

**MAINTANANCE AND WORKING PROCIDURE OF DATA AND INTERNET
EXCHANGE AT BTCL**

by

MD ARIFUL ISLAM

ID: 162-15-8102

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

Supervised by

Dr. Fernaz Narin Nur
Assistant Professor
Department of CSE
Daffodil International University

Co-Supervised

Ms. Nazmun Nessa Moon
Assistant Professor
Department of CSE
Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

MAY 2019

APPROVAL

This internship titled "Maintenance and working procedure of data and internet exchange at BTCL" submitted by Md. Ariful Islam, ID No: 162-15-8102 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 May 02, 2019.

BOARD OF EXAMINERS

Dr. Syed Akhter Hossain

Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Chairman

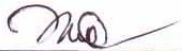


Md. Tarek Habib

Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

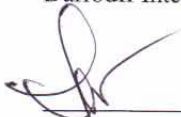


Moushumi Zaman Bonny

Senior Lecturer

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner



Dr. Swakkhar Shatabda

Associate Professor

Department of Computer Science and Engineering
United International University

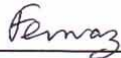
External Examiner

DECLARATION

I hereby declare that, this internship report is prepared by me, Md. Ariful Islam to the department of Computer Science and Engineering, Daffodil International University. Under the supervisor of **Dr. Fernaz Narin Nur, Assistant Professor, Department of CSE, Daffodil International University.**

I also declare that neither this internship report nor any part of this internship report has been submitted elsewhere for award of any Degree or Diploma. I also declare that, I collect information from is **Bangladesh Telecommunication center (BTCL), Data and Internet exchange & Telecommunication Based Company.**

Supervised by:



Dr. Fernaz Narin Nur
Assistant Professor
Department of CSE
Daffodil International University

Co- Supervised by:



Ms. Nazmun Nessa Moon
Assistant Professor
Department of CSE
Daffodil International University

Submitted by:

Name: MD. Ariful Islam
ID: -162-15-8102
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

First I express my heartiest thanks and thankfulness to almighty Allah for His divine blessing makes us possible to complete the final year internship successfully.

I really grateful and wish I profound my indebtedness to **Dr. Fernaz Narin Nur Assistant Professor, Department of CSE at Daffodil International University, Dhaka.** Deep Knowledge & keen interest of my supervisor in the field of Networking influenced us to carry out this internship. She's endless patience, scholarly guidance, continual encouragement, constant and energetic supervision; constructive criticism, valuable advice, reading much inferior draft and correcting them at all stage have made it possible to complete this project.

I also obligated to **Dr. Syed Akhter Hossain**, Professor & Head Department of CSE, CIS, & CS, Daffodil international University for their available comments in the internship.

I am deeply in indebted to **Kamalesh Biswase**, Director (Recruitment & Training) for give the chance to complete my internship on BTCL.

I would conjointly like provide to acknowledgments everybody of the all division members of (BTCL). (for providing suggestion on what is told way to) work and what's the procedure to figure in a very sensible manner and also how to make the post report in a better way. They helped me in many ways by allowing no matter help I required. Otherwise it were insufferable for me to complete my report.

Finally, we must acknowledge with due respect the constant support and patience of our parents

ABSTRACT

This Internship is on “**Maintenance and working procedure of data and internet exchange at BTCL**” This is kind of experience on telecommunication network. I am interested to internship basic telecommunication Company Ltd (BTCL). Because now a day communication is talk of the world. In this guide I am relate what I learn about real world field installation and working processes of data and internet exchange on BTCL, in this internship period.

BTCL is the leading public telecommunication company in Bangladesh. It is a great opportunity For us work on BTCL. It has the largest infrastructure for providing with data and internet services Which comprises of optical fiber network with high capacity routers and switches across the Country. This company provided telephone services all over Bangladesh. Most the user can also Use dial-up internet services. This company has the largest Telecom in-fracture comprising of Cooper cabling, microwave links, satellite links, and Optical Fiber network etc. ADSL broadband Internet services are available on this company. We have Gain practical knowledge about internet, Microwave transmission ADSL, IGW, IIG, ISP, LLI, VPN, GGC, NOC, NIX, IP address switch Room, domain services etc.

TABLE OF CONTENTS

CONTENTS	PAGE
Approval	i
Declaration	ii
Acknowledgement	iii
Abstract	iv
Table of Contents	v
List of Figures	vii
List of Tables	viii
CHAPTER 1: INTRODUCTION	1-3
1.1 Introduction	1
1.2 Motivations	1
1.3 Internship Objectives	2
1.4 Introduction to the Company	3
1.5 Report layout	3
CHAPTER 2: ORGANIZATION	4-11
2.1 Introduction	4
2.2 Providing services, capacity and connection	5
2.3 Structured of the organization	7
2.4 Service case and subscriber data of organization	9
2.5 SWOT Analysis	11

CHAPTER 3: TASKS, PROJECTS AND ACTIVITIES	12-27
3.1 Daily task and Activities	12
3.2 Events and Activities	27
3.3 Project Task and Activities	27
3.4 challenges	27
CHAPTER 4: COMPETENCIES AND SMART PLAN	28
4.1 Competence earned	28
4.2 Smart Plan	28
4.2 Reflection	28
CHAPTER 5: CONCLUSION AND FUTURE CAREER	29
5.1 Discussion and conclusion	29
5.2 Scope for Further career Reference	29
Reference	30
Appendices	31
Plagiarism	31

LIST OF FIGURES

FIGURES	PAGE-NO
Figure 2.1 Introduction of BTCL	4
Figure 2.2: BTCL Communication Structure	7
Figure 3.1: 5 division working procedure of BTCL	12
Figure 3.2: Leased line internet service	13
Figure 3.3: Maintaining VPN process by Cacti software	14
Figure 3.4: GGC Switches in BTCL server room	15
Figure 3.5: Example of NIX process	16
Figure 3.6: IP address	17
Figure 3.7: Private IP address	18
Figure 3.8: ADSL connectivity diagram	19
Figure 3.9: Configure ADSL connection by using command, land Phone, splitter and router.	20
Figure 3.10: Billing Server of ADSL	21
Figure 3.11: Apply for Domain Registration	22
Figure 3.12: Huawei Switch 12712	23
Figure 3.13: ODF front and back part	24
Figure 3.14: BTCL NOC room	25
Figure 3.15: Project JIKA and KT by using software I manager N-2000	26

LIST OF TABLES

TABLES	PAGE-NO
Table 2.1: BTCL subscriber data	10
Table 2.2: SOWT analysis of BTCL	11

CHAPTER 1

INTRODUCTION

1.1 Introduction

In Networking is no longer a stranger. Networks are completed up of various devices computers, switches, routers, hub connected together by cables or wireless signals. At this time all offices, institute , industries and Home has more than one computer and mobile devices there are need to communicate each other to share data, for this reason there are connected to the internet. Data communication and network have changed the way business and other daily affair works in day by day the internet user growth very faster. Because of this, I deeply think about internet. Internet Create new jobs on the remotely [1].

1.2 Motivation

Very useful and the most important part in the area of information technology is the Internet. BTCL acts various services of the Internet such as (Broadband, telephone, data & internet, ADSL, domain, etc.). I found out that BTCL has an excellent reputation for customer satisfaction and service. BTCL is well known IIG, ISP, and NIX service provider in Bangladesh. My internship experience in the BTCL will give me an idea about my future life and will be a stricter step in my future education and in my profession. My desired hope will be fulfilled from BTCL. For this reason this internship can even provide with a professional mentor.

1.3 Internship Objective

Internship often give me the chance to attend meeting and events .By interacting with professionals me gain new connections and learn how to communicate in a professional environment. Personally, my internship have introduced me to a lot of useful resource and have given me the opportunity to meet a variety of professionals in my field.

1. Learn basic computer and network knowledge.
2. Gain networking components & technologies.
3. Learn sharing with broadband.
4. Gain knowledge data, internet, LAN & router.
5. How can I access Ip addressing and TCP/IP protocol.
6. To gain experience about telecommunication.
7. To understood the situation of networking practical fields.
8. Gain knowledge about Submarine cable in BTCL.
9. Learn about official environment and conditions.
10. Gain knowledge about Network operation center (NOC).
11. Works in KT and JAIKA project.
12. Learn to operation and install of IPV-4 & Sub-Netting in BTCL.
13. Gain knowledge about ADSL and GPON connection.
14. Learn how can I registration for DOMAIN in BTCL
15. Gain knowledge about SME-WE-4 and SME-WE-5

1.4 Introduction of Company

Bangladesh Telecommunication Company Limited (BTCL) is a telecom carrier, NIX, IIG, ADSL, IGW, ICX, ISP, NIX, NITN, PSTN Operator and cc domain (.bd), (.বাংলা) register. There has a copper, optical fiber and microwave networks almost all over the country in the world, The Transmit branch lower than the Posts and Transmit Department is created in 1853 in the then British India and were regulated afterward under the Transmit Act of 1885. Bangladesh Telecommunication Company Limited (BTCL) is now a government owned company. Major services there provide were land line telephone, dial-up connection, High-speed bandwidth local and international leased line internet (LLI), VPN, MPLS, country domain (.bd), (.বাংলা) co-location etc. Soon launching NGN soft switch, GPHONE base services and triple play over fiber to home. Has plan drive for LTE wireless services. [5]

1.5 Report Layout

1. In chapter 1, I discuss introduction, motivation and internship objective of BTCL.
2. In chapter 2, I introduction of organizational information, history of BTCL, basic structure of information, capacity and connection of BTCL.
3. In chapter 3, I discuss about my task and activities of internship, events and maintains works.
4. In chapter 4, I discussed about my Skills Earned, Smart Plan, and thinking.
5. In chapter 5, discussion and conclusion, describe scope for further career of networking field

CHAPTER 2

ORGANIZATION INFORMATION

2.1 Introduction

The transmit branch under the posts and transmit department were created in 1853 in the then British India and were controlled afterward under the transmit Act of 1885. Pakistan Transmit and Telephone Department were created in 1962, after the independence of People's Republic Of Bangladesh in 1971, Bangladesh Spread and telephone Department were setup under the ministry of Posts and telecommunications. This were converted into a corporate body named "Transmit and Telephone Board" by declaration of Transmit and Telephone Board Ordinance 1975. In Pursuance of Ordinance No. XII of 1979 Promulgated on 24th February 1979. Transmit and Telephone Board were converted to "Bangladesh Transmit and Telephone Board (BTTB)" as a Government Board. In Pursuance of "Bangladesh Transmit and Telephone Board (Amendment) ordinance, 2008" Dated 01-June-2008 (Future on Bangladesh Transmit and Telephone board (Amendment) Act 2009) a company namely "Bangladesh I given a BTCL logo which is in figure 2.1.



Figure 2.1: Introduction of BTCL

Transmit invented by French inventor Claude Chipped, in 1880, Alexander Graham Bell Patented an optical telephone system, which he called the photo phone. However his earlier, invention, the telephone were more hands-on and took tangible shape. The photo phone remained an experimental invention and never materialized. During the 1920s, John Logie Baird in England and Clarence W. Hansel in the Joint States patented the idea of using arrays of hollow pipes of transparent rods to transmit images for television or facsimile systems

2.2 BTCL provide services

- Landline phone services throughout the country(PSTN- Local, NWD,ISD)
Copper line based optical fiber based GPON virtual number
- Value added services in land phone:
 1. Call barring
 2. abbreviated dial
 3. conference call
 4. call waiting
 5. wake up call.
 6. Don't disturb message
 7. call forwarding
 8. hot line
- RED telephone service.
- Internet service:
 - Dial up service
 - ADSL
 - GPON
 - Leased line internet (LLI)
 - MPLS and ADSL VPN
- Point to point and point to multi-point voice grade local leased line.
- Digital data node services.
- International private leased circuit.

- .bd domain name registration.
- Web hosting and DNS hosting.
- Inter operator connectivity.
- Co-location services.
- International Bi-lateral voice carrier.
- Web based form to submit complain.

2.2.1 BTCL telecom capacity and connection

Compressed Web length is the division multiplexing are a core technology in an optical transport network. In the fiber-optic communications, wavelength-division multiplexing (WDM) exists a technology which multiplexes various optical carrier signals on a single optical fiber by used different wavelengths (colors) of laser light to carried different signals.

2.2.2 Optical Fiber Cable Network Development in 1000 Union Parishads

Execution effort of the project titled “Optical Fiber Cable Network Progress in 1000 Union Parishads” at the charge of Tk679.87 crores, financed by GOV fund, is remain on in BTCL. This project continued started in January 2012 and will be completed by December 2016. Under the scope of the project around 8,000 km OFC beside with necessary transmission and D.C power equipment will be deployed in 1109 unions of 114 upazilas.

2.3 Structure of BTCL Exchange

All communication have a structure. So, in the BTCL have also structure of its communication system So, I draw block diagram which is one of the part of the BTCL communication structure. Now I given the structure of BTCL exchange which is in figure 2.2.



Figure 2.2: BTCL Communication Structure

Exchange: The exchange is being connected to the other exchange to connect. Exchange to exchange linked with the satellite, micro wave, fiber optic, submarine cable etc.

Soft switch: soft switches are consideration the signal and send it to the MDF. Soft switch are decided who connected in to the signal.

MDF: MDF is being key distribution frame. All the wire was connected by MDF.

Cabinet: MDF send a group of wire in cabinet. Such as 800 to 2400 pair.

DP: DP in from distribution point. Cabined connected with multiple DP. A DP has 10 to 100 pair cables.

User: DP to handler connected 2 pair cable and Stable a Communication.

2.3.1 Internet related licenses of BTCL

Internet Service Provider – Nationwide: As an ISP operator, BTCL provides with data & internet connection to Gov. / Private Clients

- **International Internet Gateway (IIG):** As an IIG operator
 - BTCL is connected to foreign up streaming providers similar SingTel, TATA, Equinix, Akamai, Google, Facebook etc. to bring internet traffic to Bangladesh
 - BTCL provides with Internet Bandwidth to other IIG or ISP operators
 - BTCL is connected with global upstream through SEA-ME-WE4, SEA-ME-WE5 and ITC.
 - It has the largest infrastructure for providing with data and internet services which comprises of optical fiber network with high capacity routers and switches across the country.

-Also BTCL has NTTN (Nationwide Telecommunication Transmission Network) license

2.4 BTCL Service case

- New LLI connection
- New temporary LLI connection
- New Google Cache bandwidth (GGC)
- New 5 years contract
- Break 5 years contract
- Bandwidth upgrade
- Bandwidth downgrade
- POP shift
- Bandwidth shift
- Closing LLI connection
- Temporary disconnection (TD)
- Reconnection from TD
- New Additional IP address
- Release additional IP
- Ownership change
- Billing address change
- IP address change
- Client name change
- New fiber (local loop
- Additional port
- Temporary bandwidth upgrade
- Connection address change (client office shift

2.4.1 BTCL pop

- BTCL has
 - Around 120 district level Pops and
 - Around 300 sub-district (Upazilla) level Pops

For providing with internet connectivity.

- Each Pop contains at least one or all of following equipment's:
 - Router
 - Switch
 - Multiplexer (MUX in short, a transmission equipment)
 -

2.4.2 BTCL Subscriber Data

There are many types of BTCL subscriber data in BTCL. There are many types of LLI connections, bandwidth sold to LLI clients, No. of ADSL connections, ADSL coverage, No. of GPON connections, GPON coverage, No of land phone connections. I given the BTCL subscriber data table which is in table 2.1.

Table 2.1: BTCL Subscriber data

	2015-2016	2016-2017
No. of LLI connections	640	836+1000 union
Bandwidth sold to LLI clients	30Gpbs	76.6Gbbs
No. of ADSL connections	2000	20600
ADSL coverage	64 district	64 district
No. of GPON connections	132	212
GPON coverage	Mirpur,Baridhara DOHS,Gulshan,Rmna SBN,Moghbazar,Uttara,Nilkhet, Fakirapul.	Dhaka and chattogram city
No. of land phone connections	7.16 lac	6.62 lac

2.5 SOWT Analysis

SWOT stances Strong point, Faintness, Chances, and Fears. SWOT analysis is the aims to classify the key internal and external issues seen as key to attaining an objective. Now I given a SOWT analysis structure which is in table 2.2.

Table 2.2: SOWT analysis Of BTCL

Strength	Weakness	Opportunities	Threats
1.Fixed phone service provider	Image	quality	Phones
2.Only one land line provider	Equipment's Lana equate	Lowest call rate	Prefer mobile Phone
3.Integratyed service package	Poorer organization's CSR activities	Increased tax and traffic on mobile set And SIM	Competition with private company's.

CHAPTER 3

TASKS, PROJECTS AND ACTIVITIES

3.1 Data and internet related service of BTCL

As an ISP operator, BTCL provides with data and internet connection to Govt/private clients. BTCL is connected to upstream providers like singtel, tata, equinix, akamai, google, facebook etc. to bring internet traffic to bangladesh. BTCL provides with internet bandwidth to another IIG or ISP operators. Now I given the data and internet organogram which is in figure 3.1.

Data & Internet Organogram

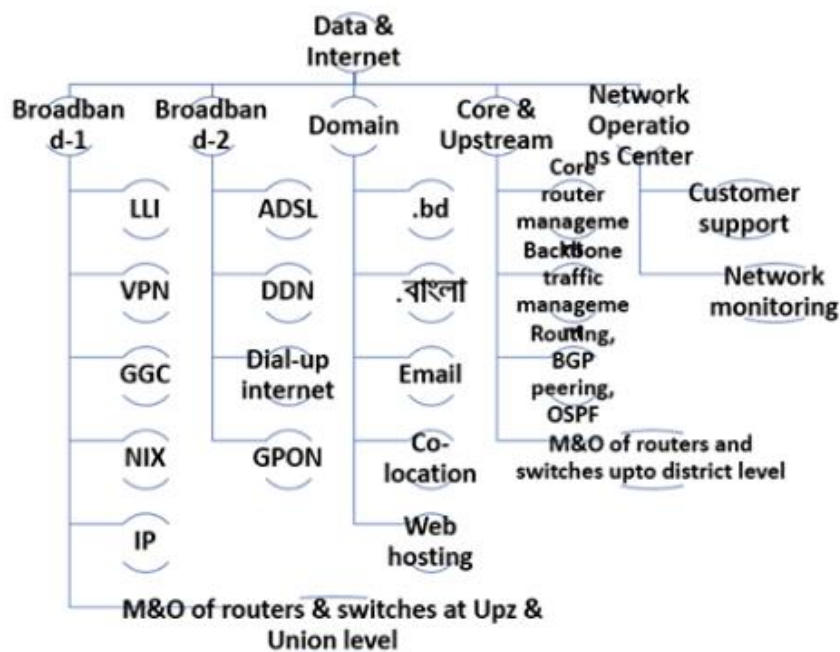


Figure 3.1: 5 division working procedure of BTCL

3.1 Broadband -1 Division

- LLI(Leased Line Internet)
- VPN (Virtual Private Network)
- GGC (Google Global Cache)
- NIX(National Internet Exchange)
- IP(Internet Protocol)

3.1.1 LLI (Leased Line Internet)

- As usually it's provided by optical fiber. (10Gbps+),
- This service is provided by the Broadband-1 division
- Features:
 - Dedicated bandwidth (Mbps to 10Gbps+)
 - Full duplex (uploaded speed == download speed, unlike ADSL service)
 - It's Connected by real IP address.

Now I given the figure of Leased line internet service which is in figure 3.2.



Figure 3.2: Leased line internet service

➤ Configured LLI

Directly from router port:

- No VLAN is required
- IP address and bandwidth are configured at router port
- IP address is added in OSPF
- From switch via router.
- From Mux:
- By NAT and VPN.

3.1.2 VPN (Virtual Private Network):

- A Virtual Private Network (VPN) is a network technology that creates a secure network connection over a public network such as the Internet or a private network owned by a service provider. I given Maintaining VPN process by Cacti software which is figure 3.3.
- This service is provided by Broadband-1 division
- Features:
 - Dedicated data speed (Mbps to 10Gbps+)
 - Full duplex (upload speed == download speed)
 - uses Can be Layer 2 or Layer 3



Figure 3.3: Maintaining VPN process by Cacti software.

-when im am in broadband -1 division maintaining VPN by cacti software

3.1.3 GGC(Google global Cache)

- BTCL has Google cache server in its own premises installed by Google. Cache service is a temporary storage mechanism that speeds the delivery of web content to end users. Cache servers retain copies of content and rich media, including audio, video, images, and static text, at various points throughout the network for later retrieval. It enables end users to Access services like YouTube and others in high scalable speed from BTCL. This service is provided by Broadband-1 division. I given the GGC switches in BTCL server room which is in figure 3.4. [3]
- Features:
 - Dedicated data speed (Mbps to 10Gbps+)
 - Full duplex (upload speed == download speed)
 - Very low cost (only 200 taka transmission charge)

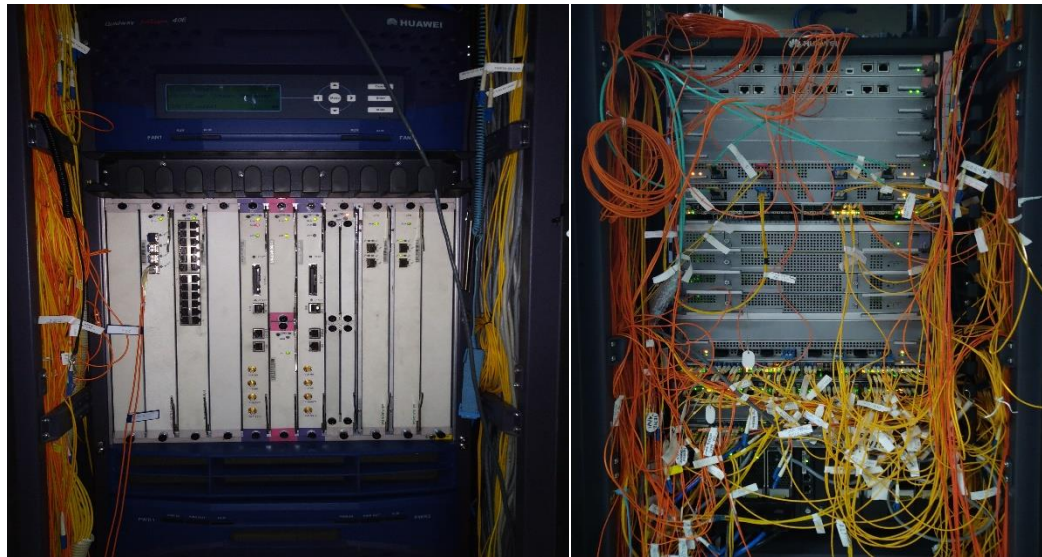


Figure 3.4: GGC Switches in BTCL server room

3.1.4 NIX (National Internet Exchange)

BTCL has national internet exchange service which turns as a neutral meeting point of the ISPs. It's main drive is to facilitate exchange of domestic internet traffic between the peering isp members. This enable more effective use of international bandwidth ind improve the qualities of service for the customer of member ISP. By avoiding several international hops and thus reducing latency. BTCL has all types of interfaces available for NIX connectivity. Now I given a example of NIX process which is in figure 3.5.

- Ip address
- ASN
- Prefix
- Peer

ENSP software uses for the NIX configuration.

This service is provided to clients by Broadband-1 division.

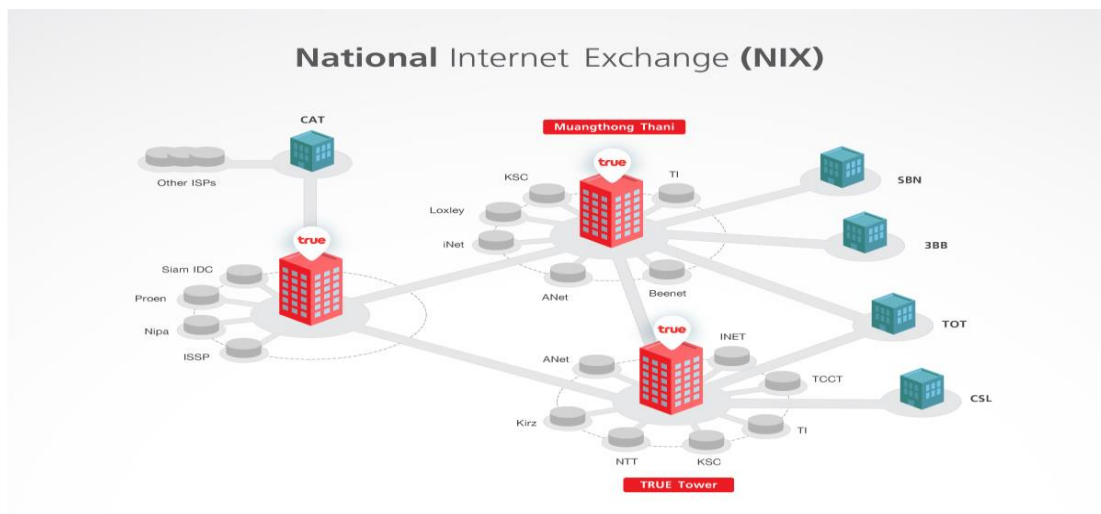


Figure 3.5: Example of NIX process.

3.1.5 IP (Internet Protocol):

➤ IP Address Service:

- BTCL owns several blocks of Public IP address bought from APNIC who is the Asia Pacific regional manager organization of public IP address.
- IP addresses are sold to LLI clients by Broadband-1 division
- IP address blocks owned by BTCL:
 - 180.211.128.0 to 180.211.255.255
 - 203.112.192.0 to 203.112.224.255
 - 123.49.0.0 to 123.49.63.255
 - BTCL IPv6 block is: **2407:5000::9:0/32** which contains around 7.92×10^{28} Ips
- IP blocks are given on per year basis and needed to renew each year by customers.
In the figure 3.6 I given how does an IP address look like.

➤ How does an IP address Look Like:

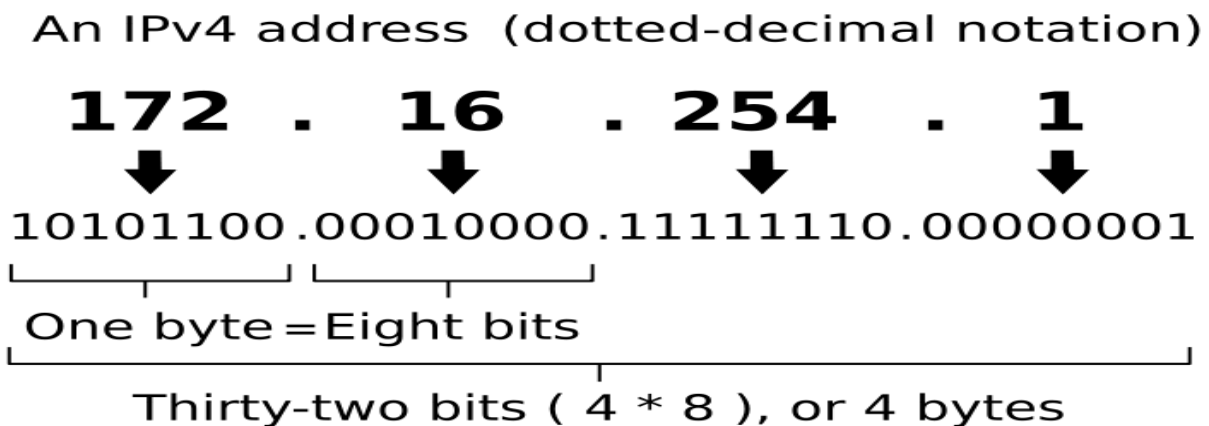


Figure 3.6: IP address

➤ Private IP Addresses

A private IP address is a non-Internet facing IP address on an internal network. Private IP addresses are provided by network devices, such as routers, using network address translation (NAT). Private IP addressing uses addresses from the class C range reserved for NAT (192.168.0.0 – 192.168.255.255). Now I given private IP address figure in 3.7.

Private Network Ranges	Start of range	End of range	Total addresses
24-bit Block (/8 prefix, 1 x A)	10.0.0.0	10.255.255.255	16,777,216
20-bit Block (/12 prefix, 16 x B)	172.16.0.0	172.31.255.255	1,048,576
16-bit Block (/16 prefix, 256 x C)	192.168.0.0	192.168.255.255	65,536

Figure 3.7: Private IP address.

3.1.6 Broadband-2 Division

➤ ADSL(Asymmetric Digital Subscriber Line)

- BTCL provides with broadband internet over telephone line known as ADSL (Asymmetric Digital Subscriber Line).
- Features:
 - Dedicated data speed (upto 1.5Mbps)
 - Download speed is higher than upload speed
 - Connected via copper cable (telephone line)
- BTCL is recently providing with GPON internet connection with higher speed (upto 10Mbps) via land phone. It is provided from telecom division.
- This service is provided to clients by Broadband-2 division
- Asymmetric Digital Subscriber Line (ADSL) is a data communications technology that

enables fast data transmission over copper twisted pairs by employing high frequencies that are not used by regular telephone lines.

- ADSL uses the frequency division multiplexing (FDM) technology to classify telephone lines into regular telephone lines, upstream channels, and downstream channels, avoiding Interference .the one of the white port is 100g data port. In the figure 3.10 I given the ADSL connectivity diagram.

➤ **ADSL INTERNET EQUIPMENTS**

- DSLAM
- BRAS
- AAS Server
- Billing Server

➤ **ADSL Connectivity Diagram**

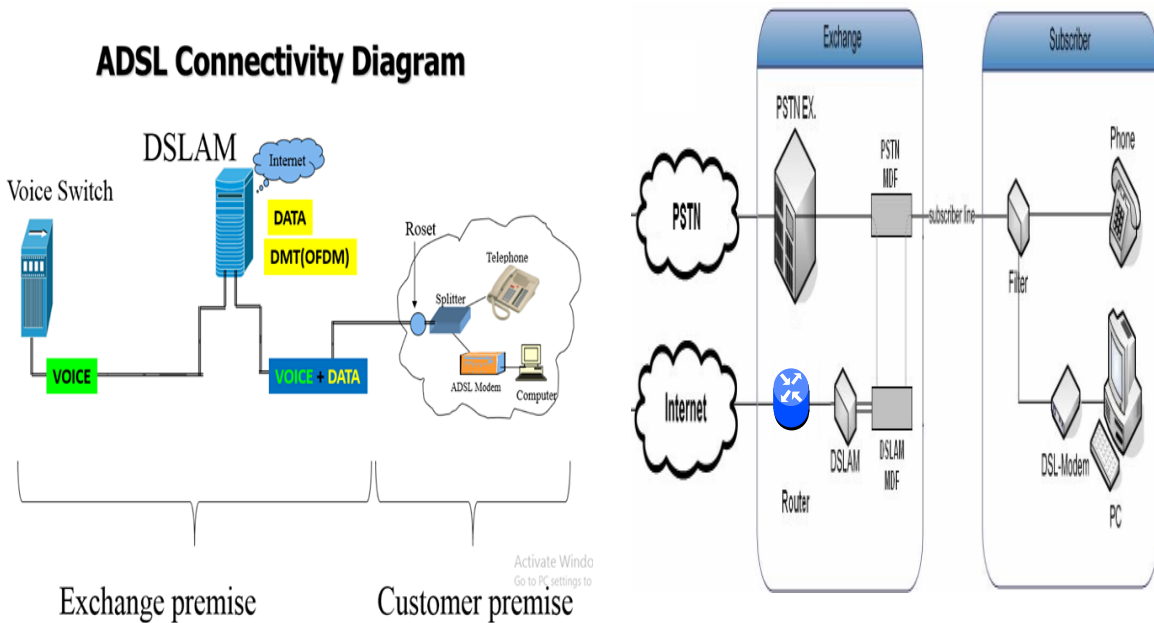


Figure 3.10: ADSL connectivity diagram

➤ Practical connection Of ADSL

When we configure the ADSL connection we need a land phone, one router and one splitter device. At the time we use optical fiber port entered into the splitter, splitter has two gate ways, one use for land phone and one for optical fiber port which use is in router. In this way data can transfer from the splitter. Now I given a ADSL connection image. Which is configured by me. [4]
In given a Configure ADSL connection which is in figure 3.11.



Figure 3.11 Configure ADSL connection by using command, land Phone, splitter and router.

➤ Billing Server Of ADSL

A customer who wants to take BTCL ADSL connection, first they come to BTCL office and pay an amount 400/- and fill up an application. That is demand note. Then an advice note is given to them by Local BTCL main office. Then it is signed by the DE of BTCL and sends it to the Junior Assistant Manager. Then data entered at billing server. After that, data are checked by the JAM and verified and then data are re-checked by the Assistant Manager and approved. After approving the data, a message including user name and password send to the user. Finally jumpering from BTCL local office MDF room, the outside workers reach the line to the user home. Now I given the billing service process which is in figure 3.12.

ADSL Phone Number	Client ID	Application Status	Account Status	View/Edit & Summary	Approve/Verify	Deny	Delete	Blacklist
62808	head80	Approved	Active(Safe)	Edit/Summary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 3.12: Billing Server of ADSL

3.1.10 Domain Division

➤ Domain

- BTCL is the owner and seller of two cc TLD (Country Code Top Level Domain)
 - .bd
 - .বাংলা
- The later one allows to write web addresses in Bengali Language
- This service is provided to clients by Domain division
- All Government sector use BTCL domain.

If anybody buy any domain by BTCL they can apply the BTCL domain registration web site. Registration process screenshot given below. I given the domain registration figure which is in figure 3.13

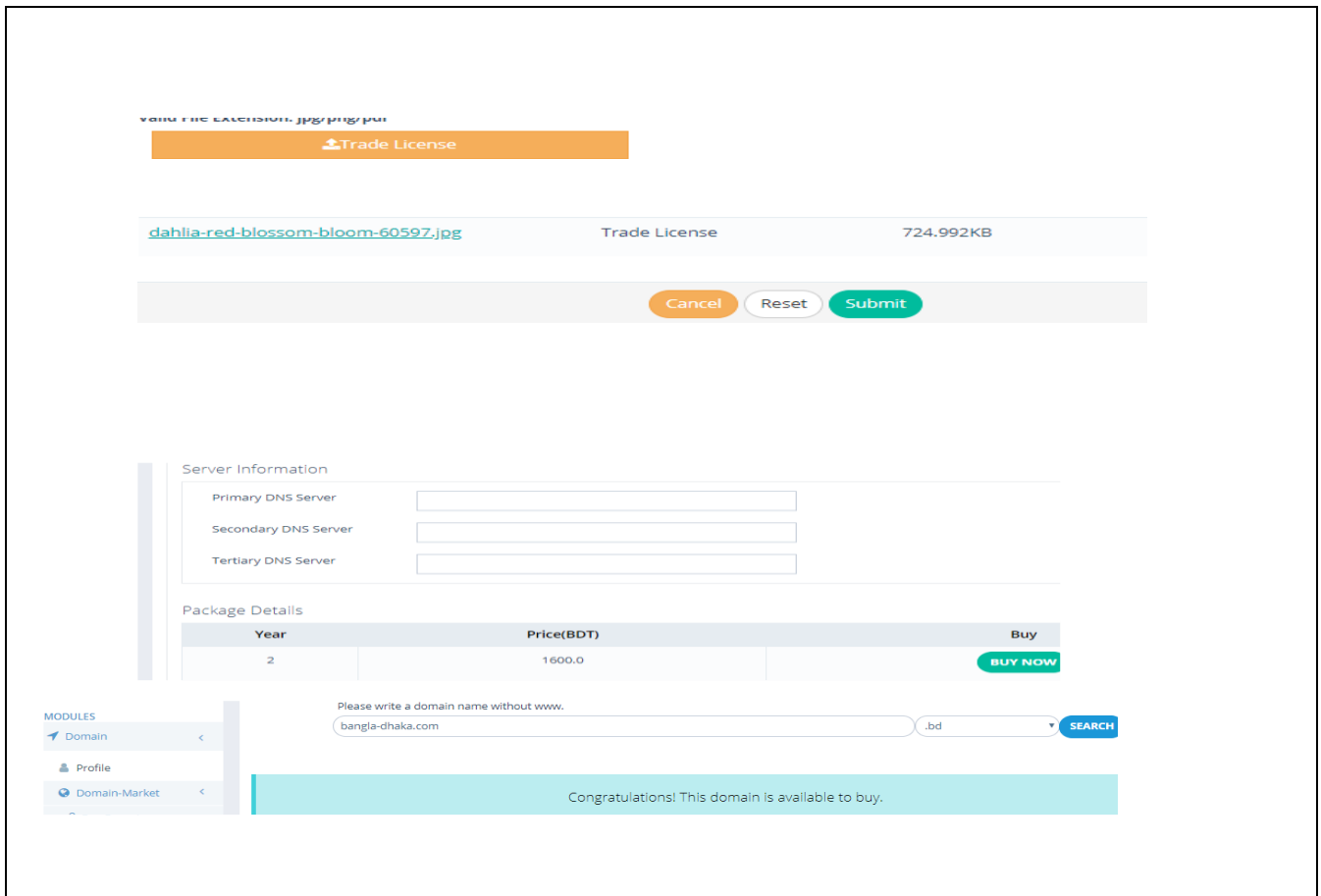


Figure 3.13: Apply for Domain Registration

3.1.12 Email Service

- BTCL has its own Email server from which it provides with below e-mail addresses to its Internal users:
- This service is provided to BTCL internal users only by Domain division

3.1.13 Core and Up streaming Division

- In the BTCL have core and up streaming division. This is one of the most important Division in the BTCL there are many types of switches in the core and up streaming Server room. This divisional teacher train me some commend to maintain the server. I given Huawei Switch 12712 which is in figure 3.14.

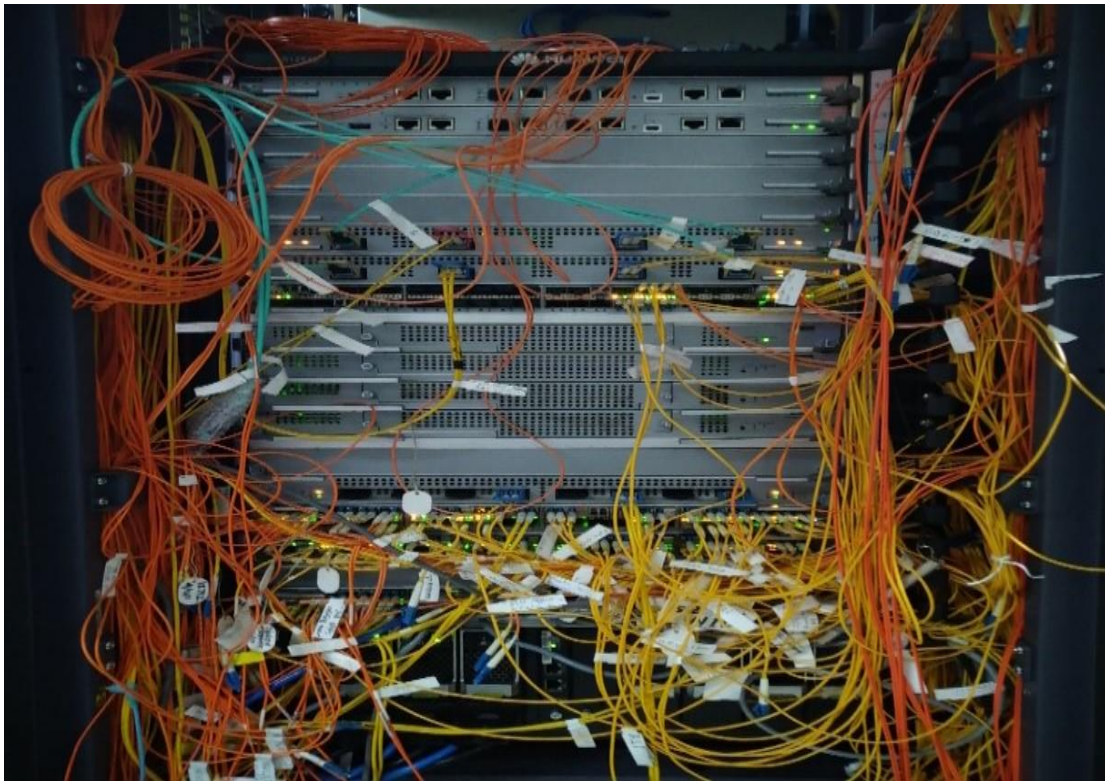


Figure 3.14: Huawei Switch 12712

3.1.15 ODF

- An ODF is one of the frame which is used to provide for the interconnection between Communication facilities, it can be integrate fiber splicing, fiber termination, fiber optic adapters. An ODF can also work as a protective device to protect the optic fiber connection for damage .To choose the right ODF it's not for a easy thing. Here is some ODF image. ODF switch have control card. Yellow wire is use for single line and orange many. Now I given the figure of ODF back and front part in figure 3.15 [2]

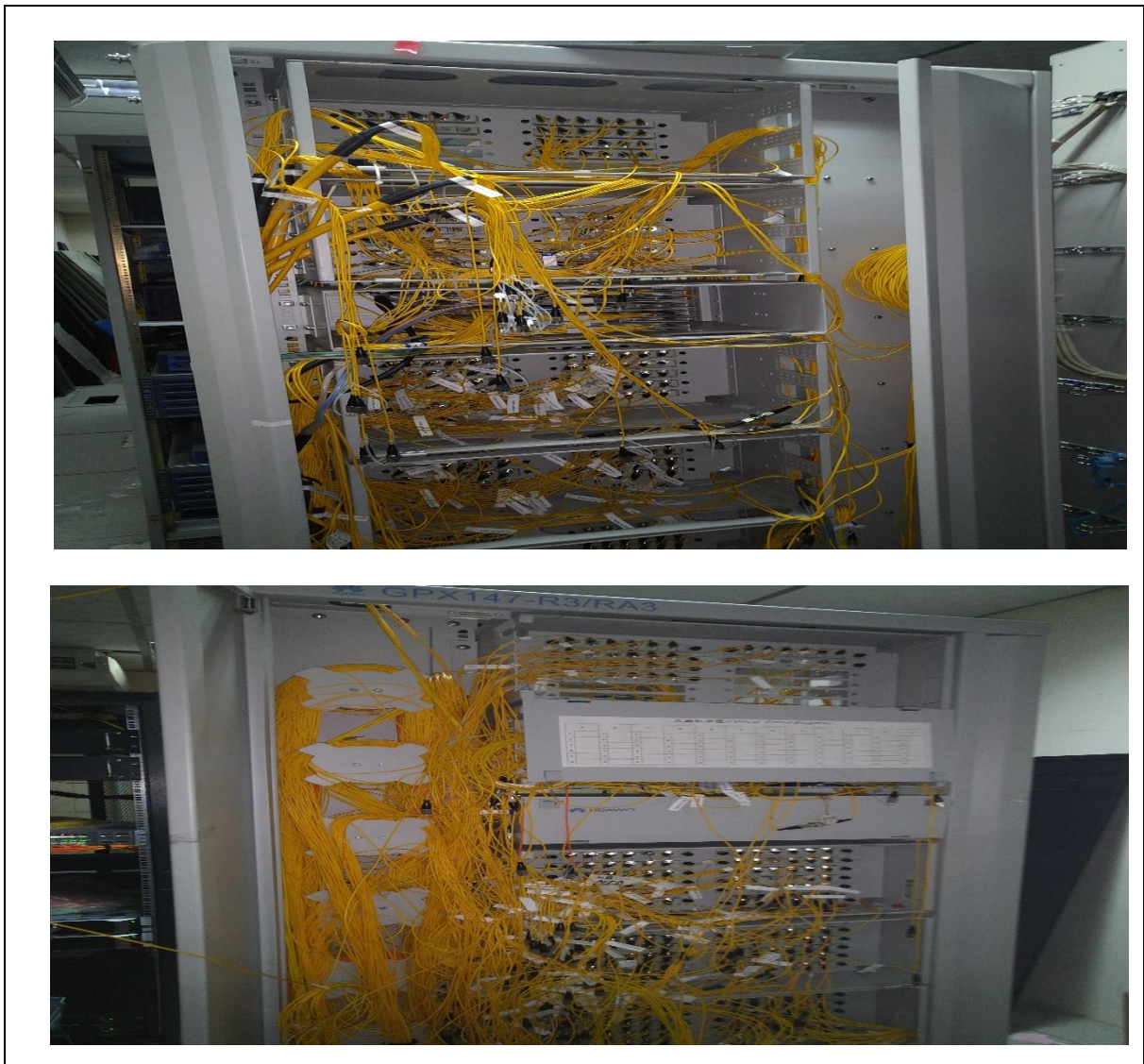


Figure 3.15: ODF front and back part

3.1.17 NOC (Network Operation Center)

- All the communication company have a NOC server room.so BTCL have a NOC room. Generally BTCL network operation center (NOC) is a central location which from network administrator manage, monitor and control one or more networks. The total function is to maintain optical network operations across a variety of platforms, communications channel and the medium. When I monitor and control in the room. When I collect some screen short which is related NOC work. I given the figure of BTCL NOC room in figure 3.16.



Figure 3.16: BTCL NOC Room

3.1.19 Project JIKA and KT

- In the JAIKA project we use the I manager U-2000 Unified Network Management System and for the KT (Korean Telecom) project I manager N-2000 Fixed Network Integrated Management system. In this time I gain knowledge about how can active or deactivate BTCL service users line in any district and we always maintains the NOC room to show which service is up and which is down .In the figure 3.18 I given the project JIKA and KT process.

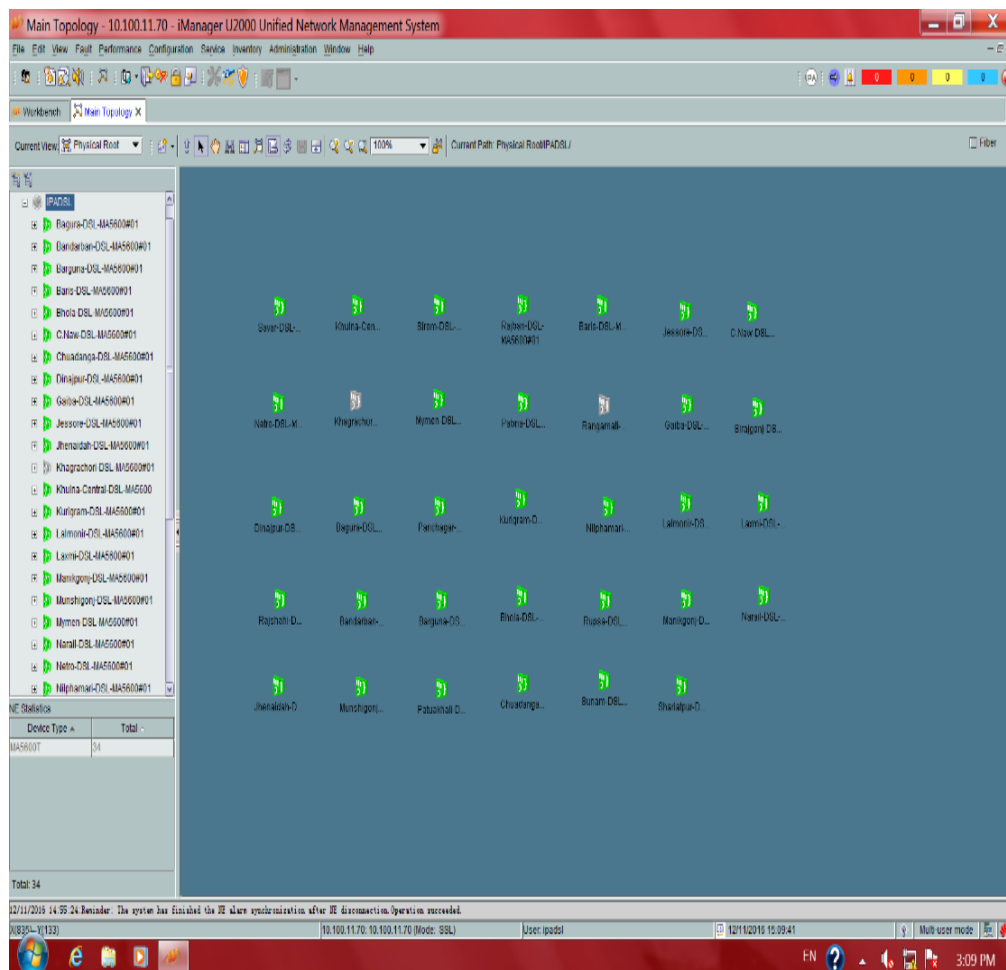


Figure 3.18: Project JAIKA and KT by using software I manager N-2000

3.2 Events and Activities

At the time when I was in Data and Internet Exchange of BTCL at Moghbazar branch I am getting knowledge about ADSL(Asymmetric Digital Subscriber Line).I learn about how to connect the ADSL system and how to maintains this connectivity. I also gather knowledge about VPN connection, some idea about cabling, doing, project JIKA and KT and some types of them

3.3 Project Task and Activities

My internship duration is 3 month and I complete my internship 2 months and few days something. Moghbazar BTCL is the main division for the data internet exchange and Telecommunication .In this sector have 5 division.In this division we solve some task which is relevant with networking procedure

3.4 Challenges

Asymmetric Digital Subscriber Line (ADSL) is a data communications technology that enables fast data transmission over copper twisted pairs by employing high frequencies that are not used by regular telephone lines .ADSL was very sensitive and secure placed all data, voice and important information is passed by the ADSL .It is one of the most difficult work under this condition

CHAPTER 4

COMPETENCIES AND SMART PLAN

4.1 Competencies Earned

In this short intern period, we tried to learn Communication and Networking and we could learn something. The current world is very developed and it's keeping with it. Strong Computer knowledge is highly needed in the competitive job market

4.2 Smart Plan

I am concerned to the future of my career now. In intern period, I gather practical knowledge that is help my future career in IT sector. Day by day, it is high demand in modern technology. I learned some real life things in my internship period with in a team. Now I try my best increase knowledge and practice more and more. My plan completely learns about Network Engineering, then implementation in real world.

4.3 Reflections

Intern gets the practical experience in the field of Network Engineering. It is help to increase experience in engineering job. In intern period, I learned Network Practical knowledge. IT is a smart and dynamic profession at present. This experience will help me to be seeking smart job. Intern provides advance tricks and trips that practiced by the professional.

CHAPTER 5

CONCLUSION AND FUTURE CAREER OR PLANNING

5.1 Discussion and Conclusion

My Internship has been completed in 24 April 2019. When I completing my internship I gain knowledge of all this things discuss in previous chapter. In present all communication system depends on internet. So we should need to upgrade the internet speed. This internship give me a chance to test attention in particular career before permanents commitments are made. In that present the internet acts plays a huge role in business sector. Suppose for example how broadly used a lot of data in heavy function as like as video conferencing, when we access cloud-based apps, video streaming , watch BDIX TV server or download a lot of file in various website. Your bandwidth is taxed for any those high demand activities. When you see a video streaming you may need 5.0 megabits per second, When various user on your network are streaming various videos.

5.2 Scope for Further Career

In our country in Bangladesh there are many lots of company. In this companies BTCL is one of the largest and popular telecommunication company. Main services in this company they provided are land line telephone and providing services a huge amount of data and internet all over in the Bangladesh. Therefore, I will try to success of the next recruitment exam

References

- [1] http://www.btcl.com.bd/files/thumbnail/14526873689347__AR-English-2013-14.pdf [Accessed 25 March 2019].
- [2] <https://community.fs.com/blog/basic-of-optical-distribution-frame-odf.html>. [Accessed 25 March 2019].
- [3] <https://www.google.com/search?q=network+operations+center&sourceid=chrome&ie=UTF-8>. [Accessed 26 March 2019].
- [4] <https://www.webopedia.com/TERM/A/ADSL.html>. [Accessed 27 March 2019].
- [5] <https://en.wikipedia.org/wiki/BTCL>. [Accessed 28 March 2019].
- [6] <https://www.google.com/search?q=network+operations+center&sourceid=chrome&ie=UTF-8> [Accessed 28 March 2019].

Appendix A: Internship Reflection

I am very obliged to complete my internship. At first I want to give a great thanks to my supervisor, Dr. Fernaz Narin Nur who is always to prepare to answer all of my questions and clear my concept for assigned tasks. In a few months a lot of changed for me. This internship is a great opportunity to enter a new world. Reflection on my intern I gain various real life connectivity and gain a lots Experience.

Appendix B: Company details

Bangladesh Telecommunications Company Ltd (BTCL)

Telejogajog Bhaban, 37/E, Eskaton Garden

Dkaka-1000, Bangladesh.

TEL: PABX: (880) 2 9320075-6, 9320080-3

E-mail: ddt@btcl.net.bd



Head Office:

Managing Director Phone: +880 2 48311500

Fax: +880 2 9320002 Email: md@btcl.net.bd

Web Administrator:

DDT, Email: ddt@btcl.net.bd duralaponi@gmail.com

