

**AN INTERNSHIP REPORT ON
INFORMATION TECHNOLOGY
DIVISION OF STANDARD BANK LTD.**



by

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An Internship Report Submitted in Partial Fulfillment of the Requirements for
the Degree of Bachelor of Science in Computer Science and Engineering

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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DECLARATION

I hereby declare that this Internship work entitled “Internship Report on Information Technology Division of Standard Bank Limited” has been supervised by Adnan Ferdous Ashrafi, Lecturer of the Department of Computer Science & Engineering Stamford University Bangladesh. I further assure that this Internship work has not been submitted either in whole or part for any Degree or Diploma in any university previously.

I further undertake to indemnify the university against any loss or damage arising from breach of the foregoing obligation.

Countersigned

Signature

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Adnan Ferdous Ashrafi

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Supervisor

Candidates

ABSTRACT

During my internship period of Standard Bank Ltd, I have investigated opportunities where technology could be effectively used. If a technology strategically fit the company's technological 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 describes new and evolving technologies that can enhance the performance of existing tools or aid in the development of a new generation of tools at SBL. Which gather my knowledge about Banking IT sector. I have successfully completed my internship as a member of an "Information Technology Department". I worked as a technology operator with great joy and confidence. For this purpose 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, genuine Windows XP Professional, Antivirus Setup, Virus scan, Open office, Outlook, Primo PDF, Virtual network Computing (VNC), J Zip, Bach, Internet Phone Configuration, active directory, Printer, ups, router, switch, Team, Scanner etc.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION:

I joined as an intern in the technology operations department of Standard Bank Limited on 28th December of 2016. The department is run by Mr. Hossain Ahmad. Under the department there are several wings, such as, network Team, hardware department, system security team and cards. I was assigned with the both of hardware & network wing. This wing also subdivided in to three more teams. 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 for all of my entire internship duration.

1.2 Objectives:

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

1.3 Scope of the Study

The main focus of the study is “Information Technology systems of SBL”. But the report has tried to cover the overview of SBL IT division, functions, management, and other things. This report has also mentioned some problems of SBL's IT and its solutions. The empirical part includes only the published information and current practices of the Standard 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, Stellar software configure, internet phone configuration and antivirus installation & maintenance. I was prepared this report after discuss with the relevant IT officer of Standard Bank ltd. After

getting their valuable opinion, information, my practical knowledge have been enriched my real experience. After getting the great opportunity to have and in depth knowledge of overall operation of SBL.^[12]

1.4 Services of Technology Department

- Hardware Troubleshooting & maintenance
- Network & Internet Connectivity
- Mail Server configuration
- Proxy Server configuration
- DNS (Domain Name Server) Configuration
- Antivirus installation
- Printer configuration
- IP Phone 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
- 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.

Problem Solutions

- When RAM is weak then PC can be restarted. Then need to replace or increase RAM.
- When RAM is not working for that reason display not getting. Then need to clean dust from RAM and reset the RAM in slot. Or need to replace RAM.
- When virus attacked & RAM do not work properly
- When Driver CD/DVD was damaged or do not match with the relation computer
- Printer's tonner, Telephone damaged & need to repair or replace it.
- Mouse sensor don not work properly
- When Operating system crashed than new operating system should be installed.
- Need to reinstall the windows.
- Need to use updated antivirus and clean the PC etc.

1.6 Network Connectivity

In order to operate the PCs of Standard Bank in a real time environment & maintain a communication simultaneously throughout the bank, it is needed to build a sustainable network consisting these entire PCs as below system:

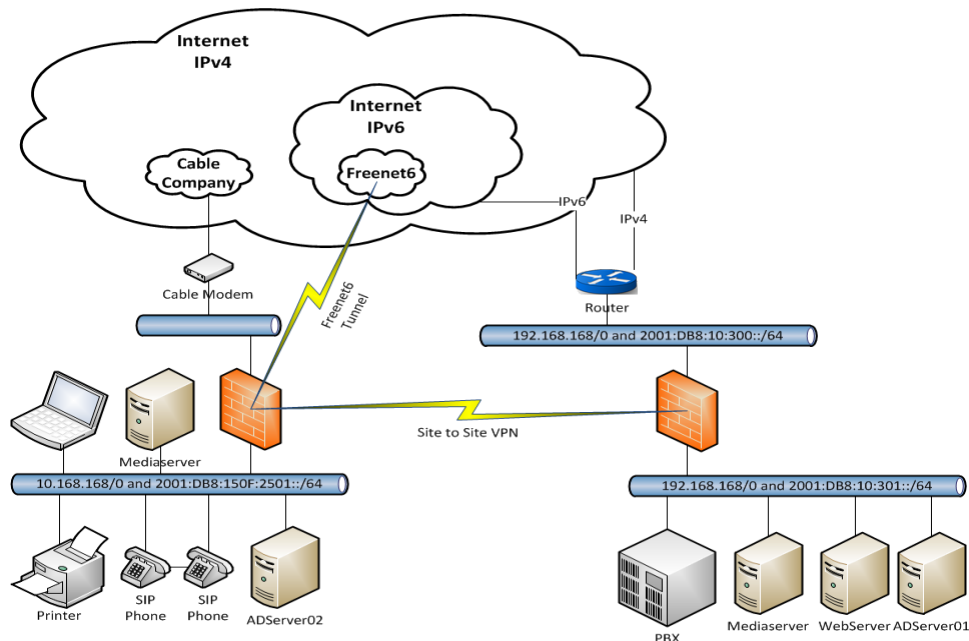


Figure 1.1: Network Connectivity

Standard Bank Ltd have used Cisco router. The head office has used core router and branches internally connected with router. Between the core router and router with connected via Dynamic Bayesian Network (DBN) and DBN have secured the data. There are have two link one of them primary link and other one secondary link. Secondary link always stands by. If failed, then the primary link automatically secondary link will run. Others Computer have connected with server; it will operate through switch.

1.7 Internet Connectivity

The internet connectivity and maintenance is to follow of Standard Bank IT person. So I have got knowledge from their by serve and maintain the internet connectivity. Like this,

- IP & proxy settings
- LAN & MAN Configuration
- Global proxy settings
- Internet connection is not available in a PC.
- Show internet Connectivity.
- Wi-Fi Connectivity.
- Internet Speed limitation distribute among the user.
- Distributing IP using network design

1.8 Mail Server Configuration

Advantage of Mail Server:

- Easy to Use
- Environment Friendly
- Speed
- Informal and Conversational
- Provision of Attachments
- Easier for Reference
- Automated Emails
- Use of Graphics
- Advertising Tool
- Cheap Service
- Advantages of Technological Development

Disadvantage of Mail Server

- Spam
- Hacking
- Not Suited for Business
- Viruses

1.9 Proxy Server Configuration

Advantage of Proxy Server

- Act as caching server to make you load a webpage faster.
- Masking your real IP address.
- Anyone can add more.
- SQL Server authenticates users much faster than active Directory.

Disadvantage of Proxy Server

- SQL server stores passwords in clear-text
- Proxy accounts are less secure than storing all user passwords in active directory.

1.10 Domain Name Server (DNS) Configuration

Advantages of DNS

- I can easily make changes to the name servers and flush/force updates
- If I have enough domains, the costs could be lower than paying a service provider for hosted DNS
- I learn a lot more than simply using someone else's web interface.
- Disadvantages of DNS
- Need to watch out for Doss and other nastier that can cause outages too.
- Possibly additional costs if I do it properly, ideally host in different locations/countries/continents, on sufficient. Bandwidth and server resources.

1.11 Antivirus Installation

- Installing & managing Slave server
- Installing network agent
- Installing antivirus

1.12 Printer

- Printer driver installation
- Set IP to the printer
- Set subnet mask & gateway
- Toner & Tephlon setting

1.13 IP Phone

- Internet Phone configuration
- Sip proxy & outbound proxy configuration

1.14 Limitation of the Work

Like any other study the limitations of this study are not out of questions. But the following factors seem to be the main points of weakness of this study: -

- The area covered by the “Internship Report on SBL IT Division” concerns with a huge number of activities and it is very difficult to sketch a total picture of the financial activities in a report at this scale.
- Officials of SBL maintain a very busy schedule. So they were not always able to provide enough time to enlighten the internee students every time, even if they had the intention to do so.
- Lack of more practical and contemporary data was another shortcoming.
- Some data are strictly confidential. As a result, it is impossible to collect all necessary data. So it is difficult to provide complete recommendation.^[4]

CHAPTER 2

BACKGROUND

2.1 Banking Sector in Bangladesh

Modern banking system plays a vital role for a nation's economic development. Over the last few years the banking world has been undergoing a lot of changes due to deregulation, technological innovations, globalization etc. These changes in the banking system also brought revolutionary changes in a country's economy. Present world is changing rapidly to face the challenge of competitive free market economy. It is well recognized that there is an urgent need for better, qualified management and better-trained staff in the dynamic global financial market. Bangladesh is no exceptions of this trend. Banking Sector in Bangladesh is facing challenges from different angles though its prospect is bright in the future.

The Bangladesh banking sector is made up of four nationalized commercial banks (NCBs), five government-owned specialized banks, thirty domestic private banks, twenty-two non-bank financial institutions, including the Dhaka Stock Exchange and the Chittagong Stock Exchange, and nine foreign banks. The percentage of non-performing loans in the banking system is extremely high. The U.S. Government and donor institutions are assisting with financial sector reforms. Part of the reform effort is to upgrade regulations and accounting standards to international standards as far as possible. Bangladesh Bank regulates all banking institutions and, as in many countries, the Ministry of Finance rather than being independent controls the central bank. Bangladesh Bank supervises the activities of all banks.

The Bangladesh Bank is now carrying out a reform programs to ensure quality services by the banks. Bangladesh Bank (BB) has been working as the central bank since the country's independence.

Every bank has different divisions and every division has units or departments and every department has their own functions to serve the customers according to customer's requirement. The departments are:

- ✓ General Banking
- ✓ Loans & Advances^[9]

2.2 Standard Bank Limited

Standard Bank Limited (SBL) was incorporated as a Public Limited Company on May 11, 1999 under the Companies Act, 1994 and the Bank achieved satisfactory progress from its

commercial operations on June 03, 1999. SBL has introduced several new products on credit and deposit schemes. It also goes for Corporate and Retail Banking etc. The Bank also participated in fund Syndication with other Banks. Through all these myriad activities SBL has created a positive impact in the Market.

2.3 Overview of Standard Bank Limited

Standard Bank is a banking company incorporated in the People's Republic of Bangladesh with limited liability. It was set up at the instance of the Government in 1976 as a joint venture between the Government of Bangladesh and sponsors in the private sector with the objective of working as a finance company within the country and setting up joint venture banks/financial institutions abroad. In 1999 when the Government allowed banks in the private sector, SBL was converted into a fully-fledged commercial bank. The Government of the People's Republic of Bangladesh now holds 32.75% of the share capital of the Bank. Directors and Sponsors having vast experience in the field of trade and commerce own 8.62% of the share capital and the rest is held by the general public.

2.4 Features of SBL

- Standard Bank builds up strong pillar of capital, promote trade, commerce and industry, and discover strategies for achieving systematic growth.
- It is the pioneer in introducing and launching different customer friendly deposit Schemes to tap the savings of the people for channeling the same to the productive sectors of the economy.
- It has created congenial atmosphere so that the client becomes interested to deal with the Standard bank limited.
- For uplifting the standard of living of the limited income group of the population, the Bank has introduced Retail Credit Scheme by providing financial assistance in the form of loan to the consumers for procuring household durables.
- The Bank is committed to maintain continuous research and development to keep pace with modern banking.
- Recently the bank starts internet banking in order to provide prompt and efficient services to the customers.
- The bank has introduced customer relations management system to assess the needs of various customers and resolve any problem on the spot.

2.5 Objectives of Standard Bank Limited

- To be a dynamic leader in the financial market in 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.

2.6 Vision of SBL

Standard Bank Mission is to provide service to its clients with the help of a skilled and dedicated workforce whose creative talents, innovative actions and competitive edge make its position unique in giving quality service to all institutions and individuals that care for. They are committed to the welfare and economic prosperity of the people and the community, for it derives from them its inspiration and drive for onward progress to prosperity.

2.7 Mission of SBL

Standard Bank Mission is to provide service to its clients with the help of a skilled and dedicated workforce whose creative talents, innovative actions and competitive edge make its position unique in giving quality service to all institutions and individuals that we care for. It is committed to the welfare and economic prosperity of the people and the community, for it derive from them it inspiration and drive for onward progress to prosperity.

They want to be the leader among banks in Bangladesh and make it indelible mark as an active partner in regional banking operating beyond the national boundary. In an intensely competitive and complex financial and business environment, it particularly focuses on growth and profitability of all concerned.

2.8 Corporate Information of SBL

Following Table Shows the Corporate Information of SBL

Table 2.1: SBL at a Glance

Name of the Bank	Standard bank Limited
Logo	 Standard Bank Limited setting a new standard in banking
Status	Public Limited Company
Head Office	Head Office, Metropolitan Chamber Building 122-124 Motijheel C/A, Dhaka.
Phone +	7175698,7169134,9560299,9558375
E-mail	sblho@bangla.net
Website	www.stsndardbankbd.com
Chairman	Kazi Akramuddin Ahamed
Managing Director	Mr. Md. Nazmus Salehin
SWIFT Code	SDBLBDDH
Number of Employees	1539
Number of Branches	114

2.9 Organogram of Standard Bank Limited

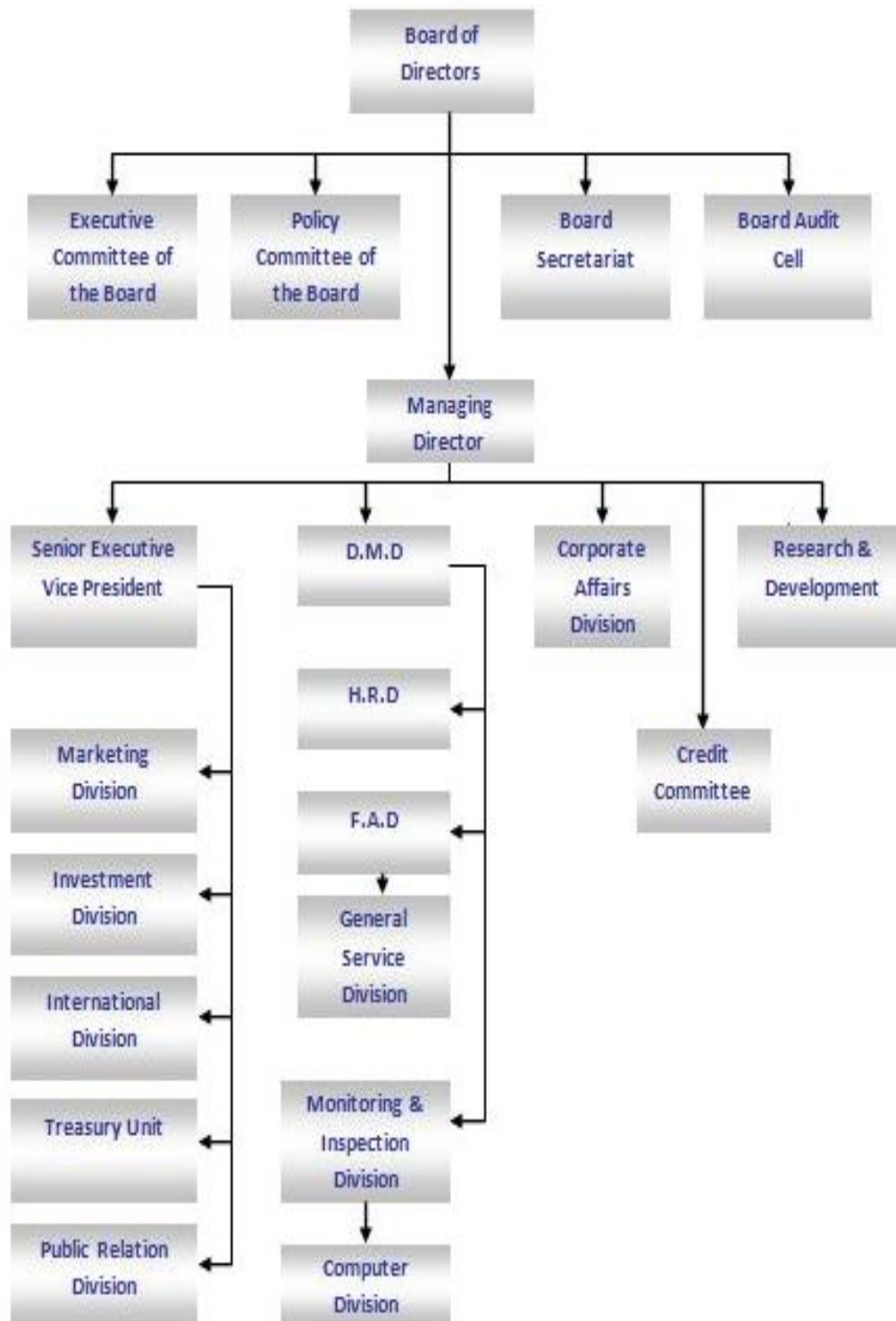


Figure: 2.1 Organogram of SBL^[14]

2.10 Organizational Hierarchy of SBL

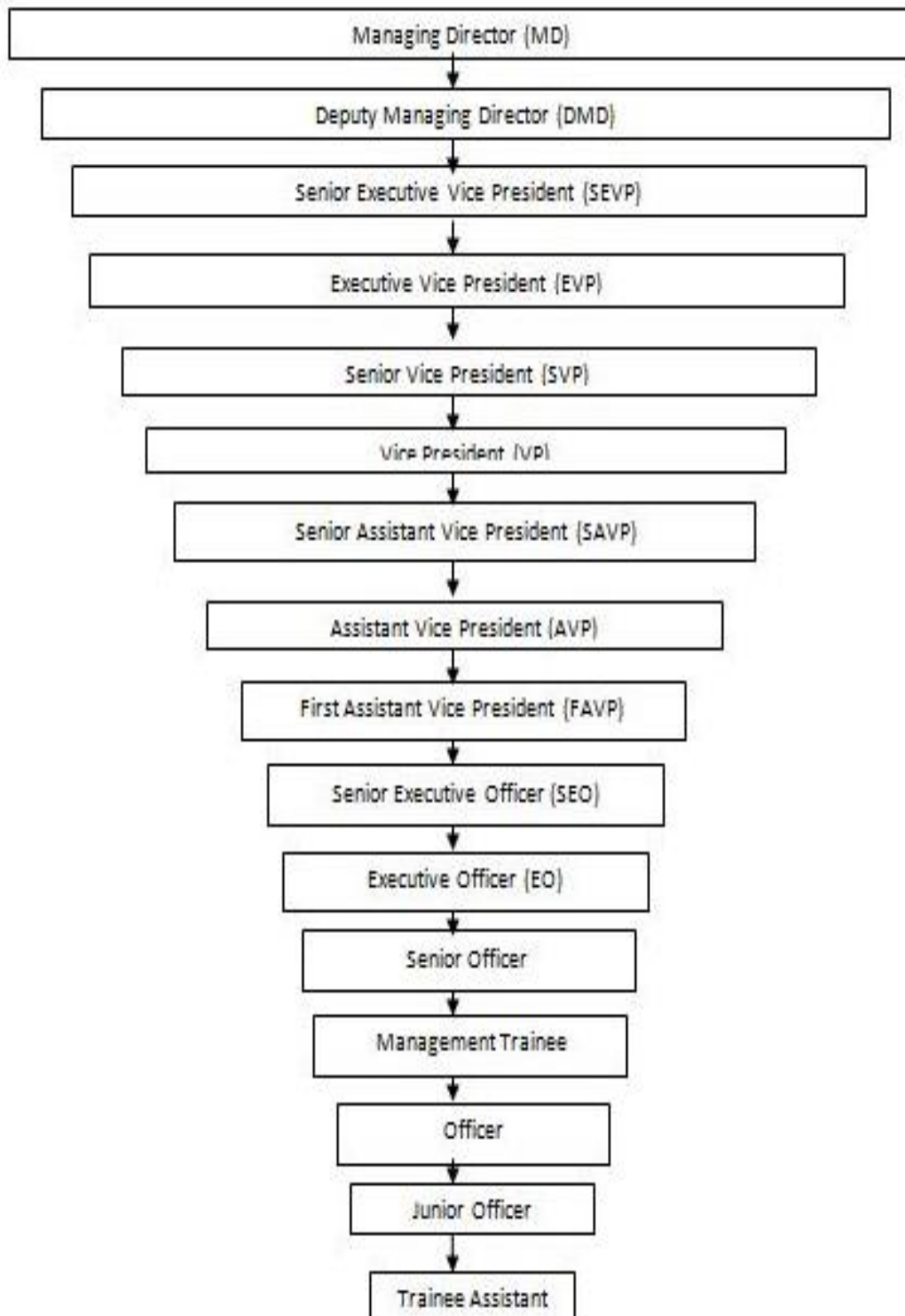


Figure: 2.2 Organizational Hierarchy of SBL

2.11 Technology of Standard Bank Limited

Since the beginning of its journey as a commercial bank in 1999, Standard Bank has been giving great emphasis on the adoption of modern technology. It became the pioneer in the field of automation by introducing computerized branch banking right in the same year. Subsequently, all the branches were brought under similar automated platforms with upgraded software applications to offer all the critical banking features. At present all 90 domestic branches are fully computerized under networked environment.

Besides, the Bank is also operating fully on-line Automated Teller Machine (ATM) services under the banner Cash at a number of locations in Dhaka and Chittagong. The ATM facilities are available to the customers at Cash booth. Since the importance of Web presence in the Internet is absolutely critical, SBL Web Site www.standardbankbd.com has long been launched for the convenience of the customers, where all the activities and information are constantly being posted and updated.

CHAPTER 3

METHODOLOGY

3.1 Introduction

Data is value collected through record keeping or pooling, observation, or measuring. The integral part was to identify and collect data; they were classified, analyzed, interpreted and presented in a systematic manner. The nature of the report is qualitative and quantitative and the source is primary and secondary. We must consult with various people, booklets, news, newspaper and other source to gain correct data. This report is maintained on the basis of primary as well as secondary sources which are given below:

The methodology of the study required data to be collected at first from the various Sources such as.

3.2 Data Sources

The study began with the collection of primary and secondary data.

Primary Sources:

Work Experience

- Ability to work
- Get Energetic
- How to communication.
- Grouping
- Professional life experience.

Verbal Interview:

Questionnaire

- There have lot of question arrange to talk the field.

Discussion with the relative IT officer

Supporting Expert

- Now I know how to support the another branch
- This bank makes me an expert to be a supporter.
- I can all support that the bank is work.

Online Work

- IP & proxy settings
- LAN & MAN Configuration
- Global proxy settings
- Internet connection is not available in a PC.
- Show internet Connectivity.

- Wi-Fi Connectivity.
- Internet Speed limitation distribute among the user.
- Distributing IP using network design

IP Phone Configuration

- Windows
- IP setting
- Setup use for branch
- Must have update version use for OS
- Safety use

Secondary Sources

- Articles
- Magazine
- Newspaper
- Annual Report of Standard Bank ltd^[1].

CHAPTER 4

IT DEPARTMENT OF STANDARD BANK LTD

4.1 Concept of IT

Information technology (IT) is the application of computers and telecommuting – to store, retrieve, transmit and manipulate data, often in the context of a business or other enterprise. The term is commonly used as a synonym computer and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, such as computer hardware, software, electronics, semiconductors, internet, telecom equipment, e-commerce and computer services.

At present, IT is gradually being replaced by information and communication technology; meaningful communication and information revolutions need an effective electronic communication infrastructure. For that reason, IT is now adopted with the knowledge explosion, technological explosion and the diverse needs of people placed demand for new form of education.

4.2 Definition of IT

Stands for "Information Technology," and is pronounced "I.T." It refers to anything related to computing technology, such as networking, hardware, software, the Internet, or the people that work with these technologies. Many companies now have IT departments for managing the computers, networks, and other technical areas of their businesses. IT jobs include computer programming, network administration, computer engineering, Web development, technical support, and many other related occupations. Since we live in the "information age," information technology has become a part of our everyday lives. That means the term "IT," already highly overused, is here to stay.

Information technology may be defined as a combination of computer and telecommunications techniques which makes possible new systems and products to help people at work in education and at home information technology is thus all about the application of wide variety of electronic technologies to the information handling activities that are central to the operation of any organization.”

Information technology is a technology which supports activities involving the creation, storage, manipulation and communication of information together with their related

methods, management and application. Therefore, information technology may be seen broadly based technology needed to support information systems.

IT is the technology which supports activities involving the creation, storage manipulation and communication of information; together with their related methods, management and application.

In the domain of library information service, by information technology is meant the use or application of various technologies.

Standard Bank Ltd IT division is based on three departments. They are

- Computer Hardware management
- Networking system connectivity
- Software
- Card division

4.3 Computer Hardware Management

Hardware, in the computer world, refers to the physical components that make up a computer system. There are many different kinds of hardware that can be installed inside, and connected to the outside, of a computer. Computer related hardware, old or new, are tested for smoothness in operation and this depends on various factors. The RAM (Random Access Memory units) need to be checked if they are working fine. In server computer power up at most times. In such cases, we usually check for a RAM or a power supply or a motherboard burnout. Step by step, we target the specific part that we would suspect and troubleshoot accordingly. The spoilt parts are usually changed with new available ones fixed. A monitor that is not working is usually sent to the vendor for repairs and we try to claim its warranty if it is still valid.^[2]

Here are some 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)
- Solid-State Drive (SSD)

- Optical Drive (i.e. BD/DVD/CD drive)
- Card Reader (SD/SDHC, CF, etc.)

Some common hardware that we might find connected to the outside of a computer:

- Monitor
- Keyboard
- Mouse
- Battery Backup (UPS)
- Printer
- Speakers

Some less common computer hardware, either because these pieces are now usually integrated into other devices or because they've been replaced with newer technology are

- Sound Card
- Network Interface Card (NIC)
- Expansion Card (Fire wire, USB, Thunderbolt, etc.)
- Hard Drive Controller Card
- Analog Modem
- Scanner
- Floppy Disk Drive
- Joystick
- 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:

Digital Modem (i.e., Cable Modem, DSL Modem, etc.).

- Router
- Network Switch
- Access Point
- Repeater

- Bridge
- Print Server
- Firewall

4.4 Adding Hardware

After installing the computer in the right place and having connected it to the domain through a network cord, what we check for next is whether the user would want a printer/scanner installed with the machine. Once the drivers for the printer/scanner are installed into the computer, the adjunct hardware can immediately be accessed.

Certain departments within the bank share a common printer or a scanner. To do so, the printer/scanner is firstly connected to a main computer and then shared into the domain. The main computer's IP address is tapped into through another computer to look for available shared devices. If a shared device on the main computer can be 'seen' from the other computer, then it's a matter of just right clicking with the mouse and connecting it.

4.5 Computer Peripheral Devices

A peripheral device is a hardware component that is attached to a computer in order to expand its abilities and performing additional features. Computers are able to interact with its external world using the peripherals Such as

- Motherboard
- Processor
- Hard disk
- Ram
- Power supply
- AGP card
- Monitor
- Keyboard
- Mouse
- USB Hub
- Pen drive

Now this peripheral device are describe here

4.5.1 Motherboard

A computer motherboard (also known as the main board) is one of the most crucial components of a computer. As the name suggests, a motherboard is the mother to all the other parts. In other words, everything in a computer connects to the motherboard. A motherboard is the primary circuit board in a computer.

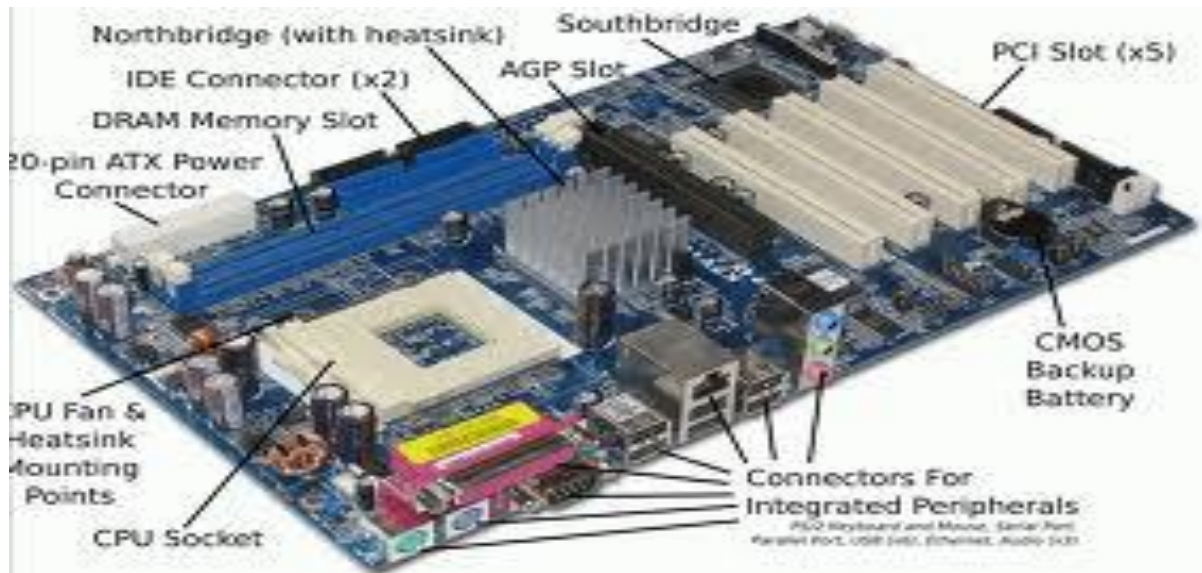


Figure 4.1: Motherboard

4.5.2 Processor

A processor is a primary chip inside a computer and it contains the digital circuitry. A processor executes all the programs and the instructions inside the computer. The processor is also embedded in the small devices and in the personal computers and is known as microprocessor. Its speed is measured in the Gigahertz. Higher the processor's speed, the more instructions it can process in less time. It is also known as the central processing unit (CPU).

4.5.3 Hard Disk

A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk Drive," those stores and provides relatively quick access to large amounts of data on an electromagnetically charged surface or set of surfaces. Today's computers typically come with a hard disk that contains several billion bytes (gigabytes) of storage.

4.5.4 RAM

Random Access Memory (RAM) provides space for your computer to read and write data to be accessed by the CPU (central processing unit). When people refer to a computer's memory, they usually mean its RAM. If you add more RAM to your computer, you reduce the number of times your CPU must read data from your hard disk. This usually allows your computer to work considerably faster, as RAM is many times faster than a hard disk.

4.5.5 Power Supply

A power supply is a device that supplies electrical energy to one or more electric loads. The term is most commonly applied to devices that convert one form of an electrical energy to another, though it may also refer to devices that convert another form of energy (e.g., mechanical, chemical, solar) to electrical energy. A regulated power supply is one that controls the output voltage or current to a specific value; the controlled value is held nearly constant despite variations in either load current or the voltage supplied by the power supply's energy source.

4.5.6 AGP

The Accelerated Graphics Port (often shortened to AGP) is a high-speed point-to-point channel for attaching a video card to a computer's motherboard, primarily to assist in the acceleration of 3D computer graphics. Since in 2004 AGP has been so progressively phased out in favor of PCI Express (PCIe). By mid-2009 PCIe cards dominated the market; AGP cards and motherboards were still produced, but OEM driver support was minimal.

4.5.7 Computer Monitor

A monitor or display (also called screen or visual display unit) is an electronic visual display for computers. The monitor comprises the display device, circuitry, and an enclosure. The display device in modern monitors is typically a thin film transistor liquid crystal display (TFT-LCD) thin panel, while older monitors use a cathode ray tube about as deep as the screen size.

4.5.8 Keyboard

The keyboard is an input device designed to enter text, characters and other commands into the computer.

4.5.9 Mouse

A device that control the movement of cursor or pointer on a display screen. A mouse is a small object you can roll along a hard, flat surface. Its name is derived from its shape, which looks a bit like a mouse, its connecting wire that one can imagine to be the mouse's tail, and the fact that one must make it scurry along a surface

4.6 Troubleshooting & Fixing 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 etc.

Problem Solutions

- If RAM is weak then PC can be restart. So need to replace or increase RAM.
- If RAM is not working for that reason display not getting. So need to clean
- dust
- From RAM and reset the RAM in slot. Or need to replace RAM.
- May be virus affected & RAM do not work properly
- Driver CD/DVD is damaged or do not matching with the relative computer
- Printer's tonner, Tephlon damaged & need to repair or replace it.
- Mouse sensor do not work properly
- Operating system crashed so new operating system should be installed.

- Need to reinstall the windows.
- Need to uninstall then install again.
- Need to use updated antivirus and clean the PC. Etc.

4.7 Installation of Windows 7

This procedure demonstrates how to install Windows 7 Professional. The procedure to install Windows 7 home edition is very similar to the professional edition. Since Windows 7 Pro is more advanced operating system, it will be used to demonstrate the installation procedure.

The best way installation Windows 7 is to do a clean installation. It is not difficult to perform a clean installation. Before you perform the installation I recommend that you check Windows 7 Compatibility List to ensure that your hardware is supported by 7. If your hardware is not on the compatibility list, you can check your hardware manufactures website to download the drivers for Windows 7

All versions of Windows 7 CD are bootable. In order to boot from CD/DVD-ROM you need to set the boot sequence. Look for the boot sequence under your BIOS setup and make sure that the first boot device is set to CD/DVD-ROM.

4.8 Network System Connectivity

In order to operate the PCs of Standard Bank in a real time environment & 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 SBLCORP.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 offices 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, Standard 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 also add to it the domain name by which the whole network is identified. Once completed, the computer immediately gets accessibility rights of the network.

4.9 Existing Network Setup in SBL

Almost every bank has their own internal internet setup, database and online application so that employees and listed user can access their own network categorized by the different network. Without networking system any individual computer cannot be able to access their own application.

Standard Bank Limited 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 SBL is encrypted by IPsec VPN from branch router to ITD router.

Standard Bank Limited Information Technology Division has data center where communication rack is installed, Network Operation Center (NOC) which is fulfilled by dynamic and reflexive devices. The central office and all branches of SBL are connected with LAN. IT department has launched a branch-wide to complete planned networking. Head office and 90 branches are connected to the data center through fiber and VSAT connectivity. All branches are secured in LAN networking.^[3]

4.10 Network Devices in IT Division of SBL

Media Converter

A fiber media converter is a simple networking device that makes it possible to connect two dissimilar media types such as twisted pair with fiber optic cabling. Standard Bank Limited Information Technology division is used the 10/100 Fast Ethernet Media Converter series. These are designed to a fast copper base via a fiber optic cable and developed to fill the huge demand of network placement and expand in a position to a maximum distance of up to 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 operations 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.



Figure 4.2: Media Converter

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 router’s 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. Routers are usually used to connect a local area network to a wide-area network (a LAN to a WAN) but can also be used to segment large local area networks (LAN’s). Standard Bank Ltd IT division use Cisco 2811 series core router. The Cisco 2811 Integrated Services Router is part of the Cisco 2800 Integrated Services Router Series which complements the Integrated Services Router Portfolio.

The Cisco 2811 Integrated Services Router provides the following support:

- Wire-speed performance for concurrent services such as security and voice, and advanced services to multiple T1/E1/xDSL WAN rates
- Enhanced investment protection through increased performance and modularity
- Increased density through High-Speed WAN Interface Card Slots (four)
- Enhanced Network Module Slot
- Support for over 90 existing and new modules
- Support for majority of existing AIMs, NMs, WICs, VWICs, and VICs

- Two Integrated 10/100 Fast Ethernet ports
- Optional Layer 2 switching support with Power over Ethernet
- **Security**
 - On-board encryption
 - Support of up to 1500 VPN tunnels with the AIM-EPII-PLUS Module
 - Antivirus defense support through Network Admission Control (NAC)
 - Intrusion Prevention as well as tasteful Cisco IOS Firewall support and many more essential security features
- **Voice**
 - Analog and digital voice call support
 - Optional voice mail support
 - Optional support for Cisco Call Manager Express (Cisco CME) for local call processing in standalone business for up to 36 IP Phones
 - Optional support for Survivable Remote Site Telephony support for local call processing in small enterprise branch offices for up to 36 IP phones



Figure 4.3: Cisco 2811 Series Router

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 works. A switch is a high-speed multiport bridge. This is why bridges are no longer needed or manufactured. Switches do what bridges 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 Gbps speed. Switches are connected with the Communication rack. It is Designed for simplifying the operation, they provide scalable, secure and energy-efficient banking application operations with intelligent services and.^[11]



Figure 4.4: Cisco 2960 Series Switch

Firewall

A firewall is used to protect more secure network from a 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 layers and can even understand Layer 7 – the Application Layer.^[6]

4.11 WAN Connectivity of SBL

- | | |
|---|--|
| ✓ Link3 Technologies | Branch Fiber/Radio/Internet Connectivity |
| ✓ BracNet | Branch VSAT Connectivity |
| ✓ MetroNet Limited | Branch Fiber/Radio Connectivity |
| ✓ Alap Communication Internet Broadband Providers | |
| ✓ BrachNet Limited | Branch Fiber/Radio Connectivity |
| ✓ DhakaCom Limited | Branch Fiber/Radio/Internet Connectivity |

4.12 Bandwidth Requirement for Branches & Head Office of SBL

From 256 kbps to 512 kbps bandwidth is used to the branches and Head Office. It can be varied by the users and sizes of the branches.

4.13 LAN Connection at SBL IT division

Standard 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 patch 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 installs in managed way in the network rack. The next frame is used for wiring in the data center to connect. [5]

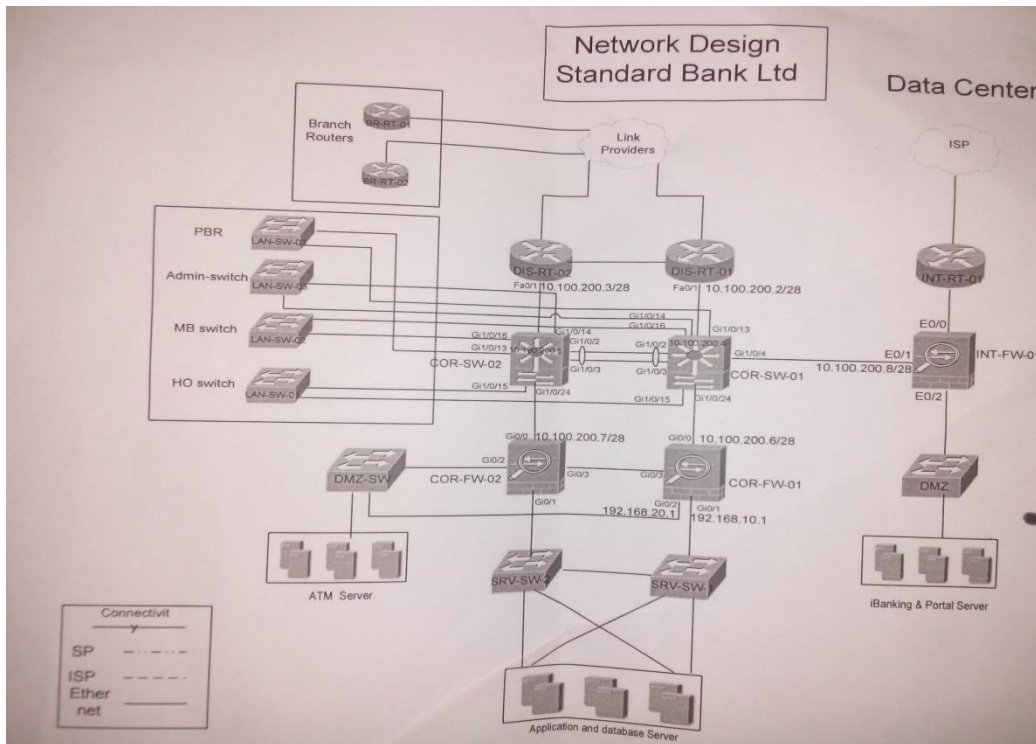
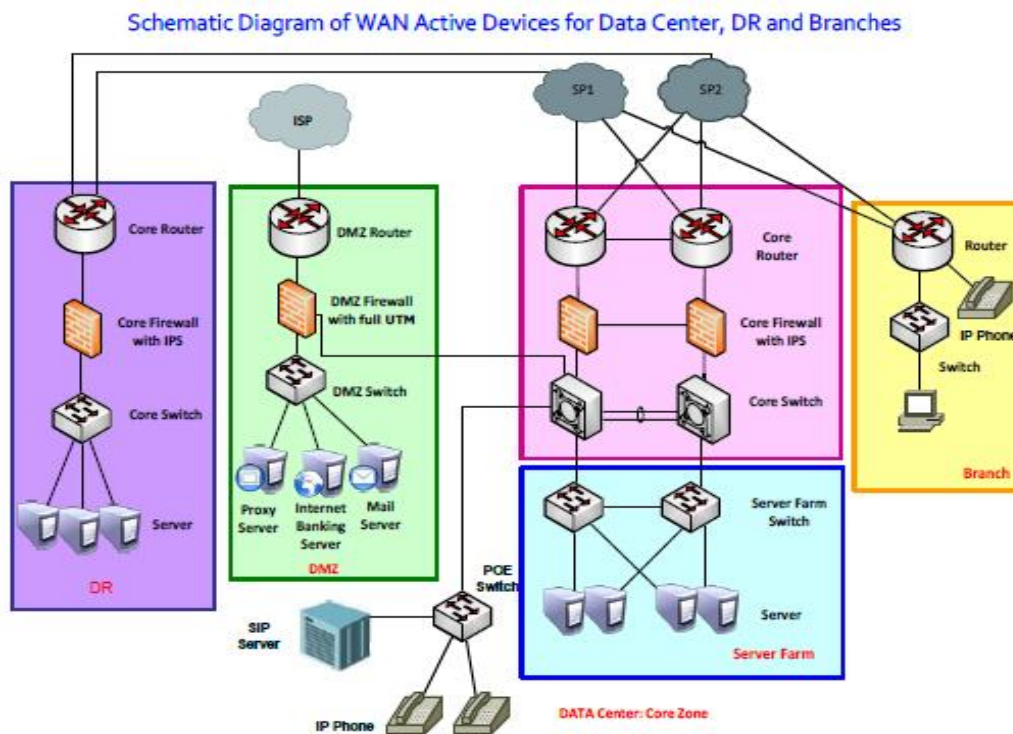


Figure 4.5: Network Design of SBL

4.14 WAN Connection of SBL

A wide area network (WAN) is a network that covers a broad area (i.e., any telecommunications network that links across metropolitan, regional, or international boundaries) using leased telecommunication lines. Business and government entities utilize WANs 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 businesses, governments, organizations.

Figure 4.6: WAN Connection Active Devices for Data Center & Branches.



To understand the standard data communication among the branches, Head Office and IT Division, SBL follows the schematic WAN diagram in their Data Center.

4.15 Existing Protocol in SBL

3DES Encryption

In cryptography, **Triple DES (3DES** ^[1]) is the common name for the Triple Data Encryption Algorithm (TDEA or Triple DEA) block cipher, which applies the Data Encryption Standard. *3DES*, a mode of the DES encryption algorithm that encrypts data three times. Three 64-bitkeys are used, instead of one, for an overall key length of 192 bits (the first encryption is encrypted with second key, and the resulting cipher text is again encrypted with a third key). Triple DES is designed to provide a relatively simple way to increase the size of the central grants encryption to protect against such attacks, without designing anew block cipher algorithm.

4.16 OSPF for Tunnel

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 specifically 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 seconds.

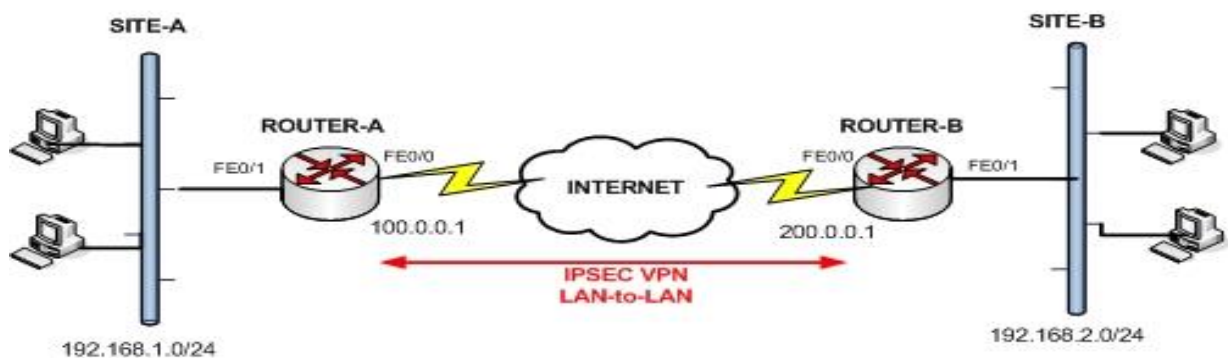


Figure 4.7: OSPF Structure

4.17 Centralized Internet solution (DMZ Firewall)

STANDARD Bank Limited is one of the prominent Bank in Bangladesh in remittance service, credit card service, general and online banking service. Now a day's Internet

service is an essential service anywhere. E-banking is the most essential part in our daily busy life where E-mail is most important thing part of business. All banks report to the Bangladesh Bank including BFS, SB, and foreign exchange currency by the internet service. Trading or any types of economic activities are dependent on Internet service.

Internet Service or Online communication in Bangladesh is not smooth and considered it as under development. Till now internet service is not available at remote area. All branches of SBL could not meet all requirements of online service at mobile operator. In the previous setup, branch has used two or more edge modem with different operators but because of network problem, low signal and bandwidth inefficiency they could not afford good facility. IT departments take the step and proposed to management to provide centralized Internet services across the WAN connection to existing branches and Head Office. Then management of SBL has permitted the proposal and condenses the existing modem and takes the broadband connection in Head Office and all branches. They also decided to acquire and install the most modern firewall to protect the bank's data and secure browsing. And that time It Division of SBL has attained and magnificently installed PALO ALTO2050 NEXT GENERATION FIREWALL to secure the online banking application, which is able to filter all incoming and outgoing containing data. It provides to secure the user's data from the network liabilities and unauthorized access to the network. Users are allowed to access the internet by their category.

4.18 Feature of DMZ Firewall

PALO ALTO 2050 is used a DMZ Internet Firewall for the internet solution in NBL IT Division. High speed internet access distributions within large branch offices and medium sized enterprises. It manages network traffic movements using dedicated processing and memory for networking, security, threat avoidance and management. By creating a high speed plane the pathway between dedicated workstations and the departure of data. It controls to ensure that management access is always available, regardless of the traffic load.

Application Identification

- ✓ Identifies more than 950 applications regardless of port, protocol, SSL encryption or indirect tactic employed.
- ✓ Permits positive execution application usage policies, allow, deny, schedule, check and apply traffic shaping.
- ✓ Graphical visibility tools enable simple and in-built view into application traffic.
- ✓ By identifying the application and category wise filtering them according to the rules
- ✓ Applied.



Figure 4.8: Functional Procedure of DMZ Firewall

4.19 Virtual Area Network (VLAN)

VLAN is a logical group of workstations, 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.

Data center and IT Division of NBL is used VLAN to reduce the trafficking of the network, secure the network and protect network from spam and spy. It eliminates inactivity in the network, which protects network properties and increases 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 limitations. It is similar to IP subnet. VLAN is used to segment a single broadcast domain to multiple domains in layer-2 switched network.

Layer-2 switched network can be divided to create a number of separate broadcast domain switches are interrelated so that different packets can be passed between them through one or more routers. In layer-2 networks, every part of the network has its own collision area but all segments are in same broadcasting area.

A Layer-3 switched network is used to section of a broadcast domain to multiple broadcast domains. All ports on a switch are in the same broadcasting domain

Types

Three types of VLAN are definite, depending on switching standards and the level of the VLAN is directed:

- A level 1 VLAN (also called a Port Based VLAN): Explains a virtual network allowing to the connection ports on the switch;
- A level 2 VLAN (also called a MAC Address-Based VLAN):It consists in the definition of a virtual network based on the MAC address of the station. This type of VLAN is much more flexible than the port based VLAN.
- A level 3 VLAN: Provides great flexibility in configuring the switch automatically changes when transferring station. On the other hand there may be minor degradation in performance since the information controlled in the packets must be analyzed more closely.

Advantages of VLAN

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

- VLAN reduces the need for having introduced the network routers contain broadcast traffic.
- Captivity of a broadcasting domain reduces network traffic. If a router is not connected between the VLANs, the end-stations of a VLAN cannot communicate with the end-stations of the other VLANs
- Broadcasts 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 broadcasts can reach the network segments which are so far where a particular broadcast has no scope. A

layer 3 device (typically a Router) is used to segment a broadcast domain. If we segment a large LAN to smaller VLANs we can reduce broadcast traffic as each broadcast will be sent on to the relevant VLAN only.

- VLANs provide greater network security. In a VLAN network environment, with multiple broadcast domains, network administrators have control over each port and user. The network administrator controls each port and whatever resources it is allowed to use.
- Cost savings result from less need for expensive network upgrades and more efficient use of existing bandwidth and uplinks.
- Dividing flat Layer 2 networks into multiple logical workgroups (broadcast domains) reduces unnecessary traffic on the network and boosts performance.

Disadvantages of VLAN

- More difficult to manage VLAN rather than manage only 1 LAN.
- Traffics between VLAN must go through a router. That means it has to need to buy a router, then setup the routing protocol and trunk.

4.20 Card Division

ATM

Standard Bank Limited has already taken initiative to introduce branchless banking services through alternative delivery channels such as Internet Banking, SMS/Alert Banking, ATMs and Branch POS terminals so that the customers can perform their banking transactions anytime and anywhere. In order to make the above services smoother, they have developed the below operating procedure which will help the branch in communicating with ADC Department for their respective services.

Important Issues for ATM

The branches attached to the booth will maintain the ATM and ATM vault and branch should assign minimum two or more persons to maintain the ATM and its operations.

ADC Department or ATM machine vendor will hand over the two Keys of ATM vault and other keys to the Branch in-charge.

ADC Department or ATM machine vendor will provide training about ATM operation like replenishment of cash transactions related to replenishment, ATM management etc.

After cash replenishment the following transactions should be performed manually in STELAR.

For 1st time:

- inward
- Dr-Cash in ATM-LCY (10100-02)
- Cr-Cash in Hand-LCY (10100-01)
- For 2nd time and onward:
- Dr-Cash in Hand-LCY (10100-01) (For remaining cash in ATM, return to branch
Cr-Cash in ATM-LCY (10100-02) cash in hand)
- Dr-Cash in ATM-LCY (10100-02) (For today's total cash feeding)
- Cr-Cash in Hand-LCY (10100-01)

Here it is mentioned that the following actions should be performed in the time of replenishment

For The 2nd Time:

- Teller will replenish the ATM vault and give input at ATM machine.
- Give input to STELAR
- Cassette-1,2,3 will be fed by 500 taka note and Cassette-4 will be fed by 1000 taka note Then start ATM.

For The 3rd Time:

- Other jobs to be performed from the 2nd day and onwards:
- Cash replenishment
- Keep records of the journal report
- Retrieving cards jammed or retained by ATM, and take necessary actions to return the card to the actual card holder.
- Replacing printer paper journal or diskette journals.

For all kinds of ATM related problems, branch must contact with ADC Department through Branch E-mail ID. ^[8]

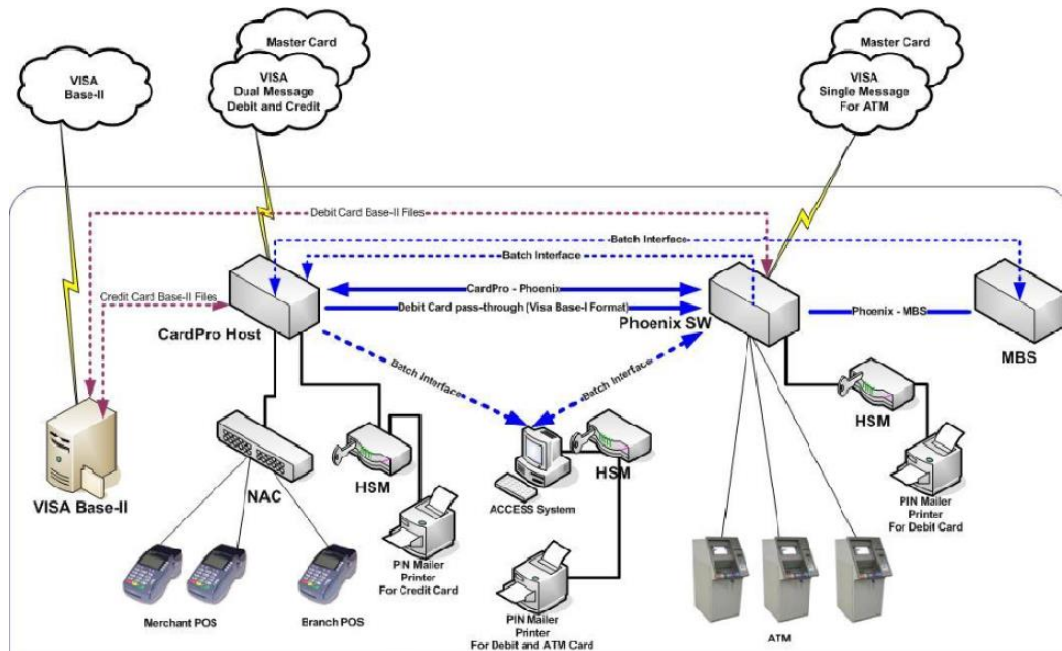


Figure 4.9: Bank's Card Management Architecture

4.21 Online Banking & Internal Communication

To meet the interest of the customer's Standard Bank Ltd. It has started Internet banking and this has helped the customers to check the balances of their account through internet or even cell phone. The staffs or employees of the bank communicate through Mail System internally. Online banking (or Internet banking or E-banking) allows customers of a financial institution to conduct financial transactions on a secured website operated by the institution, which can be a retail bank, virtual bank, credit union or building society.

SBL I-Banking

Features of SBL I-Banking

A bank customer can perform non-transactional tasks through online banking, including -

- viewing account balances
- viewing recent transactions
- downloading bank statements, for example in PDF format
- viewing images of paid cheque
- ordering cheque books
- download periodic account statements
- Downloading applications for M-banking, E-banking etc.

Facilities/Functions

- Bank customers can transact banking tasks through online banking, including -

- Funds transfers between the customer's linked accounts
- Paying third parties, including bill payments (see, e.g., BPAY) and telegraphic/wire transfers
- Investment purchase or sale
- Loan applications and transactions, such as repayments of enrollments
- Register utility billers and make bill payments
- Financial institution administration
- Management of multiple users having varying levels of authority
- Transaction approval process
- the process of banking has become much faster

Security

Security of a customer's financial information is very important. Standard Bank Limited have set up various security processes to reduce the risk of unauthorized online access to a customer's records, but there is no consistency to the various approaches adopted.

Though single password authentication is still in use, it by itself is not considered secure enough for online banking in some countries. Basically there are two different security methods in use for online banking.

The PIN/TAN system where the PIN represents a password, used for the login and TANs representing one-time passwords to authenticate transactions. TANs can be distributed in different ways; the most popular one is to send a list of TANs to the online banking user by postal letter. The most secure way of using TANs is to generate them by need using a security token. These token generated TANs depend on the time and a unique secret, stored in the security token (two-factor authentication or 2FA). Usually online banking with PIN/TAN is done via a web browser using SSL secured connections.

4.22 Software

The name of the core banking software of SBL is STELAR. It is developed by the ERA Info Tech Ltd. The platform of STELAR is oracle-11g. In software zone the main purpose of the worker is to support all the branches through STELAR. STELAR is an integrated State-of-art-the Retail Banking System that provides a complete solution for medium to large banks. A strong robust and suit of functional modules covering savings and checking accounts, Loans and deposits, Remittances and Trade Finance, integrate seamlessly with

back office General Ledger, providing an excellent Cost effective solution for multi-branch operations.^[10]

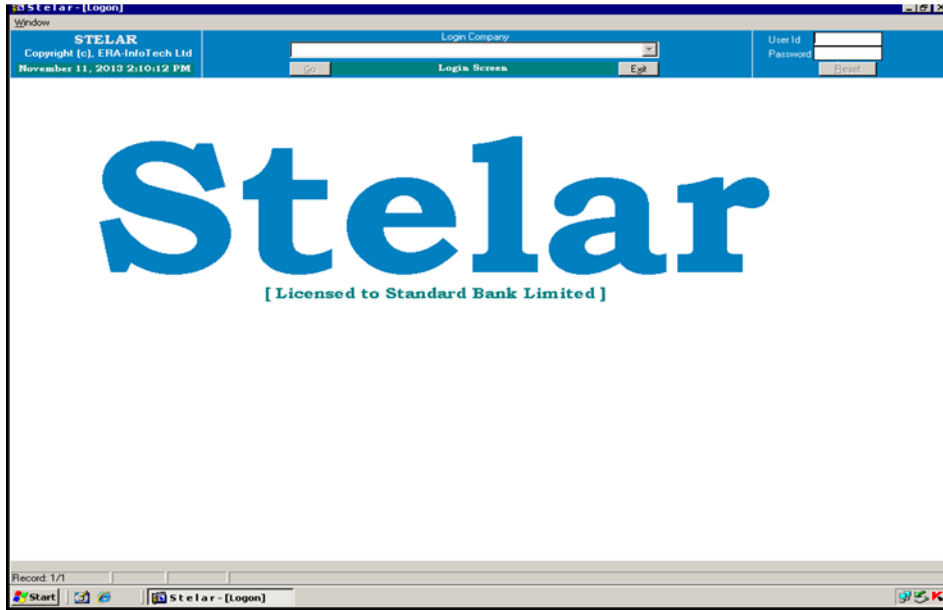


Figure 4.10: Stelar Software Home

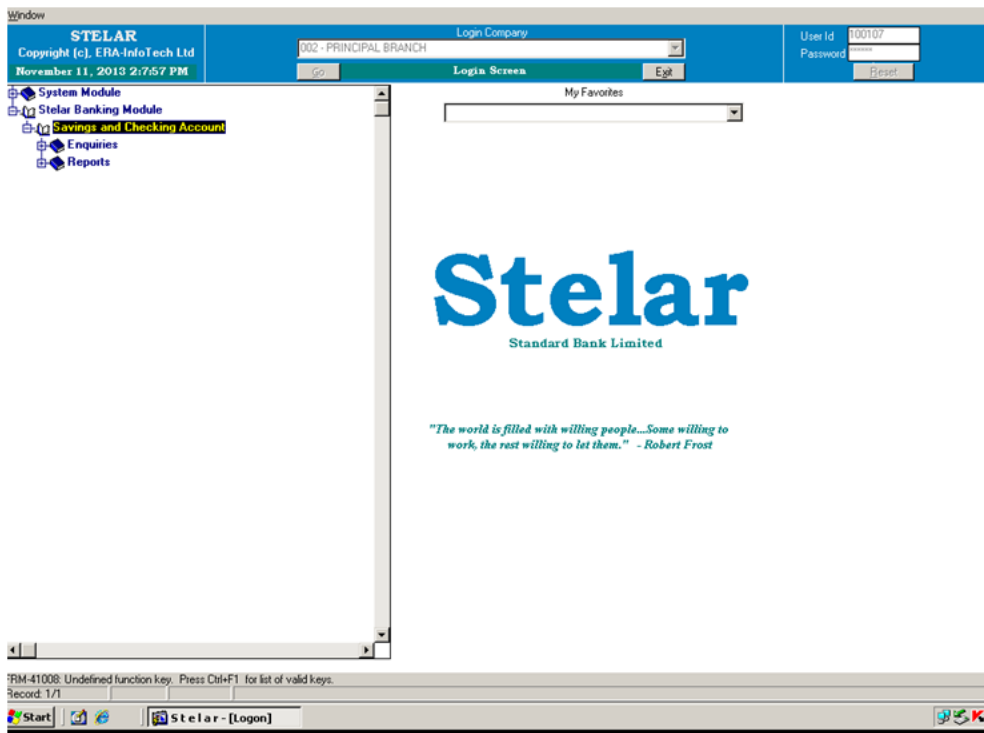


Figure 4.11: System Module

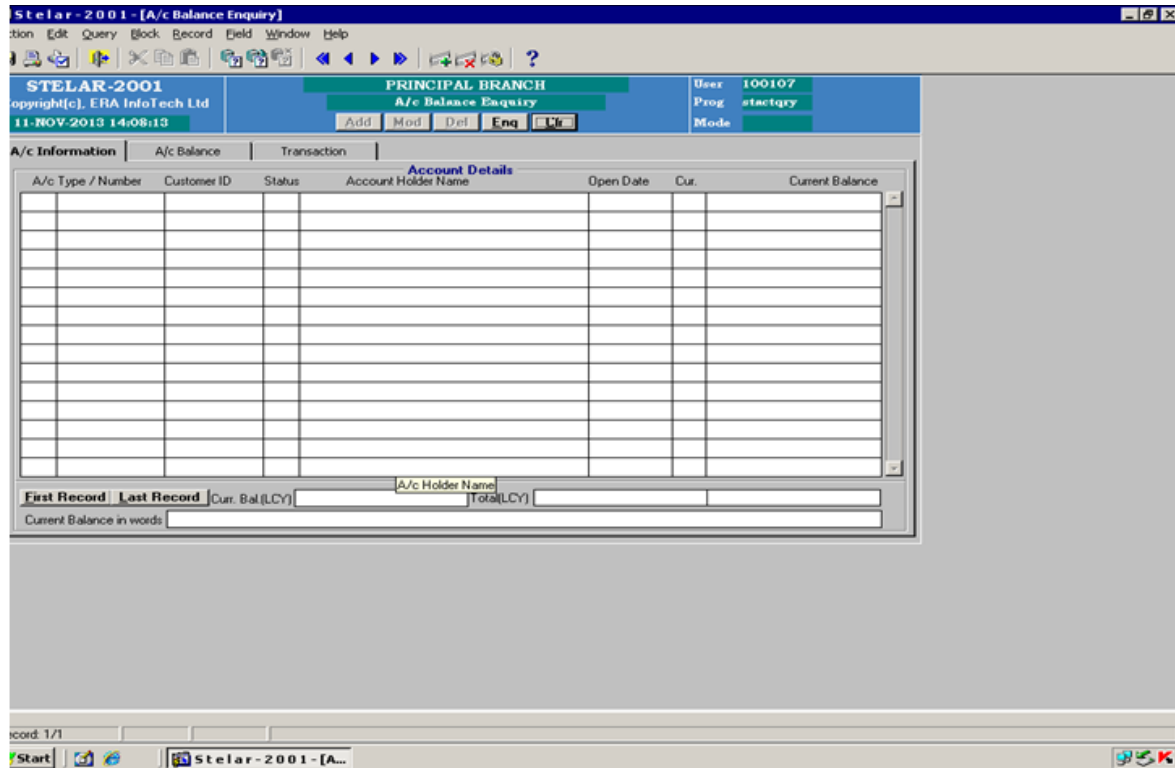


Figure 4.12: User Account Balance Enquiry

4.23 Role of IT

Information technology is working as a principle role in the global economy. ICT gives great benefit to have the facility to provide information world-wide great benefit to have the facility to provide information worldwide. It will be the dynamics for the new era. Today, the IT gives communication and methodical power that organizations need to implement trade and management companies globally with much comfort. Because of the present development of information technology they can synchronize their worldwide network of suppliers, distributors and customers, organizations have developed the global information system that a business can run automatically with the time. IT denotes the communications of hardware and software used depending on the requirements of the enterprise. And this is how Information Technology plays an important role in the present world.

CHAPTER 5

TRAINING OF STANDARD BANK

5.1 Training at Standard Bank Ltd

Standard Bank employs a large number of employees for performing various jobs. Some of them are recoverers. They need more knowledge and skill for better performance of jobs. They are, therefore, in need of proper training to contribute to the achievement of the organizational goals. There are some jobs that require little or no training but many of them need to be performed by adequately training. The use of modern technology has created new jobs in the organization, which required training. Training involves the change of skills, knowledge, attitudes or behavior of employees. Although training is similar to development in the methods used to attract learning; they differ in time frames. Training is more present day oriented; its focus is on individuals' current jobs, enhancing those specific skills and abilities to immediately perform their jobs. Employee development, on the other hand, generally focuses on future jobs in the organization. Training differs from education. Training is concerned with increase in knowledge, skills and abilities of the employees in doing a particular job: It has a narrow aim limited to increase in knowledge and skill related to a job. Education, on the other hand, broadens the mental faculties and horizon of knowledge. ^[7]

5.2 Types of Training

Foundation courses have two parts: theoretical training in the academy and job rotation. The officers on probation are required to undergo both in a period of one year. During this period, three-phased training programmed is effective. On theoretical training say, general banking, the officers are required to undergo rotation in general banking activities under the supervision of Network.

5.3 Mail Server

A computer is a network that provides "post office" facilities. It stores incoming mail for distribution to users (message store) and forwards outgoing mail through the appropriate channel (message transfer agent). The term may refer to just the software that performs this service, which can reside on a machine with other applications or to a stand-alone computer dedicated only to the mail function.

Advantage of Mail Server

- Automated Emails
- Reliable and Secure

- Use of Graphics
- Advertising Tool
- Cheap Service
- Advantages of Technological Development

Disadvantage of Mail Server

- Spam
- Hacking
- Not Suited for Business
- Viruses
- Crowded Inbox
- Lacking that Personal Touch
- Internet Access is required
- Misinterpretation Lengthy Mails
- Checking the Inbox Regularly

Configuration of Mail Server

1. Select Start > Programs > Mail Server > Mail Server Administrator to open Administrator-Connect window. If I have checked the box Run Mail Server Administrator in the previous step, I can skip this step
2. Ensure that the Host name local host is selected and click Connect. If I don't see it already listed, click and enter local host for the Name field

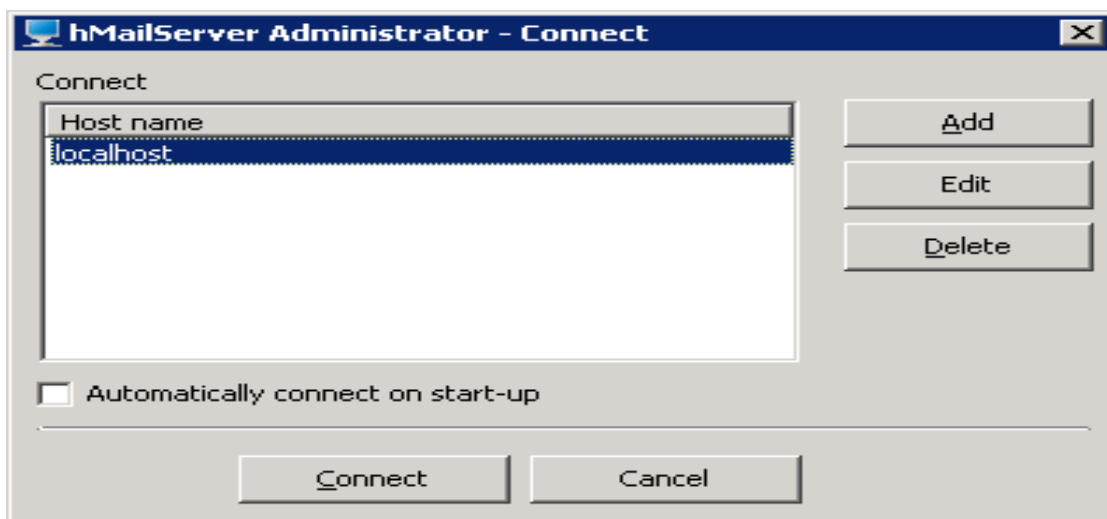


Figure 5.1: Server Administrator

3. Click on the Add domain... button and the Domain screen will be opened

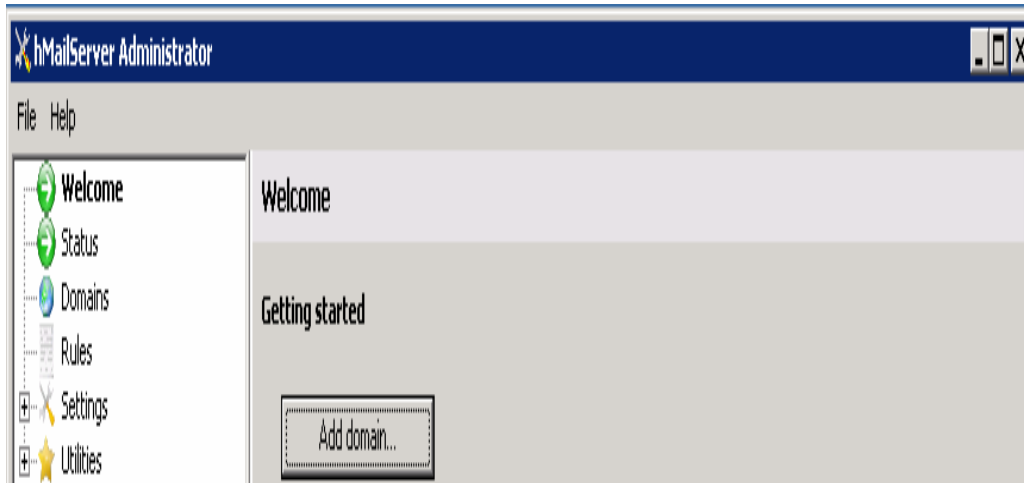


Figure 5.2: Mail Server Administrator

4. Enter our machine name for the Domain name and click Save

5. Enter the following under General tab

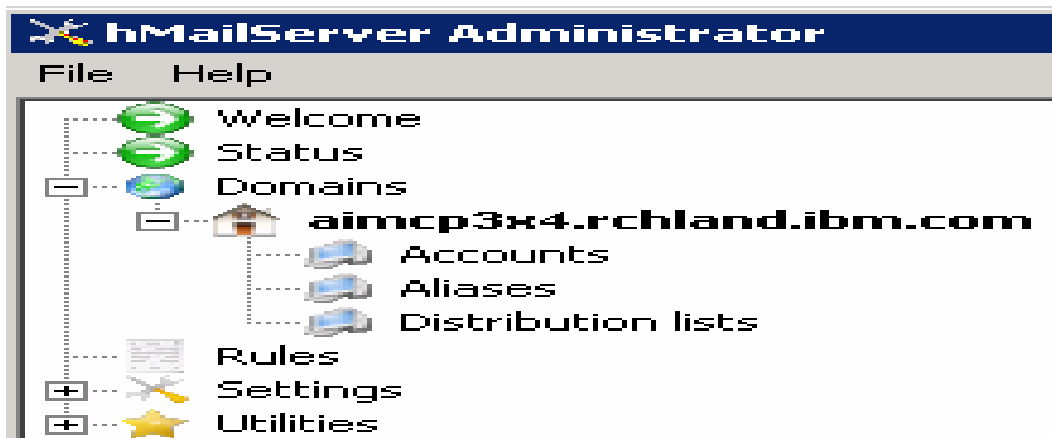


Figure 5.3: Mail Server Administrator

6. Click **Save** at the bottom I will now see the account created under **Domains > domain > Accounts** as shown below

7. Create another user

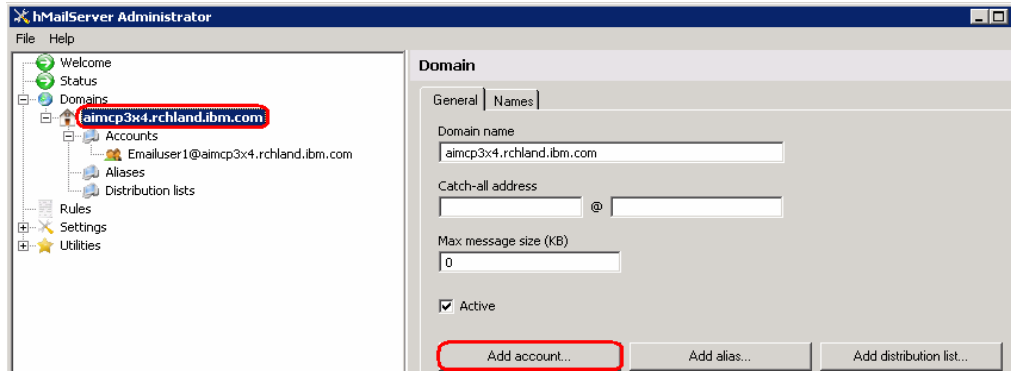


Figure 5.4: Server Domain

Select **Domains > domain** on the left. The Domain window will be opened on to our right side. Click on **Add account...**

8. Enter the following under General tab of Account: @<domain> window:

9. Select **Settings > Protocols > SMTP** on the left pane to open SMTP window on the right side

10. Select the **Delivery of e-mail** tab and see that the **TCP Port** is 25.

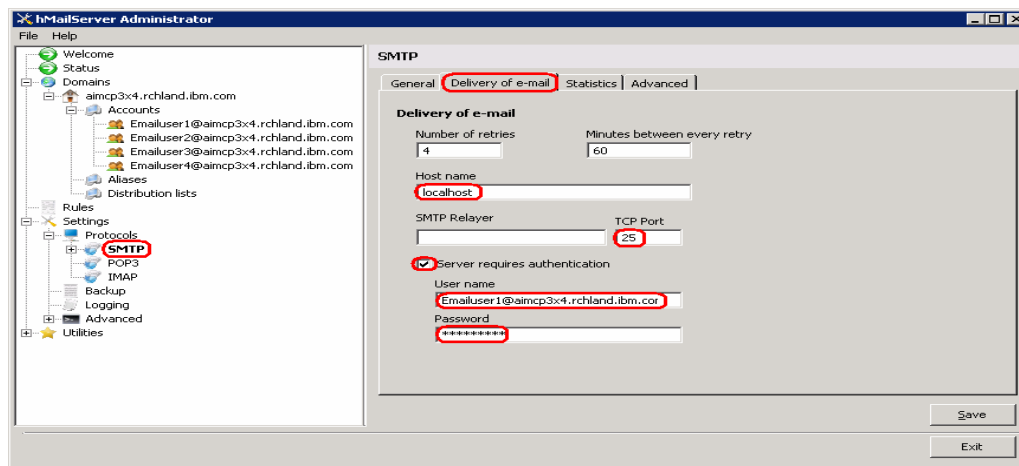


Figure 5.5: Server SMIP

11. Enter local host for Host name field

12. Select the check box next to Server requires authentication and enter the following Username:<user>@<domain name

13. Click Save at the bottom

14. Select Settings > Protocols > POP3 on the left pane and ensure that I use the unused port number for the POP3 Port if the default port number 110 is already being used

15. Select Settings > Protocols > IMAP and ensure that I use the unused port number for the IMAP port if the default port number 143 is already being used

16. Finally hit the Exit button to close the Administrator window

5.4 Proxy Server

A proxy server acts as a middleman between two networks. One network is typically the public Internet, the other is often a group of client computers sharing a single Internet connection.

Advantage of Proxy Server

- Act as caching server to make you load a webpage faster.
- Masking your real IP address.
- Anyone can add more.
- SQL Server authenticates users much faster than active Directory.

Disadvantage of Proxy Server

- SQL server stores passwords in clear-text
- Proxy accounts are less secure than storing all user passwords in active directory.

Software Requirements

Before I install Proxy Server I should also have the following software installed in the order listed below. Service packs.

- Windows NT Service Pack 4 or 5
- MS Internet Explorer 4.0 or greater with SP1 or greater
- Windows NT Option Pack 4 and choose “Upgrade Plus”

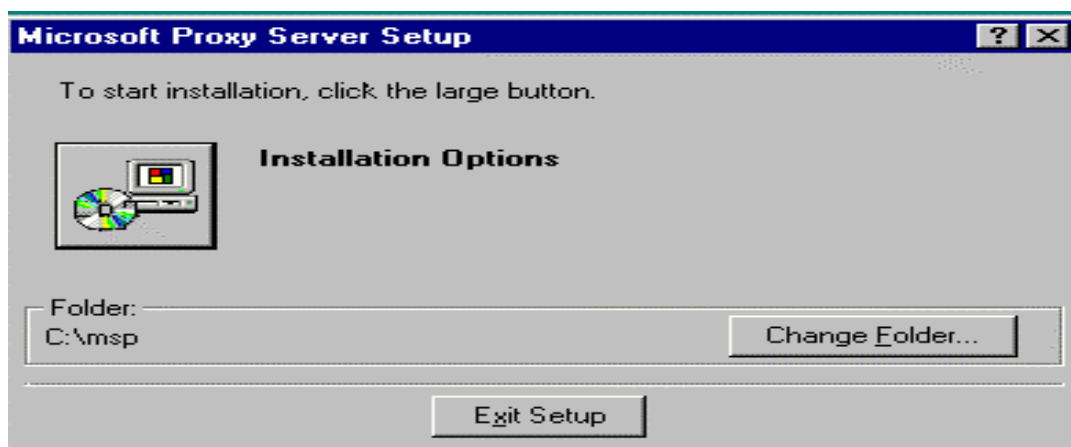


Figure 5.6: Installation Options

Reapply Service Pack 4 or 5

Proxy Server Configuration

1. Insert the Proxy Server CD into your NT server and run the setup.
2. Click on the installation button on the left-hand side.

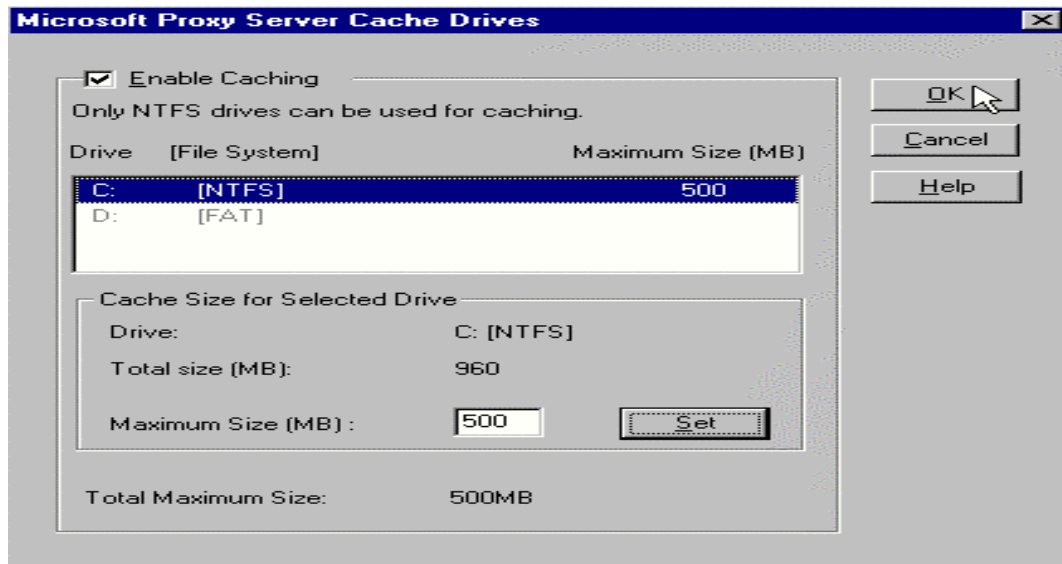


Figure 5.7: Proxy Server Cache Drive

3. A screen will appear with several options. Check load from NT internal routing table and load from specific IP interfaces. Then choose the network interface card with your private address as shown.
4. Configure the Local Address Table. The next screen you see should be an empty LAT

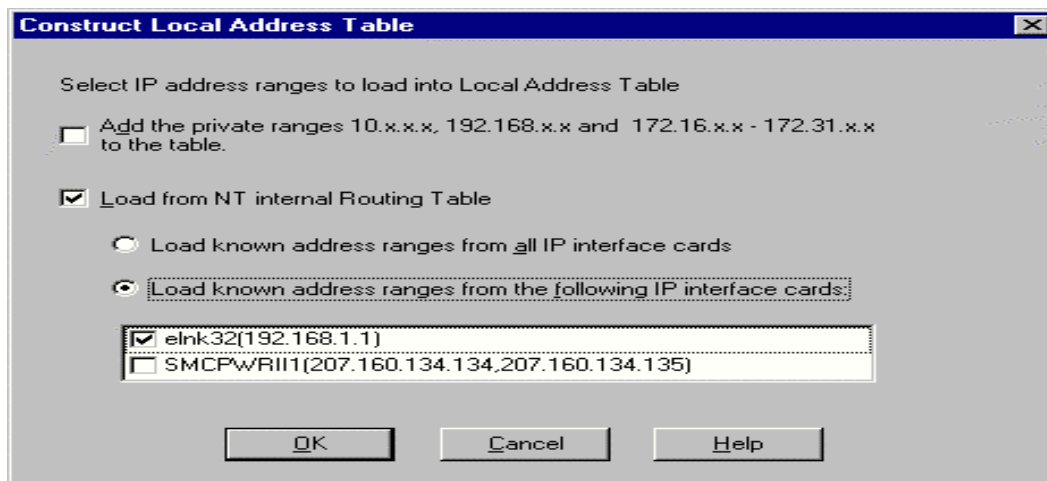


Figure 5.8: Construct local address

5. A table should now appear that includes the networks bound to your private interface. If necessary you can manually edit the table to include additional networks. For example if you have a downstream router attached to your network that includes the network 192.168.2.0 you could manually add that network to the table.

6. Configure the settings for client connections. In general, choose connect by computer name. Some configurations such as setting up a mail server behind the Proxy Serve may require a connection by IP address.

7. Choose automatically configure Web browser during client setup so that when install the Winsock Proxy client on each workstation it will look for a browser and configure it at the same time.



Figure 5.9: Server Domain

5.5 Installing Antivirus

Antivirus installation is another important aspect. Currently “Kaspersky Antivirus” is being installed in every computer within the network and the updates to the software are downloaded from one of the main servers of the Technology User Infrastructure (TUI) Department. New virus definitions are downloaded by the Network Team and stored in the antivirus server so that later on, every client using antivirus can automatically update its virus definitions and stay protected from malware. Every new and repaired computer is installed with the software as it is a must in order to maintain network security. This antivirus is performing under a network. For this reason there must be a server to maintain the client computer’s operation perfectly.

The following steps are required to install Kaspersky Antivirus.

5.5.1 CONFIGURE SLAVE SERVER

There are few steps to deployed Slave Server

Step 1

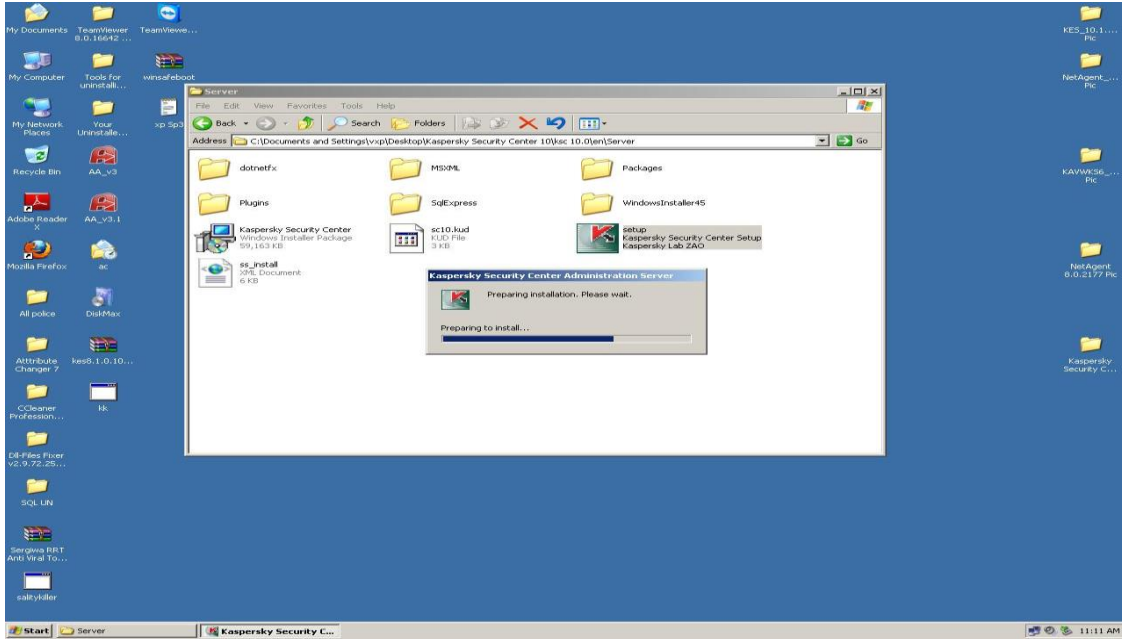


Figure 5.10: Prepare to Install Slave Server

Step 2

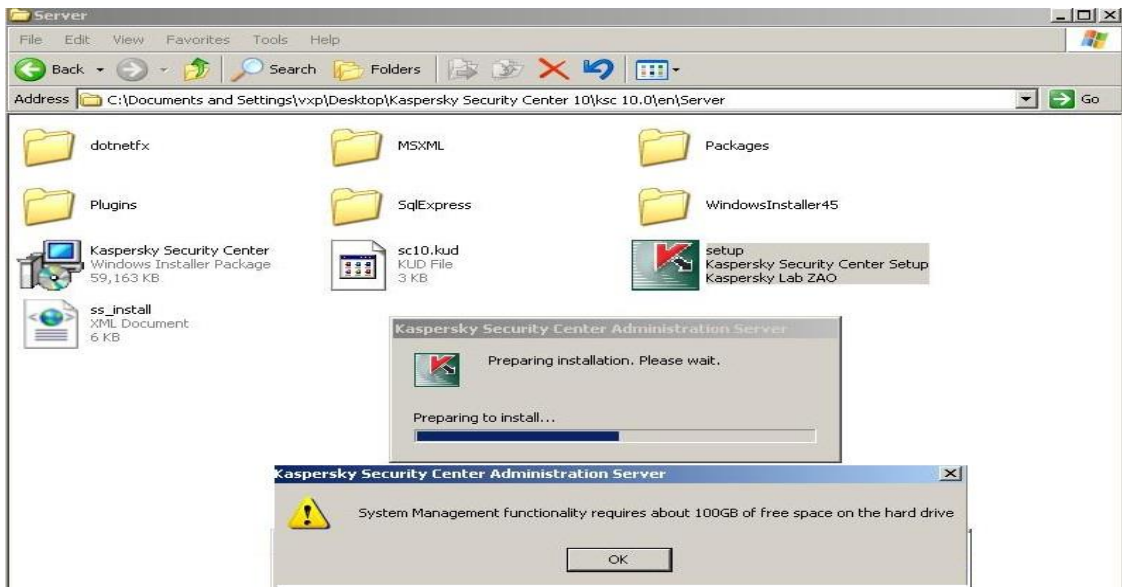


Figure 5.11: SMF Requires 100 GB Free Space

Step 3

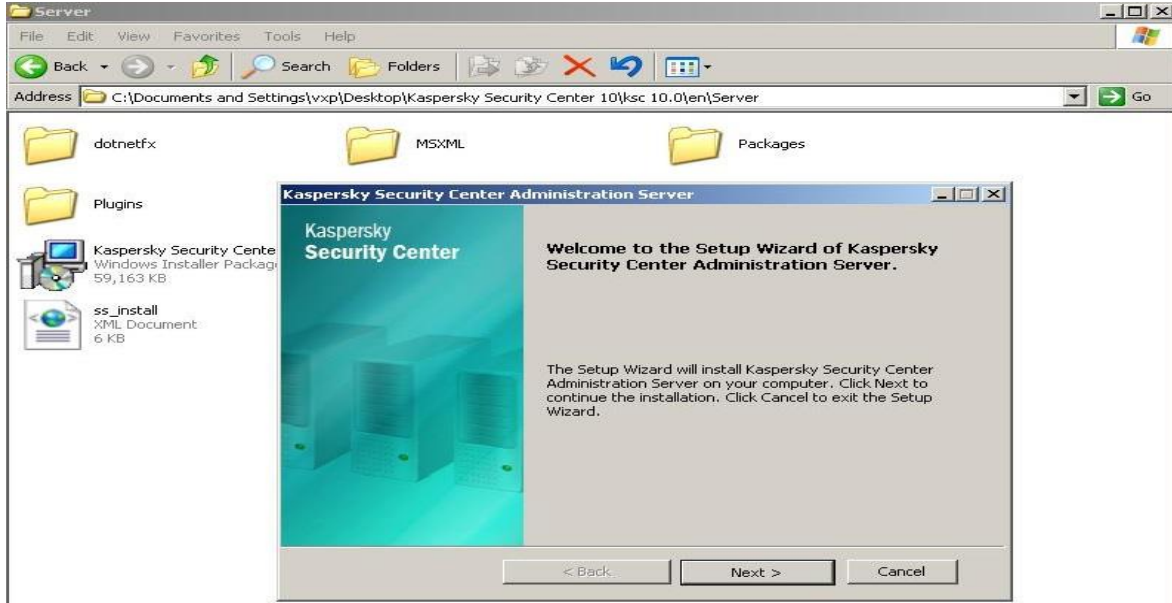


Figure 5.12: Security Centre Administration Server

Step 4

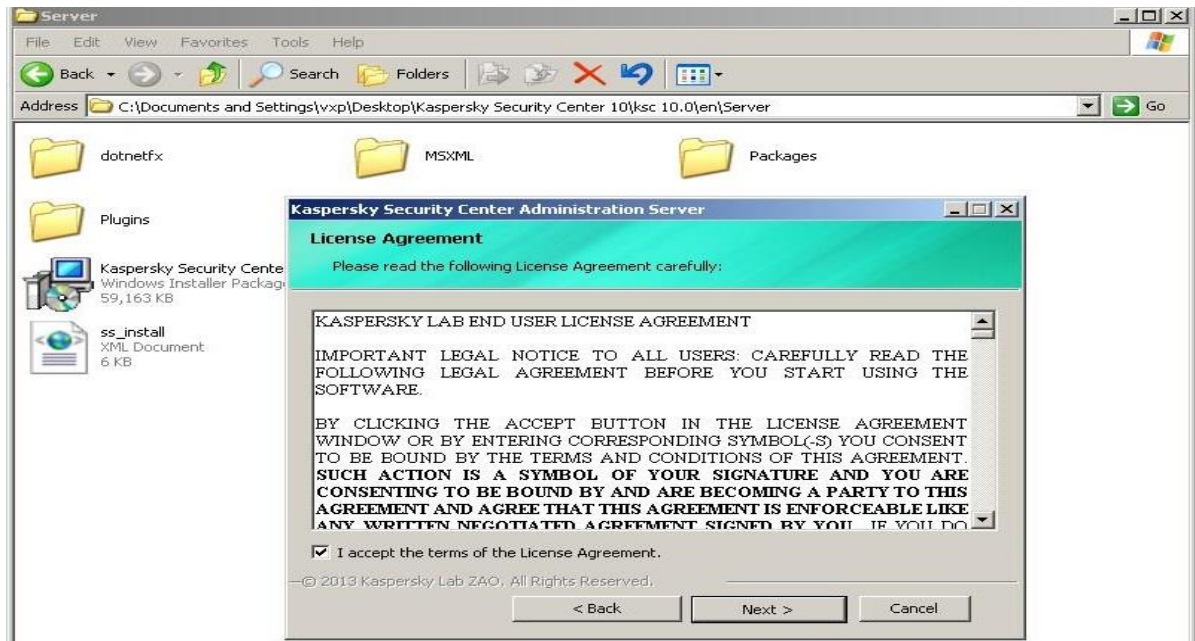


Figure 5.13: Acceptance State of the License Agreement

Step 5

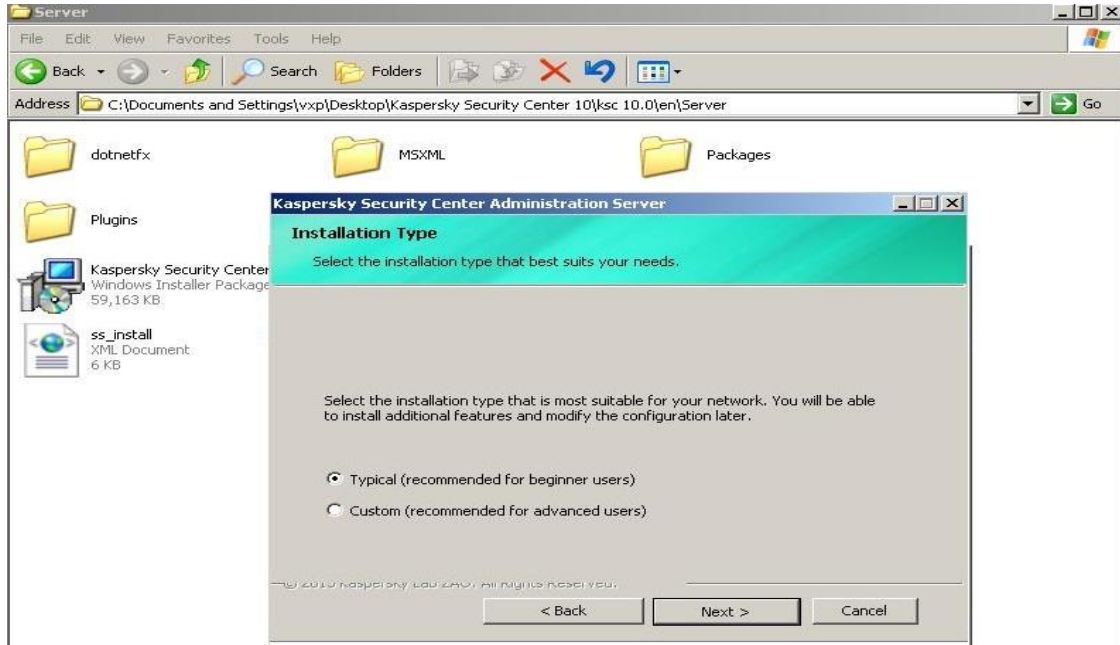


Figure 5.14: Installation Mode

Step 6

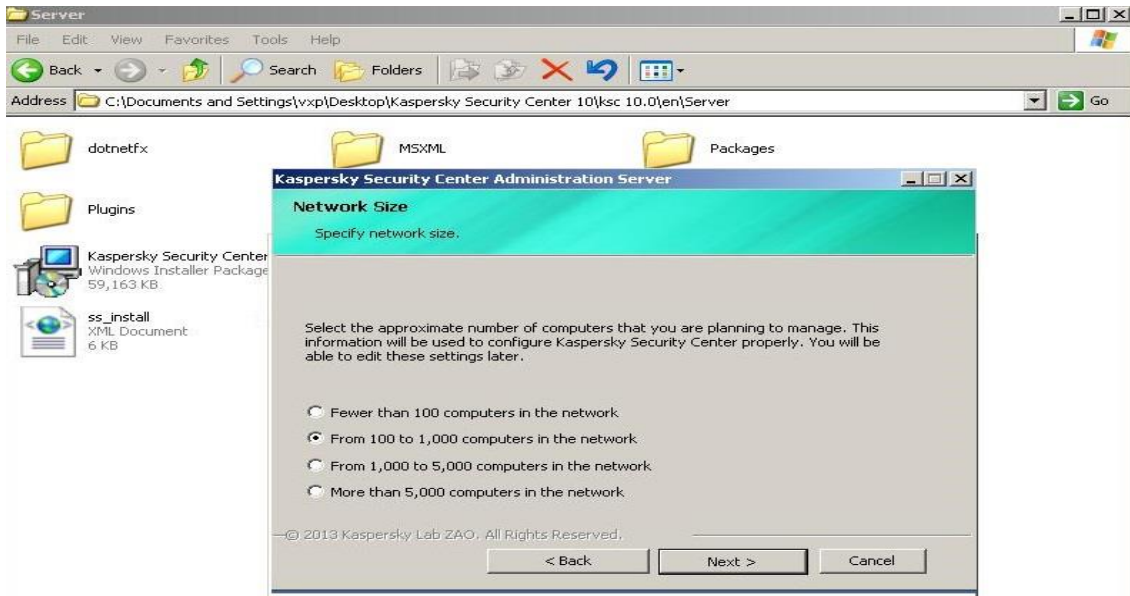


Figure 5.15: Network Size of Administration Server

Step 7

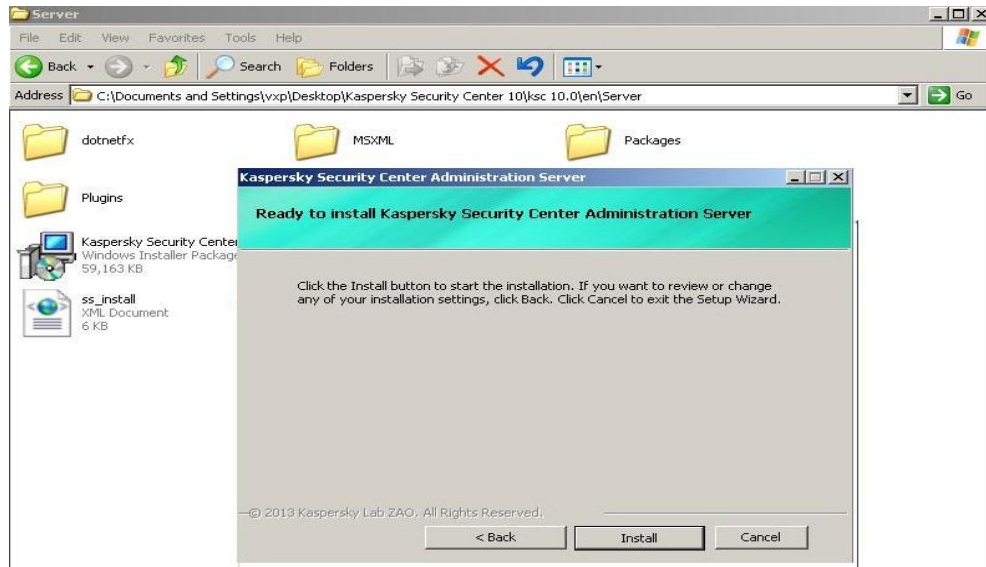


Figure 5.16: Ready to Install Security Centre Admin Server

Step 8

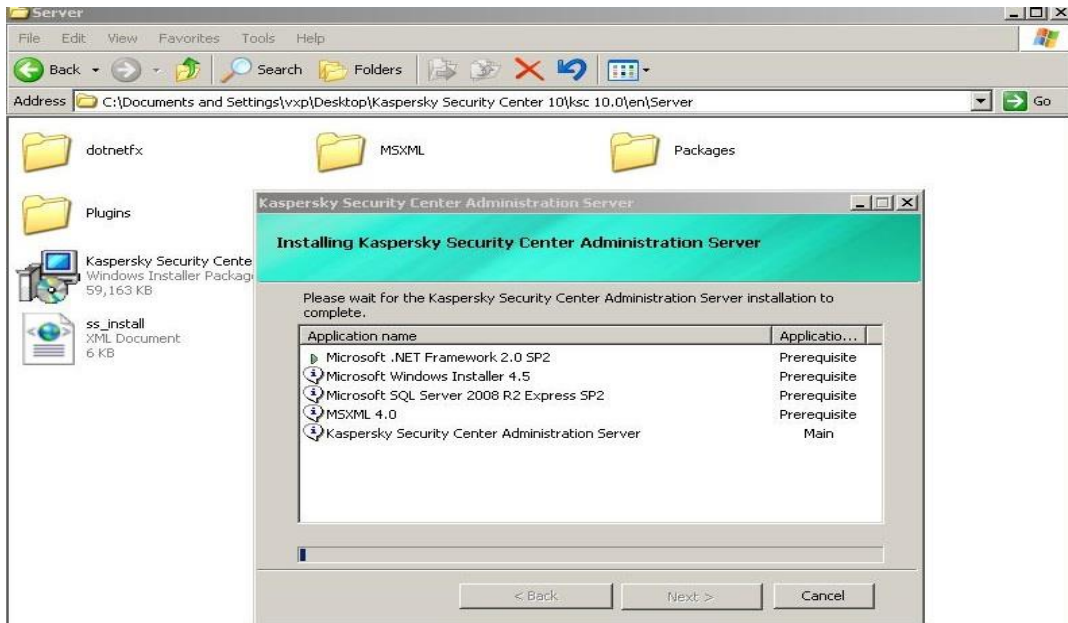


Figure 5.17: Installing Kaspersky Security Centre Admin Server

Step 9

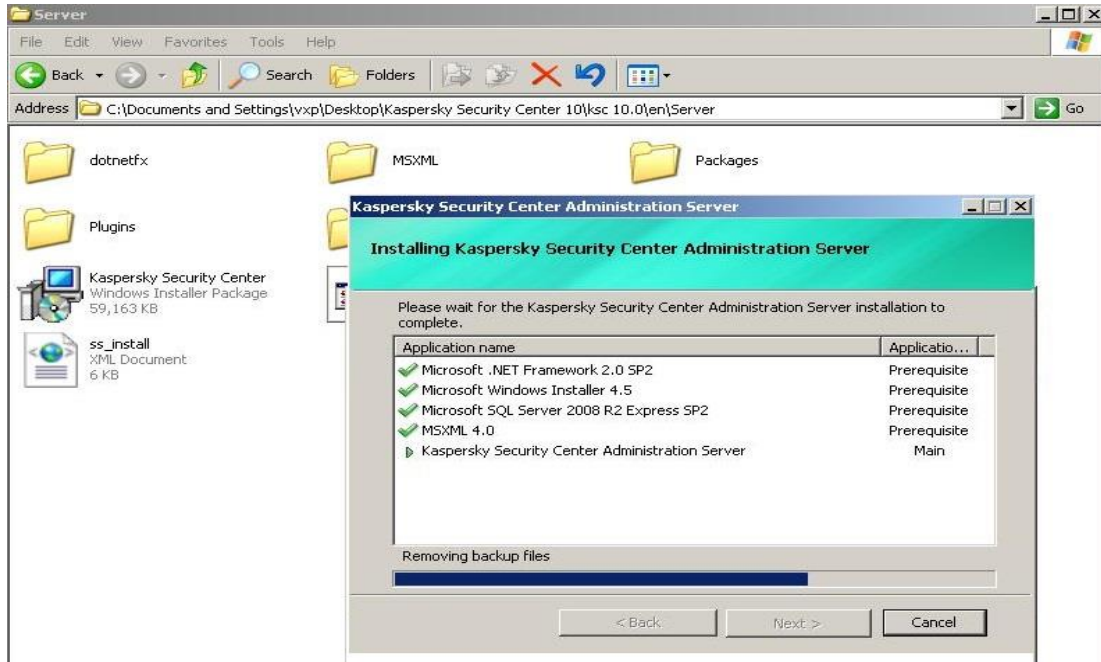


Figure 5.18: Installing Kaspersky Security Centre Admin Server

Step 10

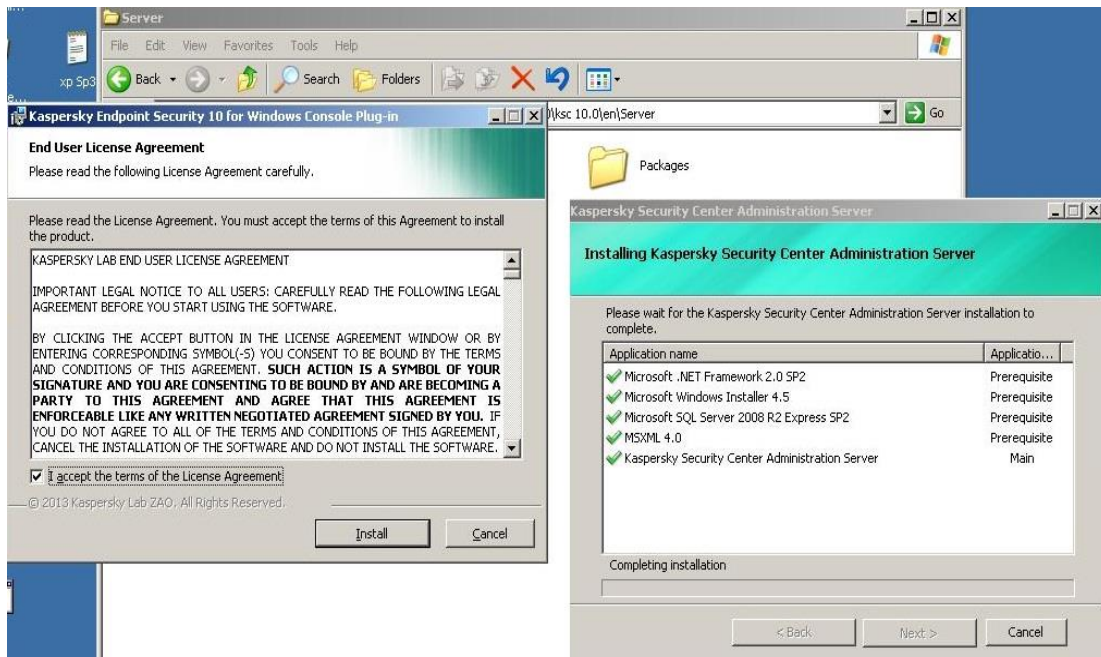


Figure 5.19: administration Server End User License Agreement

Step 11

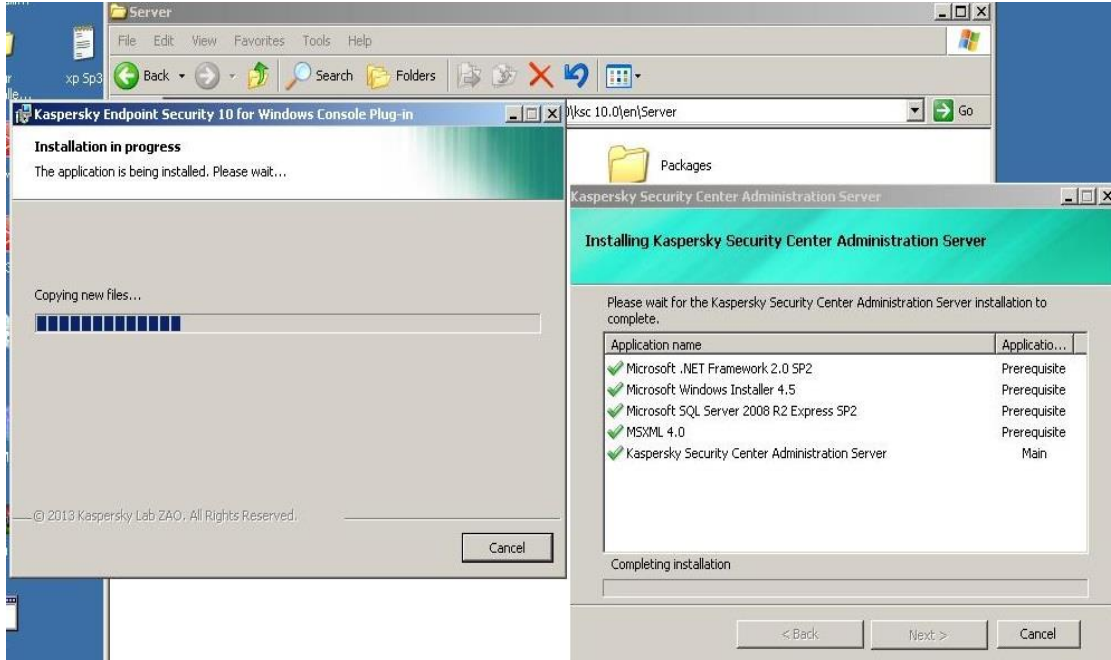


Figure 5.20: Kaspersky Endpoint Security 10 for Windows Console Plug-in

Step 12

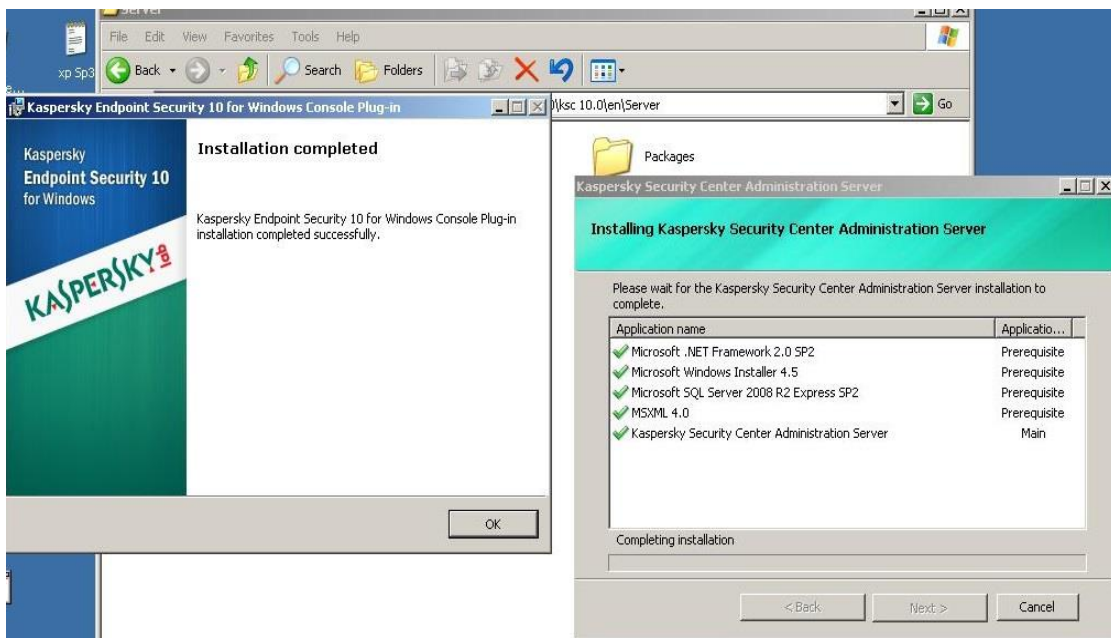


Figure 5.21: Kaspersky Security 10 for Windows Console Plug-In Installation Completed

Step 13

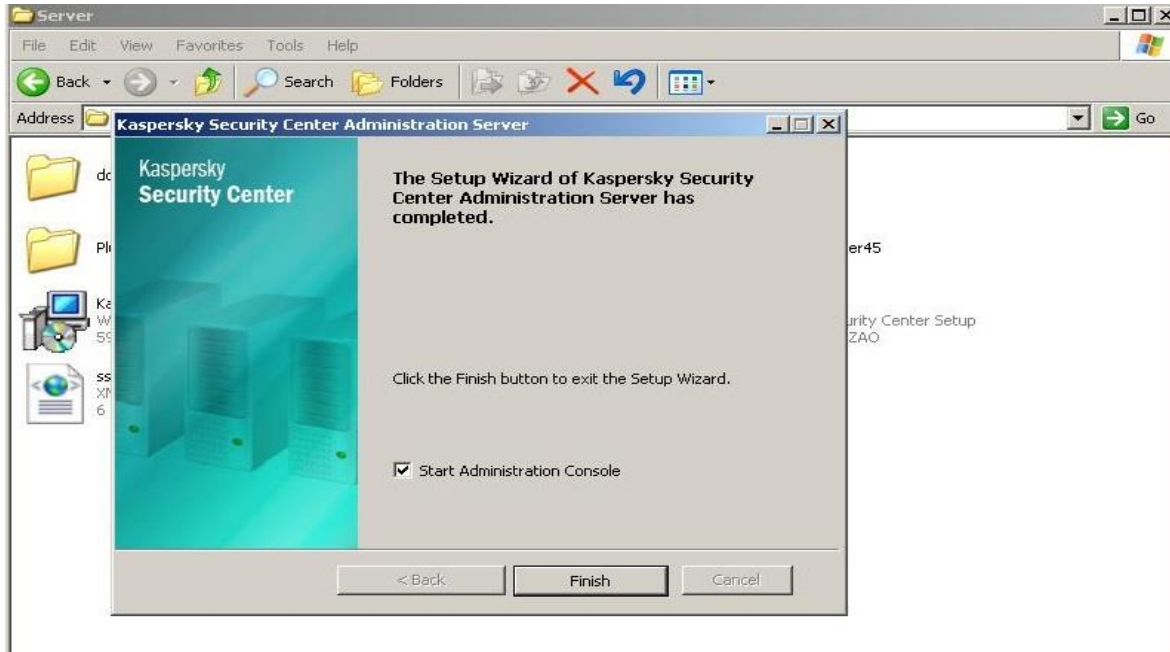


Figure 5.22: Administration Console

Step 14

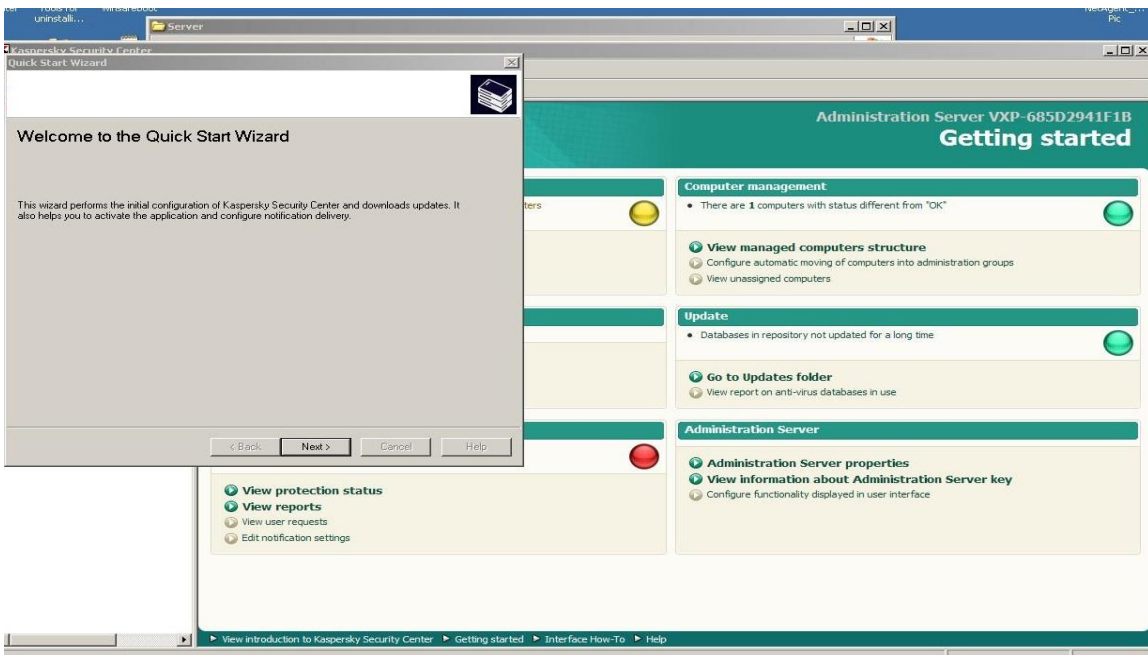


Figure 5.23: Administration Console Mode

Step 15

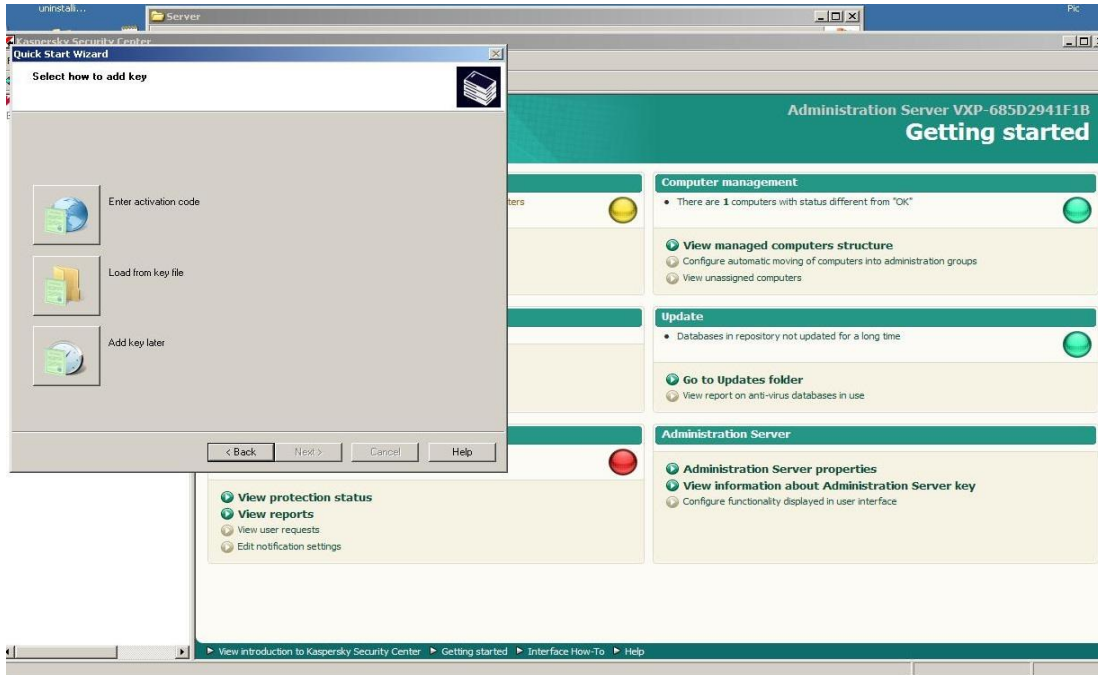


Figure 5.24: Entering Activation Code/Key

Step 16

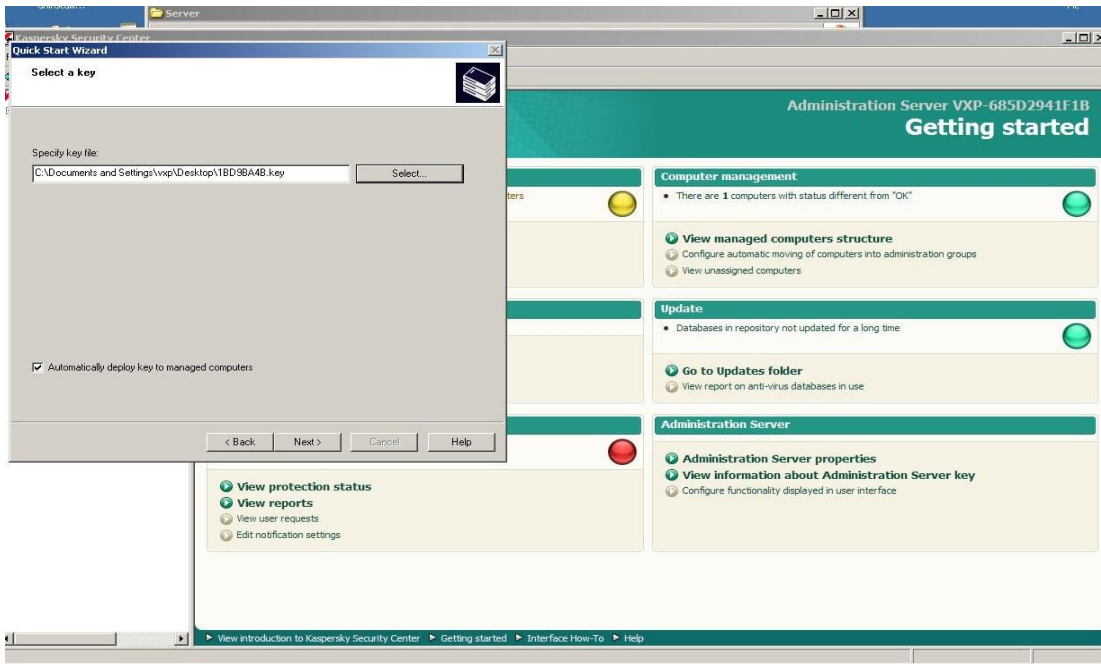


Figure 5.25: Selecting Key from HDD File

Step 17

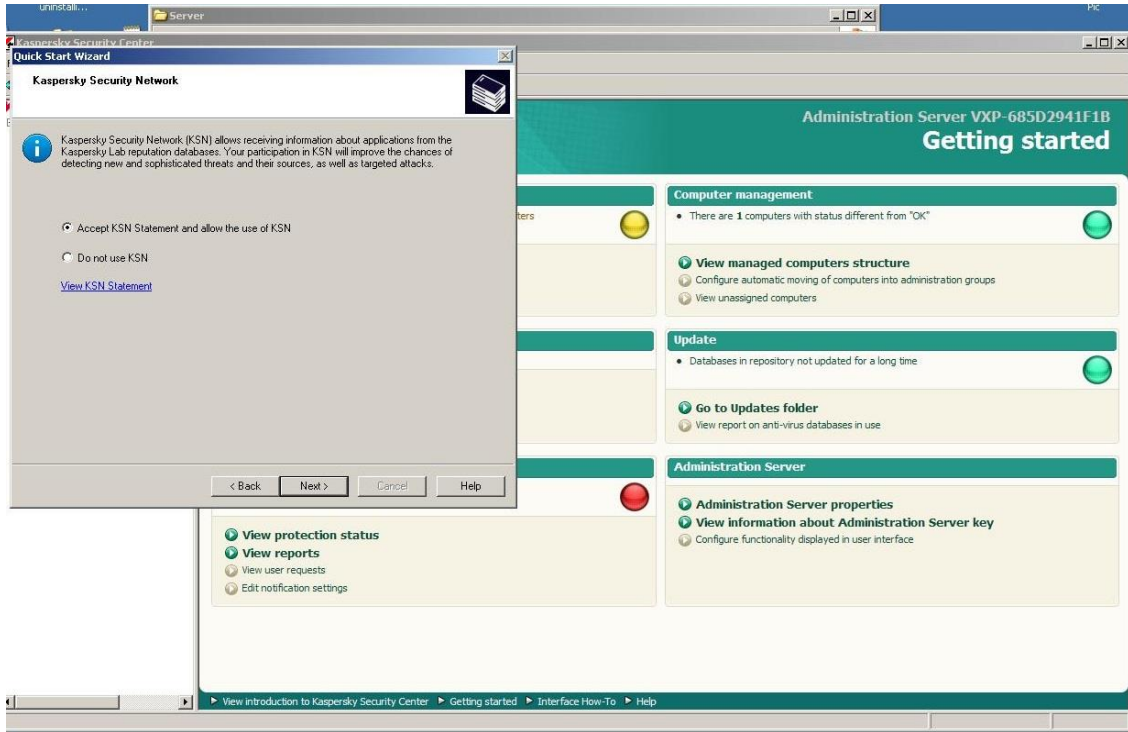


Figure 5.26: Accept KSN Statement & Allow the Use of KSN

Step 18

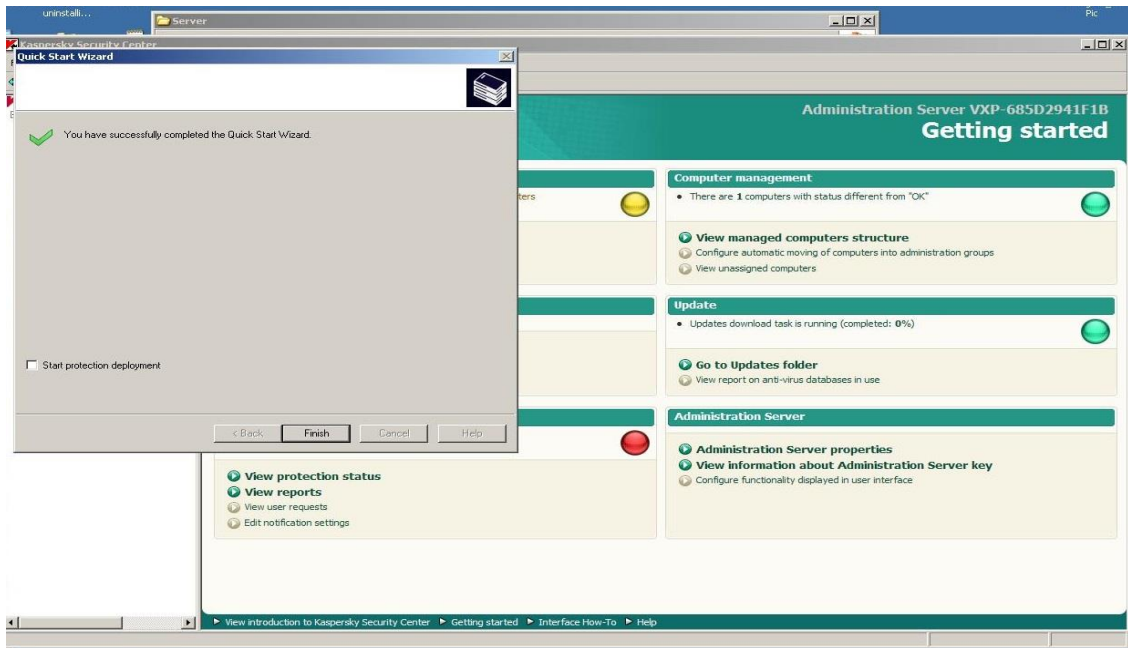


Figure 5.27: Successfully Completed the Quick State Wizard

Step 19

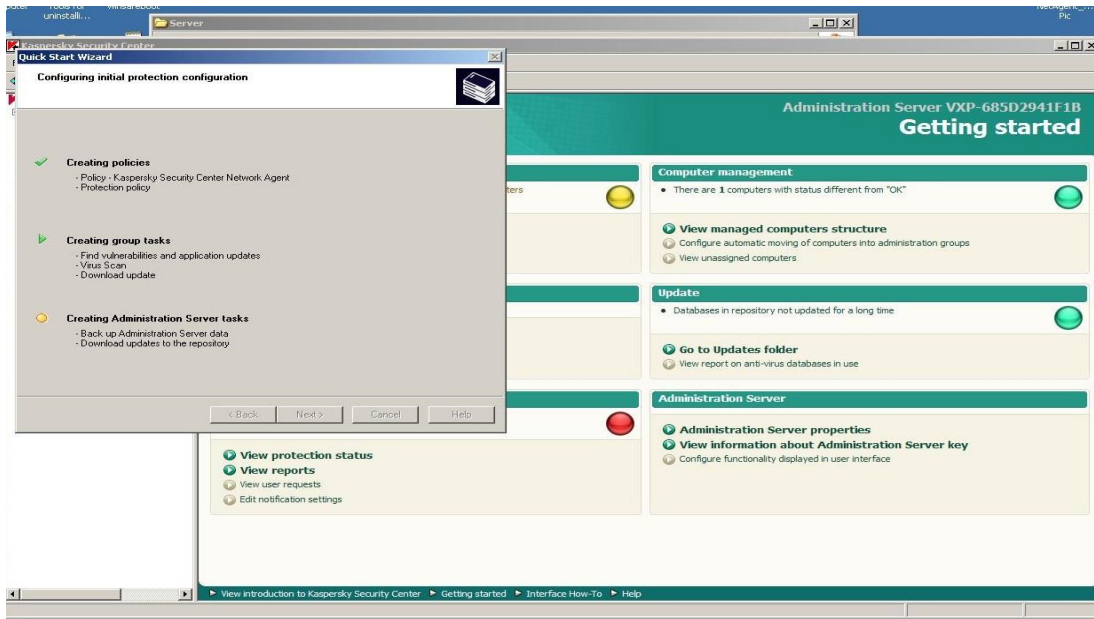


Figure 5.28: Configuring Initial Protection Configuration

Step 20

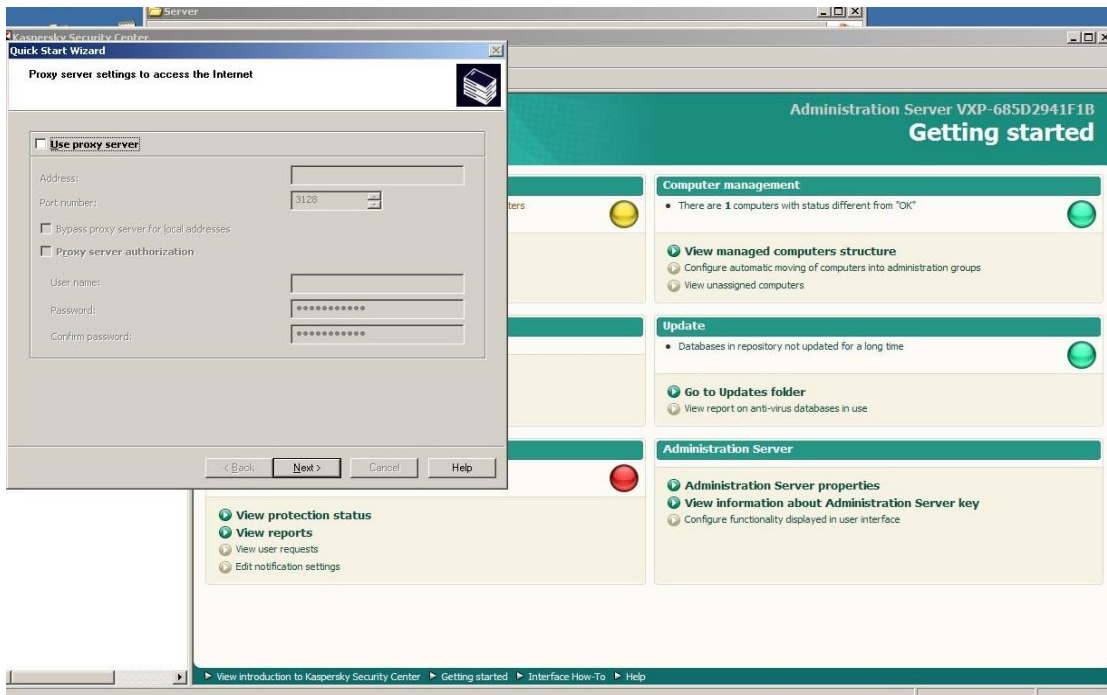


Figure 5.29: Configuring Initial Protection Configuration

Step 21

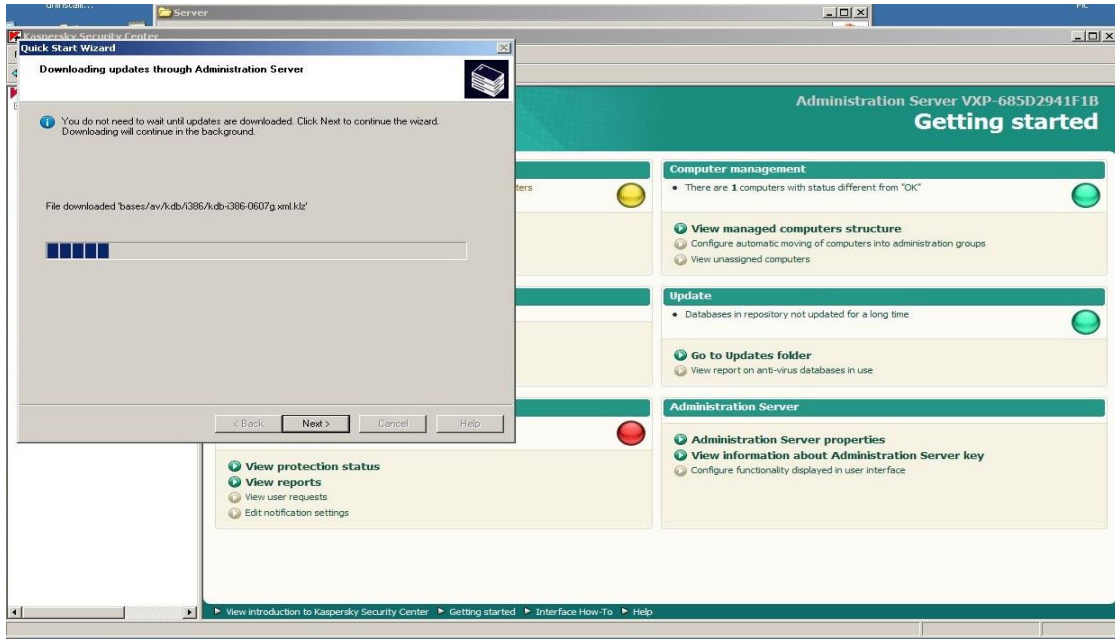


Figure 5.30: Downloading Update Through Administration Server

Step 22

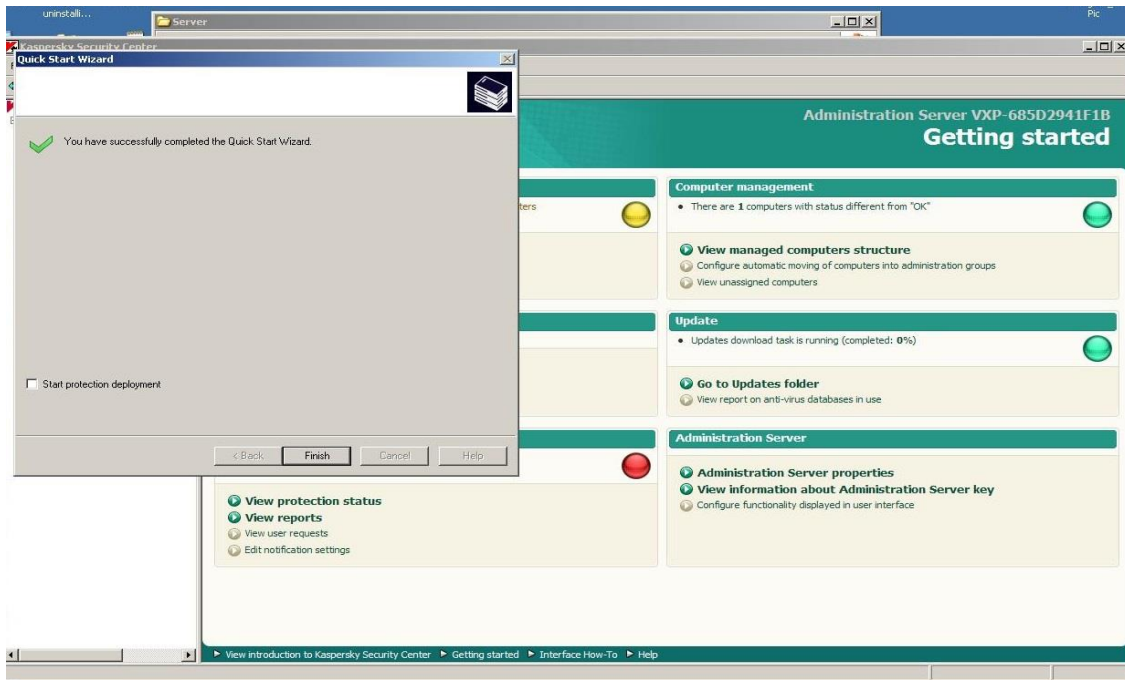


Figure 5.31: Successfully Completed the Installation of Slave Server

5.5.2 Configure Network Agent

Step 1



Figure 5.32: Kaspersky Security Center Network Agent

Step 2

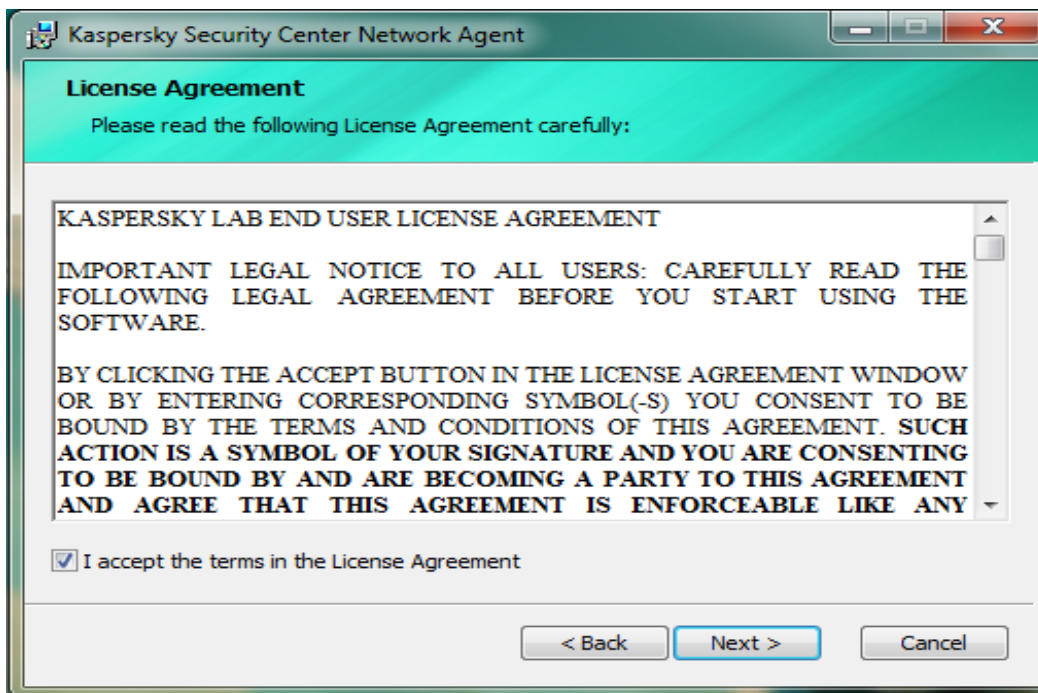


Figure 5.33: License Agreement

Step 3

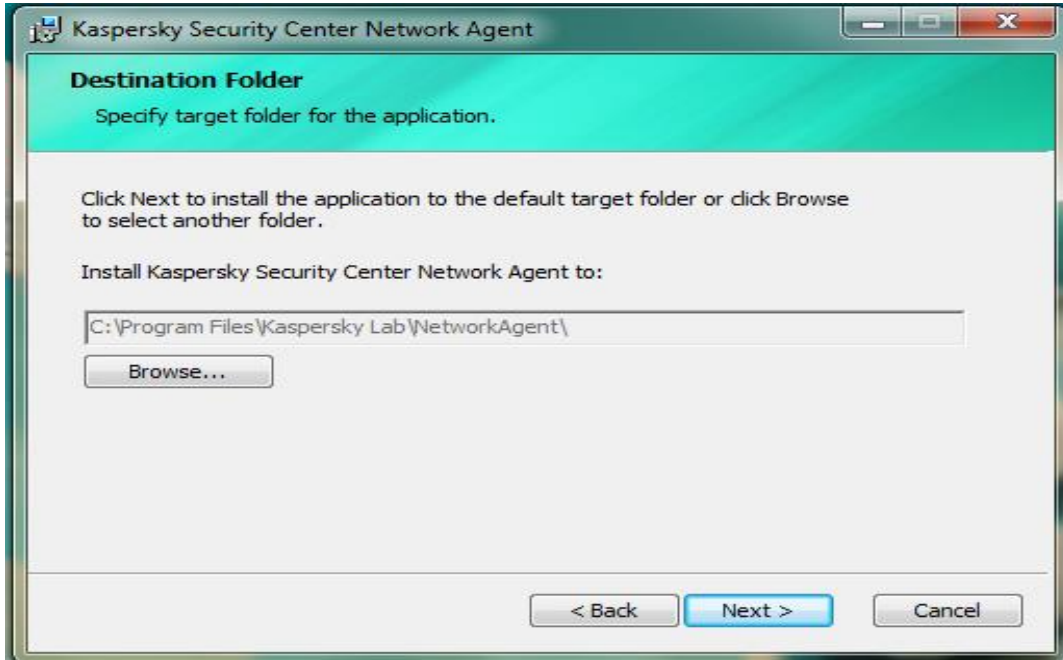


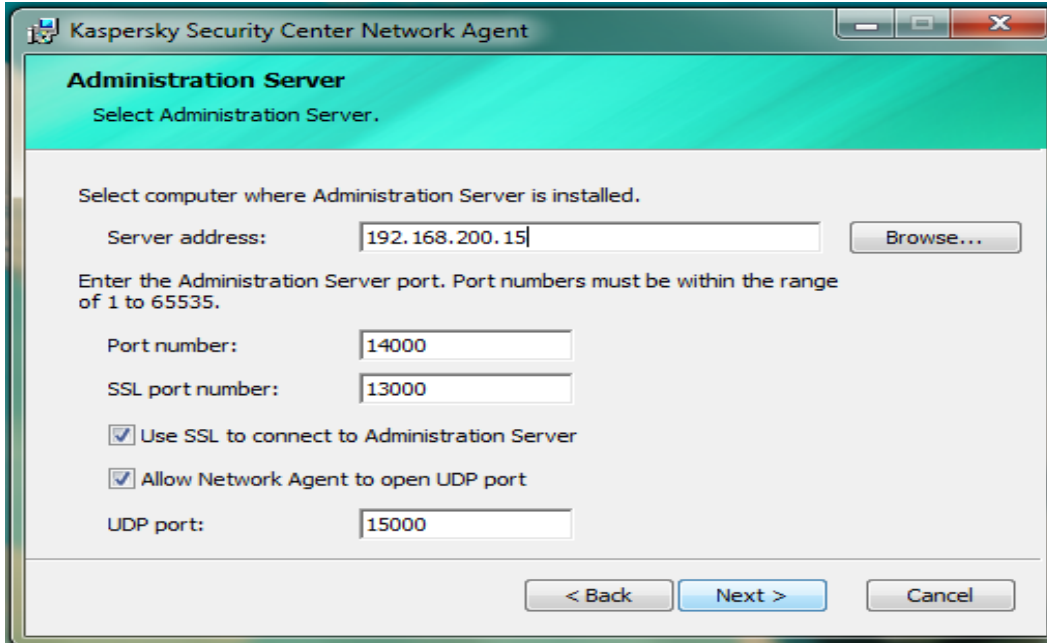
Figure 5.34: Specify Target Folder for the Application

Step 4



Figure 5.35: Specify Additional Components for Installation

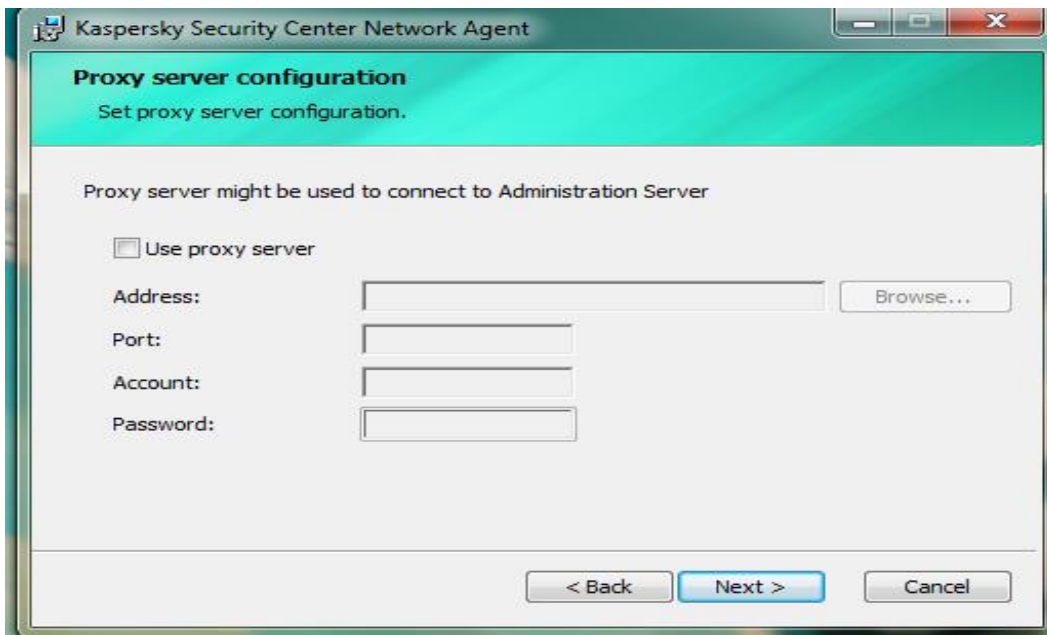
Step 5



The screenshot shows the 'Administration Server' configuration window. The title bar reads 'Kaspersky Security Center Network Agent'. The window has a green header with the text 'Administration Server' and 'Select Administration Server.'. Below the header, there is a section titled 'Select computer where Administration Server is installed.' with a 'Server address:' field containing '192.168.200.15' and a 'Browse...' button. Below that, there is a section titled 'Enter the Administration Server port. Port numbers must be within the range of 1 to 65535.' with three fields: 'Port number:' (14000), 'SSL port number:' (13000), and 'UDP port:' (15000). There are two checked checkboxes: 'Use SSL to connect to Administration Server' and 'Allow Network Agent to open UDP port'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 5.36: Put the Server Address to the Inbox

Step 6



The screenshot shows the 'Proxy server configuration' window. The title bar reads 'Kaspersky Security Center Network Agent'. The window has a green header with the text 'Proxy server configuration' and 'Set proxy server configuration.'. Below the header, there is a section titled 'Proxy server might be used to connect to Administration Server' with a checkbox 'Use proxy server' which is unchecked. Below that, there are four fields: 'Address:' (with a 'Browse...' button), 'Port:', 'Account:', and 'Password:'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 5.37: Proxy Server Configuration

Step 7



Figure 5.38: Specify Connection Gateway

Step 8



Figure 5.39: Select Administration Server Certificate

Step 9

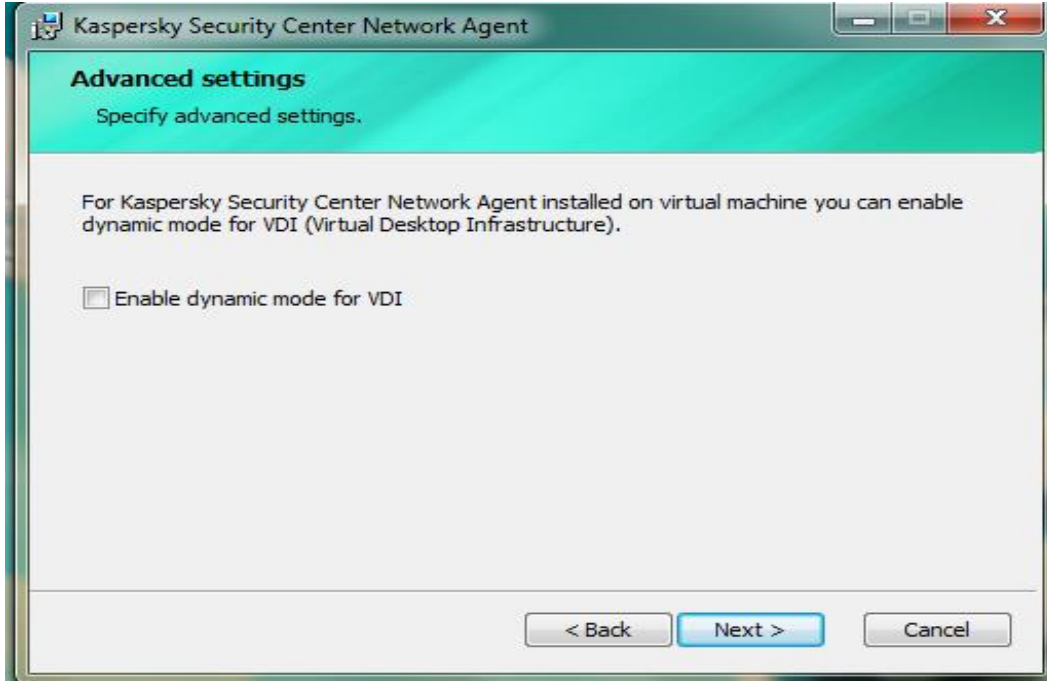


Figure 5.40: Specify Advance Settings

Step 10



Figure 5.41: Start Kaspersky Security Center Network Agent

Step 11



Figure 5.42: Installation Process Ready

Step 12



Figure 5.43: Installation Procedure Continuing

Step 13



Figure 5.44: Installation of Kaspersky Security Center Complete

5.6 BACH Install Procedure

Step-1

Panini\Demo without MICR+OCR\Setup Double Click

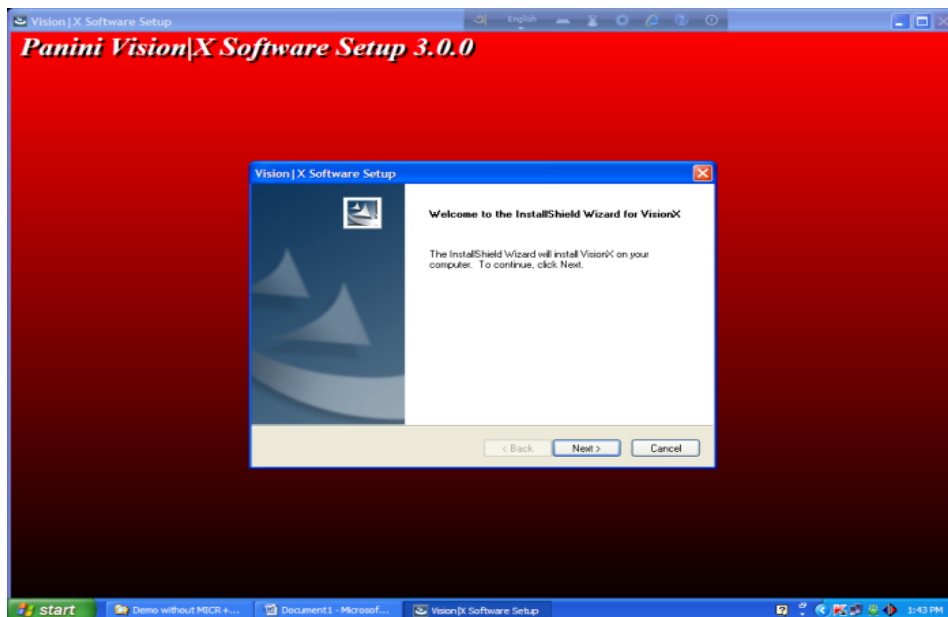


Figure 5.45: Initial State for Installation of Panini Vision\X Software

Click Next Button and Disconnect Panini Scanner USB Cable

Click OK Button

Click Next Button

Click Next Button and Please Wait

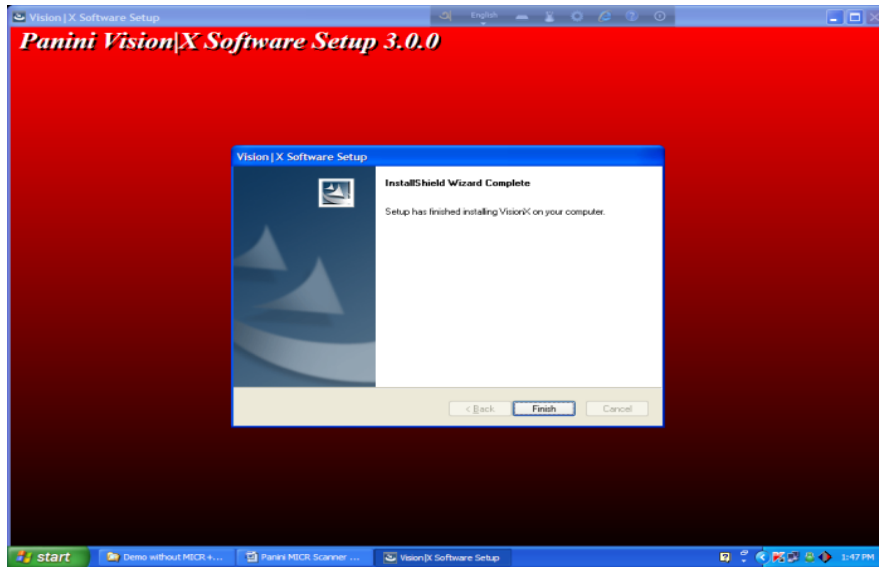


Figure 5.46: Installation Complete

Step-2

Install Jinit Version 1.3.1.22 from Panini Folder

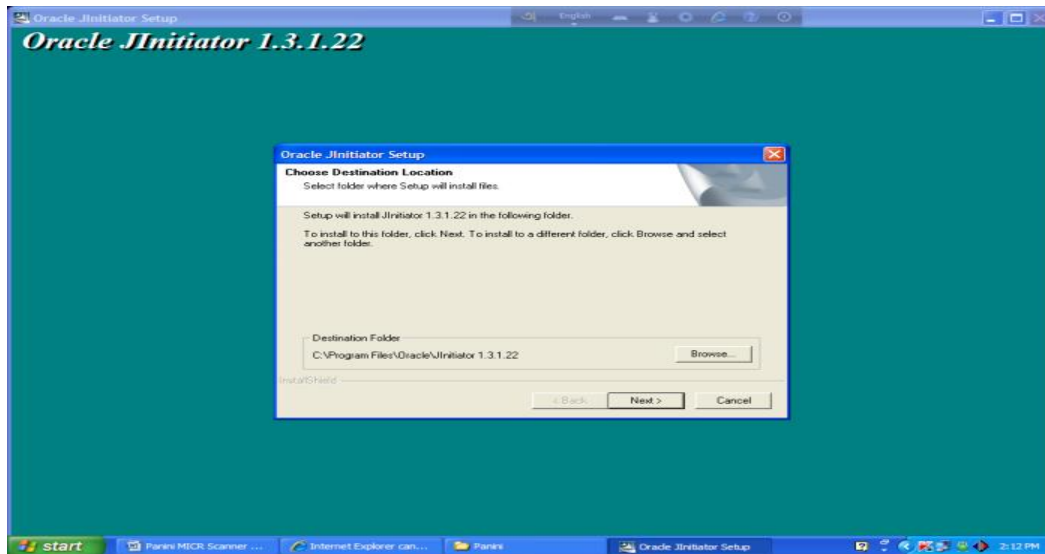


Figure 5.47: Installing Oracle JInitiator

Step-3

Copy VB Sample from Panini Folder and Past to C:\Program Files\Panini\VisionX\MyDemo

Step-4

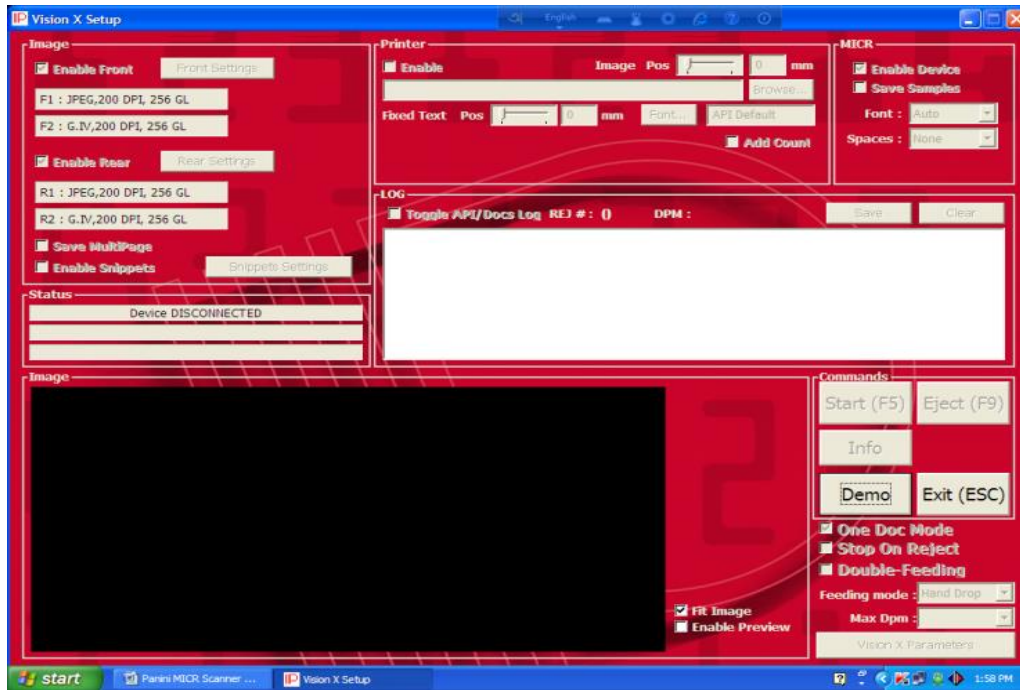


Figure 5.48: Panini Vision\X Home Page

Step-5

Copy URL (Outward and Inward) from Panini Folder then Past Internet Explorer/Netscape Navigator (Double Click) Address Bar and Enter Click Grant Always (2 or 3 times)

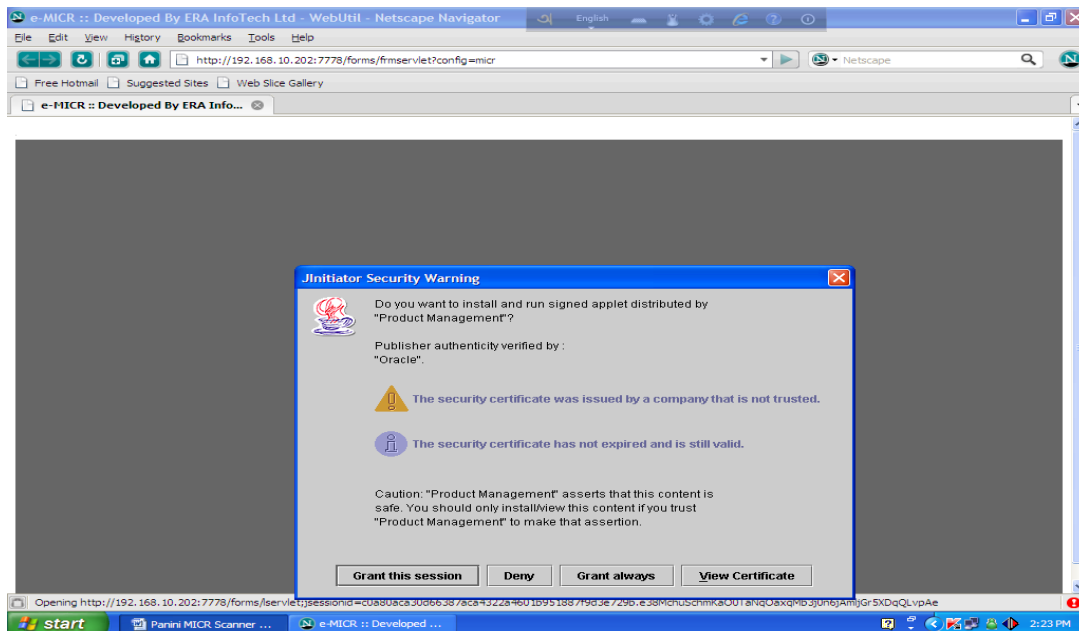


Figure 5.49: Granting the Session

Input BACH User Name and Password



Figure 5.50: e-micr Outward Home Page

Click another Branch



Figure 5.51: Selecting the Branch

Double Click Upload Data from Scanner

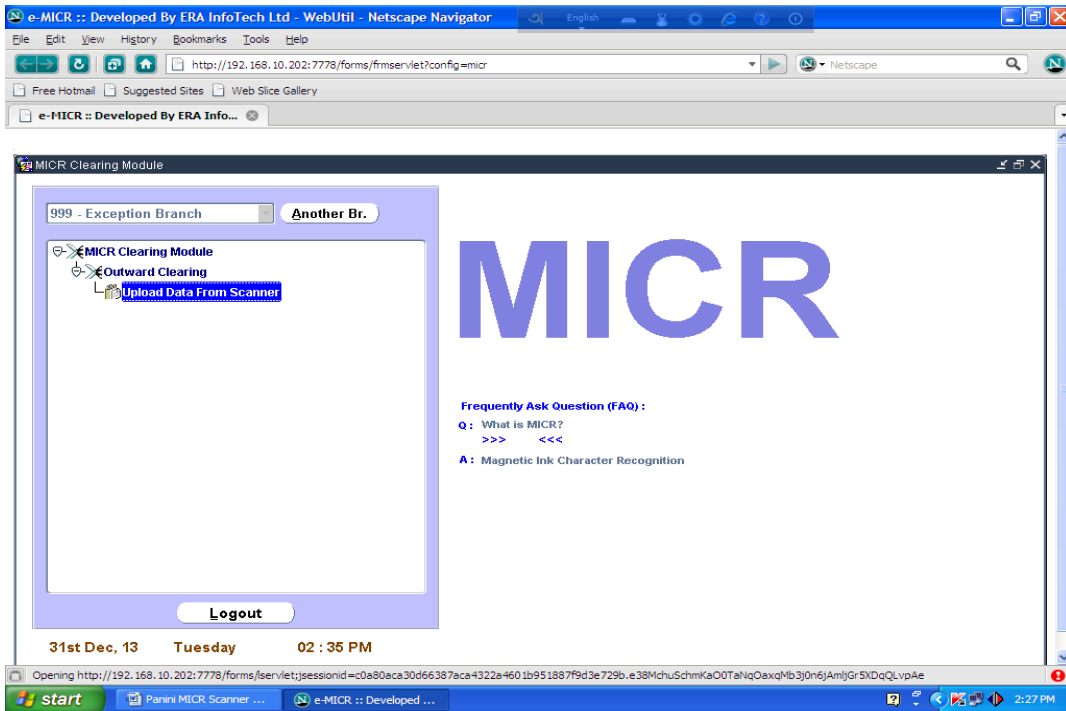


Figure 5.52: Upload Data from Scanner

Click Start Panini/Fuji_FB20/Canon Scanner Button

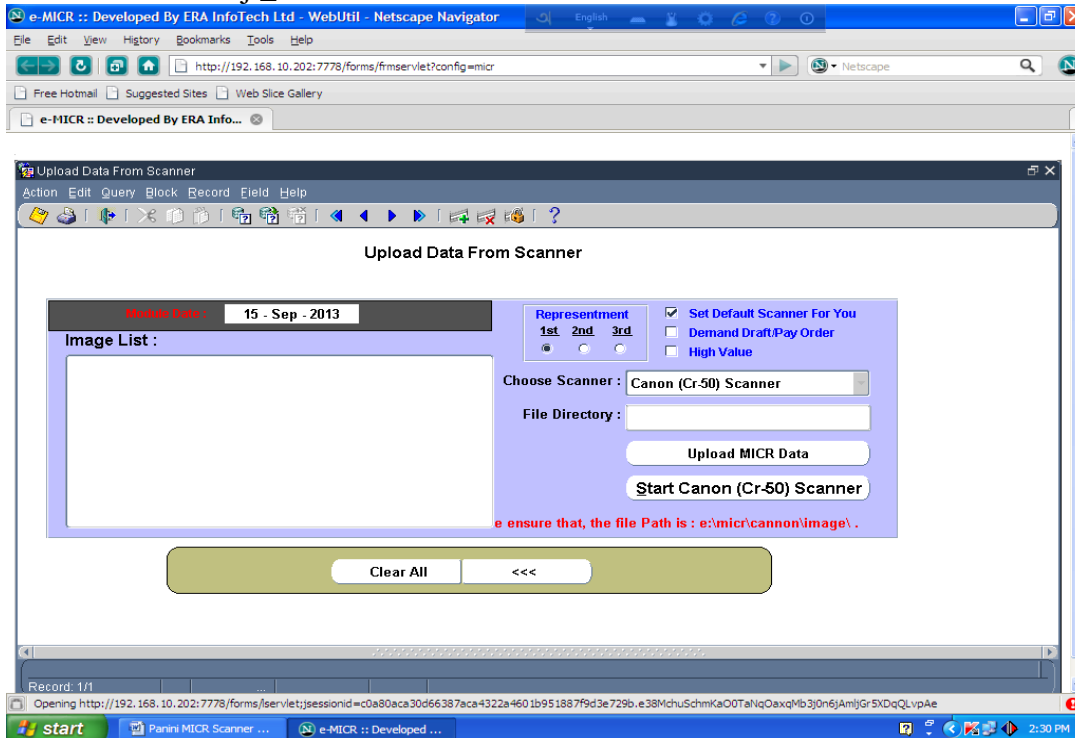


Figure 5.53: Upload Data from Scanner

5.7 IP Phone

How do IP Phone Systems Work?

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 telephony service provider for making calls, which will reduce your costs for phone calls. At the same time you are gaining many technical advantages by using IP technology for your telephony.

Users of an VoIP phone system simply plug their IP phone into the nearest LAN port. Then, the IP phone registers automatically at the VoIP 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.

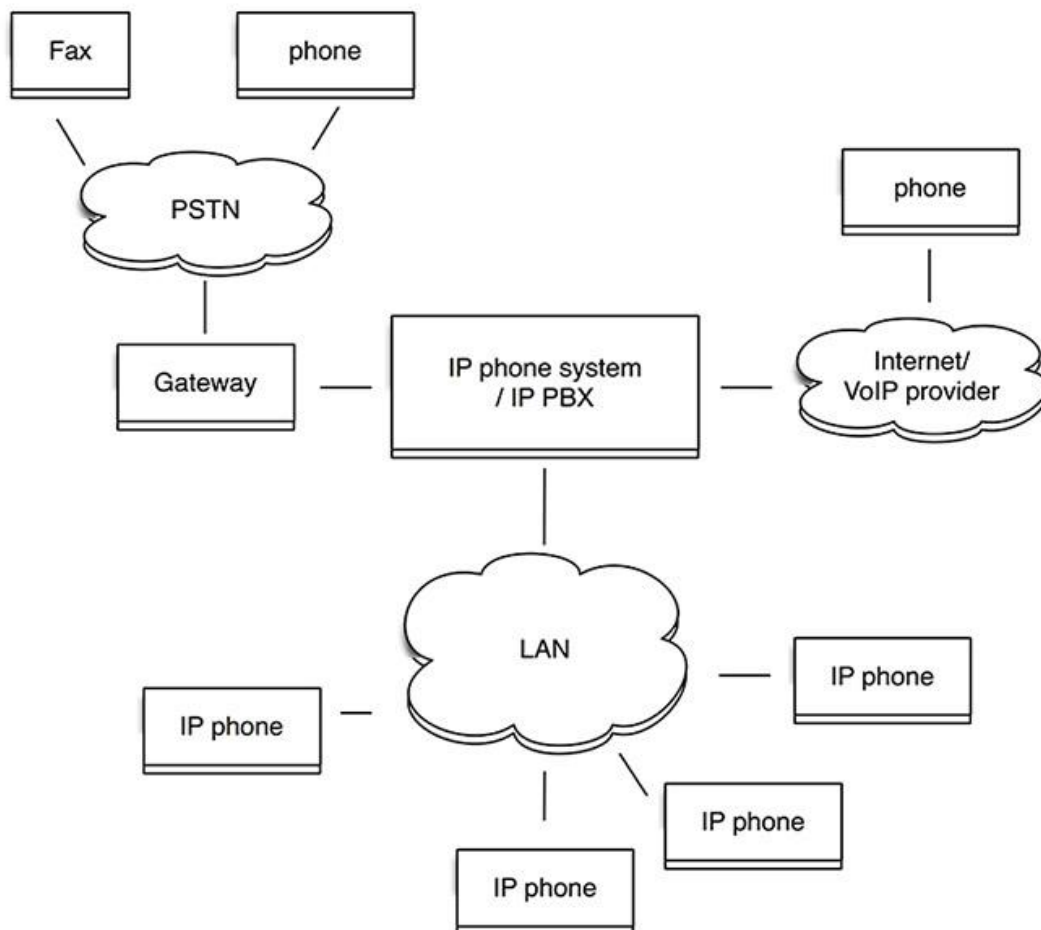


Figure 5.54: Design View of Internet Phone

All of this works because of the SIP protocol. It is a standard widely used by ISPs, VoIP phone systems and VoIP phones world-wide. It makes expensive proprietary phones obsolete, and helps that all devices can talk to each other.

IP phone systems are usually built on standard PC or embedded hardware which is more cost-effective and powerful than the hardware of the traditional phone manufacturers. At the same time, Internet phone systems are scalable, as they are not limited to a certain number of physical phone ports. That means you don't need to replace your phone system when your company grows.

CHAPTER 6

CONCLUSION & RECOMMENDATION

6.1 Conclusions

Computer related topics can get trivial when I study them from books only. But when I am exposed to practical work as well, then it helps to string then my knowledge. I must say that there was enough to learn for me during my internship period. It was a first time experience in a job for me. During the last three months that I worked for Standard Bank Ltd. Three months working experience that I gained is extremely valuable to me and I wish to implement my new found knowledge in future.

6.2 Findings

- Standard bank do not mobile banking technology
- Lack of IT Technologist
- Lack of Regular training
- Poor internet service for the user of Standard Bank Limited

6.3 Recommendation

- Management should ensure service within short time.
- Management of Standard bank should use mobile technology.
- Standard Bank should ensure in proper intranet system without any breaking.
- Management of Standard Bank should provide Training to their Component staff.

References

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