An Internship Report On Information Technology Division Of Social Islami Bank Limited

An Internship Report Submitted in Partial Fulfillment of the Requirements for the Degree of

Bachelor of Science in Computer Science and Engineering

by

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Abstract

During my internship period of Social Islami Bank Ltd. I have investigated opportunities where technology could be effectively used. If a technology strategically fit the company's technology and business objectives, I recommended ways to integrate and commercialize it. The technologies I investigated were at various stages of development: some are available today but others are one to two years away from being commercially available. This report describe s new and evolving technologies that can enhance the performance of existing tools or aid in the development of a new generation of tools at SIBL. Which gather my knowledge about banking IT division. I have successfully completed my internship as a member of an "information technology Division". I worked as a technology operator with great joy and confidence. For this reason I always tried to support remote user and also local user. In this work I am able to manage Network Connectivity, Hardware troubleshooting, Data recovery, Internal Communication, Antivirus setup, Virus scan, Open office, Internet phone connection or Configuration, Printer setup, Scanner, Ups etc.

Approval

The project report "Information Technology Division Of Social Islami Bank Limited" submitted by UZZAL KUMAR GAIN ID: CSE 05206576, to the Department of Computer Science & Engineering, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science (B.Sc.) in Computer Science & Engineering and as to its style and contents.

Board of Examiner's Name, Signature and Date:

……...	……..	……..
(Board Member 1)	**(Board Member 2)**	**(Board Member 3)**
Date:	Date:	Date:

Supervisor's Signature and Date:

……...

Supervisor Name

Mr. Ahmed Abdal Shafi Rasel

Lecturer of Stamford University

Date:

Declaration

I hereby, declare that this Internship work presented Internship Report on “Information Technology Division Of Social Islami Bank Limited” is the outcome of the investigation, performed by me under the supervision of Mr. Ahmed Abdal Shafi Rasel, Lecturer of CSE department, Stamford University. I also declare that no part of this Internship Report and thereof has been or is being submitted elsewhere for the award of any degree or Diploma.

Signature and Date:

……...

Student Name:

Uzzal Kumar Gain

Date:

Acknowledgements

I am extremely grateful and remain indebted to Al-mighty GOD who has guided in all ventures to successfully complete my Internship Report. I am thankful to the grace and the help received from him. The Internship Report would not be success, without the constant and valuable guidance of Abdal Shafi Rasel, my supervisor for the Internship Report, who is rendering all sorts of help as and when required. I am thankful for his constant constructive criticism and valuable suggestions, which benefited us a lot while implementing the Internship on “Internship Report on Information Technology Division of Social Islami Bank Limited”. I am also thankful to Dr. Kamruddin Md. Nur, Head of the Department of Computer Science and engineering for his valuable guidance. One can never find the right words to thank one's parents. I am always be indebted for the love and care that our parents have showed on us, and have done every possible effort to reach us at this stage.

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1 Introduction

1.1 Introduction

I joined as an intern in the technology operations department of Social Islami Bank Limited on 16 march of 2017. The department is run by Mr. Sultan Badsha, under the department there are several wings, such as, Network Team, Hardware department, system security team and cards. I was assigned with Hardware, Network & Software wing .this wing also subdivided in to three more team. Such as, deployment team, maintenance team & support team. The task of deployment team is to prepare all new PCs with OS & necessary software's. the task of support team is to provide instant pc related support to the users as they call for help. The support may be of two kinds, remote –which is given by using Virtual Network Computing (VNC), sometimes this team provides support by being physically present to the user end .i worked at the support &deployment team of my internship duration.

1.2 Objectives

- To know about the activity of information technology department of Social Islami Bank Limited.
- The major objective of the report is to fulfill the requirement of my internship and achieving academic and practical knowledge, how to information technology interact switch such a business field and to know the various technologies used in banking which I would apply in my future life
- To find out some problems of information technology division of Social Islami Bank Limited& find solution of those problem.

1.3 Scope of the study

The main focus of the study is "Information Technology system of Social Islami Bank Limited. But the report has tried to cover the overview of Social Islami Bank Limited IT division, functions, management and other activity. This report has also mentioned problems of Social Islami Bank Limited's IT and IT'S solutions. The empirical part includes only the published information and current practices of Social Islami Bank Limited. I was gathered knowledge about maintenance and operation of different network connectivity, hardware usability, hardware troubleshooting ,role of information technology (IT), share of network printer, Data recovery, IP phone configuration, antivirus installation. I was prepared this report after discuss with relevant IT officer of Social Islami Bank Limited. After getting their valuable opinion, information and my practical knowledge I have completed my report.

1.4 Current Services Of SIBL IT Division

- Centralized Core Banking Software (ABABIL)
    - General Banking
    - Investment
    - Foreign Exchange
    - Treasury
- Internet Banking (Fund Transfer, Account Statement)
- Mobile Top up
- Debit Card and Credit Card
- Transaction Confirmation Message
- Bulk Message
- Bangladesh Automated clearing House (BACH)
- Bangladesh Electronic Fund Transfer
- Centralized Obsore Banking
- MICR Cheque Requisition System
- On line CIB
- On line RIT
- Bulk data (LC Information) upload in Bangladesh Dash board
- Centralized PMIS and Payroll Management System
- IT Asset Management System
- Email System
- SIBL Web Site
- Internet System
- SIBL Dash Board
- Foreign Remittance Collection
- Intel Express Cash Payout System
- CCTV System
- Data center
- Disaster Recovery Center
- Connectivity With 121 Branches, CTPU,ATM
- Board Memo Automation
- IP Phone…."Connected With in single Click"
- E- GP/E-Tendering System
- WASA bill Collection
- Asian University Student Fee Collection
- DESCO Bill Collection

- Bar Council Bill Collection
- BRTA Fee Collection Software
- Active Directory Implementation
- Screening Software System and AML Solutions
- Real Time Gross Settlement (RTGS)
- XOOM Online Remittance System
- Upgradations of CIB Online Projects
- Agent Banking
- Cash Deposit Machine
- BTCL Bill Collection
- DPDC Bill Collection
- E-Paper Clippings
- Auto Number Generations Foreign Remittance Cash Payout
- Remittance Data Processing System.
- Hardware Troubleshooting &maintenance
- Network &Internet Connectivity
- Printer configuration
- Antivirus installation
- IP phone configuration
- Proxy server configuration
- DNS (Domain Name Server)configuration
- Mail server configuration

1.5 Hardware Troubleshooting & Maintenance:

The hardware maintenance is most of the importance thing of company where we need to follow some important issue to solve &identify the problem. Especially the below identification is most common problem for us.

Problem identification

- Computer starting problem
- Computer takes a lot of time to boot
- Computer making problem to shutdown
- Display power not received by the monitor
- Printer does not working
- Operating system is not working
- Utility software is not working
- Pc restarting
- Mouse not working
- Driver installation problem

Problem solutions:

- When RAM Operating system crashed than new operation system should be installed.
- When Driver CD/DVD was damaged or do not match with the relation computer
- When virus attacked and RAM do not work properly
- When RAM is not working for that reason display not getting .Than need to clean dust from RAM and reset the RAM slot
- When RAM is week then PC can be restarted. Then need to replace or increase RAM
- Mouse sensor do not work properly
- Need to reinstall the windows
- Need to use update antivirus and clean the PC.

1.6 Network Connectivity

Network connectivity is also a kind of metric to discuss how well parts of the network connect to one another. Related terms include network topology, which refers to the structure and makeup of the network as a whole.

In order to operate the PC'S of Social Islami Bank Limited in a real time environment and maintain a communication simultaneously throughout the bank, it is need to build sustainable network consisting these entire PCs as below system

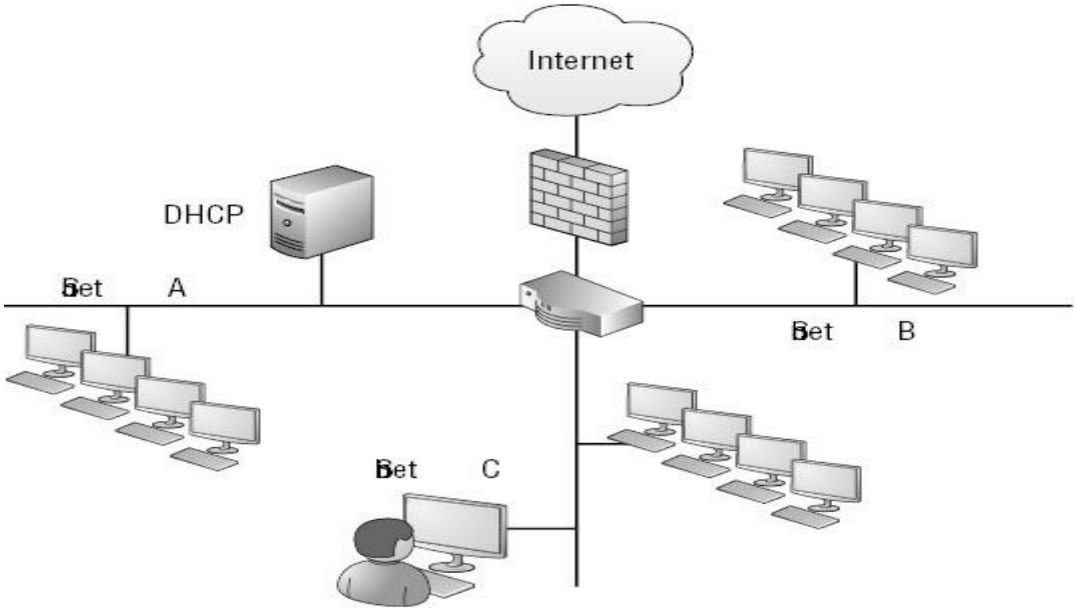


Figure 1.1: Network connectivity

2 Background of Social Islami Bank Limited

2.1 Banking Sector in Bangladesh

The banking system at independence consisted of two branch offices of the former State Bank of Pakistan and seventeen large commercial banks, two of which were controlled by Bangladeshi interests and three by foreigners other than West Pakistanis. There were fourteen smaller commercial banks. Virtually all banking services were concentrated in urban areas. The newly independent government immediately designated the Dhaka branch of the State Bank of Pakistan as the central bank and renamed it the Bangladesh Bank. The bank was responsible for regulating currency, controlling credit and monetary policy, and administering exchange control and the official foreign exchange reserves. The Bangladesh government initially nationalized the entire domestic banking system and proceeded to reorganize and rename the various banks. Foreign-owned banks were permitted to continue doing business in Bangladesh. The insurance business was also nationalized and became a source of potential investment funds. Cooperative credit systems and postal savings offices handled service to small individual and rural accounts. The new banking system succeeded in establishing reasonably efficient procedures for managing credit and foreign exchange. The primary function of the credit system throughout the 1970s was to finance trade and the public sector, which together absorbed 75 percent of total advances. The government's encouragement during the late 1970s and early 1980s of agricultural development and private industry brought changes in lending strategies. Managed by the Bangladesh Krishi Bank, a specialized agricultural banking institution, lending to farmers and fishermen dramatically expanded. The number of rural bank branches doubled between 1977 and 1985, to more than 3,330.

2.2 Social Islami Bank Limited

The Social Islami Bank Limited, a second-generation bank, operating since 22 November, 1995 based on Shariah Principles, has now 126 branches all over the country with two subsidiary companies - SIBL Securities Ltd. & SIBL Investment Ltd. SIBL lays emphasis on employment generated, environment friendly and green banking based investment keeping an eye on equitable distribution of resources over geographical territory for sustainable growth of macro economy of the country.

2.3 An overview of Social Islami Bank Limited

The SOCIAL ISLAMI BANK LTD (SIBL), a second-generation commercial bank, operating since 22nd November, 1995 based on Shariah' Principles, has now 126 branches all over the country with two subsidiary companies - SIBL Securities Ltd. & SIBL Investment Ltd. Targeting poverty, SOCIAL ISLAMI BANK LTD, is indeed a concept of 21st century participatory three sector banking model in one. In the formal sector, it works as an Islamic participatory commercial bank with human face approach to credit and banking on the profit and loss sharing. It has a Non-formal banking sector too with informal finance and investment package that empowers and humanizes real poor family and create local income opportunities and discourages internal migration. The bank has another sector to monetize the voluntary sector and management of Waqf, Mosque properties and has introduced cash Waqf system for the first time in the history of banking. In the formal corporate sector, this Bank, among others, offers the most up-to-date banking services through opening of various types of deposit and investment accounts, financing trade, providing letters of guarantee, opening letters of credit, collection of bills, leasing of equipment and consumers' durable, hire purchase and installment sale for capital goods, investment in low-cost housing and management of real estates, participatory investment in various industrial, agricultural, transport, educational and health projects and so on.

2.4 Objectives of SIBL

- To be dynamic leader in the financial market innovating new products as to the needs of the society.
- To earn positive economic value addition (EVA) each year to come.
- To top the list in respect of cost efficiency of all the commercial Banks.
- To become one of the best financial institutions in Bangladesh economy participating in the most significant segments of business market that we serve.

2.5 Mission

- Establishing Three Sector Banking Model.
- Transformation to a service oriented technology driven profit earning Bank.
- Fast, accurate and satisfactory customer service.
- Balanced & sustainable growth strategy.
- Optimum return on shareholders' equity.
- Introducing innovative Islamic Banking Products.
- Attracting and retaining high quality human resources.
- Empowering real poor families and creating local income opportunities.
- Providing support for social benefit organizations by way of mobilizing funds and social services.

2.6 Corporate Social Responsibility (CSR)

As an Islamic Bank, Social Islami Bank Limited is quite conscious of its social responsibility and always trying to participate in social cause program in the country. The bank is committed to serve the society at large through its family empowerment Micro Investment, Micro Enterprise and SME programs under non-formal sector, social capital mobilization through CASH WAQF and other programs under voluntary sector. The bank has already formed CSR Desk with the aim to serve humanity through different philanthropic activities giving emphasis on health and Education. The bank believes that any kinds of social & philanthropic activities would improve the quality of the lives of the poor masses of the country. The Board of Directors of the Bank consists of winning personalities in respective area of Trade, Commerce & Industry of the country. Under the proactive guidance, policy and direction of the Board, Management conducts its business operations.

The Corporate Governance systems in SIBL ensure transparency and accountability at all levels in conducting business. The Shariah Supervisory Committee is consisting a group of prominent Islamic Scholars, Economists and Lawyers to advise the Management on Shariah matters relating to the business operations. The Board of Directors provides leadership and direction to the Management to attain goals and objectives of the bank.

2.7 Formation of the Shariah Supervisory Committee (SSC)

Article 104 of the Articles of Association of the Bank provides, On the licensing of the Social Islami Bank Limited, an Islamic Shari'ah Supervisory Committee shall be constituted with members from Fakihs/Islamic Scholars, Economists, Banker and Lawyers to advise the company on the operation of its business in order to ensure that they do not involve any element which is not approved by Shari'ah. The Shari'ah Supervisory Committee consists of 07 (Seven) members nominated by the BOD of the Bank. Shariah Supervisory Committee of the Bank plays a vital role in framing and exerting policy for strict adherence of Shari'ah principles in all activities of the Bank since its very inception. The Shari'ah Supervisory Committee, which enjoys a high status in the structure of the Bank. Members of the Shariah Supervisory Committee meet frequently and deliberate on different issues confronting the Bank on Shariah matters. They give opinion and supervise to implement and comply Shari'ah principles in all activities of the Bank.

2.8 SIBL Securities

SIBL Securities Limited (SIBLSL), a subsidiary company of Social Islami Bank Limited and promised to be a leading brokerage house in the country has been set up with a view to strengthen the country's capital market. The company commenced stock broking activities in January 2012 and growing over time to become as the largest stock broking company in the country which developing a strong team of highly skilled and experienced professionals. SIBLSL is a 99.99% owned subsidiary of Social Islami Bank Ltd (SIBL) one of the leading listed Islami shariah based bank in Bangladesh engaged in opening of various types of deposit and investment accounts, financing trade, providing letters of guarantee, opening letters of credit, collection of bills effecting domestic and international transfer, leasing of equipment and consumer durables, hire purchase and installment sale for capital goods, investment in low-cost housing and management of real estates, participatory investment in various industrial, agricultural, transport, educational and health projects and so on.

2.9 Corporate Governance

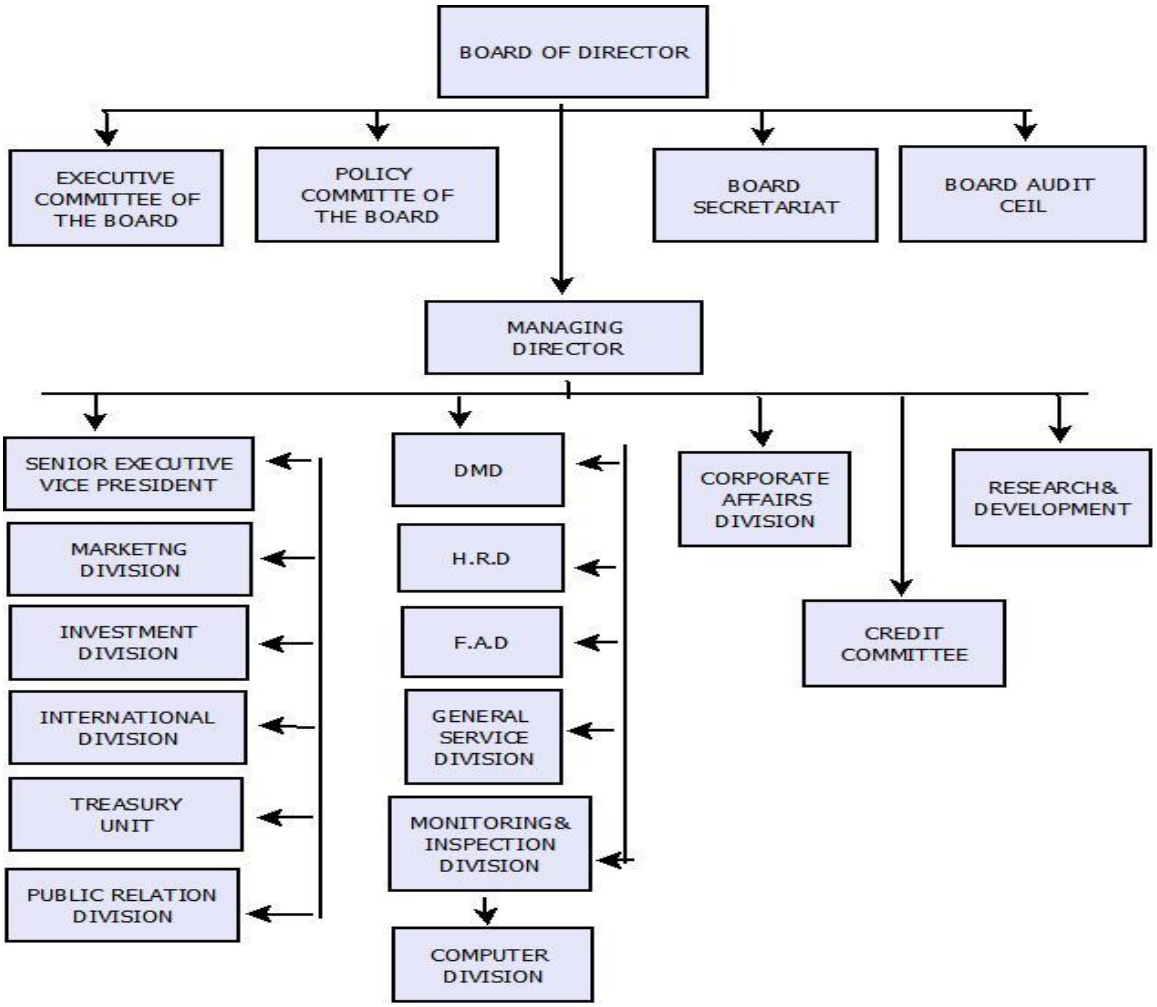


Figure 2.1: SIBL Board of Director

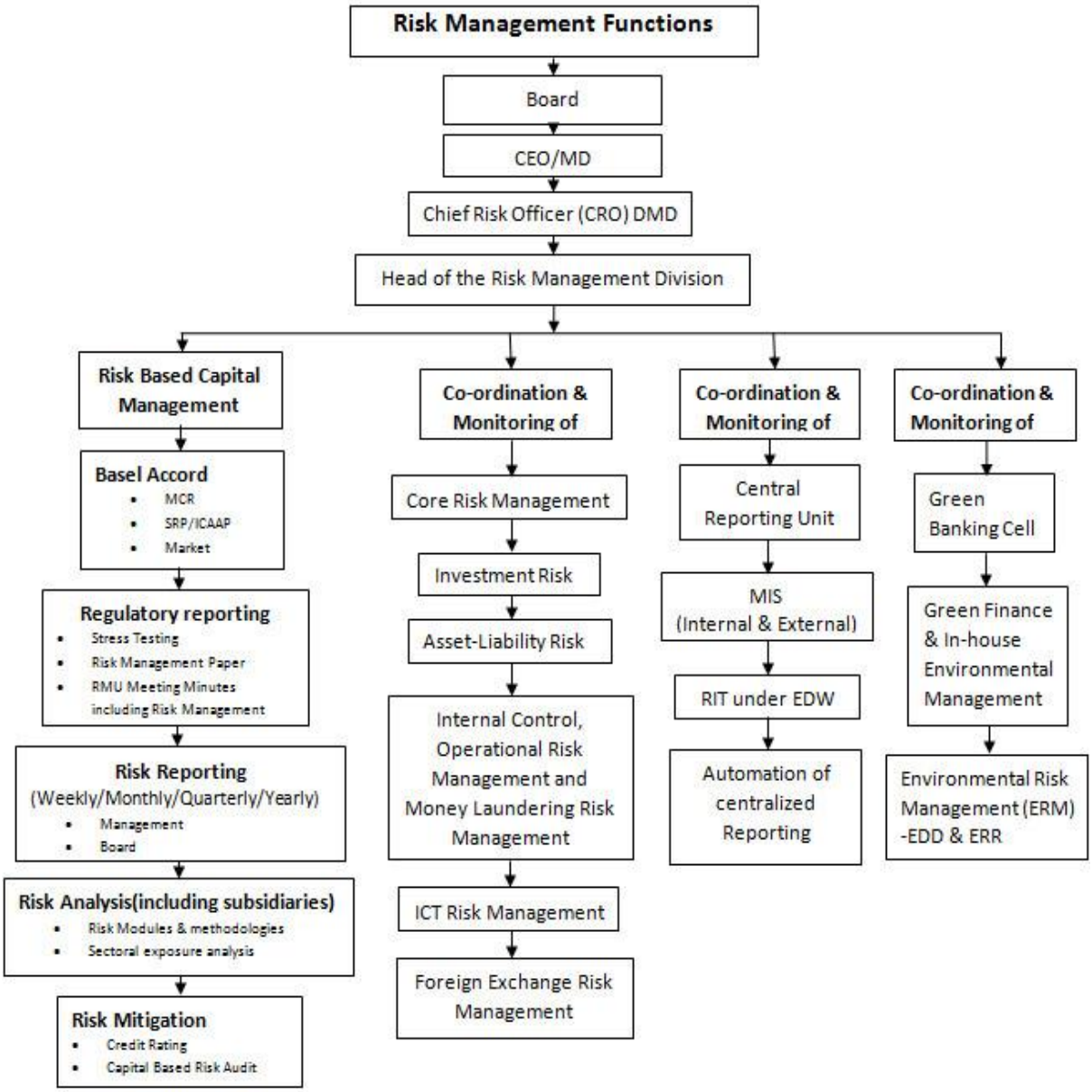


Figure 2.2: SIBL Risk Management Functions

3 Infrastructure of Social Islami Bank Limited

3.1 Introduction

SIBL has clearly understood the holistic picture of the banking industry and how the Bangladesh financial market is especially adapting to the technology needs. In order to position itself as a leader and pave the way for other banking services, SIBL took a clear vision in respect to the services it wants to offer to its customers and the services which will be required at the back end to enable such services. SIBL is gradually working based on the below vision in order to achieve its goals:

- The Interactive Layer.
- The Application Layer.
- The Infrastructure.

3.2 The Interactive Layer

The Interactive layer will constitute the hub of communication associated with the banking and will enable the technologies which help in the interaction with the customer at grass root level. This layer will help the bank explore more into the potentials of Banking industry.

- International Remittance.
- Customer Care.
- Consumer Banking.
- Door-to-Door Small & Medium Industries (SME) Banking.
- Phone Banking.
- Capital Market Segment.
- Web Based Services.
- L/C Opening and Tracking.
- Web Based Services.
- Mobile Banking or M-Commerce.
- ATM.

3.3 The Application Layer

The Application Layer will constitute all the banking applications which will enable the interactive technologies to perform smoothly and will run over the infrastructure system supporting the financial transactions. The application layer will mainly include all banking and in-house software applications which will host the banks financial services.

Some of the highlights include:

- Core Banking.
- HRMS.
- Communication Applications International Banking Systems & Payment Gateways.
- Inventory Management Systems.
- Procurement Systems.
- Database Systems.
- Internet Banking Systems.
- Mobile Banking Systems.

3.4 The Infrastructure

The Infrastructure Layer will constitute the complete A-Z infrastructure physical hardware and peripherals which will enable all Application services and will be the most crucial part of the banking system, as the entire system will depend on it. Systems needs to positioned keeping in mind the level of redundancy and scalability to gain maximum Return on Investment (ROI) and Total Cost of Ownership (TCO). These will include:

- Data Center (DC).
- Disaster Recovery Site (DRS).
- Networking Systems.
- Cheque Clearing.
- Server & Storage Farms.
- Network Operations Center (NOC).
- Card Printing.
- ICT Hardware Support.

4 IT Division of Social Islami Bank Limited

4.1 Introduction

IT is short form Information Technology. IT is the broad subject concerned with all aspects of managing and processing information, especially within a large organization or company. Computer systems are central to information management, computer departments within organization or company and universities are often called IT departments. Some organization or company refer to this department as IS *(*Information Services*)* or MIS *(*Management Information Services*).*

4.2 Concept of Information Technology Of SIBL Bank

Social Islami Bank Ltd is the pioneer amongst Islami banks in Bangladesh to introduce online banking facilities from the year 2003. It has been a rapidly growing bank in Bangladesh and in the last few years the bank has grown to a complete figure of 125 branches. As the bank is expanding this will add a lot of leverage to its existing network of branches & customer base, and will require the bank to become much more dynamic to pursue its goals. Through the development cycle a number of technology enablers has been introduced, which gradually helped the bank to reach the peak of the banking industry in not only Bangladesh but also in the global arena for the years to come.

4.3 Working Procedure Of IT Division

Mainly a Bank IT division follow three kind of working procedure or 3type, such as

- Hardware Base.
- Software Base.
- Networking Base.

Another main option is DATA BASE which totally separate and secure base working procedure.

4.3.1 Computer Hardware Management Of SIBL

Computer hardware refers to computing devices and the equipment attached to them. It is important for all businesses—large or small—to track and manage the hardware devices in their IT infrastructure. Organizations have to perform hardware inventory audits on a regular basis to keep track of all their computer assets and other hardware devices on the network. Here are common individual computer hardware components that you'll often find inside a modern computer case, Motherboard, Central Processing Unit (CPU), Random Access Memory (RAM), Power Supply, Video Card, Hard Drive (HDD), Optical Drive (DVD/CD drive). Some common hardware that we might find connected to the outside of a computer, Monitor, Keyboard, Mouse, Printer, Speakers, Ups, Ips. Some less common computer hardware, either because these pieces are now usually integrated into other devices or because they have been replaced with newer technology are, Hard Drive Controller Card ,Network Interface Card, Sound Card, Analog modem, Scanner, Floppy Disk Drive, Webcam, Microphone, Tape Drive, Zip Drive. The following hardware is referred to as network hardware and various pieces are often part of a home or business network, Router, Switch, Access point, Repeater, Bridge, Firewall, Print server.

4.3.2 Troubleshooting Hardware Problems

Identified the problem of every Hardware of a computer and then fix error if any error occurred. Here some examples & giving the solutions

- Display power not received by the monitor.
- Computer takes a lot of time to boot.
- Computer making problem to shutdown.
- Driver installation problem.
- Printer does not working.
- Mouse not moving at all.
- Pc restarting.
- Operating system is not working.
- Utility software is not working.
- File corrupted & crashing by virus.

Solution problem

- If RAM is week then PC can be restart. So need to replace or increase RAM.
- If RAM is not working then need to clean Dust from RAM and reset the RAM in slot or need to replace it.
- May be virus affected & RAM don't work properly then must be virus guard.
- Driver CD/DVD is damaged or do not matching with the relative computer.
- If computer program don't work properly then need to OS install.

4.3.3 Software Management Of SIBL

Software means computer instructions or data. Anything that can be stored electronically is software, in contrast to storage devices and display devices which are called hardware. Management software is a general phrase used to describe a category of computer software designed to help streamline the complexity of large projects and tasks as well as facilitate team collaboration and project reporting Management software is a broad term that can also apply to financial management software, network management software, customer relationship management software, asset management software or inventory management software. Social Islami Bank Ltd. Mainly use ABABIL software where all employee of SIBL connect this software and all services giving by this software.

4.3.4 ABABIL

Trade Finance has been reviewing the global trade market since 1983. There are various definitions about trade finance and the choice of words used is interesting. It is described both as a 'science' and as 'an imprecise term covering a number of different activities'. As is the nature of these things, both are accurate.. Yet within this science there are a wide range of tools at the financiers' disposal, all of which determine how cash, credit, investments and other assets can be utilized for trade. ABABIL Trade Finance is responsible for providing Shariah-based trade financing for business sector entities with maintaining Islamic financing rules & regulations.

Browser will open ABABIL log in screen to enter the application. User has to input user name and corresponding password. After user authentication checking, application will accept the user to enter into ABABIL. Otherwise there will be an error message to notify user about invalid user name or password.

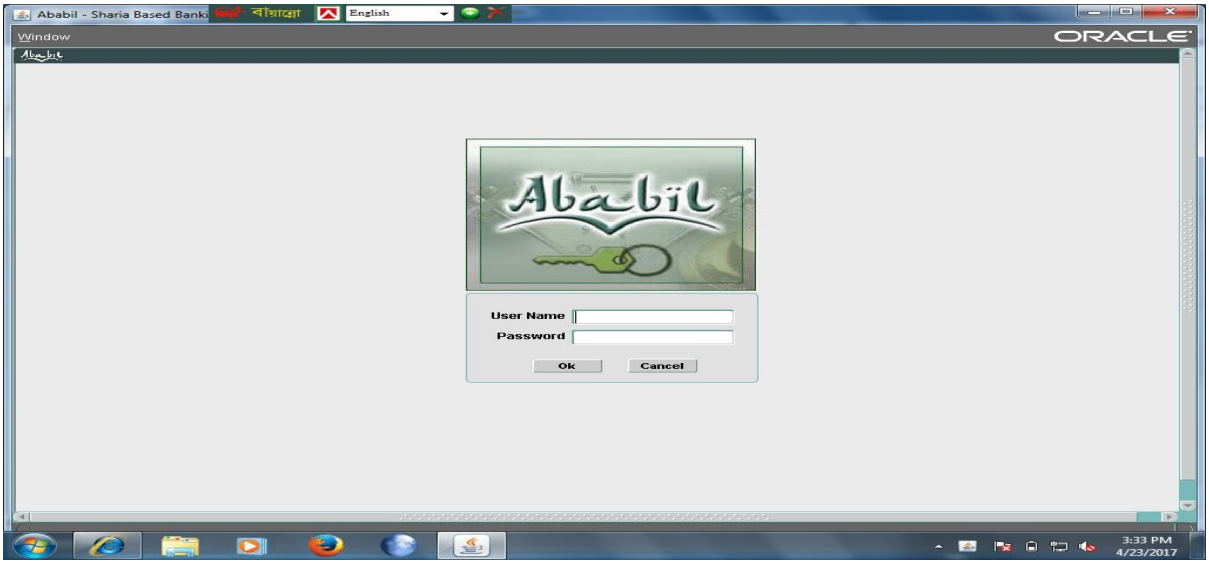


Figure 4.1: Ababil Log In Page

4.3.5 Setup

This is the top most important menu for Trade Finance Module of ABABIL. All the core information setup is performed from here which will be use for different purpose of trade finance related operations. This is one time setup or can be treating as general setup and the saved information will get in LOV or Drop-down list during the relevant operation performing.

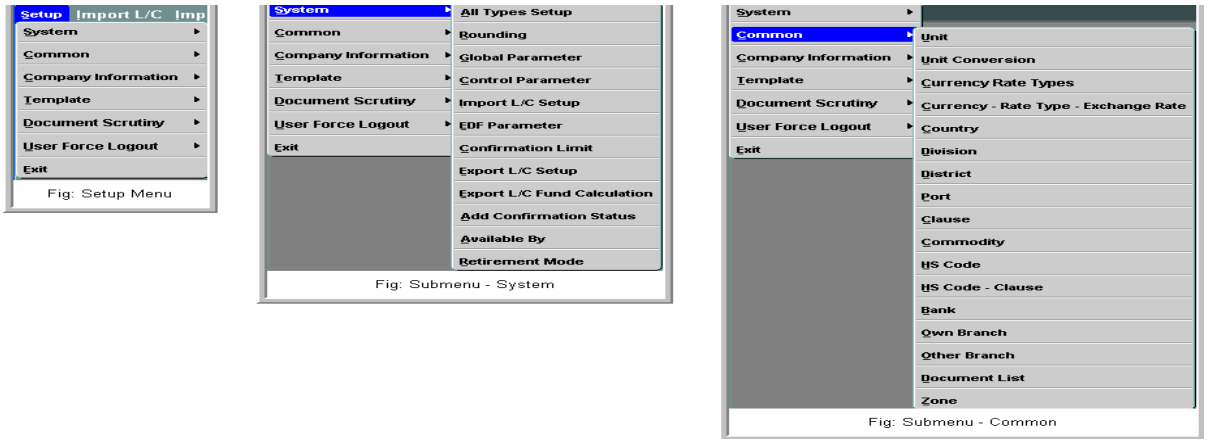


Figure 4.2: Ababil setup system

For an example, once we setup a country with necessary information then will get the country name on LOV or drop-down listed on relevant screen. No need to manual entry again and again. 10 We can perform different setups which are classified by different sub-menus. Here are some snap-shot for different setups

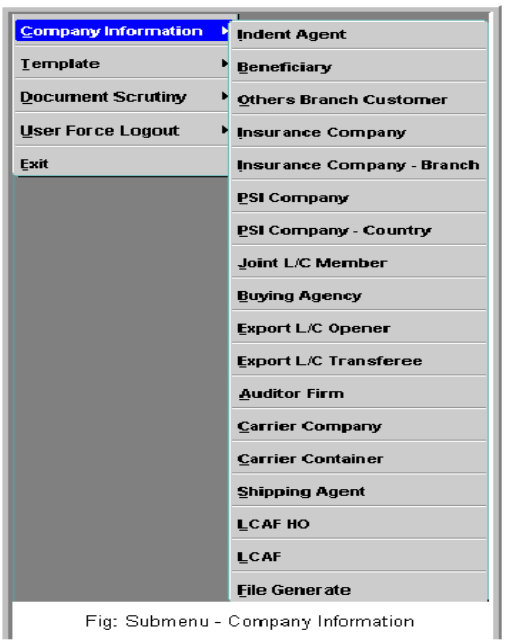


Fig: Submenu - Company Information

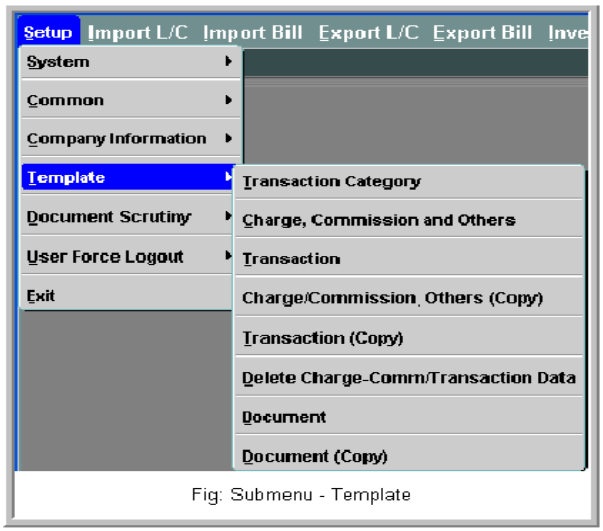


Fig: Submenu - Template

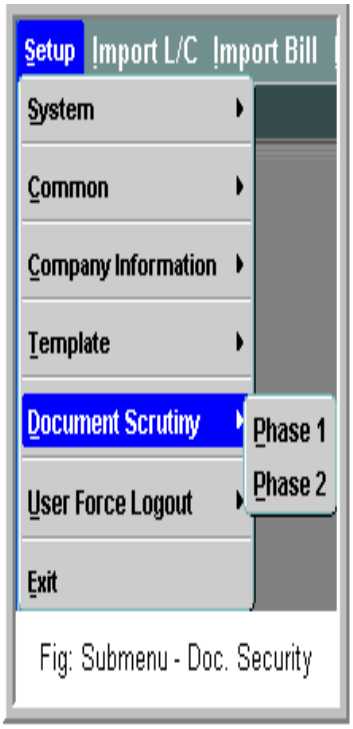


Fig: Submenu - Doc. Security

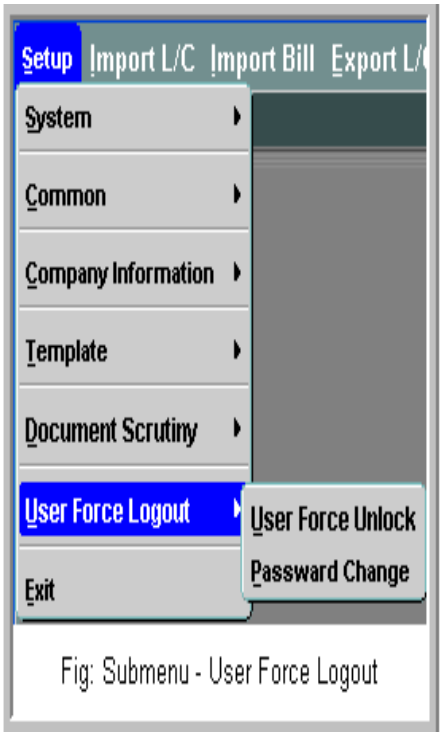


Fig: Submenu - User Force Logout

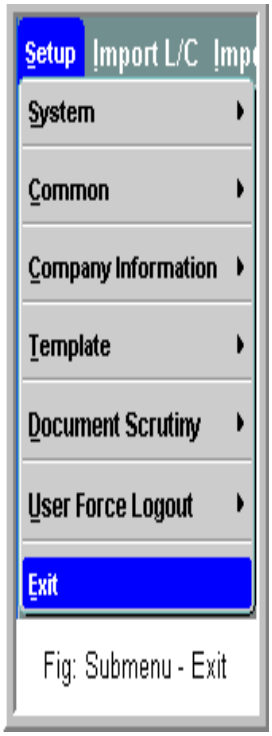


Fig: Submenu - Exit

Figure 4.3: Ababil Setup System

4.3.6 Password Change

Password is a very important issue for security purpose. Due to some unusual issue it's needed to change password. We can perform this operation under this submenu.

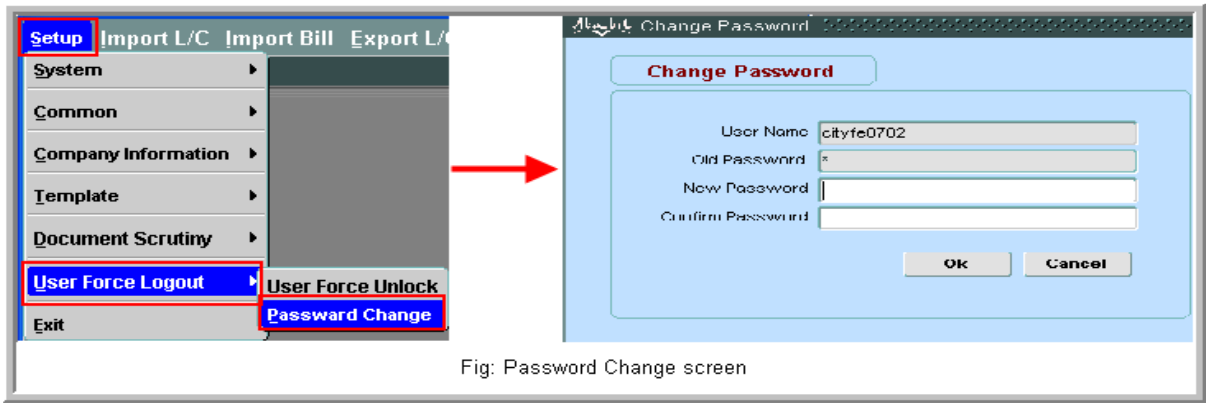


Figure 4.4: Password Change screen

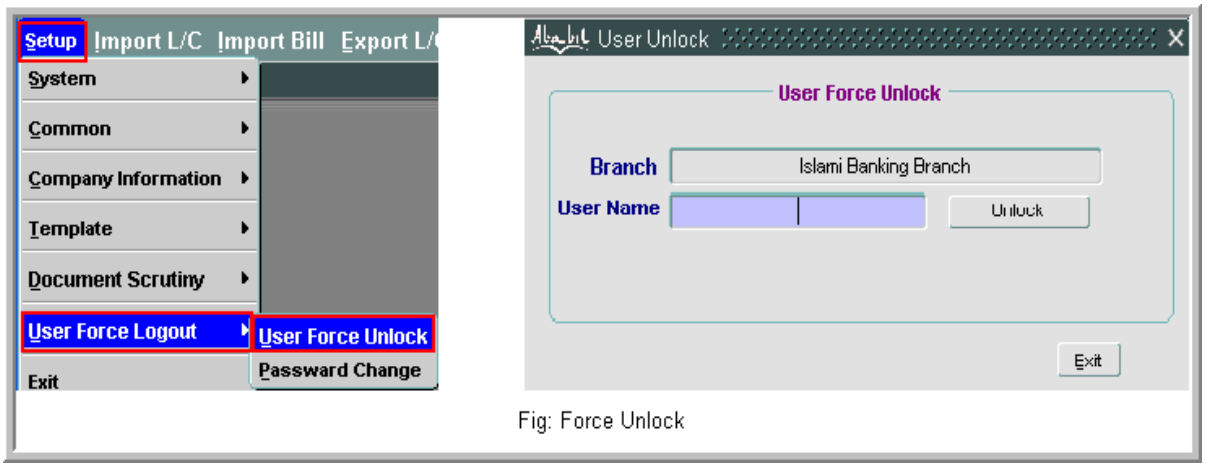


Figure 4.5: Force Unlock

Please input the desired valid user name on 'User Name' input field. And then press button 'Unlock'. Application will unlock the user.

4.3.7 Import L/C

Import related L/C's operation starts under this menu. A user can perform different operations like edit/ update for Import L/C from here. Here are also a screen shot available for this menu, which is given below and we will see full detail about this menu-wise submenu operation later on.

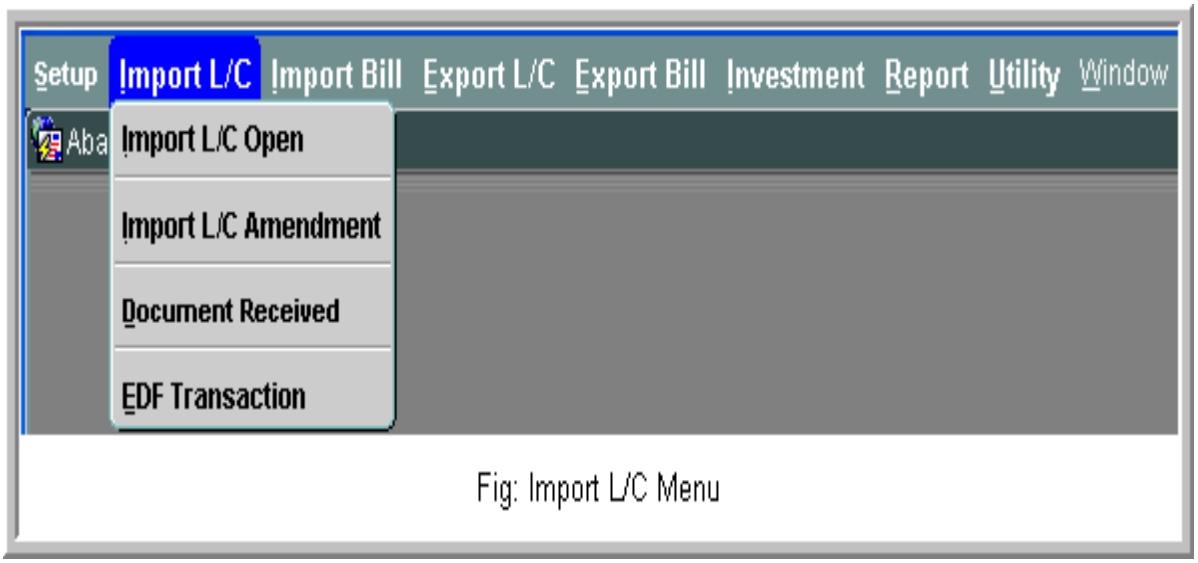


Figure 4.6: Import L/C Menu

4.3.8 Import Bill

Import related L/C Bill information inputted under this menu. A user can perform different operations for Import Bill from here. Here are also a screen shot available for this menu, which is given below and we will see full detail about this menu-wise submenu operation later on.

Figure 4.7: Import Bill Menu

4.3.9 Export L/C

Export related L/C's operation starts under this menu. A user can perform different operations for Export L/C from here. Here are also a screen shot available for this menu, which is given below and we will see full detail about this menu-wise submenu operation later on.

Figure 4.8: Export L/C Menu

4.3.10 Export Bill

Export related L/C Bill information inputted under this menu. A user can perform different operations for Export Bill from here. Here are also a screen shot available for this menu, which is given below and we will see full detail about this menu-wise submenu operation later on.

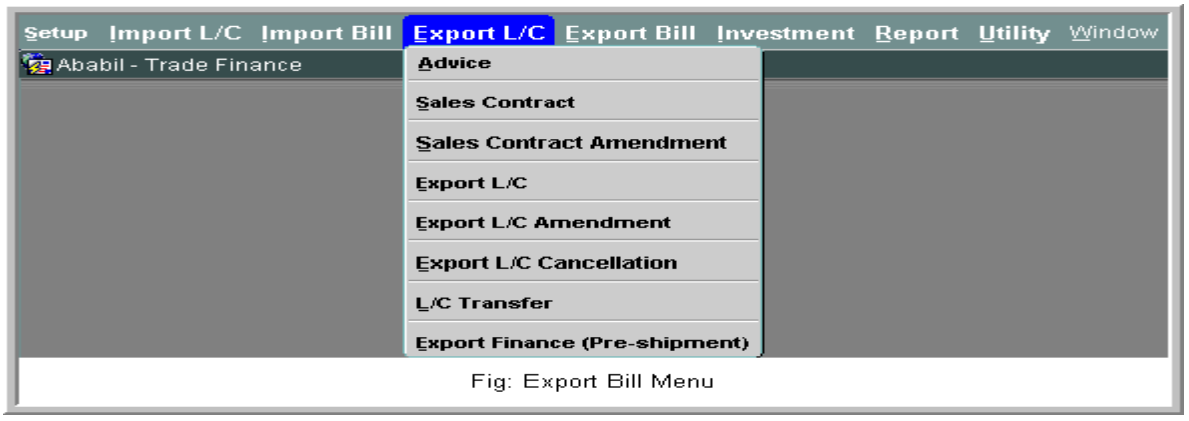


Figure 4.9: Export Bill

4.3.11 Investment

Investment related operations like sanction or account opening for trade finance can performed from here. Please view the following screen shot on investment menu with relevant submenu.

Figure 4.10: Investment Menu

4.3.12 Report

There are extensive reports available for trade financial operations. A user can find his/her desire report/s under this menu. Please have a quick look on the submenus on 'Report' menu.

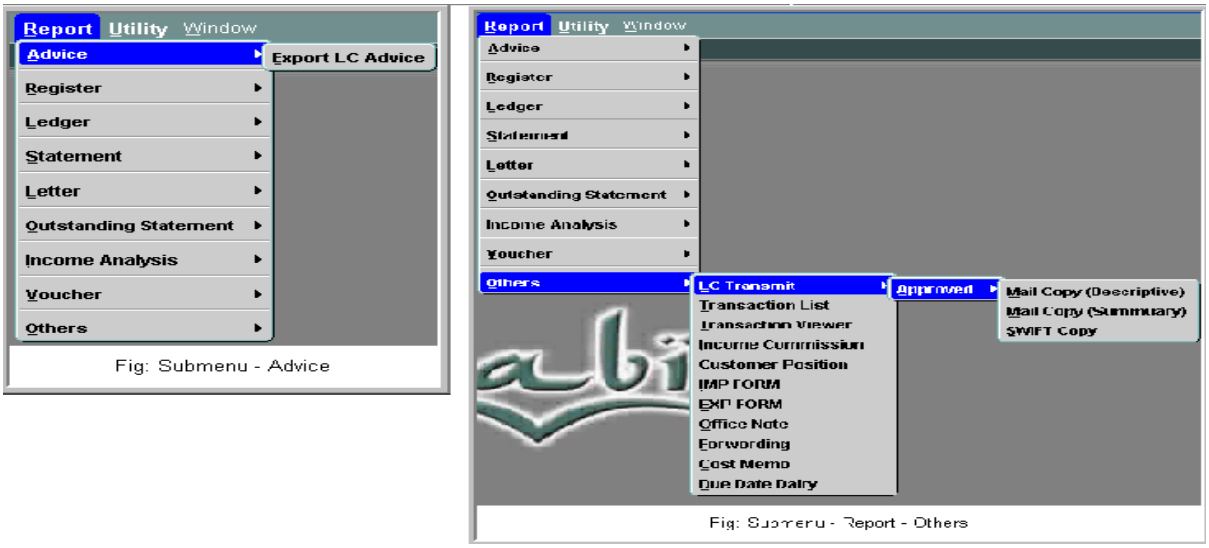


Figure 4.11:Report

4.3.13 Utility

Under the 'Utility' menu, a user can perform some supporting operations on an L/C. 'Bank Correction', 'Margin Buildup' or 'Transaction delete' etc all are supporting operation which are not used on general basis. In some circumstances or emergency basis these operations are performed. Please have a look on the screen shot on 'Utility' menu.

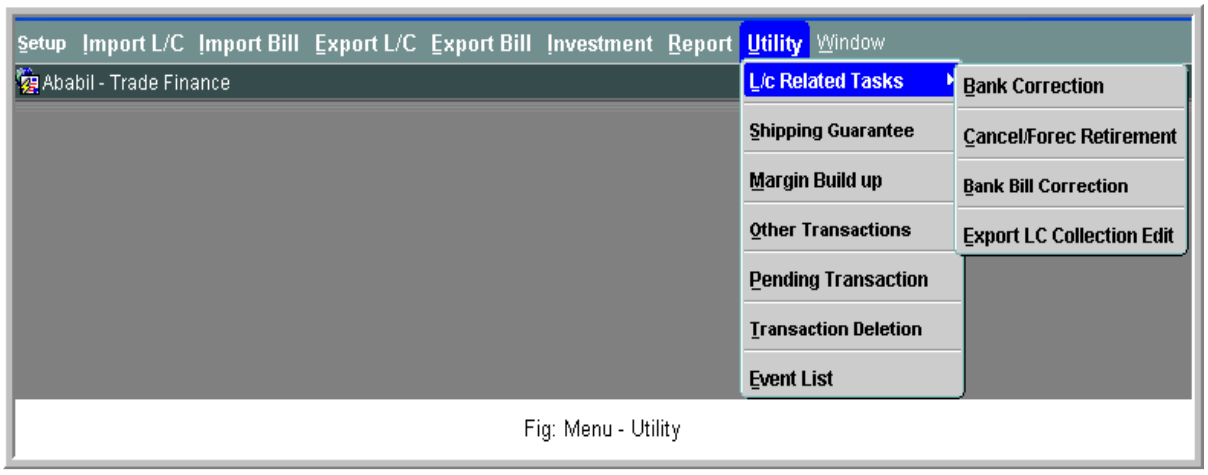


Figure 4.12: Utility Menu

4.3.14 Frames

In some pages, information is divided into small blocks using box and captions (name of the box). These are called as frame. There are three frames in the above page i.e. 'Common', 'Export LC Sales Contract' and another is anonymous frame.

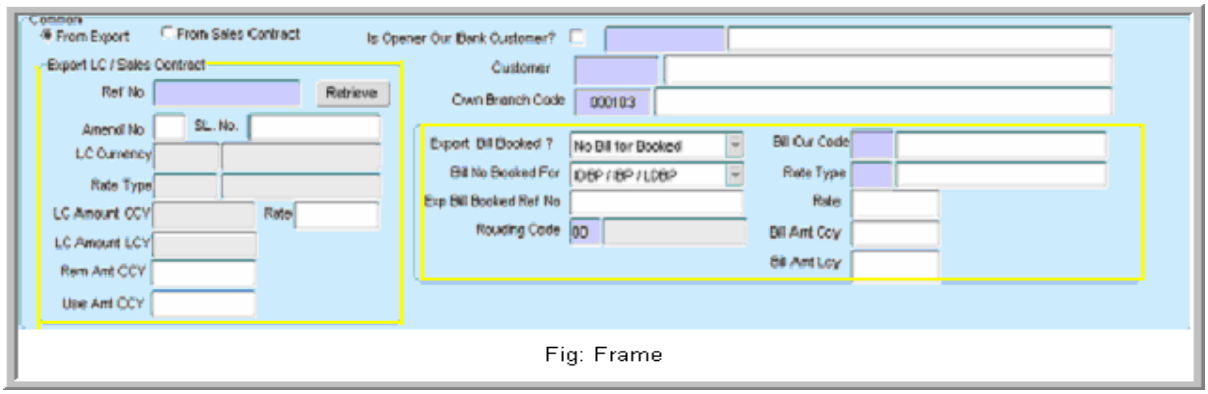


Figure 4.13: Frame

4.3.15 Display Item

These items look like input items but generally user cannot write in it. These will only show user information in about a particular thing. By default there are different colors in input and display items. Display items are gray colored, whereas Input items are white in color. Some time it is possible to edit/ update information.

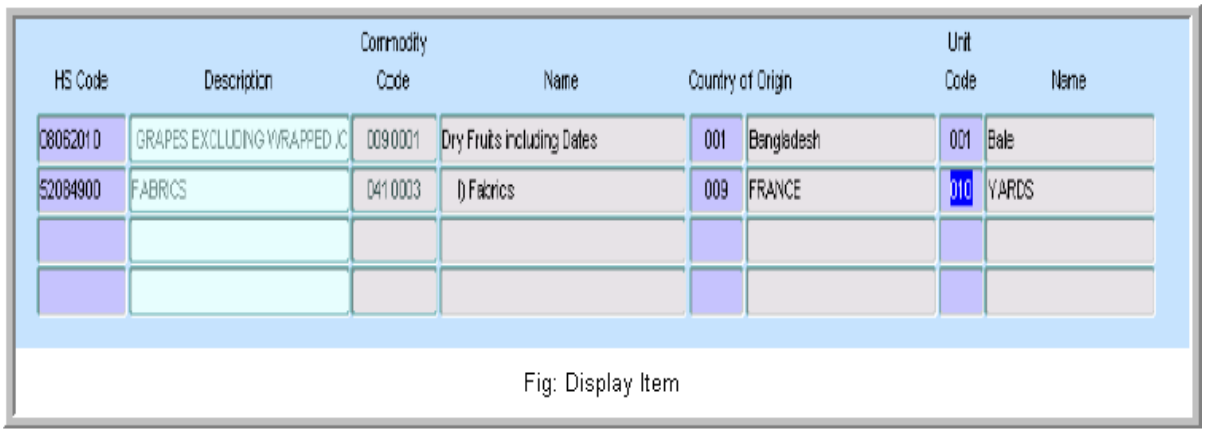


Figure 4.14: Display Item

4.3.16 Export LC Opener

To setup a new Export LC Opener information, user has to input at least ‘Name’, ‘Category’, ‘Address’, ‘Country’, ‘State/ Province/ Div’, ‘District’, ‘LC Opener Company Country’ and ‘Customer Code’ on the relevant fields. With the help of different levels, user can input other information. After that please press ‘Save’ button to save the information to database. To modify existing ‘Export LC Opener’ information, user has to select ‘LC Opener Code’ from the LOV and press ‘Retrieve’ button. Application will load all saved information on relevant fields. Please make necessary update and save that information.

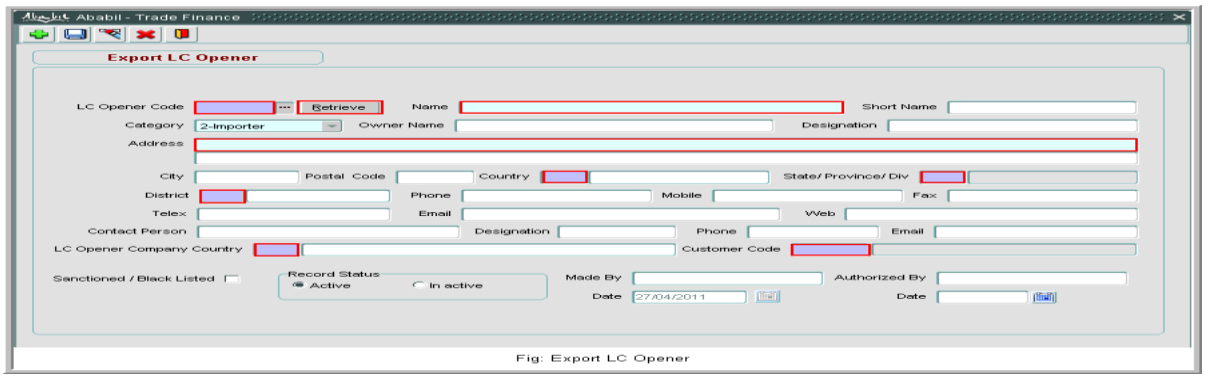


Figure 4.15: Export LC Opener

4.3.17 Export LC Transferee

From ‘Export LC Transferee’ screen, user can save Export LC Transferee information. To setup a new Export LC Transferee information, user has to input at least ‘Name’, ‘Owner Name’, ‘Address’, ‘Country’, ‘State/Province/ Div’, ‘District’, ‘Company Country’ and ‘Customer ID’ on the relevant fields. Application will automatically save the ‘LC Transferee Code’. With the help of different levels, user can input other information. After that please press ‘Save’ button to save the information to database. To modify existing ‘Export LC Transferee ‘information, user has to select the ‘Export LC Transferee’ from the LOV and then press ‘Retrieve’ button. Application will load all saved information on relevant fields. Please make necessary update and save that information.

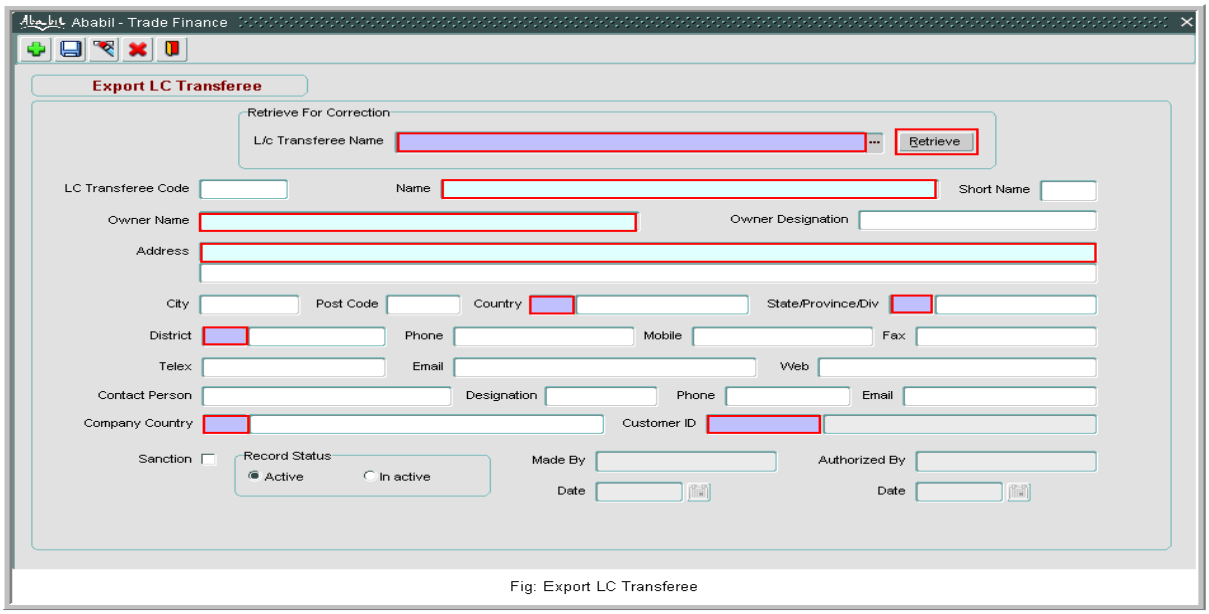


Figure 4.16: Export LC Transaction

4.3.18 Transaction

For Import or Export L/C, sometimes it is needed to use different transaction template related information for the L/C detail. Here we can view, add, edit even delete ‘Transaction’.

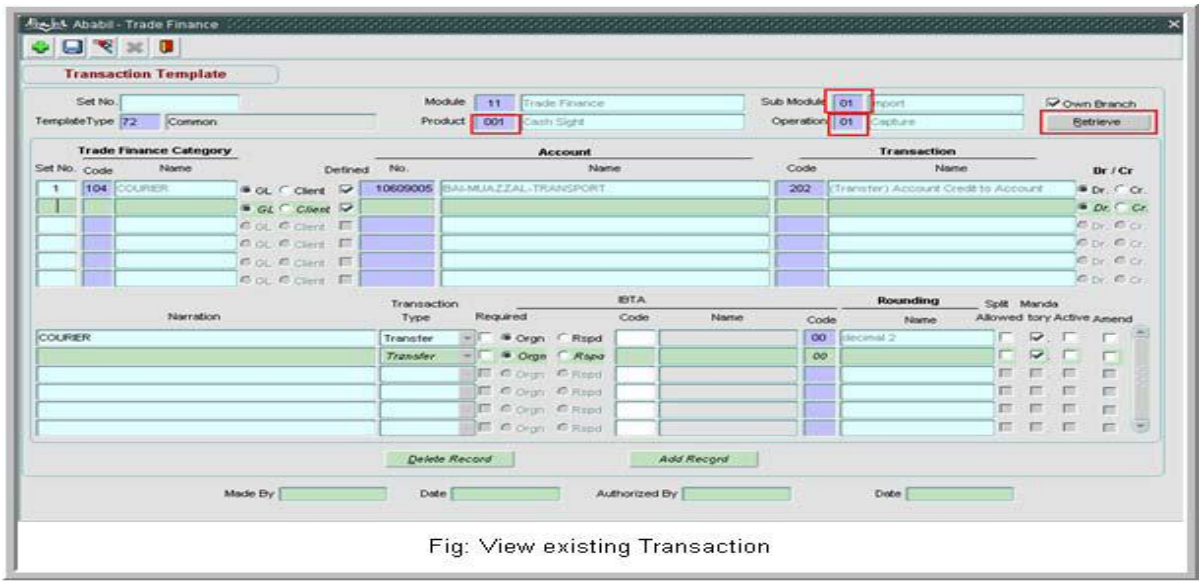
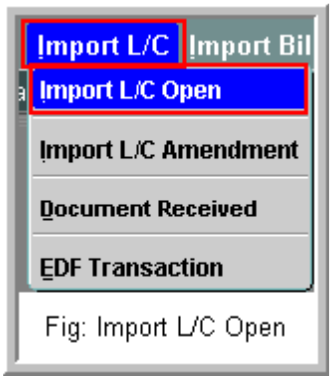


Figure 4.17: View existing Transaction

4.3.19 Import L/C

Here are two types of L/C; Import L/C and Export L/C. On this section we will see detail description about 'Import L/C'. Before starting operation, the customer should have sanction to open import L/C. Prepare 'Sanction' for a particular customer will be described on the 'Investment Sanction' menu.



Application will redirect user to 'Import L/C' screen. User has to input information there as per given level.

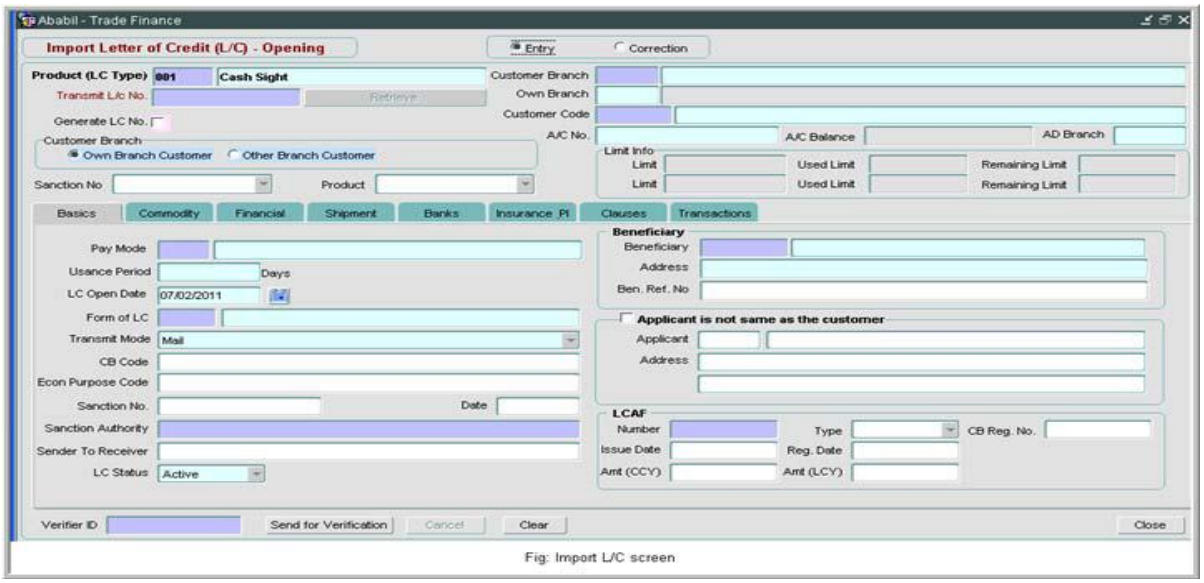


Figure 4.18: Import L/C

4.3.20 Transactions

There will be an automatic selection on 'Template Type' entry field. User has to press 'Enter' button, all other necessary information will took place on grid view. User may uncheck any option if that is needed to deactivate for this L/C. 'Select Template' button pressing will calculate the all internal calculation like, VAT, Charge etc. User may edit of update here and in this case user has to press 'Recalculate' button to check relative effect. When all entry is given and confirmed then user has to select 'Verifier' from the LOV and then press 'Send for Verification' button. After verification by the authorized person application will save all these data to server. Here is another option to make any necessary update or modification on Import L/C information. Please look at the following screen shot.

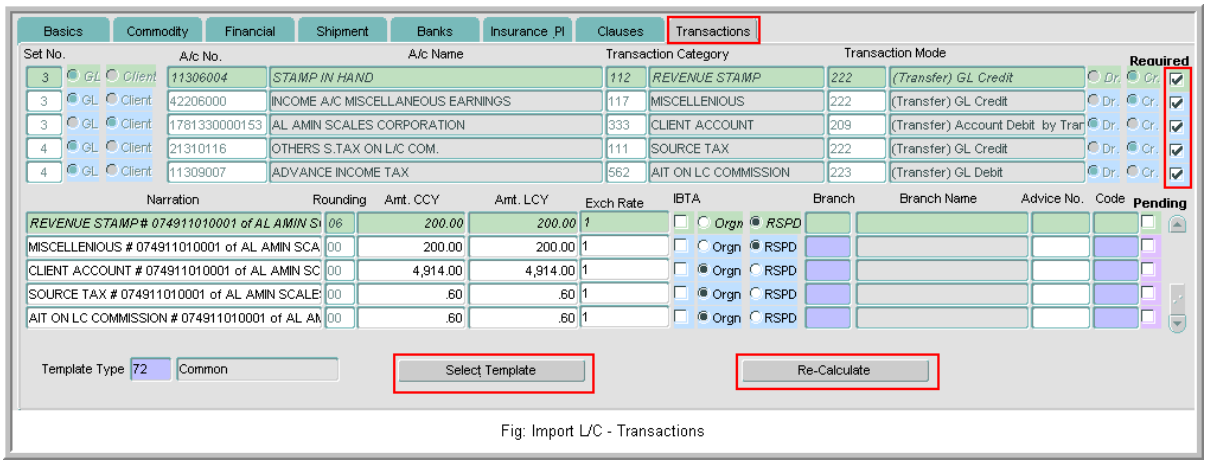


Figure 4.19: Import L/C-Transaction

4.3.21 Import Bill

This operation can be performing after receiving bill copy from the exporter. According to received bill from exporter, bill information should be included on the Bill lodgment/ acceptance.

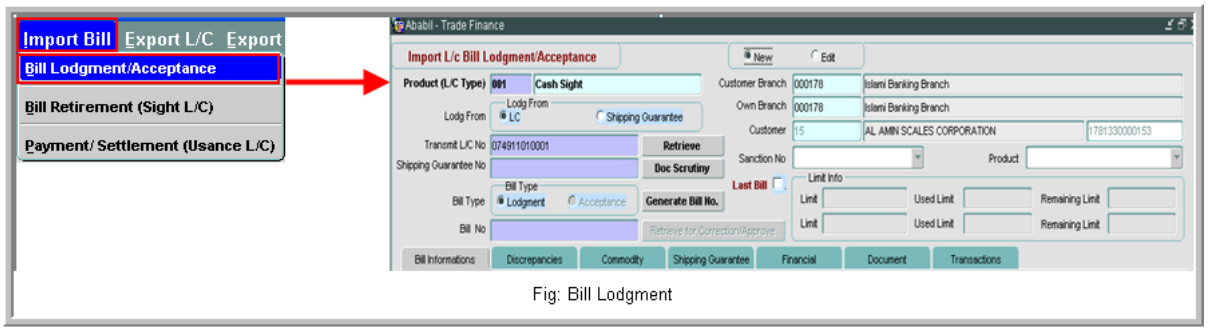


Fig: Bill Lodgment

Figure 4.20: Bill Lodgment

4.3.22 Transactions

On the 'Transactions' tab, user has to press 'Select Template' button, application will automatically filled fields with relevant data. User can make recalculate operation if needed for any modification.

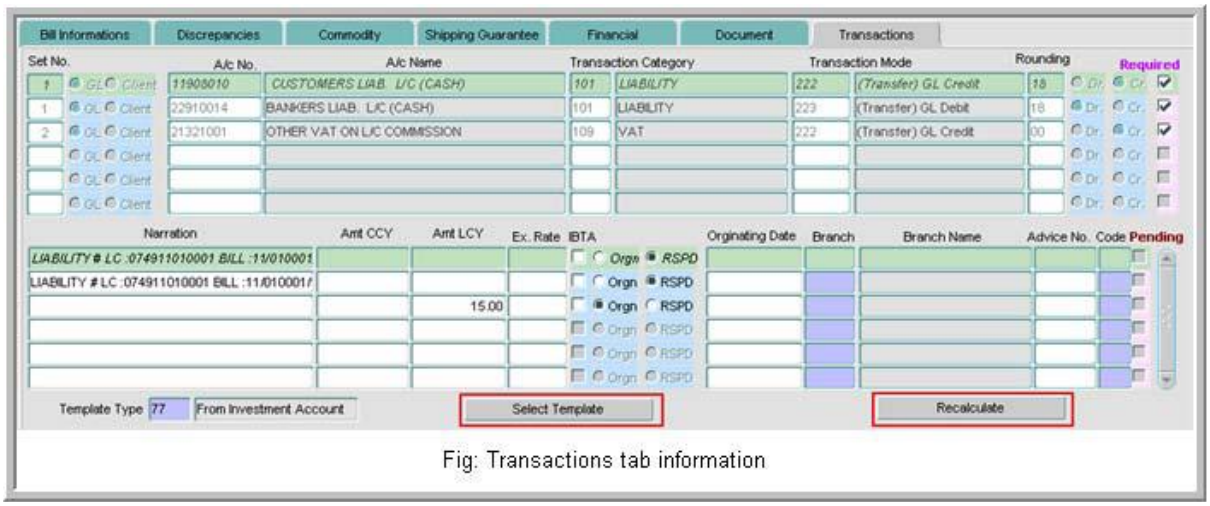


Fig: Transactions tab information

Figure 4.21 Transactions tab information

4.3.23 Bank Correction

Bank correction function allows user to make update or modification on some simple information. Here transaction related information can not be modified. Please don't make major information change because it will create problem later on. Please have look on the following screen shot Here user has to select desire Product (LC type) from the drop down list. Then input particular 'Transmit LC No' on the relevant field and press 'Retrieve' button. Application will load all saved information on the corresponding fields. Please make the necessary modifications and press 'Save' button to save the information.

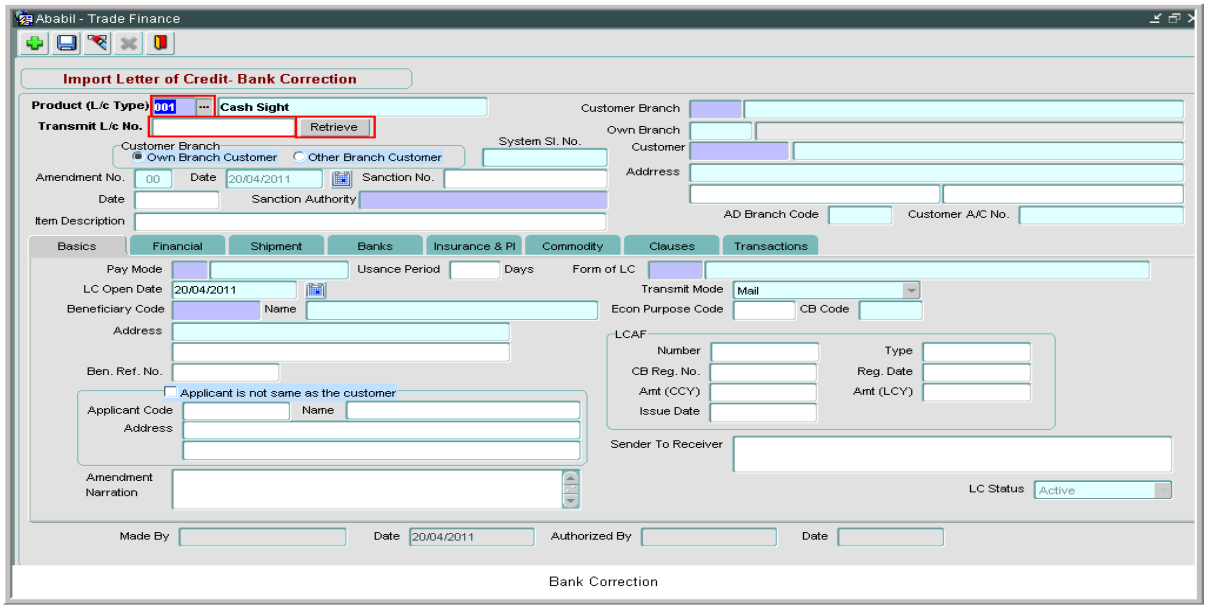


Figure 4.22: Bank Correction

4.3.24 Bank Bill Correction

When there is a situation to modify bill payment date for any crisis moment then the 'Bank Bill Correction' operation need to be performed. It can be possible also to make other information update except transactional amount.

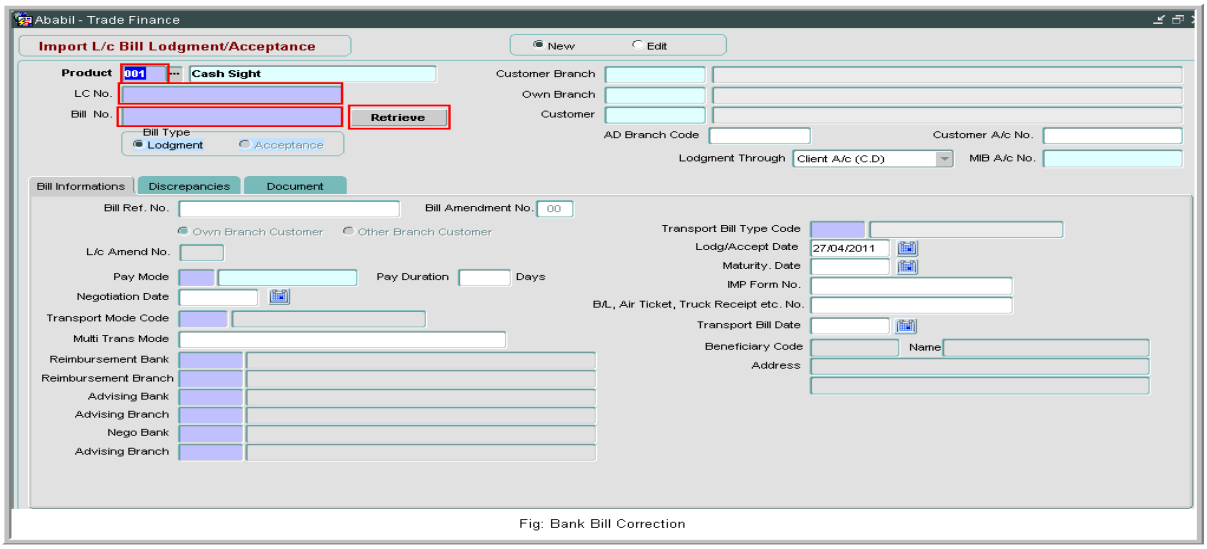


Fig: Bank Bill Correction

Figure 4.23: Bank Bill Correction

4.3.25 Transaction Correction

User can make a transaction corrected from this Transaction Correction screen. Please input the voucher no on the relevant field and then press 'Enter'. Application will load information on the grid. Please press 'Correct Transactions' button, application will delete the transaction information.

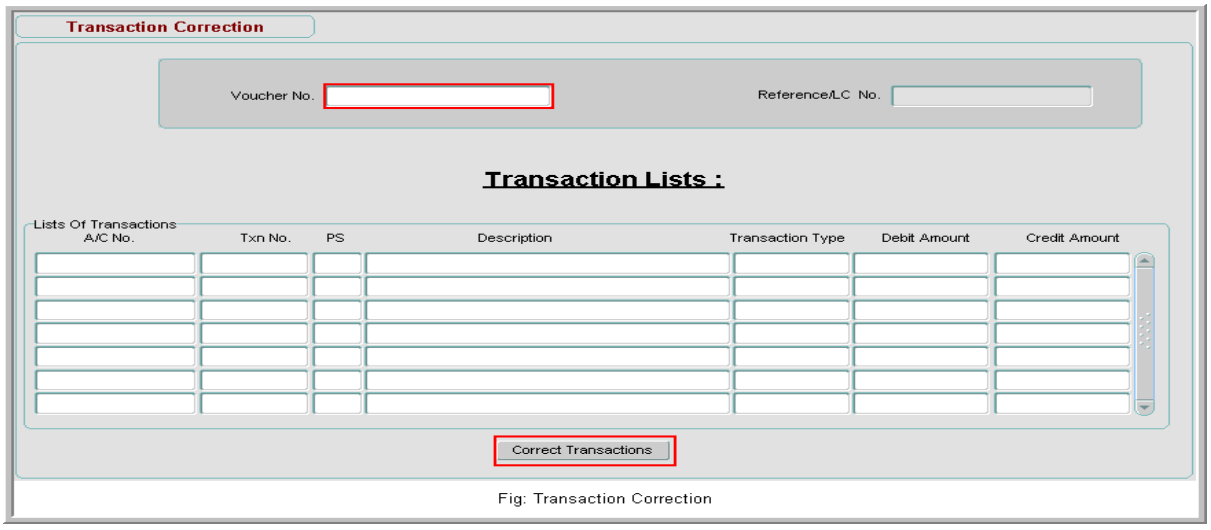


Fig: Transaction Correction

Figure 4.24: Transaction Correction

4.3.26 Networking Base Connectivity

In order to operate the PCs of Social Islami Bank Ltd. in a real time environment and maintain a communication simultaneously throughout the bank, it is needed to build a sustainable network, consisting these entire PCs. Once the piece of hardware is loaded with the necessary software. It is important to establish the kind of network connectivity we want to give it. All the PCs in the network under the same domain sibl-bd.com. Every building has a LAN (Local area network) within itself and each of the branches and offices within the city will have its own LAN. LANs under the same domain can be interconnected together to maintain equal use of the domain facilities and accessibility of centrally controlled applications like finale from the server room of the IT department. But LANs spread within a city or a small geographical area. Then how are the office spread across the country connected to the servers, Another form of network model called the WAN (Wide area network) is employed to do so. WANs can cover multiple cities, states and even countries. Employing the LAN and WAN models, Social Islami Bank has built its network infrastructure to effectively control its daily work from the head office itself. Placing a computer or a network printer within a domain is realized once an IP address (Internet Protocol Address) of the device is established by the network team. The IP address is passed on to us and then we place the address in the network controller of the computer and then alo add to t the domain name by which the whole network is identified. Once completed, the computer immediately gets accessibility rights of the network.

4.3.27 Existing Network Setup in SIBL

Almost every bank has their own internal internet setup, database and online application so that the employees and listed user can access their own network categorized by the different network. Without networking system computer can't be able to access their own application. Social Islami Bank Ltd. Information Technology Division has fulfilled with networking setup of LAN and WAN. IT Division, Data Center, Network Operation Center (NOC), Head office and branches are in well-constructed in cabling. There is also switch, router, ware manager, communication rack, network rack which is adorned with modular.

WAN connection of SIBL is encrypted by IP sec VPN from branch router to ITD router. Social Islami Bank Ltd. Information Technology Division has data center where communication rack installed, Network Operation Center (NOC) which is fulfilled by dynamic and reflexive devices. The central office and all branches of SIBL are connected with LAN. IT department has launched a branch- wide to complete planned networking. Head office and 125 branches are connected to the Data Center through fiber and VSAT connectivity. All branches are secured in LAN networking.

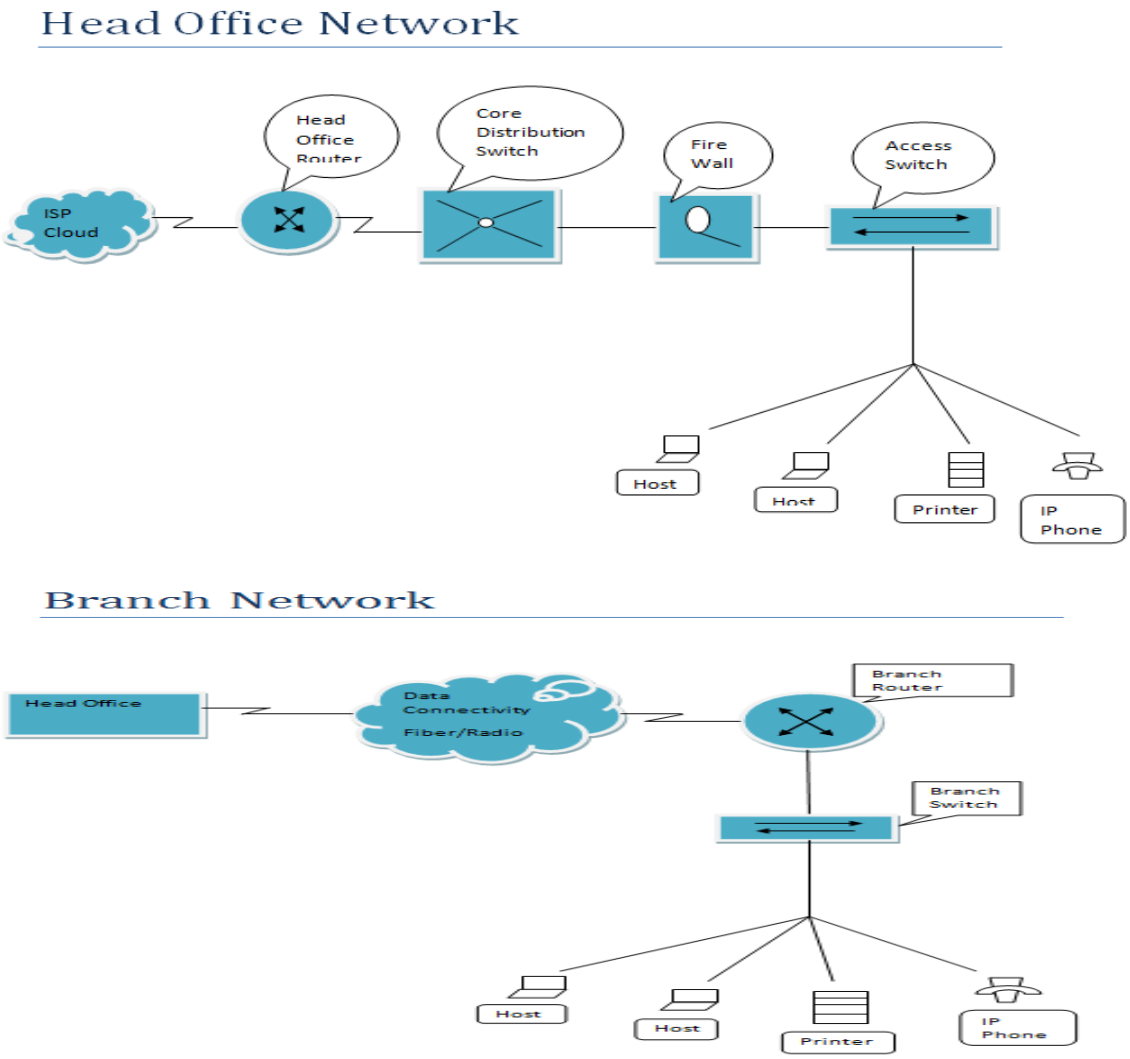


Figure 4.25: Existing network setup of SIBL

4.3.28 Network devices in IT division of SIBL

Router

A router is a hardware device and has the function of routing packets between networks. A router works at layer 3 of the OSI- model the network layer. This is the layer that the IP protocol works at most routers today are IP routers that examine the source and destination IP addresses of each packet, look up the destination of the packet in the routers IP routing table and route that packet on its way. In the event that the destination is not listed in the routing table, the router will either send the packet to a default router if it has one or drop the packet. Router are usually used to segment large local area network to a wide –area network (a LAN to a WAN) but can also be used to segment large local area networks (LANs). Social Islami Bank Ltd. IT division use Cisco 2911 series core router. The Cisco 2911 integrated services

router is part of the Cisco 2900 integrated Services Router Series which complements the integrated Services Router Portfolio.

Figure 4.26: Router 2911

Switch

A switch is a hardware device that works at layer 2 of the OSI model – data link. The data link layer is where the Ethernet protocol working. A switch is a high speed multiport bridge, this is why bridge are no longer needed or manufactured. Switches do what bridge did faster and cheaper. Most routers can also function as bridges. Cisco 2960 is used for floor LAN connection and it is confined with 24 numbers Gbs speed. Switches are connected with the communication rack. It is designed for simplifying the operation, they also provide scalable, secure and energy- efficient banking application operation with intelligent services.

Figure : 4.27 : Switch 2960

Media Converter

A fiber media converter is a simple networking device that make it possible to connect two dissimilar media types such as twisted pair with fiber optic cabling. Social Islami Bank Ltd. Information Technology division is used the 10/100 fast Ethernet Media Converter series. These are designed to fast copper base via a fiber optic cable and developed to fill the hug demand of network placement and expand in a position to a maximum distance of up the 120 km .10/100 fast Ethernet media converter series are fully acquiescent by the 10/100 Base –TX, 100 base –FX, IEEE802.3, IEEE802.3U and standards which are connected with standard converter chassis. The operation procedure of these media converter series are simple. A set of diagnostic led which is set at the front panel are observed the operation condition.

Firewall

A firewall is used to protect more secure network from less secure network. Generally, firewalls are used to protect your internal /private LAN from the Internet. A firewall generally works at Layer 3 and 4 of the OSI Model. Layer 3 is the Network layer where IP works and layer 4 is the Transport Layer, where TCP and UDP function. Many firewalls today have advanced up the OSI layer and can even understand Layer 7- the Application Layer .

4.3.29 LAN Connection at SIBL IT Division

Social Islami Bank IT division is built with two floors and connected more than 300 nodes which are connected with the cabling of Panduit cat6 cable. All cables are connected with channel cable tray and using of ladders, pipes, insulation and sound protection. Industry has made path code which are used everywhere. Switches, wire manager and all patch panels are decorated in a network rack for different floor and Network Operation Center (NOC). All communication fiber cables are resolved and media converter converts and install in managed way in the network rack. The next frame is used for wiring in the data center connect.

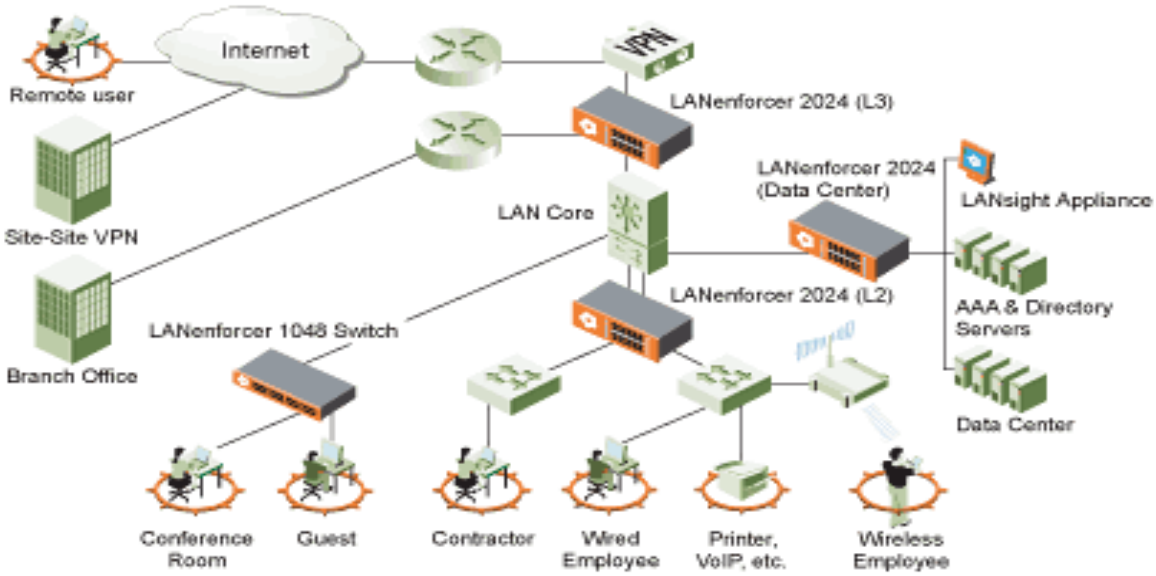


Figure : 4.28: LAN Connection of SIBL.

4.3.30 WAN Connection Of SIBL

A wide network (WAN) is a network that covers a broad area (telecommunication network that links across metropolitan, regional or international boundaries) using leased telecommunication lines. Business and government entities utilize WAN to relay data among employees, clients, buyers, and suppliers from various geographical locations. In essence, this mode of telecommunication allows a business to effectively carry out its daily function regardless of location. The internet can be considered a WAN as well and is used by business, governments, organization, and individuals for almost any purpose imaginable.

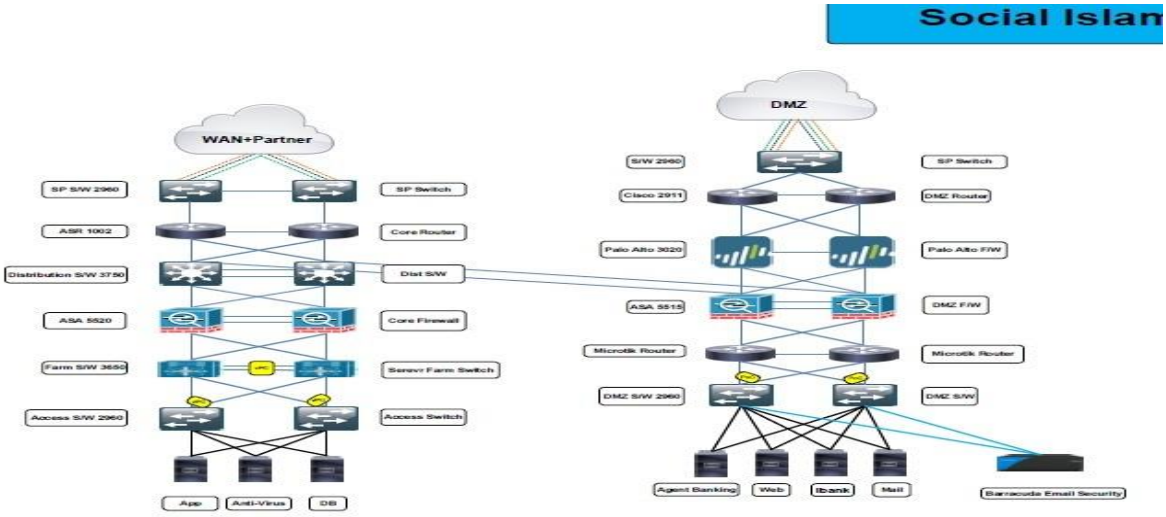


Figure : 4.29: WAN Connection of SIBL

4.3.31 OSPF For Tunel

OSPF is an interior gateway protocol that routes Internet Protocol (IP) packets solely within a single routing domain by autonomous system. It collects information about the status of the router lines which are creating a network topology map. The topology determines the routing table presented to the internet layer which makes routing decisions based specially on the destination IP address found in IP packets. OSPF discovers changes in the topology, such as errors and roll into the new routing loop – free structure in the seconds.

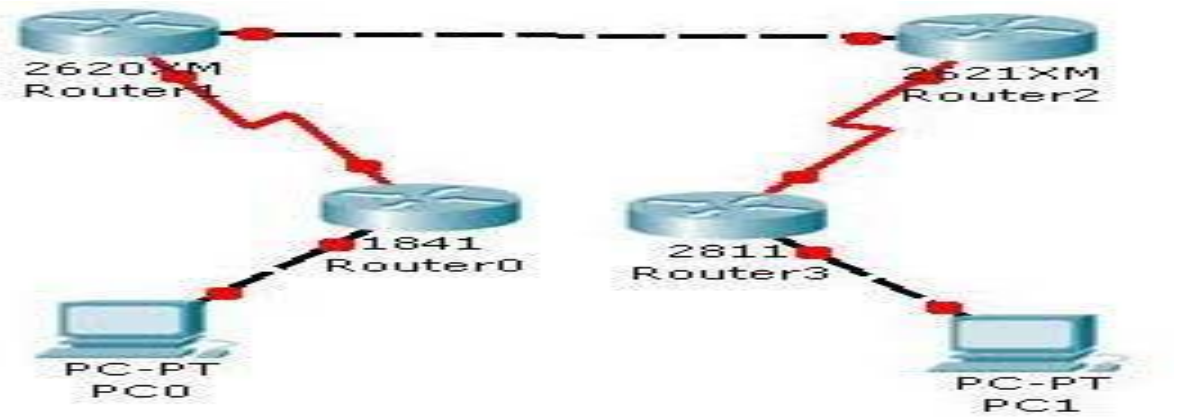


Figure 4.30: OSPF Tunel

Advantages of OSPF

- OSPF is an open standard, not related to any particular vendor.
- OSPF is hierarchical routing protocol, using area 0 (Autonomous System) at the top of the hierarchy.
- OSPF uses Link State Algorithm, and an OSPF network diameter can be much larger than that of RIP.
- OSPF supports Variable Length Subnet Masks (VLSM), resulting in efficient use of networking resources.
- OSPF uses multicasting within areas.
- After initialization, OSPF only sends updates on routing table sections which have changed, it does not send the entire routing table, which in turn conserves network bandwidth.
- Using areas, OSPF networks can be logically segmented to improve administration, and decrease the size of routing tables.

4.3.32 Virtual Area Network (VLAN)

VLAN is a logical group of workstation, servers and network devices that appears to be on the same LAN despite their geographical distribution. The virtual LAN controller can change workstations and manage load balancing and bandwidth distribution more easily. VLAN can be thought of as logical broadcast domains. Datacenter and IT Division of SIBL is used VLAN to reduce the trafficking of the network, secure the network and protect network from spam and spy. It eliminates inactively in the network, which protects network properties and increase network proficiency.

VLAN can extent in multiple switches and it can also perimeter within the switch network. In the switched network if the devices are using interconnection switches then VLAN are not restricted to any bodily limitation. It is similar to IP subnet. VLAN is used TO SEGMENT a single broadcast domain to multiple domains in layer -2 switched network.

Advanced of VLAN

VLAN provides for location independence. This flexibility makes ads, changed and moves of networking device a simple process. It also allows you to group people together, which also makes implementing your security policies. IP protocols support 500 device per VLAN.

- VLAN reduce the need for having introduced the network routers contain broadcast traffic.
- Captivity of a broadcasting domains reduces network traffic. If a router is not connected between the VLAN , the end – station of a VLAN can not communicate with the end station of the other VLAN.
- Broadcast are required for the normal function of a network. Many protocols and applications depend on broadcast communication to function properly. A layer 2 switched networks is in a single broadcast domain and the broadcast can reach the same broadcasting area.
- A layer -3 switched network is used to section of broadcast domain to multiple broadcast domains

4.3.33 IP Phone

The “IP” in IP phone system refers to voice over IP or having your phone calls routed over the internet or your local network (LAN). This is great for many reasons. First of all, you don’t have to use the telephone network of your telephone service provider for making calls, which will reduce your cost for phone calls. at the same time you are gaining many technical advantages by using IP technology for your telephone. Users of an IP phone system simply plug their IP phone into the nearest LAN port, then the IP phone register automatically at the IP phone system. The IP phone always keeps its number, and behaves exactly the same way no matter where you plug it in – on your desk, in the office next door or on a tropical island.

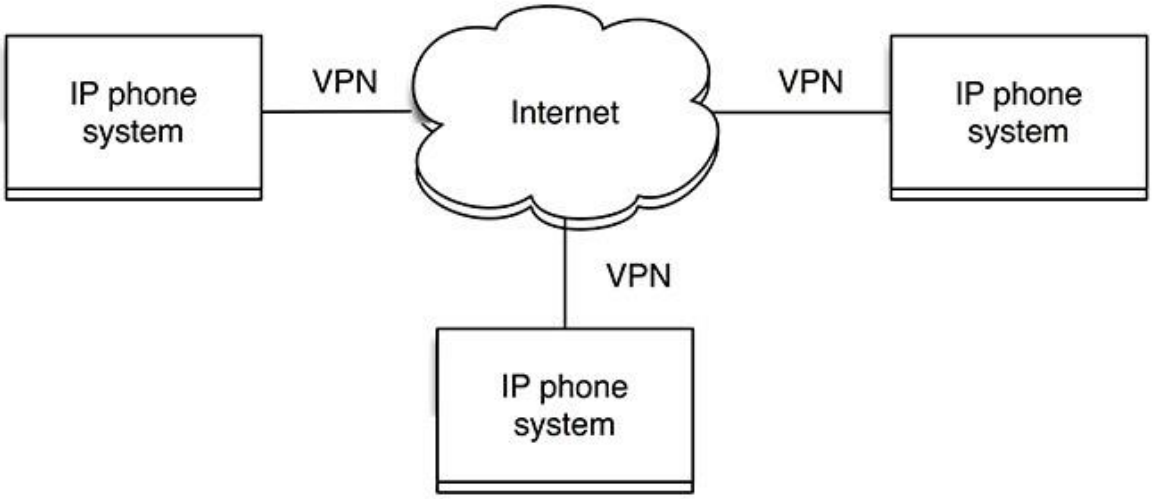


Figure 4.31: Design view of IP Phone.

5 Acquired Knowledge

5.1 Some hardware problem and that I identify and solve

Power Supply: When computer not open or not run then at first check the power supply cable if there has no problem then check the power supply and if it damage then repair it or change it.

RAM: When PC is on then if it gives beep sound or If pc display shake automatic or after some time then it describe RAM problem and then repair it or change.

Hard Drive: If any problem in hard drive then computer is on but not display turn on just it open black display. In this why at first install the OS if OS not taking then it define hard drive problem.

Motherboard: If any problem in motherboard then PC not open then total motherboard change and new motherboard attach by technician.

Phone call support: When difference branch employee face problem their PC then they contact bank hardware technician and tell their problem that solve technician by phone instruction and using Remote Desktop connection.

5.2 Essential software installation

In hardware sector hardware technician also install banking essential software that must needed such that, Dash board, Ababil, Mozilla firefox, Java, Microsoft office, Bijoy, Remote connection, Domain fixed ,Network cable fixed, OS installation, Driver installation, etc .

5.3 Remote Desktop Connection

Remote Desktop Connection is mainly use for connect one PC to another PC on the network by using IP address. This connection set this way,

.

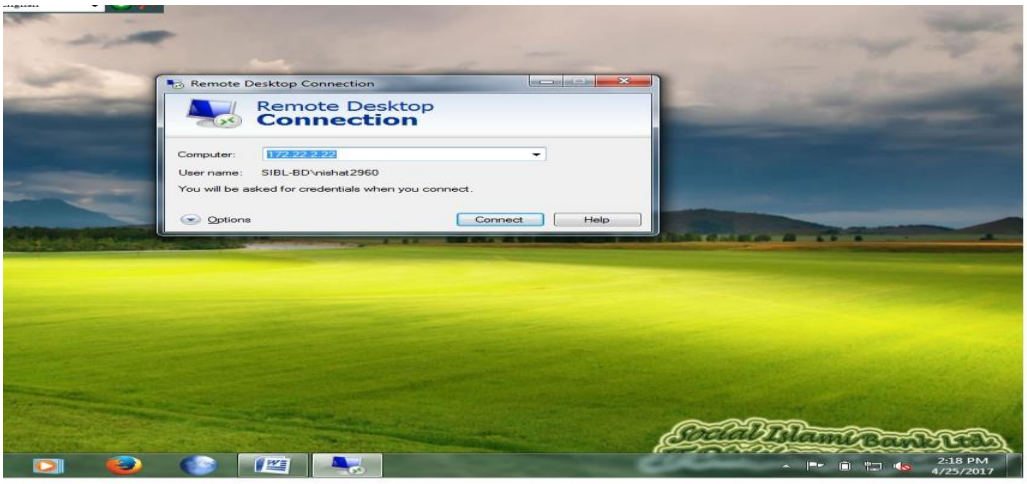


Figure 5.1: Remote connection

5.4 Domain Setup PC

If any pc connect to organization server then their stay own Domain if that pc connect to domain then it follow below step,

- Computer -Right Click
- Properties
- Change setting
- Change
- Computer name
- Full computer name
- Member of domain
- Ok

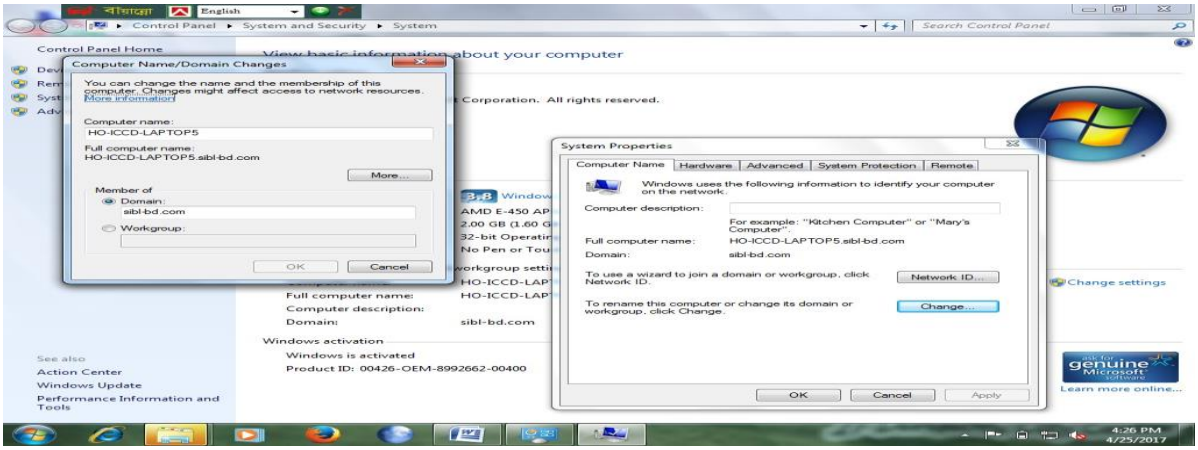


Figure 5.2 : Domain setup PC

5.5 Simulation Setup for Failure / Recovery Configuration

Figure 5.3 below shows the setup for Recovery Configuration. The simulation is set to be 15 minutes, the first failure is set to be 5 minutes which is 300 second, and the recovery is set to be 600 seconds. Recovery configuration is set to be the same for all scenarios except the route would be dropped.

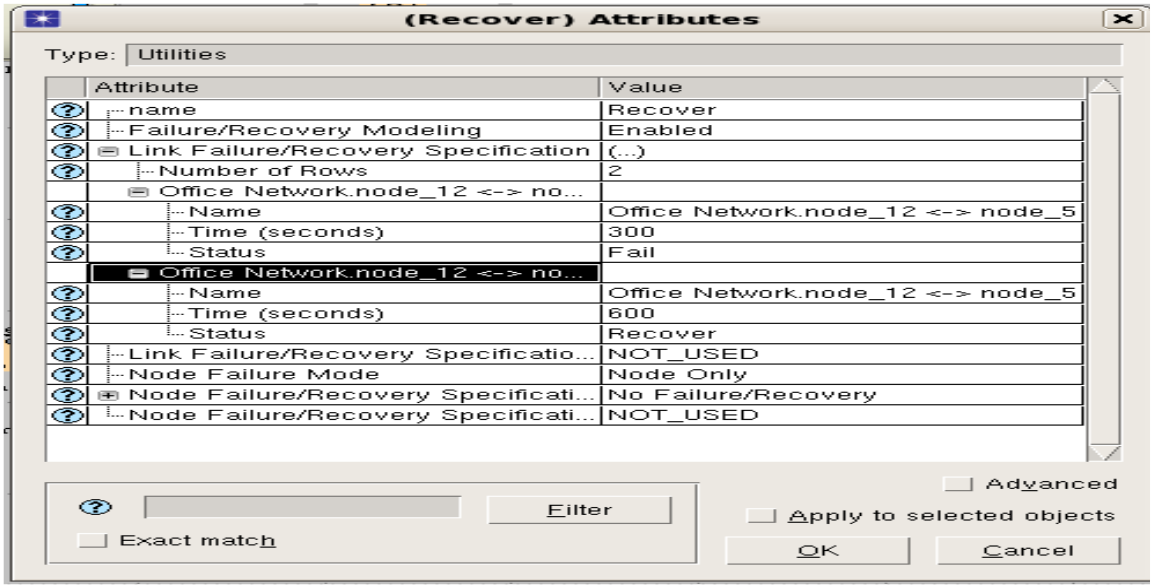


Figure 5.3: Failure/Recovery Configuration

5.6 Simulation Setup for Individual DES Static's

Since three protocols will be examined, the individual statics will be set differently. It concludes the features will be compared in the project which are Convergence Activity, Convergence Duration and Traffic Sent (bits/sec).

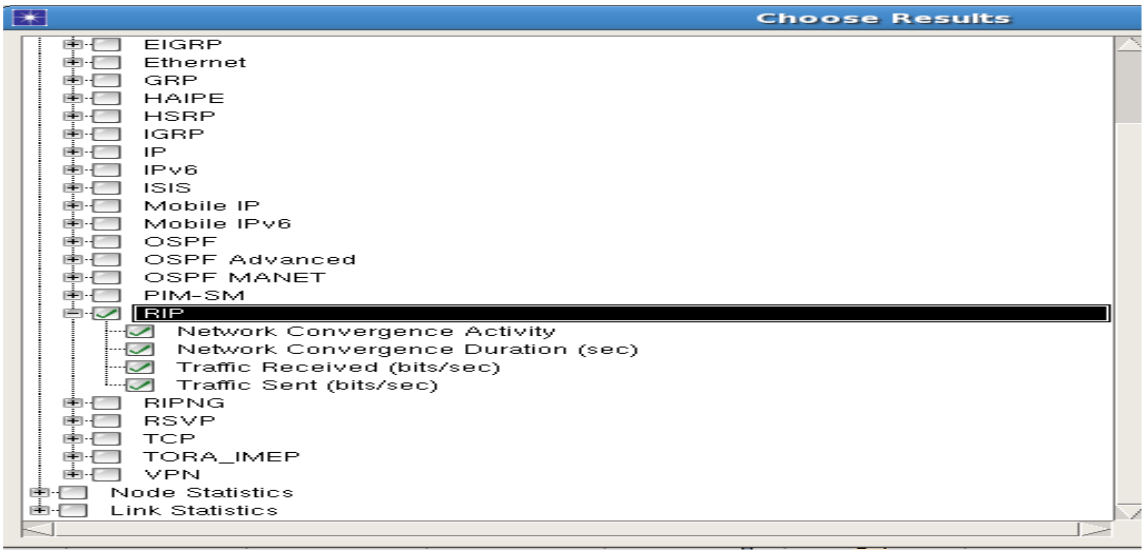


Figure 5.4: RIP DES statics

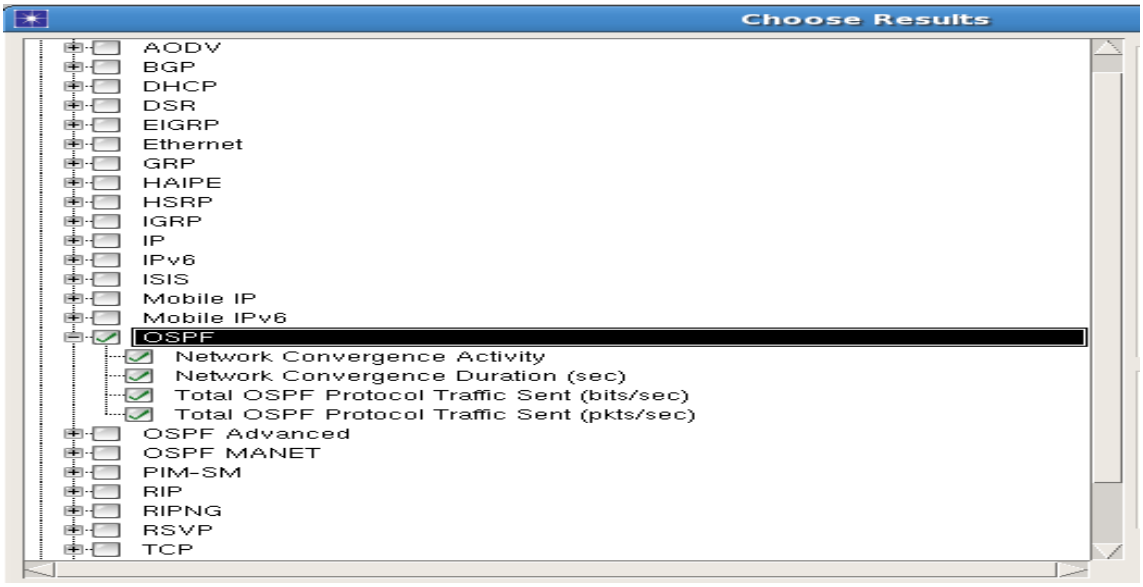


Figure 5.5: OSPF DES statics

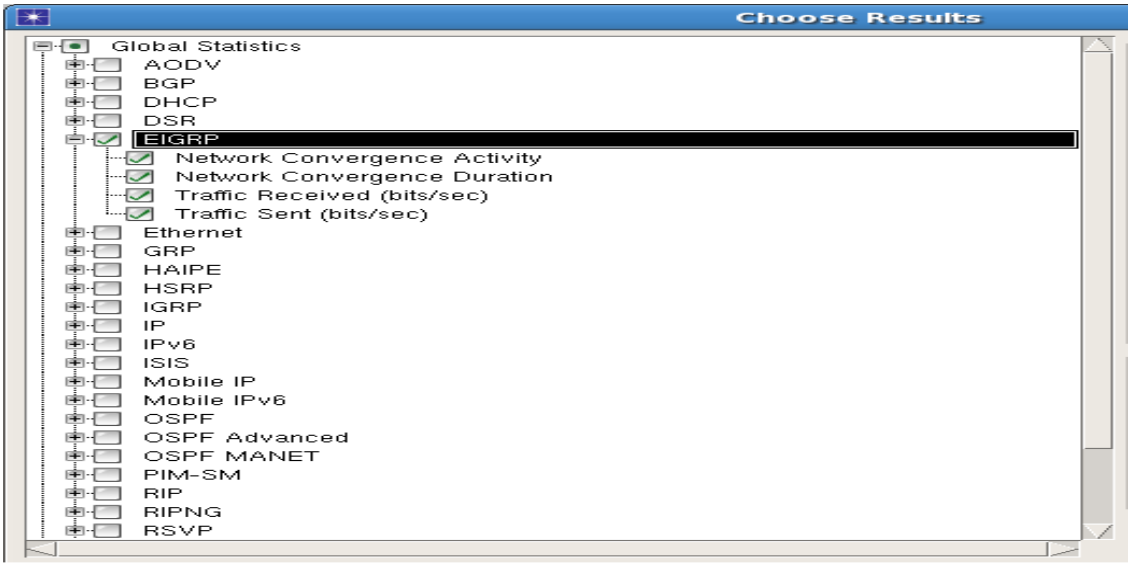


Figure 5.6: EIGRP DES statics

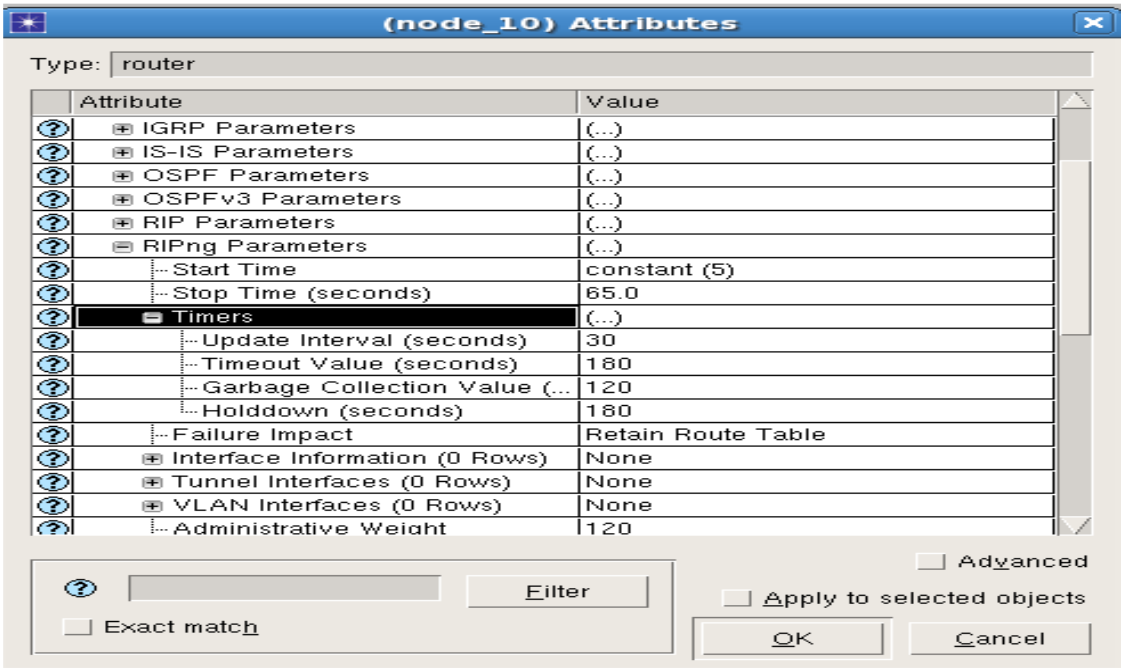


Figure 5.7: RIP parameters

- The RIP routing tables are initialized with the local gateway's IP addresses. The cost for these routes is set to 0.
- Silent RIP processes are modeled with a parameter that can be controlled by the user. Silent RIP processes do not send out routing update messages, and are normally used for hosts that do not act as network gateways.

- The start time at which the first regular routing updates are generated is a parameter that can be controlled by the user.
- Split Horizon with Poisoned Reverse is implemented to avoid including routes in updates sent to the gateway from which they were learned. Such routes are included in updates, but their metrics are set to infinity.
- Regular and Triggered Updates.
- Garbage Collection (Flush) and Timeout (Route Invalid) timers.

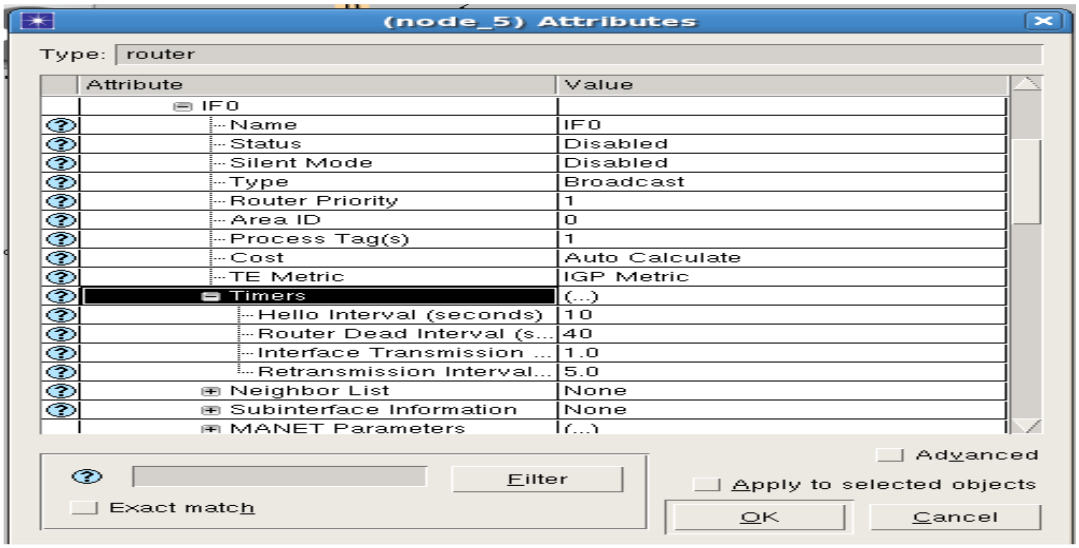


Figure 5.8: OSPF parameters

1. Hello Interval: Determines the time interval between hello messages. A high value lowers the EIGRP traffic in steady state, and a low value enables node failures to be detected more quickly.

2. Hold Time: Specifies the value of hold time, which is advertised in the hello message sent over the corresponding IP interface. The hold time value defines the amount of time a neighbor should wait for another hello message from this process model before marking its node as down. A high hold time value delays the detection of node failures, and a low value may cause misjudging the status of a neighbor as down because of a few delayed or dropped hello packets.

3. Split Horizon: Enables or disables split horizon on the interface. The default configuration enables this feature on all interfaces.

4. Route Filters: Specifies the prefix/distribute lists used to filter routes received on or sent from this interface. Prefix/distribute lists are defined in the IP > IP Routing Parameters > Prefix Filter Configuration attribute.

5.7 Result and Analysis

Based on our three topologies, we simulated the performance of each routing protocol on all three topologies, Firstly we ran the simulation on small mesh topology for RIP, OSPF and EIGRP.

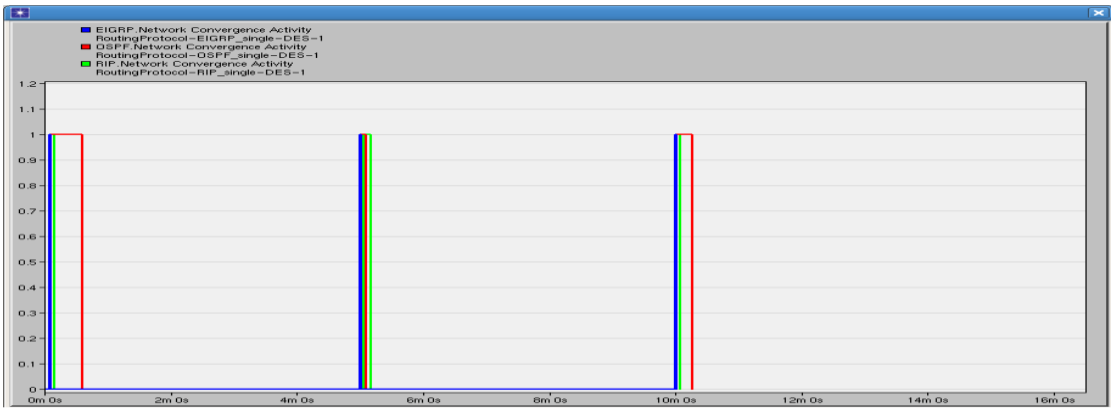


Figure 5.9: Overlaid Convergence Activity on small mesh

The three peaks from left to right in the graph represent: initialization, failure, recover. The width of the peak stands for the convergence time of the protocol. If the peak is wider, the protocol converges slower. In small mesh topology, EIGRP is the fastest protocol among the three. RIP is a little bit slower than EIGRP. It is clear to see from the graph that OSPF converges most slowly.

Next we simulated the data transmission of three protocols on large mesh topology.

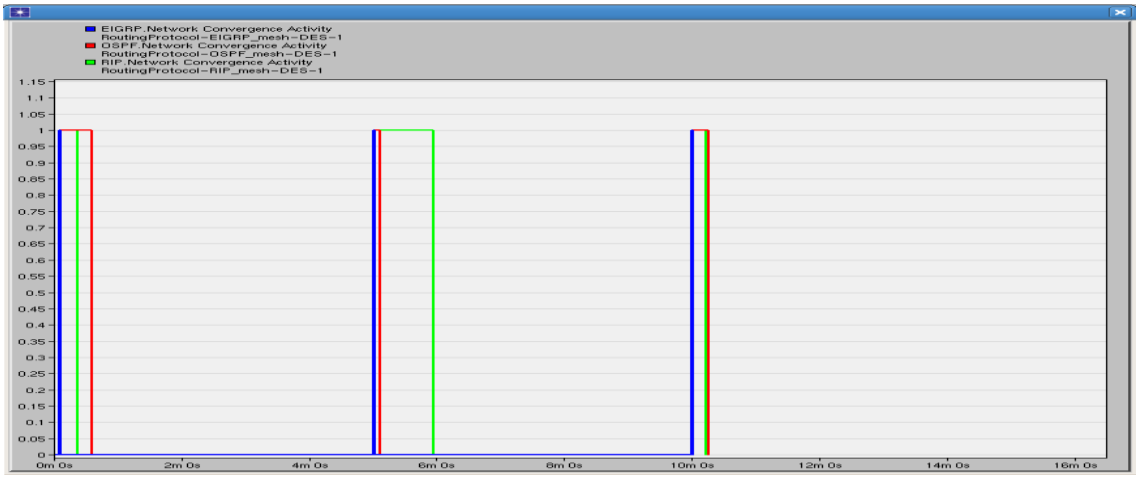


Figure 5.10 : Overlaid Convergence Activity on mesh .

This time the fastest protocol is still EIGRP. OSPT has longer initialization and recover time than the other two protocols. The difference in peak duration for OSPF is not significant in

small and large topologies. RIP is the slowest one in large mesh especially when the link is failed; its initialization duration is half of OSPF. RIP has very long fail convergence compare to the other two. Our assumption was RIP is limited by its hop count which is only 15.

Then we simulated the data transmission of large tree topology.

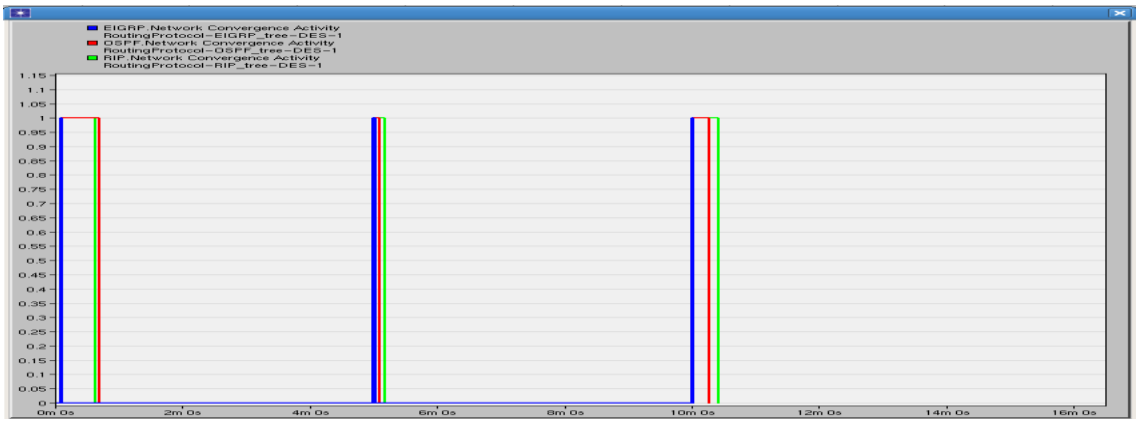


Figure 5.11: Overlaid Convergence Activity on tree.

EIGRP is still the fastest protocol among all three. OSPF has a slightly longer initialization time compare to RIP and both OSPF and RIP has much longer initialization time than EIGRP. The fail convergence time is different from the mesh topology where EIGRP>OSPF>RIP, but the difference is not significant. RIP has the longest recover time and OSPF is a bit faster.

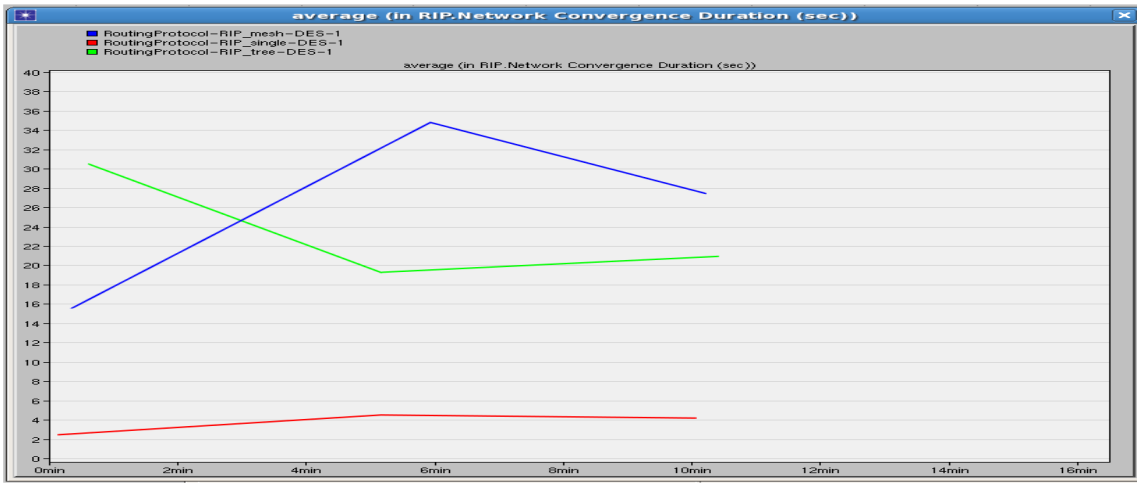


Figure 5.12 : RIP Average Convergence Duration over different topologies.

It is clear to tell that RIP has best performance on small network comparing to large tree and mesh. Since RIP has to update every 30 seconds, it will take more time on large networks.

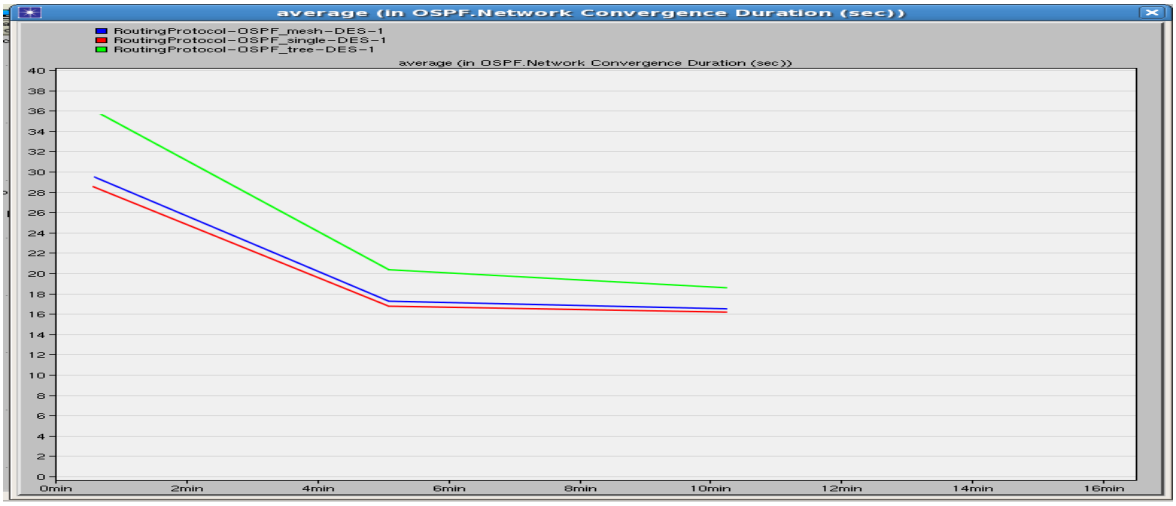


Figure 5.13: OSPF Average Convergence Duration over different topologies.

The performance of OSPF is quite similar in three topologies. The initialization time in singe mesh is a slightly faster than that in large mesh and large tree.

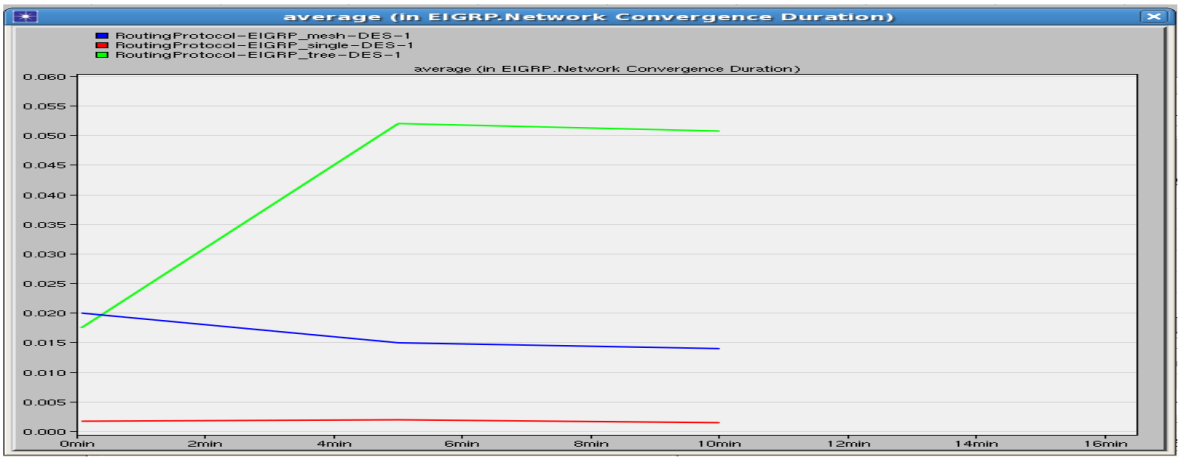


Figure 5.14 : EIGRP Average Convergence Duration over different topologies.

From figure , it looks like a huge difference over topologies but in details, the difference is only around 0.02 second which is really tiny. Therefore, the convergence of EIGRP in different topologies did not have radical improvement.

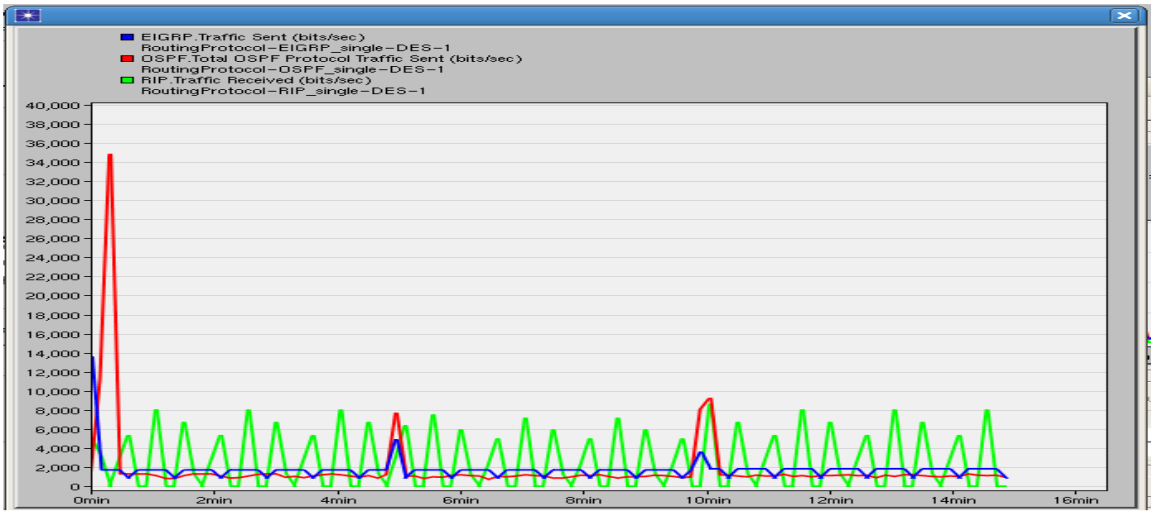


Figure 5.15: Traffic sent comparison on small mesh topology.

The figure above shows the router traffic sent in bits/sec in three protocols using single mesh topology. From the graph, the first peak is the initial traffic, the next peak is link failure and the last peak is the link recovery in the network. We can tell OSPF generates the highest initial traffic since the OSPF will map out the network which requires routers to distribute a 19 large amount of information then choosing a path. In addition, we note that EIGRP has the highest bandwidth efficiency, and the second one is OSPF. However, the RIP has the lowest bandwidth efficiency. In this graph, the RIP shows a little difference from OSPF and EIGRP because RIP will update the routing table every 30 seconds, which is the same as our result.

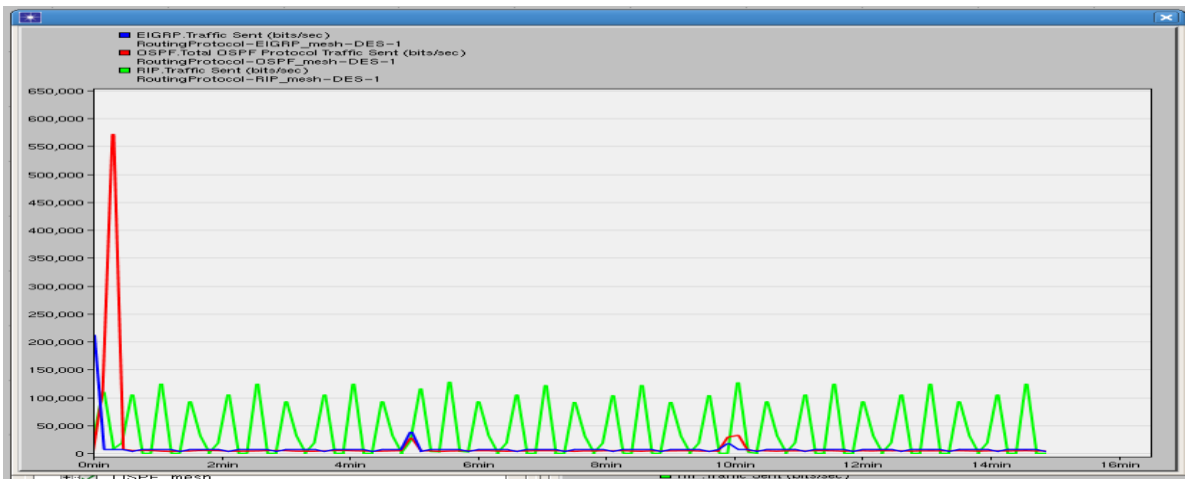


Figure 5.16 : Traffic sent comparison on mesh topology.

When we use large mesh topology, we can clearly tell that the throughput for each protocol has increased. It is just because the number of routers used in this topology is increased. At the beginning, OSPF has a throughput of 0.52Mbps, but EIGPR only has 0.2 Mbps. As we mentioned that OSPF using link state and EIGRP using hybrid in the introduction, link state requires to map out the whole network at the beginning. Also, we note that when failure occurs the EIGRP has higher throughput than OSPF. However, when recovery occurs the

throughput is higher than EIGRP, which is the same situation as the initial. As for bandwidth efficiency, OSPF and EIGRP has a much higher bandwidth efficiency than RIP. In every 30 seconds, RIP wastes about 0.11Mbps, so we think RIP is only suitable for small network.

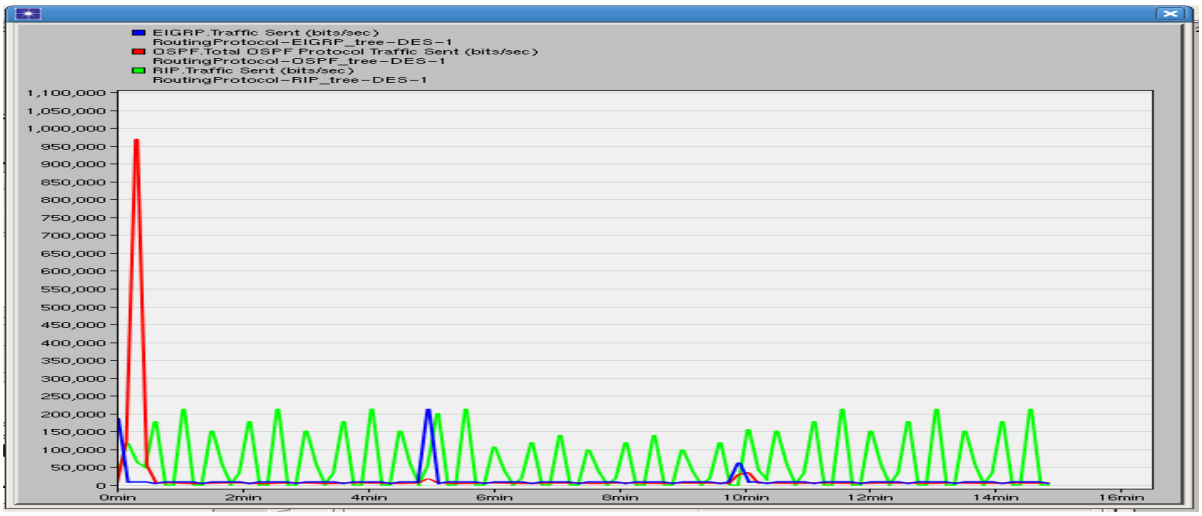


Figure 5.17 : Traffic sent comparison on mesh topology.

When we use large tree topology, we can clearly tell that at the beginning, OSPF has a throughput of 0.95Mbps, but EIGPR only has 0.18 Mbps. As we mentioned that OSPF using link state and EIGRP using hybrid in the introduction, link state requires to map out the whole network at the beginning. However, when failure and recovery occurs the EIGRP has higher throughput than OSPF. As for bandwidth efficiency, OSPF and EIGRP has a much higher bandwidth efficiency than RIP. In every 30 seconds, RIP wastes about 0.19 Mbps, so again we prove that RIP is not suitable for large network.

6 Conclusion

6.1 Conclusion

The report represents there all life experience that I had during my internship period as a IT personnel. This experience has challenged me to continually learn about myself and my interactions with others. The internship gives me the opportunity to be confident with the techniques which I will be able to apply in my future profession .I learned from my internship that how to deal with different person. I've learned how I should deliver myself to other so that everyone can get my point and work under pressure.

I hope that this experience will help me in future in my job career. The things that I learned from the experience will always be with me and will help me to go forward in my professional life.

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