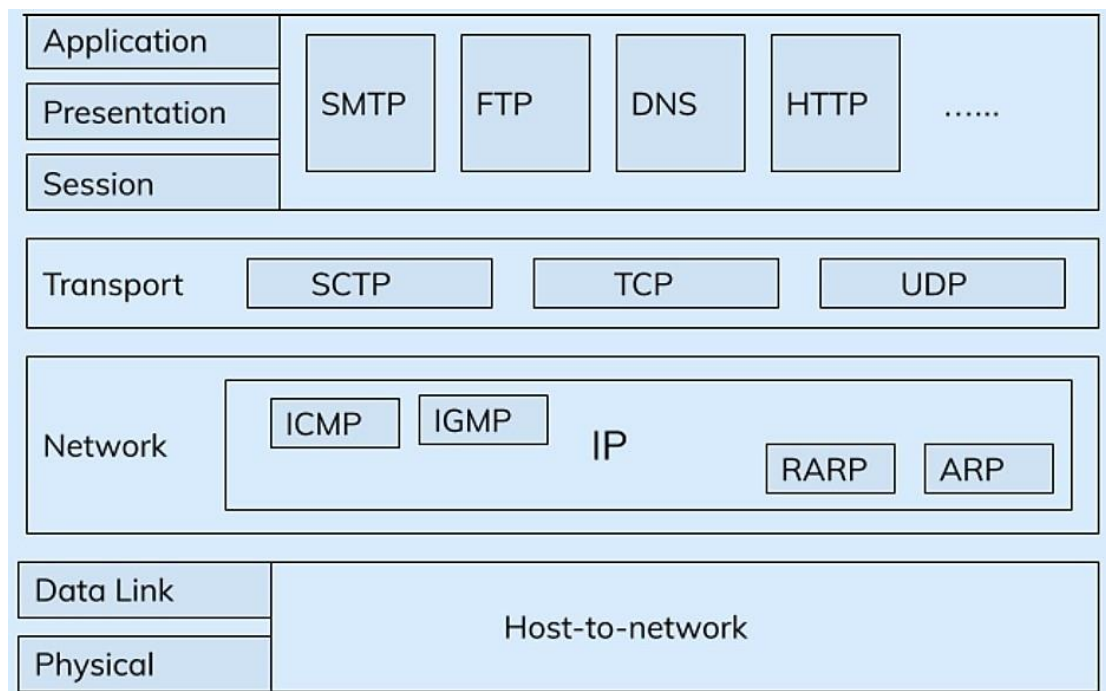


Figure 3.2: TCP/IP Reference Model

There are two distinctive sort of layers and vindicated into layers, this point portrays how the layers of TCP/IP are composed into a stack.

- Application
- Transport
- Internet
- Network Access

Protocols: Are the regulations governing how devices communicate and exchange data over a network. Processes include the following:

- IP
- HTTP
- SMTP

Protocols bundles or stacks are typically formed when many protocols operate together to provide end-to-end network wireless networks. Other manuals go through precautions in great depth.

3.4 IP Addressing and Sub-Netting:

The computation for building a Default gateway, classes of IP addresses built for certain routing purposes, and public vs networks That are connected are all components of Internet protocols. There are two different forms of Packet forwarding.

They are-

1. (IPv4)
2. (IPv6)

The 32bit IPv4 address type is currently most common. But the 128-bit IPv6 is also in use.

Difference Between Class Full and Classless IP Address:

When the concept of IP was first developed, it was decided that IP addresses would be classified into classes, with the default veil for residential areas being determined by system size. The administrator uses their own subnetting veil, which has no class and is used arbitrarily by the boorish" steering convention. IP address with a bit of a snarl. With the exception of as a point of reference or on some affirmation tests, these default subnet veils aren't used much anymore. The term "class complete" refers to the fact that IP addresses have a class, which can be class A, B, C, or D. Any class that falls into these categories is also using the default subnet veil that the IP address or programming accepts. A "raunchy" direction convention, on the other hand, does not anticipate IP locations to have their default subnet veils.

IPv4 Addressing:

An IP address gives a various leveled structure to separate systems. IPv4 is normal and simple to utilize. Consider the following address as an example- 192.168.0.1.

The IP Location vindicated into four octets:

First Octets Second Octets Third Octets Fourth Octets 192

168 1 1

A PC value an IP address in its paired structure, Each Octets is 8-bits in length, resulting in a 32-bit IP addresses. The above location in double would looks as pursue

First Octets Second Octets Third Octets Fourth Octets

11000000 10101000 00000001 00000001

Subnet Mask:

An IP address have two kinds of segments, the system address and the host address. A subnet cover vindicates the IP address from into the system and host addresses. A Subnet veil is a 32-bit number where every one of the bits of the system part and which part is the host part. Subnet Mask by the created framed to requested system bits to all "1"s and requested host bits for all "0"s. Inside a given system, two host locations are safeguardedfor exceptional aim to and can't be doled out to has. The "0" address is forced a systemaddress and "255" is forced to communicate address, and they can't be forced to has.

IPv4 address Class:

Class	Decimal range of 1 st octet	Network/host ID (N=Network and H=Host)	Default Subnet Mask	Number of useable host per network
A	1-126	N.H.H.H	255.0.0.0	16,777,214($2^{24}-2$)
B	128-191	N.N.H.H	255.255.0.0	65,254($2^{16}-2$)
C	192-223	N.N.N.H	255.255.255.0	254(2^8-2)
D	224-239	Reserved for Multicasting		
E	240-254	Used for experimental research		

Figure: 3.3: IP Class

Class	Private IP	Subnet Mask	Address Range
Class A	10.0.0.0	255.0.0.0	10.0.0.0 – 10.255.255.255
Class B	172.16.0.0 – 172.31.0.0	255.240.0.0	172.16.0.0 – 172.31.255.255
Class C	192.168.0.0	255.255.0.0	192.168.0.0 – 192.168.255.255

Figure: 3.4: Private IP Block

3.5 Routing Protocol Information:

Introduction:

Routing is the process of moving data from one point to another. Whenever the packet reaches at an address on a router, the location IP address is looked up in the packet header and compared to the routing protocol. A router needs to know the destination address and which interfaces to send packets out on in order to relay a packet. The destination node in the computer's memory instructs the router which outgoing interface the packet should use to reach the target network.

You may manage routing protocol on your router in three main ways:

1. Static Router protocol
2. Default Router protocol
3. Dynamic Router protocol

Routing that is not dynamic:

- Any modifications must be done by the operator
- Good for small networks
- Configuration and administration of expansion become difficult.
- provided Comprehensive secure, as only the superintendent has access to the routing pathways.
- Uses fewer resources (CPU, RAM)

Routing that is changed on the fly:

- Uses additional resources (CPU, RAM) due to the router's dynamic nature.
- Routers dynamically share routing information.
- The router adapts to the patterns in income time.
- Capable of doing tasks ranging from little to large (Any network).
- Economical and simple to configure.

Routing Concepts:

People may use communication to communicate, cooperate, and network in a variety of ways. Networks are used to access web pages, communicate on IP phones, play online games, shop on the Internet, engage in teleconferencing, do online courses, and more. Ethernet exchanges are used to transport Ethernet packets between devices connected to the network at the data link layer, Layer 2 data link layer. Networking is the act of getting a datagram from one site to another. When the transmitter and receiver IP addresses are on different networks, the Wireless frame must be delivered to a router from each source.

Dynamic IP routing protocols:

All of RIP version:

- v1
- v2
- EITRP
- OSPF-V2
- IS-IS_V1
- BGPv4

3.6 Static and Default Routing:

Introduction: The reason for arranging of static switch, just as RTP and IGRP, is to conclude the courses is a switch directing table. Tear and IGRP do as such naturally. A switch can advance parcels to subnets that are not appended to it.

Advantages:

- Static Routers can be easy to configured and Extremely simple to set up.
- Including all routing devices, static routing is permitted.
- • Static networks are now simple to understand and use in local applications.

Static Routing Modification:

- Recommended Routes
- Secondary Routes
- Static Computation Offloading
- Default Route • Fixed Null Route.

Configuring Robust Router:

The basic syntax for a static route is as follows-

Syntax
Router (config)# ip route { <i>destination network</i> } { <i>Subnet mask</i> } { <i>Next-hop</i> }

Default routing:

Syntax
Router(config)#IP route 0.0.0.0 0.0.0.0 {next hop IP address}

3.7 Routing Information Protocol (RIP)

RIP full meaning is the Routing Information Protocol. This convention uses separation vector calculation is a single of most seasoned directing conventions for separation vector framework which utilize the jump check and send the bundle for the following bounce for the response as a steering metric. The most extreme bounce are 15 trusts. As a result, the maximum number of systems that RIP can handle is 15.

Below is a RIP Routing Table example:

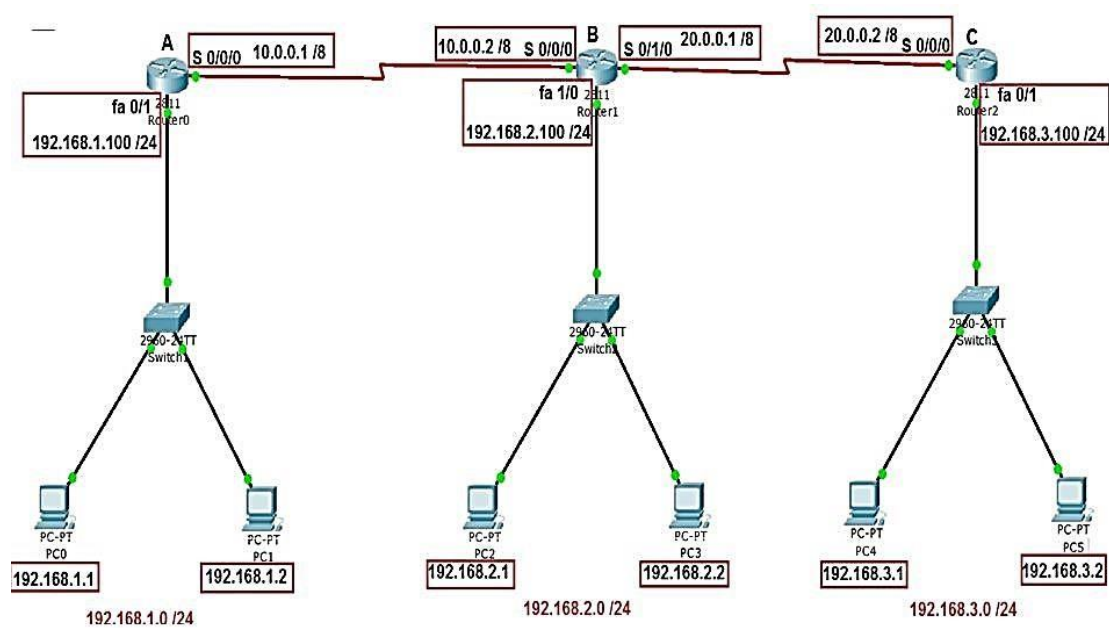


Figure 3.5: RIP Routing Table

Routing Information Protocol (RIP) Configuration syntax:

Syntax
Router>enable
Router#configure terminal
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network {IP address}
Router(config-router)#network {IP address}
Router(config-router)# no auto summary

Figure 3.6: RIP Routing syntax

3.8. EIGRP)

Introduction:

Upgraded IGRP (EIGRP) is a convention of raunchy, improved separation vector convention that gives us a genuine edge experience for another cisco owner convention, inside entryway steering convention IGRP. That likewise called as Enhanced IGRP.

Enhances Interior Gateway Routing Information Protocol configuration syntax:

Syntax
Router>enable
Router#configure terminal
Router(config)#router eigrp {autonomous number}
Router(config-router)#network {IP address}
Router(config-router)#network {IP address}
Router(config-router)# no auto summary

Figure 3.7: EIGRP Routing syntax

For routing table, we can use "Router#show ip route" command. The EIGRP routing table is shown below:

```
Router#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

D    10.0.0.0/8 [90/2681856] via 40.40.40.2, 00:12:09, Serial0/1/1
    20.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
D    20.0.0.0/8 [90/3193856] via 40.40.40.2, 00:12:08, Serial0/1/1
D    20.20.20.0/30 [90/2681856] via 30.30.30.1, 00:12:07, Serial0/1/0
    30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    30.30.30.0/30 is directly connected, Serial0/1/0
L    30.30.30.2/32 is directly connected, Serial0/1/0
    40.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
D    40.0.0.0/8 [90/3705856] via 30.30.30.1, 00:12:07, Serial0/1/0
C    40.40.40.0/30 is directly connected, Serial0/1/1
L    40.40.40.1/32 is directly connected, Serial0/1/1
D    192.168.10.0/24 [90/2170112] via 40.40.40.2, 00:12:09, Serial0/1/1
D    192.168.20.0/24 [90/2682112] via 40.40.40.2, 00:12:08, Serial0/1/1
    [90/2682112] via 30.30.30.1, 00:12:07, Serial0/1/0
D    192.168.30.0/24 [90/2170112] via 30.30.30.1, 00:12:08, Serial0/1/0
    192.168.40.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.40.0/24 is directly connected, GigabitEthernet0/0/0
L    192.168.40.1/32 is directly connected, GigabitEthernet0/0/0
```

Figure 3.8: EIGRP Routing table

3.9 OSPF

Introduction:

The used most system is Open Shortest Path Fast (OSPF). EIGRP is under Cisco restrictive convention since it is an open using steering convention while its largest directing framework, thus different retailers can't access or utilize it. OSPF is a complicated Link-to-Link state steering protocol.

OSPF configuration syntax:

Syntax
Router>enable
Router#configure terminal
Router(config)#router ospf { <i>process number</i> }
Router(config-router)#Network- { <i>IP address</i> } { <i>wildcard mask</i> } area { <i>backbone area number</i> }
Router(config-router)# no auto summary

Figure 3.9: OSPF configuration syntax

To see OSPF neighbor, we use "Router#show ip ospf neighbor" command. Below is a OSPF neighbor table.

```
Router>en
Router#show ip ospf neighbor
```

Neighbor ID	Pri	State	Dead Time	Address	Interface
192.168.10.1	1	FULL/DR	00:00:31	10.10.10.1	GigabitEthernet0/0/0
192.168.20.1	1	FULL/DR	00:00:32	20.20.20.2	GigabitEthernet0/0/1

We use "Router # show ip protocol" to show which protocol is used on a network.

The following is an example of an OSPF protocol table:

```
Router#sh ip protocol

Routing Protocol is "ospf 2"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 20.20.20.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    10.10.10.0 0.0.0.3 area 0
    20.20.20.0 0.0.0.3 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    20.20.20.1      110          00:16:28
    30.30.30.2      110          00:47:04
    192.168.10.1    110          00:21:11
    192.168.20.1    110          00:16:34
  Distance: (default is 110)
```

Figure 3.10: OSPF configuration table

3.10 NAT and PAT

(NAT) was created to solve the addressing challenges that developed as a result of the internet's rapid development. NAT, or routing protocol translation, is a technology that allows a single network device to function as a bridge in between private area network and a wireless LAN, such as the internet. The goal of this NAT device is to convert the sequence number of local wireless hosts into public routable IP addresses. It might be used to communicate via the internet protocol.

NAT configuration syntax:

Syntax
Router#configuration terminal
Router(config)#interface { <i>Choose interface</i> }
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#interface { <i>Choose interface</i> }
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip nat inside source static { <i>privet IP</i> } { <i>public IP</i> }
Router(config)#exit

Figure 3.11: NAT configuration syntax

PAT:

PAT is a sort of static NAT that allows you to configure address translation at the port level while simultaneously making the most use of available IP addresses. From a pool of routable IP addresses, PAT converts numerous source local addresses and ports to a consistent international IP address and port on the destination network. Because the port number is unique, It is used in combination with the connector IP address, however other hosts may have the same IP address. It distinguishes the

Using a separate source destination address on the inner global IP address allows for alternative interpretations.

PAT configuration syntax:

Syntax
Router#configuration terminal
Router(config)#interface { <i>Choose interface number</i> }
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#interface { <i>Choose interface number</i> }
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#access-list { <i>list number</i> } permit { <i>network IP address</i> } { <i>wildcard mask</i> }
Router(config)#ip nat inside source-list { <i>list number</i> } interface { <i>inside interface</i> } overload
Router(config)#ip nat pool { <i>pool name</i> } { <i>public IP</i> } net mask { <i>subnet mask</i> }
Router(config)#ip nat inside source-list { <i>list number</i> } pool { <i>pool name</i> } overload
Router(config)#exit

F

Figure 3.12: PAT configuration syntax

3.11 Switching Introduction and Virtual Local Area Network (VLAN)

Repeater:

A wireless device would be an electrical device that receives a signal, retransmits it, and recovers the information for the recipient. In media transmission repeater are retransmit the information and recuperation the information to recipient. There are a few sorts of repeater transmit and communicate sign to transmit the information and recuperation to the recipient. Recurrence and baud rate are information transmit rate.



Figure 3.13: Repeater

Switch:

Switches link various devices on the same network inside the confines of a building or campus. A switch, for example, may link your PCs, printers, and servers to form a network of shared resources. The switch would act as a controller, allowing the different devices to exchange data and communicate with one another.



Figure 3.14: Switch

Virtual Local Area Network:

VLAN separate broadcast domain as well as segments the networks so that security can be ensured. Each switch has a default VLAN.

VLAN Features:

- A layer 2 security
- Creates several collision domain from a single broadcast domain
- VLANs may be generated from a variety of sources. 1 – 001
- Only a single switch can be setup.

VLAN Benefits:

- ✓ Protections
- ✓ Cost-cutting
- ✓ Improved performance
- ✓ Storm-prevention through broadcast
- ✓ Increased IT staff productivity
- ✓ Management of a little system or application

Syntax of configuring VLAN the is given below:

Syntax
Switch#
Switch#configure terminal
Switch(config)#vlan 2
Switch(config-vlan)#name { <i>VLAN name</i> } [Type the name IT_department]
Switch(config-vlan)#exit
Switch(config)#vlan 3
Switch(config-vlan)#name{ <i>VLAN name</i> } [Type the name HR_department]
Switch(config-vlan)#exit
Switch(config)#vlan 4
Switch(config-vlan)#name{ <i>VLAN name</i> } [Type the name Software_department]
Switch(config-vlan)#exit

Figure 3.15: syntax of configuring VLAN

To see VLAN table we use “Switch#show vlan” command. The following shows VLAN table:

```
Switch#show vlan

VLAN Name                Status    Ports
-----
1    default                active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
                                           Fa0/5, Fa0/6, Fa0/7, Fa0/8
                                           Fa0/9, Fa0/10, Fa0/11, Fa0/12
                                           Fa0/13, Fa0/14, Fa0/15, Fa0/16
                                           Fa0/17, Fa0/18, Fa0/19, Fa0/20
                                           Fa0/21, Fa0/22, Fa0/23, Fa0/24
                                           Gig0/1, Gig0/2

2    IT_department          active
3    HR_department           active
4    Software_department     active
1002 fddi-default            active
1003 token-ring-default    active
1004 fddinet-default        active
1005 trnet-default         active
```

Figure 3.16: VLAN table

To add interface to a different VLAN, the following syntax can be used.

Syntax
Switch(config)#int range f0/1-5
Switch(config-if-range)#switchport access vlan 2
Switch(config-if-range)#exit
Switch(config)#int range f0/6-10
Switch(config-if-range)#switchport access vlan 3
Switch(config-if-range)#exit
Switch(config)#int range f0/11-15
Switch(config-if-range)#switchport access vlan 4
Switch(config-if-range)#exit

Figure 3.17: To add interface to a different VLAN

Trunk Port: Trunk port is required to carry VLAN traffic from one switch to another.

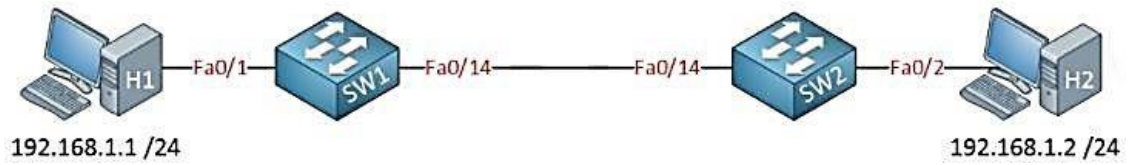


Figure 3.18: Carry VLAN traffic

The syntax of configure Trunk port is given below:

Syntax
Switch>enable
Switch#configure terminal
Switch(config)#interface fastethernet 0/14
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit

Figure 3.19: The syntax of configure Trunk port

3.12 Difficulties:

Every employment is full with challenges. There is no such thing as a job that isn't full with problems. Internships are a great way to get experience and meet new people while learning about our strengths and weaknesses during our training period. To solve the answers, it is critical to take up and grasp unknown items as well as a variety of other issues. As a result, we should take our work very seriously and treat it as such.

There have also been inadequate jobs to solve during my training sessions at the firm. Some of the job is done by myself, some by our employers, and also by labors. As a result, during my training years, some of the tasks I completed on my own initiative and emailed to my company's administrator. I did several of these jobs as a youngster labor.

I realize how to do my task without injuring myself. So, in the beginning of any job, I am cautious of injuries and try to avoid them. I've learned a lot about office culture and how to keep my calm while maintaining workplace etiquette. And I'm free to ask whatever questions I want and to work as an independent contractor. In the employment competition, I was fortunate in that I was able to finish the internship periods without incident. During this time, I learned how to collaborate with others and establish customer relationships. I don't comprehend much, but I do my best to learn as much as possible about all areas. As a job applicant, After I graduate from this institution, I plan to start a new life.

CHAPTER 4

SMART PLAN AND COMPETENCIES

4.1 SKILLS AND A SMART PLAN:

At this situation, all employment center or anywhere is teeming with talents. That is why we must maintain our practical knowledge. Abilities aid in earning or learning for the outcome, this is a statement of what an impersonator is expected to learn., be engaged in, or as kind of a result of work - related approach, have the ability to accomplish. PC system administration is a component of my future earning position. Present and decommissioning of the bulk of Two datacenters host the framework and application machines. Lead role in Router Configuration. Temporary employment times have totaled more than issue preparations; thus, it will drive me to the future for keeping up massive issue in a peaceful mind. As a result, it's a huge accomplishment for me from my short work. In this entry-level role, I'll show you how to set up and manage networking equipment, as well as how to set up and utilize services like VLANs, OSPF, and Multicast. and RIP configuration. Furthermore, the Internship on it Other Site Supervisor was giving me a presentation concerning authentic methods and ideas on that mechanical competence, and I was unwavering with myself of the taking in outcomes.

4.2 Smart Plan:

An organization sets its top label leadership to make their strategy distinctive, more effective, and inventive in the other Company in order to attain more and greater achievement gains. To have a brilliant career and a happy life. This internship is hugely advantageous to a well-thought-out strategy. Some of smart plat encores us for in this sector.

4.3 Reflections:

JBS Security Solution Ltd. provides a high level of customer service. They have been highly concerned about providing their service since their inception date. They are an intranet solution and telecommunications firm that provides its technical group with a highly and perhaps most productive connection and they take great care to taken care of their customers and encourage repeat purchases for more. They worked with many organizations and many projects and achieved the reputation which is very helpful of them. They are employing the most up-to-date merchandise and improving services as needed.

CHAPTER 5

CONCLUSION AND FUTURE CAREER

5.1 Conclusions and Discussion:

My internship was finally completed. Also, self-motivation to perform good work and solve challenges. Working hard for 8-9 hours a day, 5 or 6 days a week has been a habit for me, which has been reinforced by this assignment. This assignment is critical for gaining practical experience. This internship teaches me how and when to work in an office for 8 to 9 hours. The primary concerns of time are maintained by subconscious and driven by internship, as I have disclosed. This training session maintains time sense, which is quite common and necessary in every corporate and commercial life.

During my internship, I learned many vital aspects of my course's associated themes, as well as many other important skills that will be useful in my future job. I gained information and will continue to work hard as a result of my job and future aspirations. This employment has made me more honest and motivated to work hard. It teaches me how to retain my calm in the workplace because when occupational stress is too severe I understand how to change my boss's thinking and gain promotion via my work and attitude. Finally, I'd want to emphasize the necessity of internships in any academic facility or workplace for gaining real-world experience and skill expertise.

5.2 Prospects for a Future Career:

At the moment, computer networking is a highly sought-after career field. Wireless networking, router and switching, desktop to data communications, network system engineer or administrator are all examples of networking. There's also a lot of work in IT, such as CCNA Routing and Trying to switch, Mikro-tik routers, Linux, and so on. One or more IT specialists are required in every office, bank, or corporation. As a result, this is just another another piece of good news for a systems engineer. The IT industry is caused by many different factors. A skilled worker is in high demand in any location, thus I must first develop a proficient job before moving on to a higher level of my life.

APPENDIX

Appendix A: Internship Reflection:

Internships are critical at the business level; else our learning attainment would be unmarketable. During my internship, I work and collaborate with another skilled worker who attentively instructs me. The employment pushes me to make personal and professional growth plans for myself and for the rest of the world. The internship has taught me how to manage supervisors in a professional manner, and several reps have benefited from such a training. As a result, the internship period is extremely beneficial to the development of our skills in real life. When I was in business training, I took every step extremely seriously. I know how to take on a difficult assignment and make it simple to complete. I am an association's primary objective or vision is realized, how control is shared, how to communicate with partners, how to manage, how to pick the optimal method, and how to keep input and output linked. The industrial attachment reflection has influenced my complete life, teaching me how to balance meaningful life and office culture, as well as how to keep my coolness in a stressful situation. It also changes our specific circumstances and how we should deal with it in order to have a good future. The internship taught me how to keep a client, deal with a project, and maintain a problem-solving strategy. Internships are a great place to connect and work with professionals on a larger scale. It is crucial to understand how they overcome numerous critical tasks.

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