



Department of Electronics and Communication Engineering

INTERNSHIP REPORT ON

Networking & Server Maintenance of Abdul Monem Ltd.



Prepared By;

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ID: 2011-2-55-013

Dept. Of ECE

East West University

Supervised By;

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Letter of Transmittal

21 August 2016

To

Dr. M. Mofazzal Hossain

Professor & Chairperson

Department of Electronics and Communication Engineering

East West University

Subject : Submission of Project Report as Internship(ETE-498)

Dear Sir,

I am pleased to let you know that I have completed my Internship program at **Abdul Monem Limited (AML)**, karwanbazar, Dhaka. The attaché contain of the internship report that has prepared for your evaluation and consideration. The internship has given me a great opportunity to work with the networking system closely and also gave me the opportunity to apply the theoretical knowledge in real life situation which I have acquired since last four years from you and the other faculty of EWU, which would be a great help for me in future.

I am very grateful to you for your guidance throughout the internship period, which helped me a lot to acquire practical knowledge.

Thanking You.

Yours Sincerely

Md. Maruf Hossain
ID# 2011-2-55-013
Dept. Of ECE
East West University

Declaration

This is certified that the internship report is done by me under the course “Research/Internship (ETE-498)”. It has not been submitted elsewhere for the requirement of any degree or any other purpose except for publication.

MD Maruf Hossain

ID: 2011-2-55-013

Dept. Of ECE

Acceptance

This internship report is submitted to the **Department of Electronics and Communication Engineering, East West University** is submitted in partial fulfillment of the requirements for the degree of **B.Sc in ECE** under complete supervision of the undersigned.

Dr. M. Mofazzal Hossain
Professor & Chairperson
Dept. Of ECE

MD Jamal Alom Khan
Network Administrator,
Abdul Monem Ltd.

Acknowledgement

At first I wish to convey my cordial thanks and gratitude to Almighty Allah for everything. I would like to thank my parents and everyone else who has supported me all the way through to complete the Internship program successfully and also to those who rendered their cooperation in making this report.

I would like to thank **Dr. M. Mofazzal Hossain** (Professor & Chairperson Dept. Of ECE, EWU) for guided me with lots of effort and time to perform the internship program.

I want to convey my gratefulness to **MD Jamal Alom Khan**(Network Administrator,Abdul Monem ltd.) who helped me greatly by providing valuable suggestion whenever required my internship report “Networking & Server maintenance of AML” They also gave the opportunity to hold that flagship of the topic.

I would also like give to acknowledgments everyone of the IT Department of Abdul Monem ltd.. For providing suggestion on how to work and what is the procedure to work in a practical manner and also how to make the internship report in a better way. They helped me in many ways by allowing whatever assistance I needed. Otherwise it was not possible for me to complete my report.

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Chapter 1

Introduction

1.1 Background of the study

In the broadest terms, people like to view the Internet as a cloud, you put your data in one place, it comes out the place you want it to on the other side. Now all kind of government Organization, non government Organization, private organization work, and banking sector etc are depended on communication system. To create communication system, networking is the main key factor. A communication system performance depends in optimal network designing and maintenance..

We know computer networking is the principal part of our modern life. I decided to know about computer networking and how does it work, how to design a wide area network and backbone network, what are the important keys to design a beneficial network, how can I design cost effective network.

In this situation network design and implementation get great job opportunity in communication system. Such as Internet service provider, Mobile Company, Corporate office network and IT support of Organization, Banking sector etc. Throughout my academic carrier, I took several networking related courses such as, [Communication & Network Security (ETE450), Computer Communication & Networks (ETE302), and Information Theory & Coding (ETE350)]. My interest in networking grew along with the involvement in several networking and communication related courses. In this case, I think to build my carrier in network design and implementation section

I had an opportunity to work with most leading diversified business conglomerates of Bangladesh that is **Abdul Monem Limited (AML)**. I consider myself timely to get a chance to take a deep look to their Networking system and maintenance as I worked on there IT department. Now I am able to implement and maintenance a network system in a large area.

1.2 Internship Goal

The aim of the internship program to build my profession into network sector of communication system from my academic carrier in university. The network related task network design, maintenance the network, inspired me in this situation internship period of the organization. Goal was to know about the network function, its implementation, its problem and solution, Hardware problem and solution and management the office software.

1.3 My Responsibilities in Abdul Monem Limited (AML)

I have worked on its IT department. As an Internee, I have always tried to provide proper services to AML . During the internship my responsibility was installation and configuration of windows server. Installing operating System including other application software and troubleshooting problems occurred in client and server computers, maintenance the server.

Chapter 2

Company Profile

2.1 About Abdul Monem Limited (AML)

AML started its operation back in 1956 as a construction firm and was engaged in major government construction work. Within a few decades, the organization diversified its operation in other industries, especially in food and beverage industry. AML started its Ice Cream Plant in Chittagong in 1964 with a brand name IGLOO followed by the bottling license and distributorship of Coca Cola in 1982. Today, AML has eight different business lines running with a yearly turnover of over US\$ 85.7 million dollar or BDT 6 billion. The group of business of AML are consist of :

- Construction Contractors for the road & highways, bridges, buildings & flood embankment
- Bottler and Distributor of Coca Cola, Fanta & Sprite
- Manufacturer of IGLOO Ice Cream
- Abdul Monem Sugar Refinery Ltd.
- AM Pharma Ltd.
- Manufacturer of AmoMilk Liquid Pasteurized Milk
- Manufacture of IGLOO Ghee
- Manufacture of IGLOO Sugar
- Trading & Distributing product of Danone Brands
- AML InfoTech Ltd.

Name and Address:

Name of the Company: **Abdul Monem Limited (AML)**

Office Address : Monem Business District
111, Bir Uttam C.R. Dutta Road, Level 13
Karwanbazar, Dhaka-1205, Bangladesh.

Phone : +88 (02) 9632011-13,

Fax : +88 (02) 9632315-17

Email : nfo@amlbd.com

Web Site : <http://www.amlbd.com>

AML possess:

- More than 10,000 work force
- Multifunctional teams comprising of highly experienced professionals
- Highest aggregate experience in construction industry
- Largest fleet of construction industry equipment
- Backward linkage: Own production of auto-bricks, bitumen emulsion & asphalt ready-mix concrete
- Possession of huge chunk of land in strategic locations of the country
- 18 fully functional operation units, each having major shareholding in the concerned business sector
- Number One Ice-cream brand-Igloo, Bottling of a renowned global brand like Coca-cola, placing within Top 100 global BPO companies by IAOP
- Most extensive distribution network (100,000 outlets) in FMCG industry with the widest cold chain system
- Abilities to deal out goods and services in the farthest and remotest territories of Bangladesh etc.

Partners:

World Bank	Square
Cocacola	DSM
Gsk	RADISSON
Jica	Nestle

Chapter 3

TOOLS & Device for Networking

3.1 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
- Network interface card
- RJ 45 connector
- Network Crimping Tools
- HUB
- Switch
- Repeaters
- Router
- Co-axial cable
- STP cable
- UTP cable
- Optical fiber

Some of devices are described below

3.2 Switch

A network switch (also called switching hub, bridging hub, officially MAC bridge is a computer networking device that connects devices together on a computer network, by using packet switching to receive, process and forward data to the destination device. Unlike less advanced network hubs, a network switch forwards data only to one or multiple devices that need to receive it, rather than broadcasting the same data out of each of its ports.



Figure3.1: Network Switch

A network switch is a multiport network bridge that uses hardware addresses to process and forward data at the data link layer (layer 2) of the OSI model. Switches can also process data at the network layer (layer 3) by additionally incorporating routing functionality that most commonly uses IP addresses to perform packet forwarding; such switches are commonly known as layer-3 switches or multilayer switches. Beside most commonly used Ethernet switches, they exist for various types of networks, including Fibre Channel, Asynchronous Transfer Mode, and InfiniBand.

3.3 Router

A **router** is a networking device that forwards data packets between computer networks. Routers perform the "traffic directing" functions on the Internet. A data packet is typically forwarded from one router to another through the networks that constitute the internetwork until it reaches its destination node.

A router is connected to two or more data lines from different networks (as opposed to a network switch, which connects data lines from one single network). When a data packet comes in on one of the lines, the router reads the address information in the packet to determine its ultimate destination. Then, using information in its routing table or routing policy, it directs the packet to the next network on its journey. This creates an overlay internetwork.



Figure3.2: Network Router

The most familiar type of routers are home and small office routers that simply pass data, such as web pages, email, IM, and videos between the home computers and the Internet. An example of a router would be the owner's cable or DSL router, which connects to the Internet through an ISP. More sophisticated routers, such as enterprise routers, connect large business or ISP networks up to the powerful core routers that forward data at high speed along the optical fiber lines of the Internet backbone. Though routers are typically dedicated hardware devices, use of software-based routers has grown increasingly common.

3.4 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. They were introduced to the industry nearly two decades ago, and are important in interconnecting fiber optic cabling-based systems with existing copper-based, structured cabling systems. They are also used in metropolitan area network (MAN) access and data transport services to enterprise customers.



Figure 3.1: Media Converter

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3.5 Power Over Ethernet (PoE)

Power over Ethernet or PoE describes any of several standardized or ad-hoc systems which pass electrical power along with data on Ethernet cabling. This allows a single cable to provide both data connection and electrical power to devices such as wireless access points or IP cameras. Unlike standards such as Universal Serial Bus which also power devices over the data cables, PoE allows long cable lengths. Power may be carried on the same conductors as the data, or it may be carried on dedicated conductors in the same cable.



Figure3.2: PoE Device

3.6 Repeaters

Network repeaters regenerate incoming electrical, wireless or optical signals. With physical media like Ethernet or Wi-Fi, data transmissions can only span a limited distance before the quality of the signal degrades. Repeaters attempt to preserve signal integrity and extend the distance over which data can safely travel. Actual network devices that serve as repeaters usually have some other name. Active hubs, for example, are repeaters. Active hubs are sometimes also called "multiport repeaters," but more commonly, they are just "hubs." Other types of "passive hubs" are not repeaters. In Wi-Fi, access points function as repeaters only when operating in so-called "repeater mode."



Figure3.5: Network repeaters

3.7 Network interfaces

A **network interface controller (NIC)** is **computer hardware** that provides a computer with the ability to access the transmission media, and has the ability to process low-level network information. For example, the NIC may have a connector for accepting a cable, or an aerial for wireless transmission and reception, and the associated circuitry.

The NIC responds to traffic addressed to a **network address** for either the NIC or the computer as a whole.

In **Ethernet** networks, each network interface controller has a unique **Media Access Control (MAC)** address usually stored in the controller's permanent memory. To avoid address conflicts between network devices, the **Institute of Electrical and Electronics Engineers (IEEE)** maintains and administers MAC address uniqueness. The size of an Ethernet MAC address is six **octets**. The three most significant octets are reserved to identify NIC manufacturers. These manufacturers, using only their assigned prefixes, uniquely assign the three least-significant octets of every Ethernet interface they produce

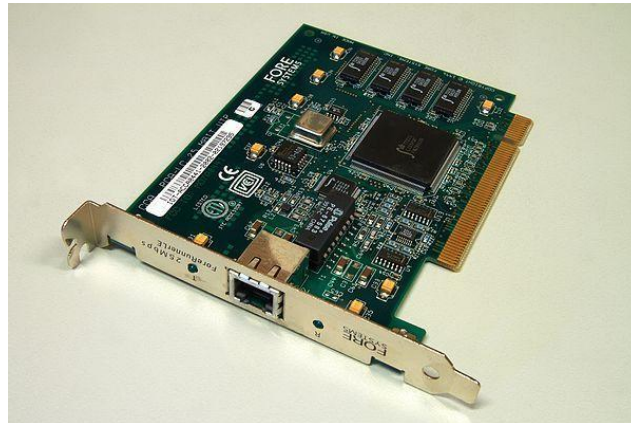


Figure 3.6:Network interface

3.8Cable

Co-axial cable:

Coaxial cable, or coax, is an electrical cable with an inner conductor surrounded by a flexible, tubular insulating layer, surrounded by a tubular conducting shield. The term coaxial comes from the inner conductor and the outer shield sharing the same geometric axis. Coaxial cable was invented by English engineer and mathematician Oliver Heaviside, who first patented the design in 1880.

Coaxial cable is used as a transmission line for radio frequency signals, in applications such as feed lines connecting radio transmitters and receivers with their antennas, computer network (Internet) connections, and distributing cable television signals. One advantage of coax over other types of radio transmission line is that in an ideal coaxial cable the electromagnetic field carrying the signal exists only in the space between the inner and outer conductors. This allows coaxial cable runs to be installed next to metal objects such as gutters without the power losses that occur in other types of transmission lines, and provides protection of the signal from external electromagnetic interference.

Coaxial cable differs from other shielded cable used for carrying lower frequency signals, such as audio signals, in that the dimensions of the cable are controlled to give a precise, constant conductor spacing, which is needed for it to function efficiently as a radio frequency transmission line.

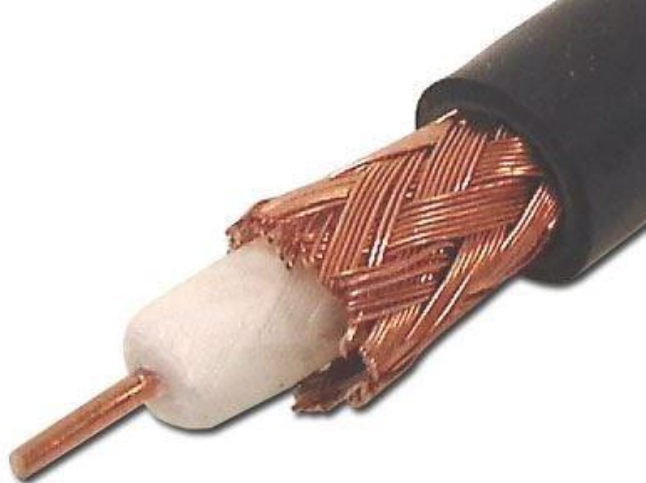


Figure3.7: Coaxial cable

Twisted pair cabling is a type of wiring in which two conductors (the forward and return conductors of a single circuit) are twisted together for the purposes of canceling out electromagnetic interference (EMI) from external sources; for instance, electromagnetic radiation from unshielded twisted pair (UTP) cables, and crosstalk between neighboring pairs. It was invented by Alexander Graham Bell.

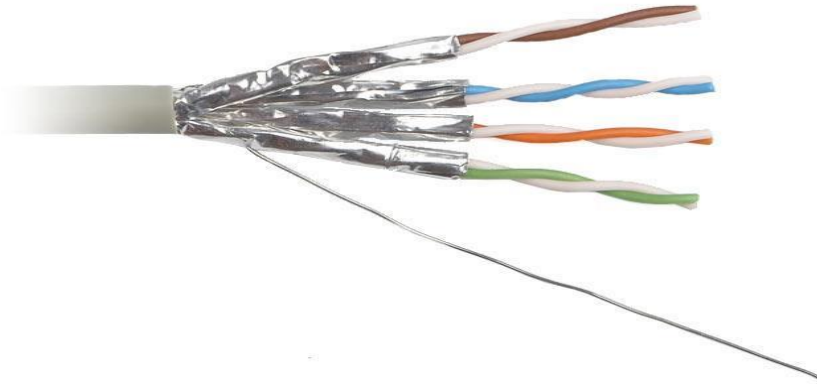


Figure 3.8: Twisted pair cable

UTP Cable:

Unshielded Twisted Pair is a type of cable used in telecommunications and computer networks. It consists of different numbers of copper wire that have been twisted into matching pair. It differs from screened and shielded twisted pair, in that the individual pair is not protected with additional protection from interference. Each copper wire is insulated, and the groups of twisted pair have a sheathing holding them together, but no additional insulation is provided. UTP comes in many different types and sizes, and is primarily used as node cabling, meaning it runs from a backbone unit to the individual components on the network.

Fiber Optic:

Optical fiber or fiber optic refers to the medium and the technology associated with the transmission of information as light pulses along a glass or plastic strand or fiber.

Fiber Optic Cable

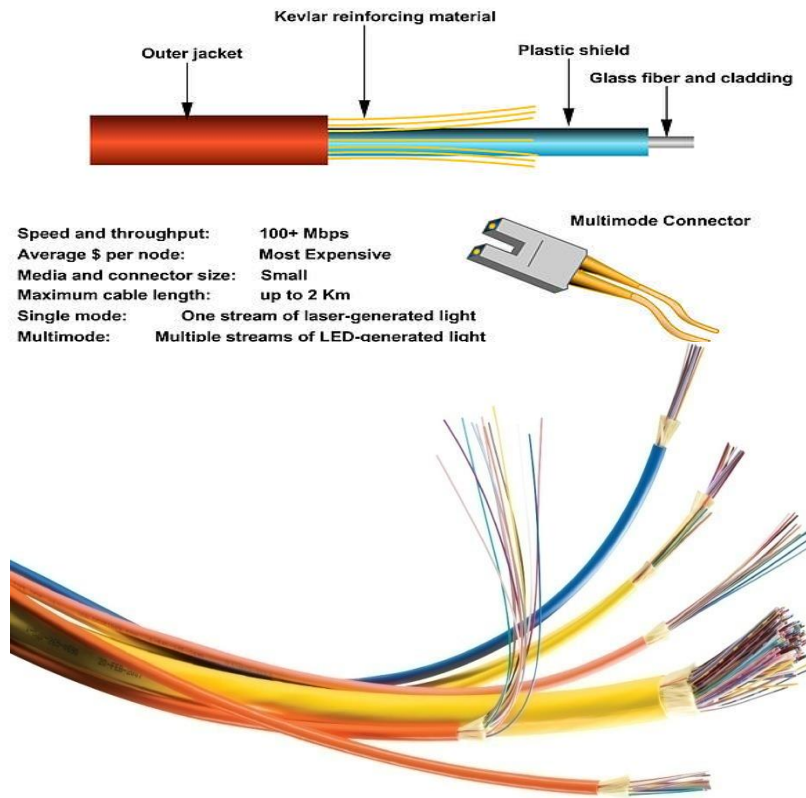


Figure 3.9: Optical Fiber

Advantages of Fiber Optic cable:

- Greater bandwidth than metal cables. Large carrying capacity.
- Less susceptible than metal cables to interference.
- Much thinner and lighter than metal wires.
- Data can be transmitted digitally rather than analogically.
- Fiber optic cables costs much less to maintain.

Chapter 4

Network Designing

4.1 Design of a Network

Below the steps of a business network design. It will fulfill all of the requirements of any organization.

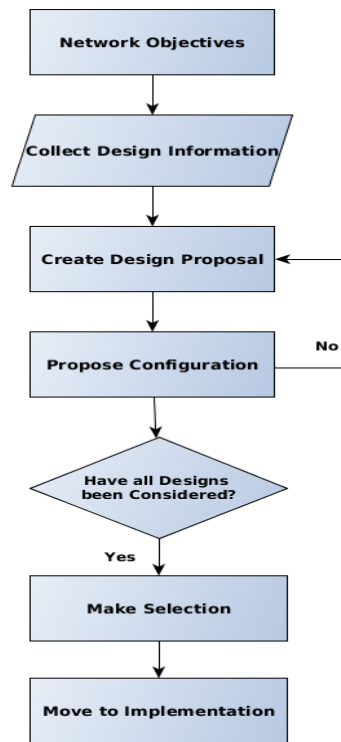


Figure 4.1: Design steps of a business network

Objectives of a network design:

- a) Who are the users of this network and what are the requirements?
- b) What types of application will be supported?
- c) Does the design replace of existing network?

- d) Overall Responsible for network management
- e) What is the budget?
- f) designed consideration

Requirements to design a network:

- a) Bandwidth Requirements
- b) Performance Requirements
- c) Protocols Required
- d) Quality of Service/Type of Service (QoS/ToS)
- e) Sensitivity to Packet Loss and Delay
- f) Multicast
- g) Scalability
- h) Security

Backbone Network Design:

To design a network, we need to follow some rules or steps that create a network more efficient and give high performance. A designed network has some goals that are discussed earlier.

- I. Scalability
- II. Availability
- III. Security
- IV. Manageability

To fulfill the fundamental goals of a network must be built an architecture that allows for both flexibility and growth.

Hierarchical networks have some advantages over flat network designs. The benefit of hierarchical design is that local traffic remains local. Only traffic goes to other networks and it's moved to a higher layer. A flat network using Layer-2 devices provide to control broadcasts or to filter undesirable traffic. As more devices and applications are added to a flat network then response times degrade until the network becomes unusable.

Keeping all of the above, we can use the hierarchical method to design of our desire network. There are some benefits of hierarchical network that are given below.

Actually hierarchical network is divided into three layers.

- 1) Core layer: Connects distribution layer devices
- 2) Distribution layer: Interconnects the smaller local networks
- 3) Access layer: Provides connectivity for network hosts and end devices

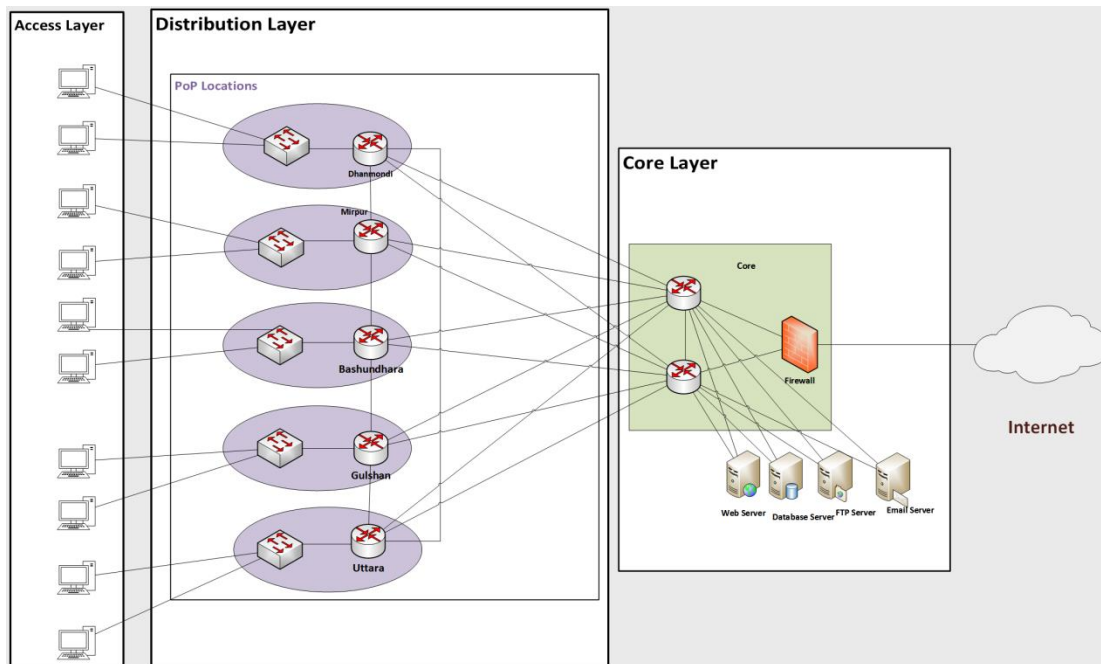


Figure 4.2: Hierarchical Design of a Network.

For long distance we can use fiber optic cable or radio connectivity for backbone connection. Fiber optic and radio connectivity is more efficient than Ethernet cable. Due to signal degradation we cannot use Ethernet cable long distance. On the other hand, by using optical fiber and radio connectivity we can transfer signal for long distance. Most of the backbone network is connected by fiber optic cable or radio connectivity.

4.2 Network Planning

A typical task has to follow to perform a proper planning of a network that can solve the complexity. A planned network has to perform of the business of an organization. In that case, a perfect network plan is followed to the proper business plan

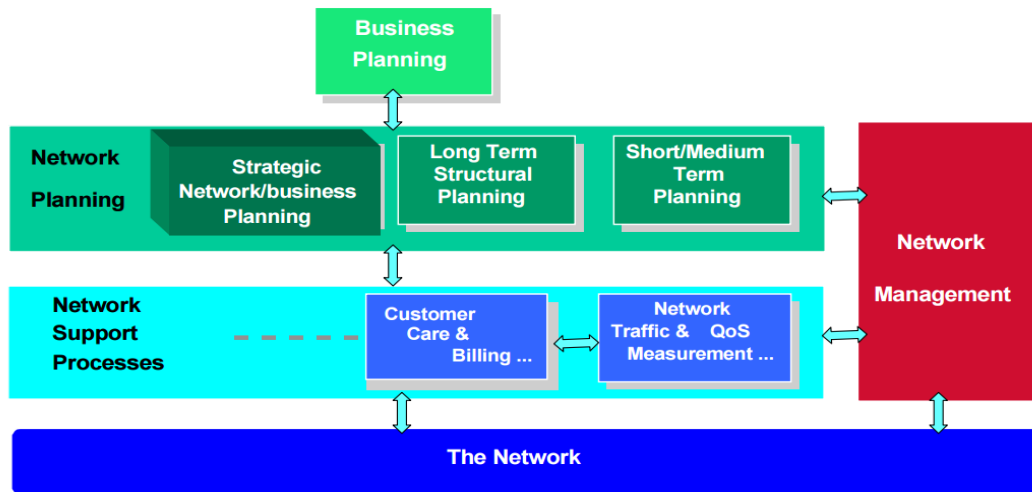


Figure 4.3: Network planning diagram

Long Term Planning (LTP): Long lifetime and large investments for their deployment.

Strategic Planning:

- Technology
- Network mechanism
- Recovery mechanism

Fundamental Planning:

- Topology planning
 - Allocation of function in network nodes
 - Distribution functions in network nodes.
 - Resource optimization
-
- **Medium Term Planning:** Capacity upgrading of the network nodes and links. This always following the long-term (LT) deployment strategies.
 - **Short Term Planning:** The routes and the telecommunications systems that support a demand on this planning

4.3 Overall design of a Network Planning

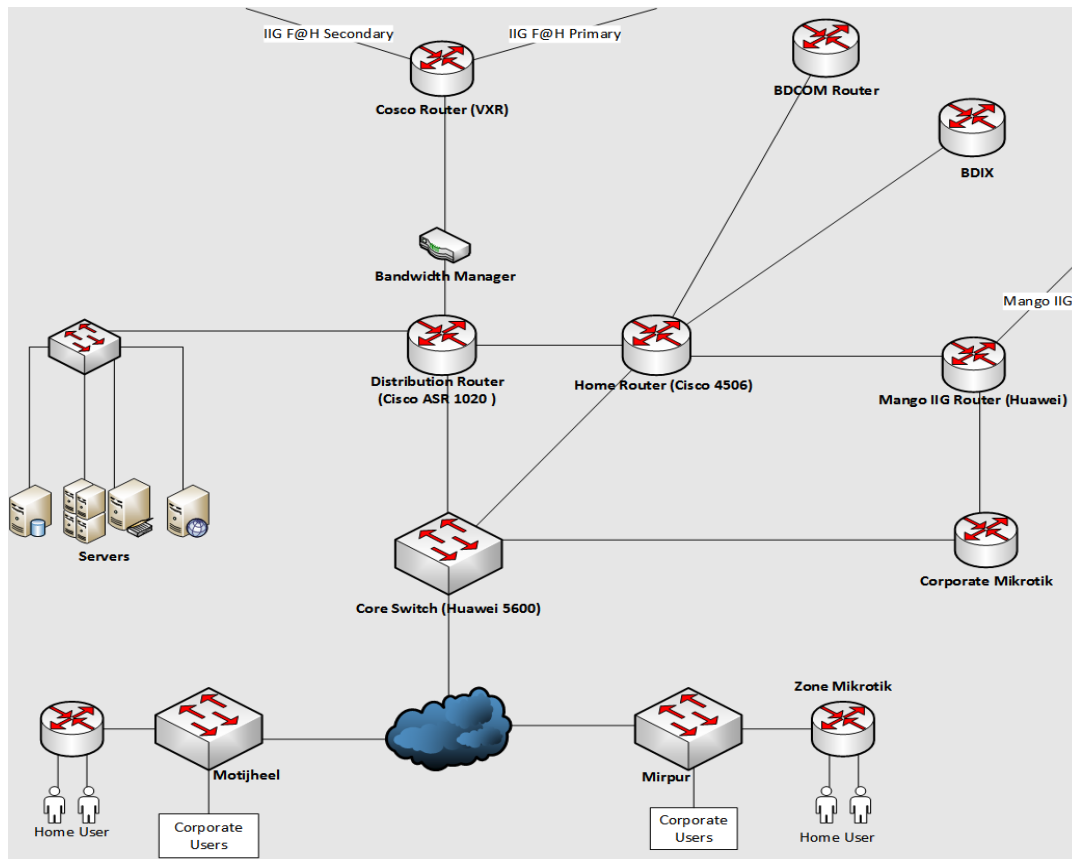


Figure 4.4: Network design diagram

4.4 Network Diagram of Abdul Monem Ltd.

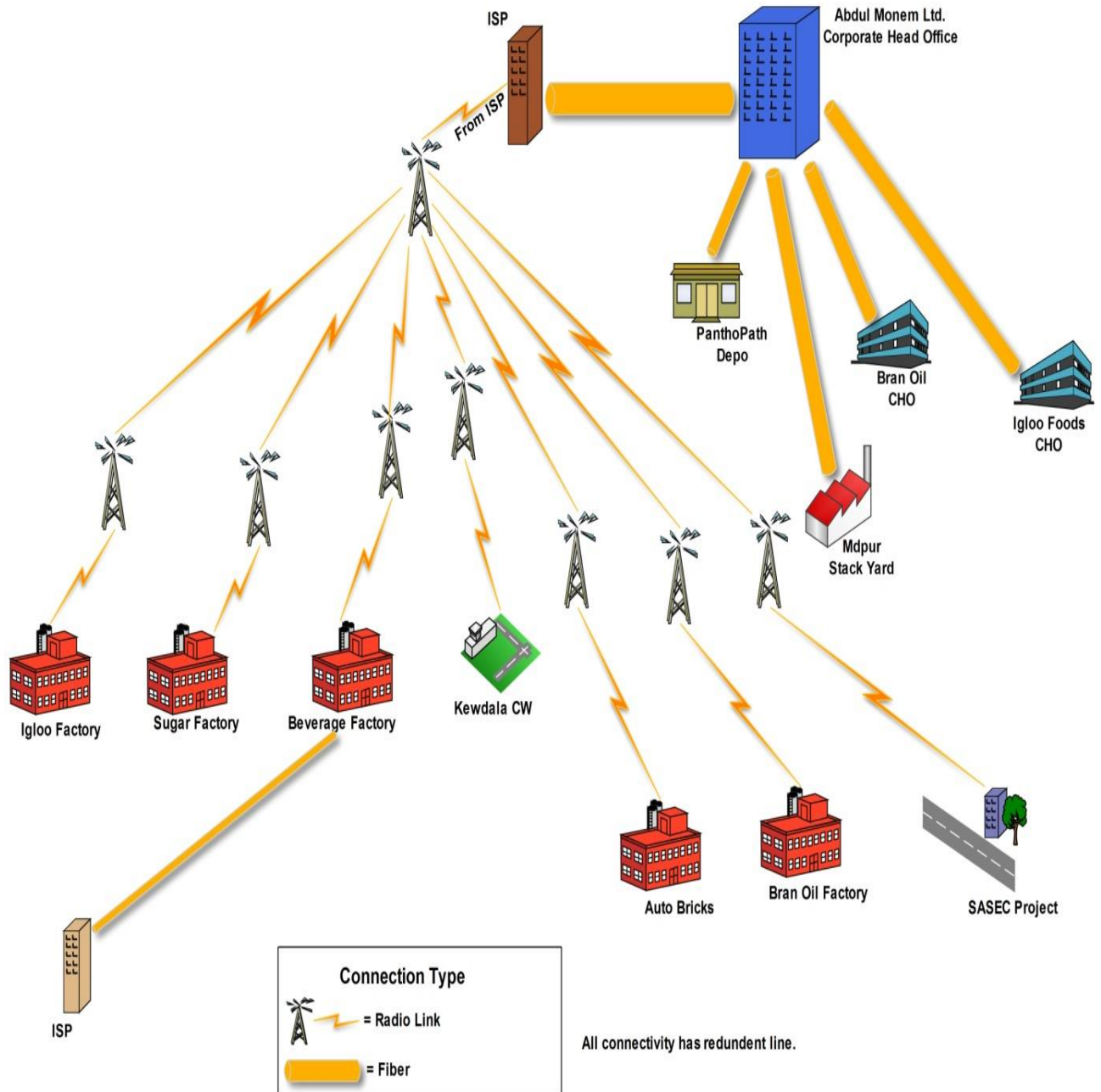


Figure 4.4: Network diagram of AML.

Chapter 5

Internship Activities

5.1 Networking

Networking is the practice of linking two or more computing devices together for the purpose of sharing data. Networks are built with a mix of computer hardware and computer software.

A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams.

Two very common types of networks include:

- File Sharing
- TCP/IP configure
- windows 2012 server configure
- Local Area Network(LAN)
-

5.2 Computer Name and Workgroup Setting

My Computer (Popup menu) → Properties → Computer Name → Network ID

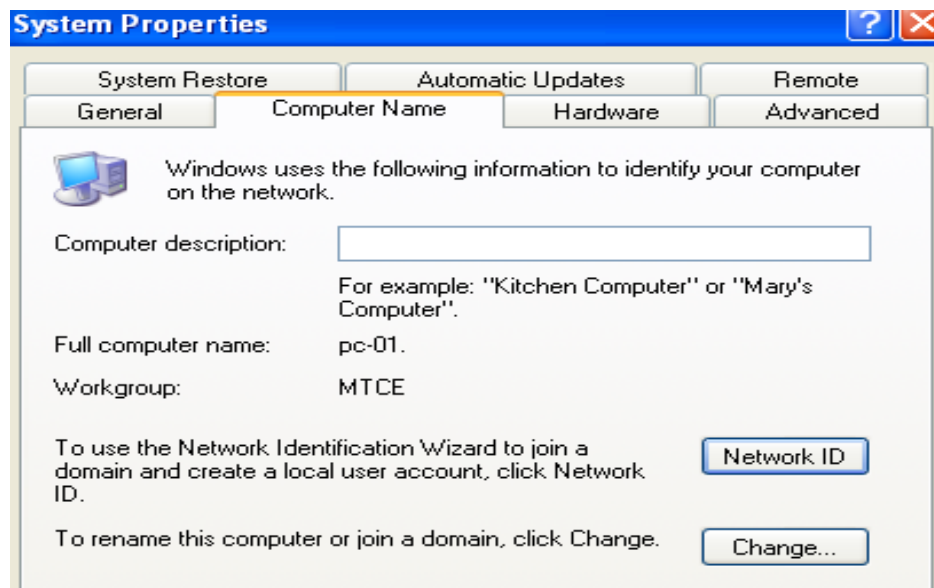


Figure 5.1: System properties

Next→

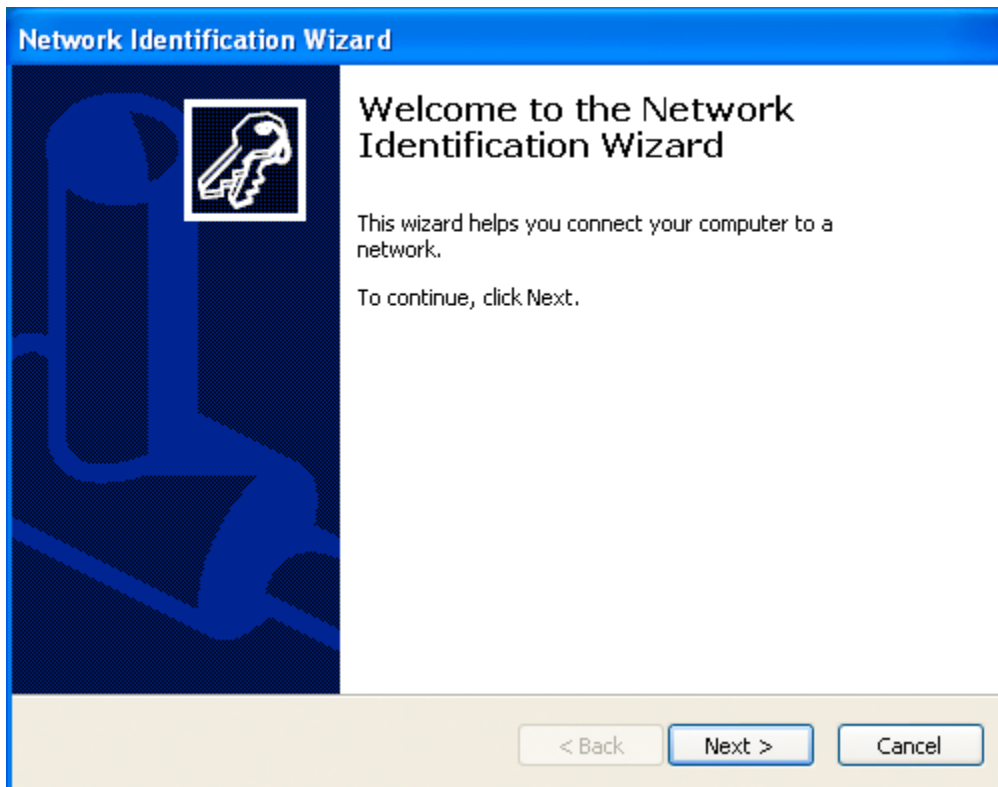


Figure 5.2: Network identification wizard 1

This Computer is part of a business Network and I use it to connect to other computer at work.

Next→

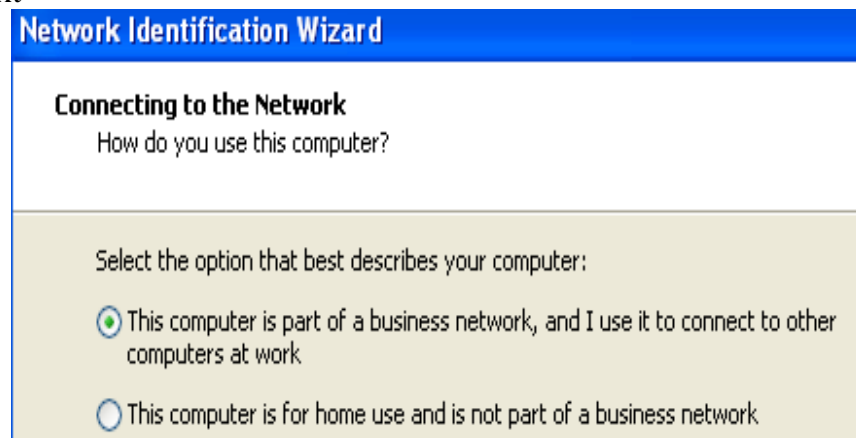


Figure 5.3: Network identification wizard 2

My Company Uses a Network with a domain
Next→

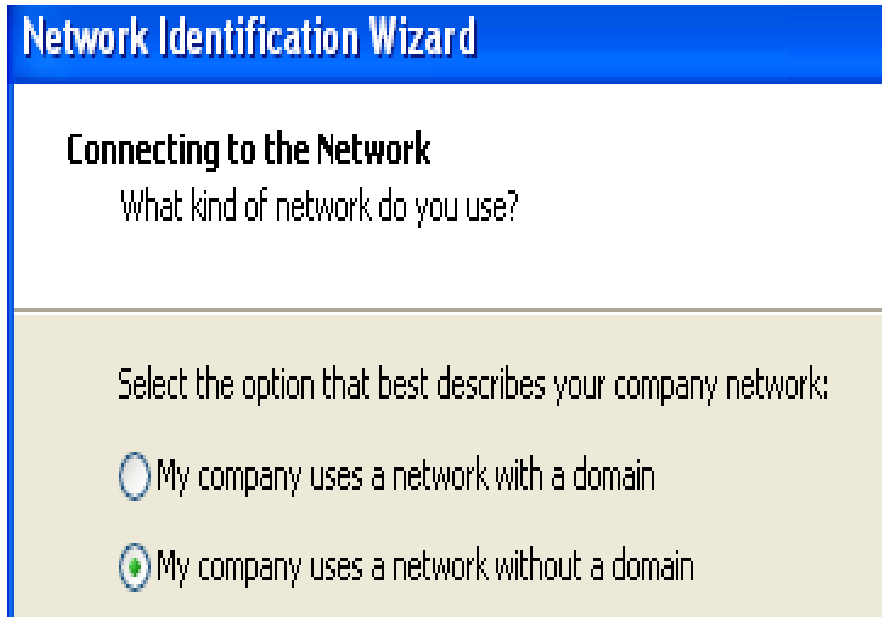


Figure 5.4: Network identification wizard 3

Type work group Name
Next→

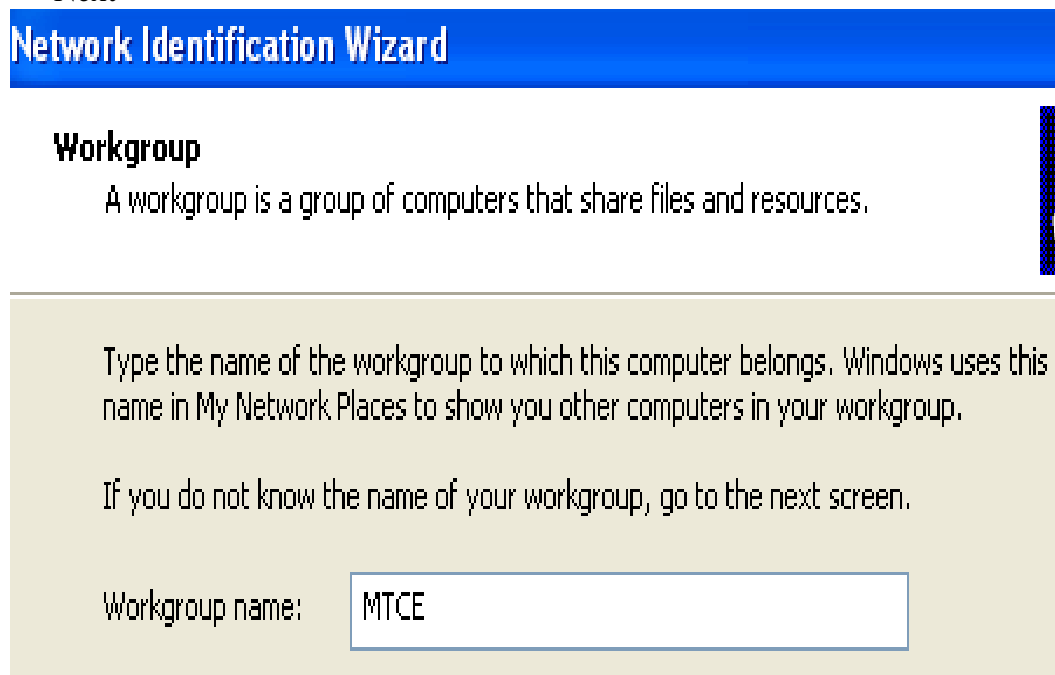


Figure 5.5: Network identification wizard 4

Finish.

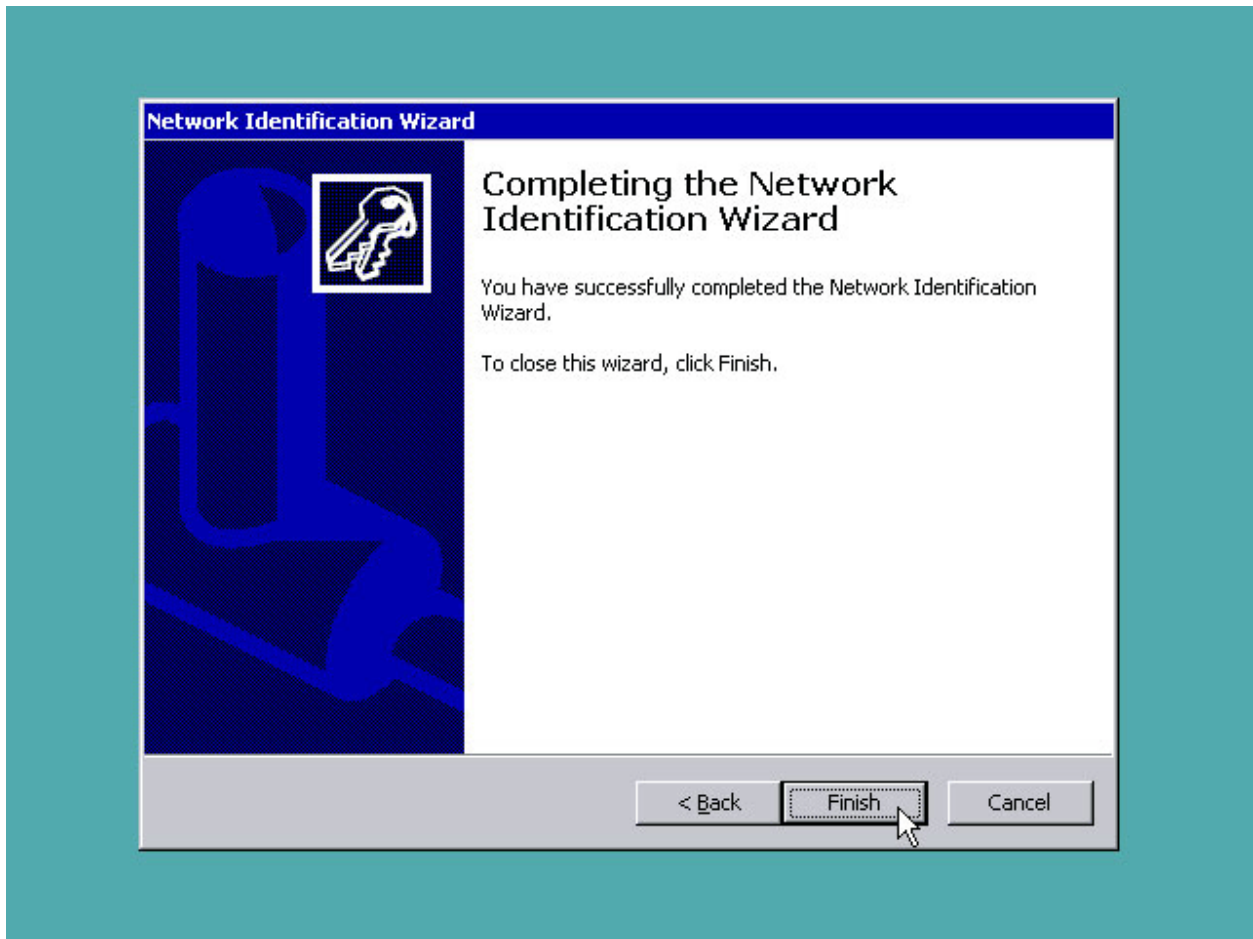


Figure 5.6: Network identification wizard 5

When we can change the computer name workgroup
My computer Icon (popup) → Properties → Computer name → Change

Select target → ok → ok → Restart computer.

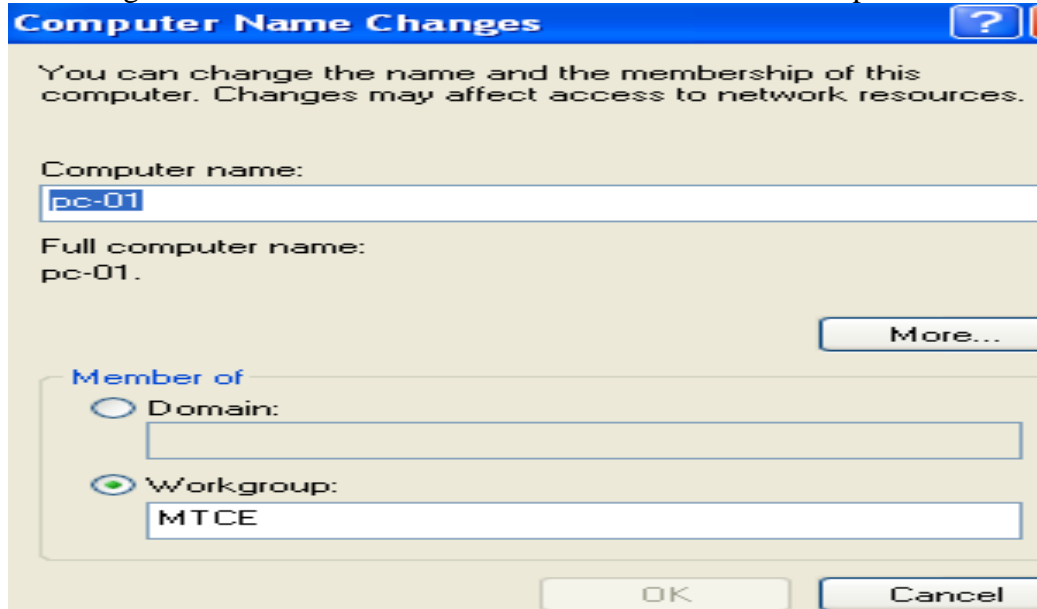


Figure 5.7: Computer name change

5.3 Cabling

- Orange + Orange white
- Green + Green white
- Blue + Blue white
- Broun +Broun white

Make Cross Cabling

Class A	Class B
Orange white	Green white
Orange	Green
Green white	Orange white
Blue	Blue
Blue white	Blue white
Green	Orange
Brown white	Brown white
Broun	Broun

Table5.1: Cross cabling

It is use to the Hub to Pc,Hub to Router,Switch to Pc

Make Striate Cabling :

Class A	Class B
Orange white	Orange white
Orange	Orange
Green white	Green white
Blue	Blue
Blue white	Blue white
Green	Green
Broun white	Broun white
Broun	Broun

Table5.2: Striate cabling

5.4 Sharing the pc

Mouse right button on Folder → Properties → Sharing → Select Sharing this folder → Apply → Ok.

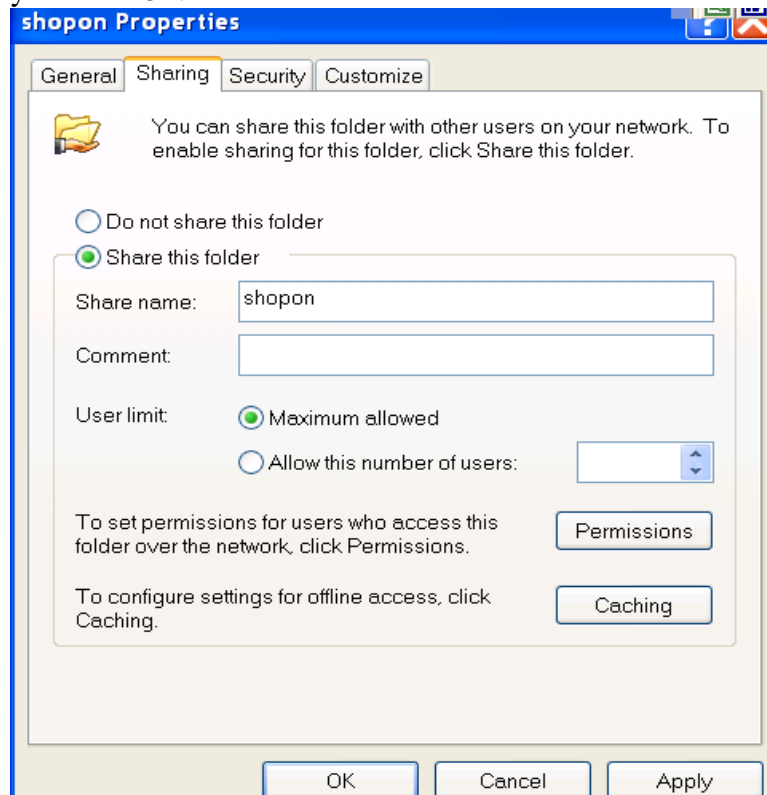


Figure 5.8: Sharing the pc

5.5 Local Area Network (LAN)

Setup Process of IP address:

IP (Internet Protocol) address is the 4 octets (32 bit) address used to identify your desktop computer, network, router, switch or other network devices in your network or internet. It's also called as IPv4 (Internet Protocol Version 4). IP address is assigned to network card on your desktop computer or notebook to communicate with other network devices [6]. Each IP Octet can be the value between 0 and 255, but several rules exist for ensuring IP address are valid. Examples are 192.168.10.97, 192.168.10.98 etc.

Setup

The step by step instructions showing how to set IP address and network information:

Step 1: Go to Start and click on Control Panel.

Step 2: Control Panel window will appear. Double click on Network Connection.

Step 3: Network Connections window will appear, Right click correct Local Area Connection by identifying correct network card and click Properties.

Step 4: Select Internet Protocol (TCP/IP) click on Properties.

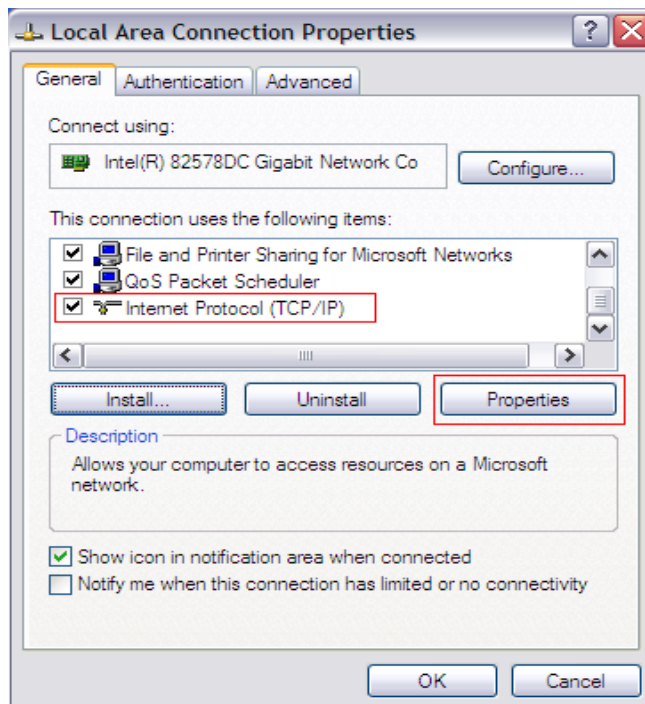


Figure 5.9: Setup of TCP/IP

Step 5: Now click Use the following IP address manually set IP address, Subnet mask, Default gateway.

Step 6: Now click Use the following DNS server address and manually set Preferred DNS server, Alternate DNS server then click Ok.

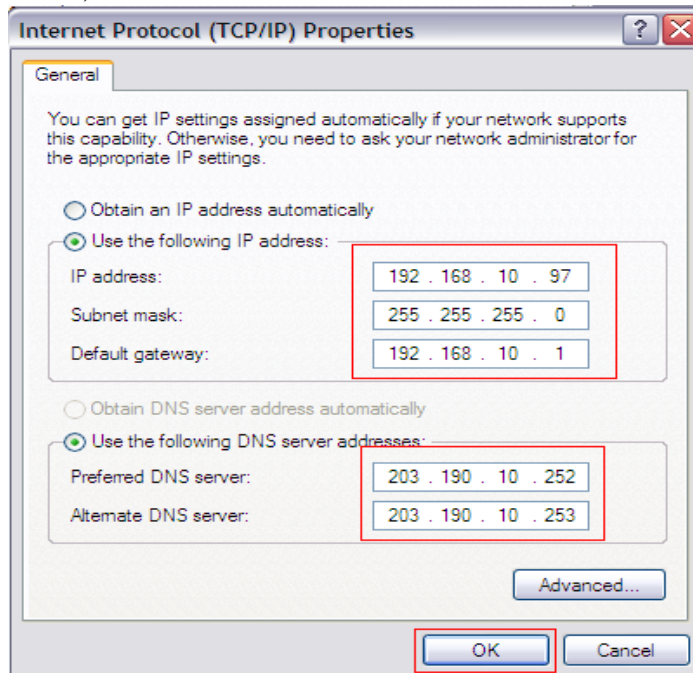


Figure 5.10 TCP/IP Properties

Troubleshooting Networking Work

1. Check network cable.
2. Check faceplate.
3. Change IP address.

Learning of Networking Work

1. How to check the connection PC to PC by ping command.
2. Here I know how to setup IP different computers.

5.6 Windows 2012 Server Configuration

DNS (Domain Name System)

DNS is one kind of Host name to convert IP Address.

Example:

www.microsoft.com to convert 192.168.0.1

DNS main three part:

(K) Resolver

(L) Name server

(M) Name Space

DNS Installation and Configuration

At first we setup the active directory

Click on Start > Run

Now type dcpromo > Click OK

then Active Directory Services activated

DNS Installation and configuration win 2003 server

Start → Setting → Control panel → add remove Program → add remove windows component → Windows compound wizard → Next → Networking service →

Details → Domain name service (DNS) → Ok → Next → Finish.

Then insert the CD in the CD Rom

Start → Program → Administration tools → DNS manager → Concentrate menu properties → Monitoring → Test performed → Simple queries and recurs me quarry → test now.

Command prompts some types

Run → cmd

ping ip address = we know activated the destination IP address

nslookup = DNS has activated know as.

5.7 Basic Troubleshooting

They proactively monitor their network from their IT department to ensure that they catch potential problems before they even happen. Moreover, their skilled engineers make sure that when they do occur, that they are resolved as quickly as possible. Apart from that, AML Support is working to provide with the fastest and most accurate support. We detected our problem in any client holder then we asked user which problem in your pc. There are some problem and solutions given below.

Some Different Troubleshooting

1. Suddenly computer hang problem

SOLUTION

1st of all we test the Power supply then we follow the processor cooling fan is loose when processor is over hit then pc is hung.

2. Suddenly computer is open then we can see the monitor show Operating System is Boot failure problem

SOLUTION

We see the computer Hard disk is disconnected or Data cable is connection failure. on the other hand Hard disk is corrupted.

3. Display Problem

SOLUTION

Suddenly we see the computer no Display and Motherboard become the sound. In that case we know that RAM is problem. Then we can wipe the ram and finally we attach the RAM slot.

4. Mother board No Power

SOLUTION

Computer is not run because at firstly check the power cable and then secondly power supply cannot pass the power in the mother board. So this power supply in corrupted.

5. Suddenly we run the any games then computer is hang or restart.

SOLUTION

This problem solve the simple because of the games is regulation high between your computer. So you can PCI Express card include.

6. In any moment computer is run but monitor no display

SOLUTION

At 1st monitor VGA port is check then your graphics is setup high regulation. That is this monitor is not supported. So another monitor connects the pc then regulation low configure. Then your monitor is supported.

7. Some client told the no file share another client or no show the workgroup

SOLUTION

At 1st we see the your pc show the LAN card. If we see no show LAN card then we can setup. Or if LAN card is disable then it is click enable.

8. Suddenly file share the another user click then show the user name and password

SOLUTION

It is very simple that another client does not share this workgroup. Then we share the another user.

9. Suddenly client computer can not the print

SOLUTION

At 1st we see the connect client to server pc. Otherwise connect the server pc.

CHAPTER 6

Server Management & Maintenance

6.1 Server Management

Server is the heart of your network, and its hardware and software must be custom tailored to your office computing needs. Computer network must also be properly maintained to function properly and avoid system downtime or loss of computer data.

In Windows Server 2012 RC, the capabilities of Server Manager have expanded considerably to facilitate multi-server tasks such as remote role and feature deployment to both physical and virtual servers, remote role and feature management, and custom server group creation.

Server Manager can handle multiple servers in a server pool, and create server groups to organize them. The server grouping functionality resembles the grouping functionality in Windows Server Update Services (WSUS), or the cloud service Windows Intune™. Groups let you manage servers that are related by certain common characteristics (such as location, function, Windows operating system release, or hardware type) as if they were a single unit.

6.2 Installing roles and features on a remote server

Windows Server 2012 RC with Server Manager can deploy both roles and features in a single session using the unified Add Roles and Features Wizard. The Add Roles and Features Wizard in Windows Server 2012 RC performs validation passes on a server that you select for deployment as part of the installation process; you don't need to pre-verify that a server in your Server Manager server pool is properly configured to support a role.

Administrators can deploy roles and features to remote servers and offline virtual hard disks from Server Manager on their local servers. In a single session in the Add Roles and Features Wizard, you can add your desired roles and features to an offline virtual hard disk, allowing for faster and simpler repetition and consistency of desired configurations.

6.3 Server role management across multiple servers:

Management of server roles is improved by shifting from a single-server, single-role model, to one in which multiple server roles can be managed remotely by using a single management application.

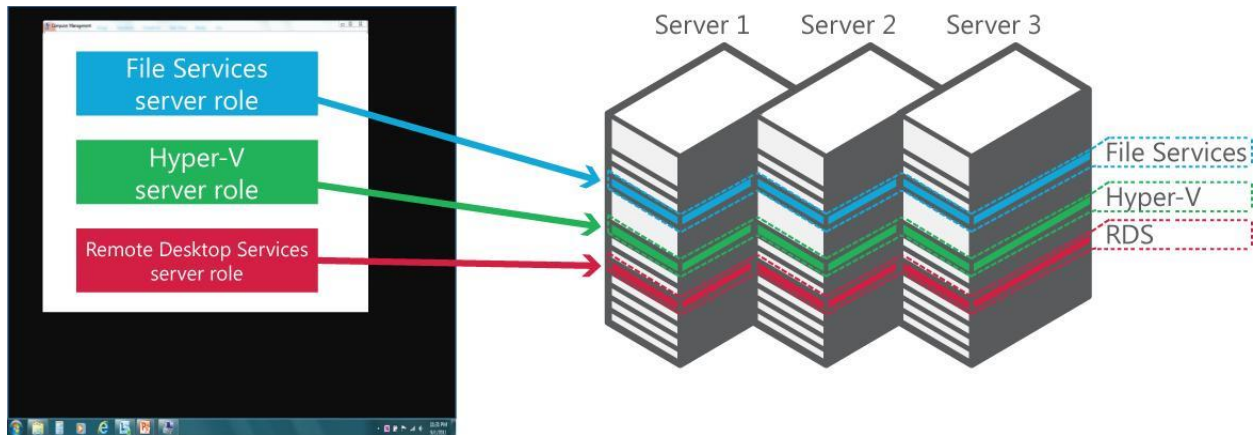


Fig 6.1: In Server Manager in Windows Server 2012 RC, you can manage server roles such as File Services across multiple servers.

6.4 Remote Desktop Services configuration:

Remote Desktop Services provides session virtualization and virtual desktop infrastructure technologies that enable users to access session and virtual desktop collections. In Windows Server 2012 RC, new management features of Server Manager simplify how Remote Desktop Services is deployed and managed in a multi-server environment. Scenario-based deployment reduces the complexity of installing different Remote Desktop Services components across multiple servers based on how Remote Desktop Services will be used. New multi-server management tools then simplify how administrators manage different servers that are running Remote Desktop Services role services and virtual desktop infrastructures.

6.5 Minimal performance impact:

The Server Manager dashboard has a default 10-minute polling cycle that users can modify in the console. By using a relatively infrequent default polling cycle, and returning only incremental data with each poll, the performance-load impact on individual servers is minimized. Server Manager uses new Windows Management Instrumentation (WMI) providers and Windows PowerShell cmdlets to pull updated status information from servers.

Requirements:

Server Manager in Windows Server 2012 RC requires the following:

- Windows Server 2012 RC (**Full installation** option)
- Remote deployment is only supported to computers that are running Windows Server 2012 RC; remote deployment of roles and features to Windows Server 2008 R2 and earlier Windows releases is not supported.
- For remote management, the value of the **Remote Management** property must remain **Enabled** on the Local Server page in the Server Manager console on a server that you want to manage remotely. (This property is enabled by default in both Server Manager and Windows PowerShell.)

6.6 Server Maintenance

Server maintenance involves keeping a server software updated and running so that a computer network can operate smoothly. Regular preventive maintenance will keep the application software running as expected and will help avoid a total or partial network failure. Server maintenance tasks include reviewing the server's performance, ensuring that automated system monitoring utilities are properly installed and configured, identifying potential security risks and backing up data at regular intervals.

AML Server maintenance plan:

- Checking server log files
- Assessing hard disk space
- Examining folder permissions
- Monitoring network temperature applications
- Ensuring adequate redundancy of systems
- Examining security features
- Installing security software patches
- Reading server logs for security alerts or evidence of computer hacking attempts

- Updating antivirus software on all computers on the network
- Updating critical service packs and software updates
- Performing regular comprehensive back-ups to ensure that vital data can be retrieved from storage in the event of a system failure

CHAPTER 7

CONCLUSION

As a developing country, the government of Bangladesh has taken some necessary project to develop the Information and Technology sector; however, it is the major part of “Vision 2021”. IT is big step forward for the concept “Digital Bangladesh”. Computer related topics can get trivial when you study them from books only. But when you are exposed to practical work as well, then it helps to strengthen your knowledge and give you confidence about your understanding. I must say that there was a lot 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 **Abdul Monem Limited**. I tried my best to get accustomed to the corporate environment and achieve each and every target that I had partaken. Working besides my supervisor, Mr. Jamal Alom Khan has helped me to envision myself in the kind of professional life I should get ready to delve into once I graduate from my university. My internship ended on the 30th July 2016. The three months’ work experience that I gained is extremely valuable to me and I wish to implement my new found knowledge in future.

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