## **INTERNSHIP REPORT ON**

## Network Support and Design in Sonali Bank LTD.

By

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

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# DAFFODIL INTERNATIONAL UNIVERSITY

## DHAKA, BANGLADESH

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## APPROVAL

## DECLARATION

I hereby declare that, this internship report is completed by me, Shakila Yasmin, ID NO: 153-15-6533 to the Department of Computer Science and Engineering, Daffodil International University, has been done by me and under the supervision of Shaon Bhatta Shuvo, Senior Lecturer, Department of CSE, and Daffodil International University.

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#### ACKNOWLEDGEMENT

To begin with I express my heartiest thanks and appreciation to omnipotent God for His celestial gift makes me conceivable to finish the last year temporary job effectively.

I really grateful and wish my profound my indebtedness to Shaon Bhatta Shuvo,

Senior Lecturer, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of my supervisor in the field of "**Network Support and Design**" to carry out this project. His endless patience ,scholarly guidance ,continual encouragement , constant and energetic supervision, constructive criticism , valuable advice ,reading many inferior draft and correcting them at all stage have made it possible to complete this internship.

I would like to express my heartiest thankfulness to **Dr. Sayed Akhter Hossain**, The Head, Department of CSE, for his kind help to finish my internship and also to other faculty member and the staff of CSE department of Daffodil International University.

At long last, I should recognize with due regard the consistent help and patient of my parents.

## ABSTRACT

This internship report is intended to complete my B.Sc. at the Daffodil International University. I had an internship at a reputed organization called **Sonali Bank Limited** about "**Network Support and Design.**"

We call network when two or more computers are linked and are swap data or information. To swap data or information from one to another, we need some unique PC'S called Server. There is a various types of server For Example-Web server, DNS server, Proxy server, Mail server, Firewall, FTP server. Maintaining a network is not feasible because each operates differently. If we are attached to the network and want to safeguard our data, we need to learn about the network scheme.

That's why I choose my report's topic. This internship enables me gather practical understanding of working in networking sites, increasing association skills. In addition, I attempted to show whether or not internship was a success.

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## CHAPTER 1 Introduction

#### **1.1 Introduction**

A network system or associated framework is an accumulation of single devices, swap systems, transmission frameworks, transfer stations, tributary stations and data terminal equipment usually fitted to interconnect and interoperate to form an integrated structure.

Today's in the competitive world all the c commercial banking industry of Bangladesh are improving their networking sector day by day. In comparison to other bank Sonali Bank Ltd, is one of the largest state owned commercial bank in Bangladesh. Day by day Sonali Bank is trying to build up a strong with other organizations. At the beginning the network system was not so suitable with their branches. But today all branches are strongly connected with others.

They are trying to upgrade their network with new technologies and equipment. And very soon a strong bonding will be benefited with their strong networking system.

#### **1.2 Motivation**

Internship is not only give experience but also tech a student how to communicate, how to work properly, how to maintain office. As an intern I'm proud on myself. Internship gives me a vast knowledge, huge skill development in networking site and of all how to maintain this duties properly. An internship can make a student to become a responsible. A student can take field experience by doing intern. As a result internship grow the ability. Networking demand in first world is too high and it's becoming a topic in our country also. Except powerful networking system prospect of making "Digital Bangladesh" is not possible.

#### **1.3 Internship Objectives**

Main objectives from my internship program is to understand the current conditions of job market and also to ready myself as a skilled person in the ambitious work market. Internship is very essential for ability improvement. To achieve some special quality and real life job experience in order to prove myself as a skilled one internship is the only way. This report gives an overview of the projects that I have worked on during my internship at SONALI BANK LTD. IT department. The man objective of the study is to understand overall network connectivity system of, to know about SONALI BANK LTD. Out various communication systems, know about modern equipment and technique and to know about official working environment. I have learned to create a Local Area Network, Router, Switch configuration & client end physical and logical support.

#### 1.4 Overview of Sonali Bank Ltd.

Quickly during the country's founding, Sonali Bank appeared as the biggest state owned commercial through the declaration of the Banks Nationalization Oder 1972 (Presidential Order-26) which restructured Pakistan's the National Bank, Premier Bank and The Bank of Bhwalpur. As a fully owned organization, the bank has fulfilled its nation-building duties by conducting the various socially-economic systems given to the government, and its own monetary operations, covering all economic fields.

The bank was transformed into a government owned Public Limited Company and began operating as Sonali Bank Limited from November 15, 2007 to take in total assets, liabilities and business of Sonali Bank. After corporation, the Bank's executive was provided the independence needed to make the bank profitable and efficiently operate its company.

Sonali Bank Limited is controlled by an 11 member Board of Directors. The bank is headed by a well-known banker and renowned professional CEO& Managing Director.

The Banks head office is situated at the city's primary business center, motijheel, Dhaka, Bangladesh.

#### **1.5 Report Layout**

The report is arrange as Follows- Chapter-1 Introductory chapter gives why I choose internship. Chapter-2 Overview of Sonali Bank Limited. What kind of services they provide to clients & roles in job market in Bangladesh and Networking System of the IT sectors? Chapter-3 is about Sonali Bank network provider, their software's and my training and performed tasks. Chapter-4 problems and solutions. Chapter-5 Conclusion & future scope.

#### **CHAPTER 2**

#### Organization

#### **2.1 Introduction**

Quickly during the country's independence, Sonali Bank appeared as the Biggest state- owned commercial bank through the declaration of the Banks Nationalization Oder 1972 (Presidential Order-26) to liquidate Pakistan's then National Bank, Premier Bank and Bhwalpur Bank. As a fully owned organization, the bank has fulfilled its nation-building duties by conducting the various socially-economic systems given to the government and its own monetary operations, covering all economic fields. The bank was transformed into a government owned public Limited Company and began operating as Sonali Bank Limited from November 15, 2007 to take in total assets, liabilities and business of Sonali Bank. After corporation, the Bank's executive was provided the independence needed to make the bank profitable and efficiently-operate its company.

The name of Chairman is MR.MD.Ashraful Moqbul, CEO & Managing Director is MR.MD.Obayed Ullah Al Masud.

Sonali Bank total branches are 1215. Number of foreign branches are 2 (Kolkata and Siliguri in India). Number of local branches are 1213. Local branches are 701 and urban branches are 512.

Sonali Bank (UK) Limited having 2 branches in UK. SONALI BANK LIMITED signed with vendor's Agreement 15 November, 2007. Sonali bank LTD. Website address is <u>www.sonalibank.com.bd</u>. Email address is <u>itd@sonalibank.com.bd</u>. [1]

Sonali Bank Information Technology division divided into 5 division.

**Business IT:** Business IT Division develops business. They develops Information Technology in business.

**IT Services Management:** They give services into all branches. They are monitoring all branches and support them.

**Infrastructure IT:** Infrastructure IT hardware, software, networks, data centers, facilities and associated equipment for the development, testing, operation, monitoring, management and/or support information technology services.

#### IT Procurement & Maintenance: They sign agreement with Vendors.

IT Security: They secure the banking system.

#### 2.2 Product and Market situation:

#### 2.2.1 Products

- \* Sonali Deposit Scheme
- \* Education Deposit Scheme
- \* Medicare Deposit Scheme
- \* Monthly Earning Scheme
- \* Marriage Savings Scheme
- \* Rural Deposit Scheme

#### 2.2.2 Market Situation

Business in banking is becoming daily competitive. Every bank has its own marketing strategies. Because a lot innovative and efficient marketing helps an institution to have a firm market position. Now let's take a look at Sonali Bank's marketing strategy-

#### PRODUCT:

Product is something that could be given to a sector for exposure, purchase, using or consumption and a willingness or needed must be fulfilled. Product levels may be follow categories-

- AUGMENTED PRODUCT
- ACTUAL PRODUCT
- CORE PRODUCT

Today, banks diversify their product to attract the customers and cope with customer demand changes. However Sonali Bank still offers basic and ordinary products. Although Sonali Bank has few products, it has a large number of customers.

#### PRICING:

Price is the amount of a product or a benefit charged. Although price in banking business is not a dominant factor, it may be an effective tool. A banks price variable is-

- INTEREST RATE
- TRANCATION
- PROCESSING FEE

Now let's look at the initial amount of opening Sonali Banks bank account-

- FDR: A customer has to bear very few cost compared to other Banks to open an FDR with Sonali Bank.
- CURRENT ACCOUNT: A customer needs TK.1000 to open a Sonali Bank account.
- SAVINGS ACCOUNT: The initial amount needed to open a Sonali Bank savings account is just TK.500, which is very minute compared to other Banks.

SERVICE CHARGE: Private banking service charge is a burden on a customer. But Sonali Bank appears to be very customer friendly. It does not charge the customer any service charges.

INTEREST RATE: Sonali banks savings account interest rate is 8%. It gives interest in FDR by 10%. In the current rate, no interest is paid.

PROMOTION: Promotion has become a key part of modern enterprise. No advertising is used by an effective tool. It provides customers with a leaflet and pamphlet to let customers know about their product. As its competitors do it does not emphasize the communication strategy. [2]

### 2.3 Target Group

Committed to expand a broad variety of good items that promote the divergent requirements of individuals to enhance their life, generate value for the stakeholders and add to the social-economic growth of the country. Besides, there are some SBL target:

- Transformation into a service-oriented technology-driven profit earning bank.
- Ensure fast, accurate and best-in-class customer service.
- Balanced and suitable growth strategy.
- Introducing innovative banking products.
- Attract and retain high quality human resource.
- Empowering real poor families and create local income opportunities.
- Providing support for social benefit organizations-by way of mobilizing funds and social services. [3]

#### 2.4 SOWT Analysis

SOWT analysis is an important tool for performance of an organization.

#### Strength:

- Dedicate Customer service / support department
- Flexibility
- Dedicated, enthusiastic staff
- Web development services
- Biggest network
- Huge IT Infrastructure
- Skilled IT person

#### Weakness:

- No direct customer-seller interaction
- Service level agreement should be more active
- More IT person needed
- The marketing environment is not perfect. An encouraging environment has to be created to increase the productivity of workers.

#### **Opportunities**:

- Internet user is rapidly increasing
- The Internet services are becoming common to us
- Sonali Bank has huge number of customers
- Enough capital to invest on IT and business
- Economies of scale
- Big vendors are incorporated with Sonali Bank

#### **Threats:**

- Hostile security environment
- More device to support
- New generation prefers private bank compared to Sonali Bank

## 2.5 Organizational Structure

#### Chairman

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#### **Board of Director**

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## **CEO & Managing Director**

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## Deputy Managing Director (DMD)

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### **General Manager (GM)**

## $\mathbf{\hat{U}}$

## Deputy General Manager (DGM)

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### Assistant General Manager (AGM)

 $\hat{\Gamma}$ 

## **Senior Principal Officer (SPO)**

## Ŷ

## Principal Officer (PO)

 $\hat{\Gamma}$ 

## Senior Officer (SO)

Ŷ

Officer

## **CHAPTER 3**

## **Tasks, Projects and Activities**

#### 3.1 SBL Network Active Device Diagram

#### 3.1.1 Sonali Bank Service Providers

\* ADN

\* AGNI

\* BRACNET

\* DRIK-ICT

\* BDCOM

\* INNOVATIVE ONLINE

\* METRONET

\* RANKSIT

#### 3.1.2 Running Networking System of SBL

The current networking system of Sonali Bank Ltd is centralized. That's means all branches are connected together. All branches are interconnected to each other through by a third party organization which called vendors.

Branches sent data to Head office through SP (Service Provider Where SP are connected with WAN switches. Actually all the branches are mostly connected with Head office finished Data Center (DC) core router.

DMZ. Local LAN are interest site and DC (Data enter is connected with SAN storage Area Network and DR (Disaster Recovery) site. Where all the data are restrict store here. The DC site is connected through SAN switch with DR site. SAN switch are act as a backup link for DR. If any kind of occurrence happened in DC then DR create backup for DC. The branches also

interconnected to each other by land phone if there is any problem in one branch, then they can get help from the Head office either by telephone solution or by their necessary vendors.

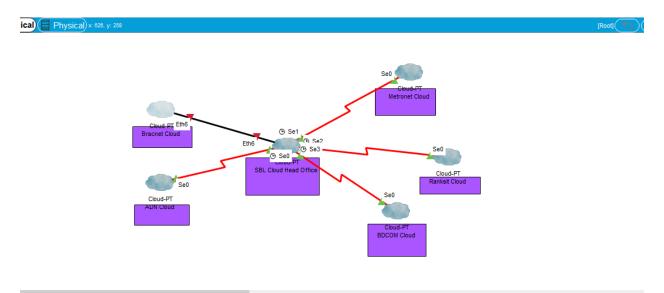


Fig 3.1: SBL Network Design

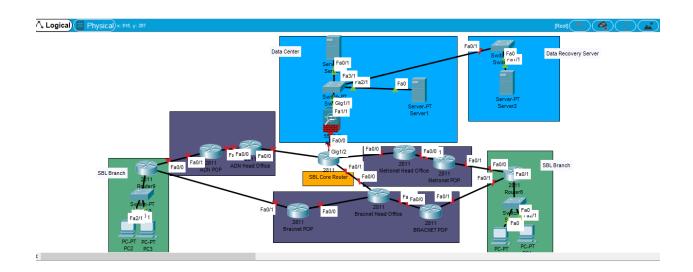


Fig 3.2: SBL Network Design2

#### 3.1.3 Function of Network Monitoring Center

- 1. Observed all the network system of all branches of SBL.
- 2. Solve the network problem if any failure occurred in any branches or Head office.
- 3. Contact and solve the network problems if it happened by vendors.
- 4. Configure all the networking devices.
- 5. Solve the problem of the networking software and hardware.

#### 3.1.4 Sonali Bank Network Software

Sonali Bank used "Sonali Intellect CBS" software for Core Banking Solution. Designed by bankers, Intellect CBS is a highly scalable core banking platform that caters to both private and public sector banks in the country.

Core banking is term given to centralized system wherein all banking functions. The implementation of this technology enables the SBL to move towards next generation banking technology and will also offer them with a competitive service edge and faster go-to-market. The main functions of intellect CBS are given bellow:

- Opening new accounts and Customer on-boarding.
- Managing deposit and withdrawals.
- Transaction management from initiation to reporting.
- Interest calculation and management.
- Payment Processing (Cheques, Cash, etc)
- Loans disbursement and management.
- Processing cash deposit and withdrawals.
- Processing and service loads.
- Accounts Management.



Fig 3.3: Sonali Intellect CBS Software

## LVMS:

Sonali Bank used "Link Vendor Management System Software" for network support. When branches link is down, slow, support management gives complain through this software. Management makes their monthly report through this software.

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	INTERNET LI	NK VENDOR MANAGE	MENT SYSTEM	
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Fig 3.4: Link Vendor Management System Software

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php MyAdmin is background of link vendor management system.

Fig 3.5: php MyAdmin

### Solarwinds:

Sonali bank used "Solarwinds" for Network Monitor System.

Solarwinds, Network Performance Monitor (NPM) is a strong and cheap network monitoring software that allows you to fast identify, diagnose and solve problems and interruptions in network performance.

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**Fig3.6: Solarwinds** 

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Fig3.7: Network Performance Monitoring using Solarwinds

#### **3.2 Daily Tasks and Activities**

#### My daily task were-

- Network Troubleshooting.
- Making wires and check connection.
- Implementing Routing Protocols.
- Making Ethernet Cables (RJ45).

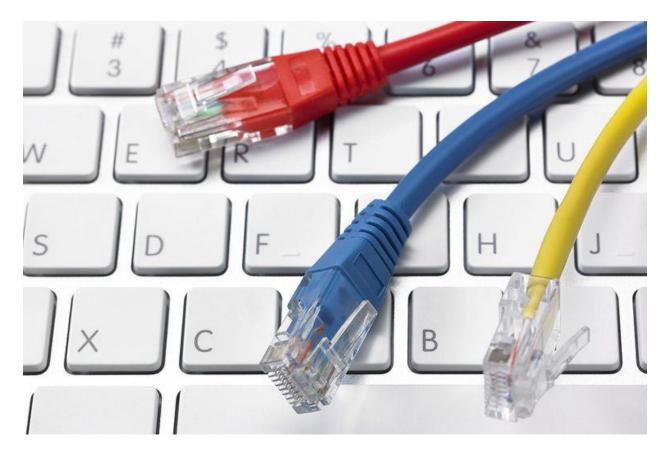
#### 3.3 Events and Activities

#### **3.3.1 Making Ethernet Cables**

An Ethernet connection is one of the most common system connection type's used on wired systems. In a neighborhood, Ethernet connects interface gadgets similar to PCs and Switches. Since these are physical links, they have their confines, both out there that they can extend and still convey legitimate signs, and their robustness. This is one reason why there are different kinds of Ethernet connection, particular conditions for particular errors.

#### 3.3.2 What an Ethernet Cable Looks Like

There is a picture of a few of Ethernet link on this page. It looks like a telephone connection is bigger and the wires are moving. The two connections have a relative form and fit but there are eight wires and a larger attachment in an Ethernet links than the four wires found in telephone links.



**Fig3.8: Ethernet Cable** 

#### 3.3.3 Types of Ethernet Cables

Ethernet connection at least one industry principles including Category 5 (CAT5) and Category 6 (CAT6) principles. A hybrid connection is a rare kind of Ethernet connection extraordinarily intended to interface two PCs. Some Ethernet links are intended to interface one PC to switch or switch by differentiate. Ethernet connection are made in two basic structures called strong and stranded. Strong Ethernet links offer better performance and enhanced electrical obstruction

assurance. They are also more commonly used on business systems, cabling inside office dividers, or under laboratory floors to settle areas stranded Ethernet connections are less inclined to physical splits and breaks, making them more suitable for explorers or in home systems administration setups.

#### 3.3.4 Limitations of Ethernet Cables

A lone Ethernet connections, comparable to an electric power rope, has a limited maximum separation boundary, meaning it is a farthest stage of confinement to what level it can be before flag bad luck (called lessening) occurs. This is because of their electrical transmission attributes and is straightforwardly influenced by impedance around the link. The two finishes of the link ought to be sufficiently close to each other to get flags rapidly, yet sufficiently far from electrical obstructions to dodge interferences. In any case, this is by itself doesn't restrain the extent of a system since equipment like switches or center points can be utilized to combine numerous Ethernet links inside a similar system. This separation between two gadgets is known as the system distance across. The most extreme length of a solitary CAT5 link, before constriction happens, is 324 feet. CAT6 can go up to around 700 feet. Remember that Ethernet links can be longer however they may experience the ill effects of flag misfortune, particularly if there are other electrical apparatuses that the link cruises by. [4]

#### **3.4Project Task and Activities**

There was a project to design a network system of Sonali Bank Limited using OSPF. The previous network system was designed using Static and RIP Routing Protocol.

#### **3.5 Challenges**

The investigation found the best five territories which provides IT professionals with the most Squeezing difficulties:

#### 3.5.1 Improving and Securing Business Esteem:

Aligning and integrating the capabilities of IT opportunity management and company coherence with more comprehensive, long haul company method.

#### 3.5.2 Cyber Security

Controlling and strengthening safety and safety for the frameworks and data of the organization is presently the highest requirement for all undertakings.

#### 3.5.3 Information Order

Sorting, supervising and ensuring effective data measures within the association.

#### 3.5.4 IT Resource and Information Administration

Getting better instruction and data management systems, driven by the development of the use of mobile phones and apps and the reconciliation of share methods and processes into IT.

#### 3.5.5 Versatile Stages and Online Networking

Incorporate safe, coordinated frameworks for mobile company, gadgets and etc... And tendency within the organization to web-based social networking protections and methodology.

#### 3.5.6 Explosion of Flexible Working

This universality was in a general sense changed by various variables, most noticeably the ascent of the homeworker- and the upset in the speed and dependability of economically accessible web associations. Late decades have seen a basic movie in the path in which we work. With the expanded unwavering quality and speed of home systems, numerous associations have seen (and effectively energized) a blast in adaptable working. To an ever increasing extent, representatives are signing at in home, at their neighborhood bistro, on trains and in airplane terminals. Accordingly, the bounce from running a huge VPN for homeworkers and extending it to incorporate little satellite workplaces- or even real workplaces- is not as noteworthy as it once might have been. Properly, numerous associations have experienced essential moves in their systems administration methodology, including increasingly on the energy of general society Internet and less on a customary private system arrangement.

## **CHAPTER 4**

## **Competencies and Smart Plan**

#### **4.1 Competencies Earned**

My main goal of internship is to gain knowledge and competence in hardware and networking related problem and finding the solutions. I have practiced and learned about both hardware and network related works.

#### Problem 1: Connection closed by remote host

A client has set up an association with a remote host, and the association closes before the client logs out.

#### Cause

This more often than not happens in light of the fact that the remote host played out a shutdown and separated the association, or the client procedure for the related daemon was ended.

#### Solution

Utilize the ping charge to decide if the host is running. During if the remote host is around reaching the host organize overseer. In the event that the host is not down, utilize telnet to restore the association.

#### **Problem 2: Connection timed out**

#### Solution

On the off chance that you speculate that the remote host or system is down, contact the system head for the host and demand the host status.

```
Command Prompt
Microsoft Windows [Version 10.0.16299.15]
(c) 2017 Microsoft Corporation. All rights reserved.
C:\Users\User>ping 102.00001000
Pinging 102.000010000
Ping statistics for 102.000010000
Ping statistics for 102.000010000
Ping statistics for 102.000010000
C:\Users\User>
```

Fig 4.1: Ping connection timed out

#### **Problem 3: Computer Screen is Sideways**

#### Solution

Some computer monitors can be rotating, so there are video cards which support that rotation. For example, web design and artists use rotating wide screen monitors to look at long pages. To turn ON this feature, you probably pressed CTRL+ALT+LEFT Arrow. To turn off, simply press CTRL+ALT+UP Arrow instead.

#### **Problem 4: Login incorrect**

#### Solution

Users must know their substantial records and passwords on the remote hosts.

#### 4.2 Smart Plan

#### 4.2.1 Network Failure

Here and there arrange disappointment happens. At that point issues are not found through investigating and take care of the issue.

#### 4.2.2 Cable Damage

Sometimes cables damages or doesn't work or disconnected somehow. Checking the cable connections properly or changing the cable are the only way to solve the problem.

#### 4.3 Reflections

Prior to my entry level position, I had just hypothetical learning of systems administration gadgets, different conventions and equipment. In any case, amid my temporary job I have learned and had a few hands on routine with regards to PC equipment and system gadgets. Presently without much of a stretch I can outline a system framework and furthermore can actualize the entire system. Amid my temporary position I have learnt to plan a system utilizing open most brief path Fast steering convention. Beforehand the entire system was composed in static directing.

## CHAPTER 5 Conclusion and Future Career

#### **5.1 Discussion and Conclusion**

Overall internship was a very good field and to the performance site to me. It helps to increase my skill, strength, abilities and performance. It was a great experience to me. In this internship I have been able to learn and experience about many networking equipment's of the banking server which bank use to increase their network and power.

Banking site internship is huge field to gather knowledge. I am happy to an opportunity. In this internship I have not only a huge knowledge also have experience. Internship makes a man independent. Here they can research, implement their theory and practical knowledge. It will help us in our future life.

#### 5.2 Scope for Further Career

The backbone of the most significant thing recognized as 'Internet' is computer networking. IT-Infrastructure and IT-Software go hand in hand. To make our society simple, both are similarly essential. Networking is evergreen, it is only going to get bigger and more complex. But it is not very easy to enter as a fresher, but if I have to study and practice hand. Unlike software programming, where the job is more confined to simply coding this area demands hands-on or practical knowledge on multiple networking hardware, platforms, network protocols and more importantly problem solving skills.

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[4] Learn about Ethernet cable, available at <u>http://www.lifewire.com/what-is-an-ethernetcable-</u> <u>817548</u> Accessed on: April 5, 2019

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