

**Internship on Server Network System in DOL (Daffodil Online Ltd.)**

**BY**

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

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**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

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## **APPROVAL**

This Project/internship titled “**Server Network System**”, submitted by Md. Musfequr Rahman, ID No: 162-15-8195 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 4 May 2019.

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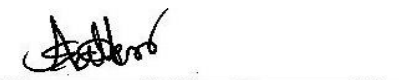
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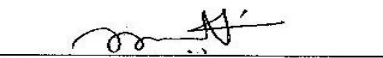
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## DECLARATION

I hereby declare that, this internship has been done by me under the supervision of **Ahmed Al Marouf, Lecturer, Department of CSE** Daffodil International University. I also declare that neither this internship nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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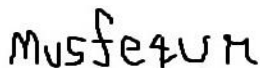
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Finally, I must acknowledge with due respect the constant support and patients of my parents.

## ABSTRACT

The Dissertation titled as “**Internship on Server Network System in DOL (Daffodil Online Ltd.)**” is configure for corporate network to enhance network performance and security and I have configured some services using Server, Web, Mail, DNS, DHCP server etc. for a corporate Network computer devices that originate, route and terminate the data are called network node. Nodes can include hosts such a personal computers, phones, servers as well as networking hardware. Two such devices are said to be networked together when one device is able to exchange information with the other device, whether or not they have a direct connection to each other. From now on new subscribers don't have to follow the manual process, they will have a built in option for balance transfer in their new SIM. Existing subscribers will not get built in facility in their SIM unless and until they change their SIM, I do update our software upon our customer's requirement. Flexi Load server is software of Mobile load/Balance server of Brace Oracle LTD. It processes load through SMS. A better idea on how to implement a more efficient and space conserving system. There are a few opportunities wait for me and help us to improve my career. The market place is very good for attendance management system in IT section. So I want to build my career of this system in IT section and known new system to improve my career.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Now a days, many technology has come up and we cannot move an inch without technology. We use technology such as, data communication and networking changing the way we do business. Business decisions must be over faster and decision makers require immediate access to accurate information and wait for the report from Germany to arrive by mail when you could appear almost instantaneously through a computer network. Businesses today relay computer network and internet work that before you ask how fast I can get online and I must know how to operate a network. The development of the personal computer brought about tremendous changes for business, industry, science and education. Research in data communication, networking has led to new technologies. One goal is to be able to exchange data such as text, audio and video fall the points in the world. Now I discuss about server network system.

### 1.2 Motivation

I have worked internship program build up my good career of the network server system. This can be help the employee in learning new strategies, ideas for the growth of the any company. Represent the application software of technologies to support an organization's purchasing activities and seeking for an interesting and satisfying post in a dynamic company which I can procedure my strong technical knowledge. Organizations can think to experience various types of benefits if these server network systems support are wisely implemented.

### 1.3 Objective

Now a days, conventional system support network well but more often than conventional system does not meet consumer expectations also the conventional system is quite time consuming not flexible to the requirements. It is an important challenge to the network

administrator or network engineer to follow the transport of data within the shortest minimum time, also make advance network diagram.

Server-based computing denotes a significant part of the way people access data services, including shared file storage and website hosting and databases. If a server is similar to a desktop PC in many respects and its main objective is to provide information to a group instead of an individual. As servers send data through networks, the growth of the Internet has fueled their use and popularity. Servers are continuously networked either by a traditional Ethernet cable or with a wireless connection.

## **1.4 Goals**

The main goal of networking is "Resource sharing", and it is to type all programs, data and equipment available to anyone on the network without the regard to the physical location of the resource and the user. The second goal is to provide high reliability by consuming alternative sources of supply. Example: All files could be replicated on two or three machines, so when one of them is unavailable and the other copies could be available.

Alternative goal is saving money and small computers have a much better price or performance ratio than larger ones. Mainframes are roughly a factor of ten times faster than the fastest single chip microprocessors, but they cost thousand times more. This imbalance has produced many system designers to build systems consisting of powerful personal computers, one per user, with data kept on one or more shared file server machines. Which goal leads to networks with many computers located in the same building such a network is called a LAN (local area network). Networks enable computers to share their resources by offering services to other computers.

Some of the primary reasons for networking servers are as follows;

- [I] Resource file sharing.
- [II] Programs do not need to run on a single machine.
- [III] Decrease cost.
- [IV] Several machines can share printers and tape drives, etc.

## **1.5 Introduction to the company**

Daffodil Online Ltd. (DOL) is one of the trailblazers and oldest ISP/ASPs in Bangladesh and provided that one stop integrated ICT services and solution since July 2002. DOL is going to conduct the most challenging & demanding IT professional courses and training in the day of globalization. Daffodil Online Limited (DOL) is one of the fastest ISP's in Bangladesh to connect everyone, anywhere, all the time to deliver high-quality Information and Communication Technology (ICT) services at a reasonable price. DOL use the latest technologies and upgrading the services wherever it is required.

DOL has a very strong professional engineering management team certified and associated with SUN, Cisco, Microsoft, and Linux, beside Oracle as actively involved with world leading computing associations including IEEE, ACM, ACS, BCS, and PMI. Our Corporate Social Obligation ethos strengthens the sense of my responsibility on Community," Workstation, Location and Market place.

## **1.6 Report Layout**

In this lessons, I have stated introduction of internship, introduction to the company and motivation of internship in Chapter 1. Then the chapter 2, I have describe my internship process. And in this part give all information about where the company an internship has been accompanying take on responsibilities. Then included how to do perform about the internship works. Daffodil online offered what is the IT service, work responsibilities and what is the role of in job market of Server Network System. After that, in chapter 3, I have stated about internship daily task and activities, events and activities and challenges. Then, I stated that is competence smart design, reflections, more earned in chapter 4. Finally, in chapter 5, I have described is future possibility for internship also conclusion. I discuss for future Propagation of the Server Network and write a conclusion.

# CHAPTER 2

## ORGANIZATION

### 2.1 Introduction

Daffodil Online Ltd.(DOL) is one of the originators besides oldest ISP-ASPs in Bangladesh and provided that one stop integrated ICT services solution since “July 2002”. DOL is going to behavior the most challenging and demanding IT professional courses besides training in this day of globalization. Daffodil Online Limited (DOL) is one of the express ISP’s in Bangladesh and connect to everyone,-anywhere, besides permanently to deliver high-quality Information and Communication Technology (ICT) services at a rational price. DOL use the modern technologies, then upgrading the services somewhere it is Obligate.

DOL has a very strong qualified engineering management besides team certified and accompanying with SUN, Cisco, Microsoft, Linux, and Oracle and actively convoluted with world leading computing relations including IEEE, ACM-ACS, -BCS, or PMI. Our Corporate Social Responsibility is ethos toughens, then the sense of our responsibility on the Community, Workstation, - Location and Market place.

### 2.2 List of Product’s

- I. Laptops and Notebooks: [Asus](#), [HP](#), [Dell](#), [Lenovo](#), [Apple](#), [DIU PC](#).
- II. Desktops: [Asus](#), [Acer](#), [HP](#), [Dell](#), [Dell All in one](#), [Asus apple All in one](#).
- III. Mobile : Le phone, DCL mobile, Lenovo Tablet pc.
- IV. Monitor : [Asus](#), [LG](#), [Samsung](#), [Dell](#), [HP](#), [Philips](#).
- V. Software & Antivirus: [Adobe software](#), [Antivirus’s](#), [Customize-Software](#), [Microsoft](#).
- VI. Security & Observation: [Access control](#), [Furniture](#), [Attendance Device](#), [CCTV Camera](#), and [DVR & NVR](#), [IP Camera](#).
- VII. Networking Product : [Cable](#), [Switch](#), [LAN Card](#), and [Modem](#), [Microtik Router](#).

- VIII. Printer & Scanner : Magazine, Printer All Brand, Scanner All Brand, Toner.
- IX. Company Equipment : Fax-Machine, Equipment, projector and White Board, Photo Copier, Projector Screen, Projector, Digital Podium, L-C-D Flat Panel.
- X. Accessories : Camera, Graphics Card, and Micro SD, OTG Pen Drive, Pen Drive, Bank, and SDD, Speaker, Casing, DVDRW, Processor, RAM, Head Phone, Keyboard, Motherboard, Mouse, HDD.

## 2.3 Market Situations

After that I want to say, Finding a new job can be an overwhelming viewpoint in just an 5 about any industry today. Then for those with IT and Linux skills of the challenges are a little bit less overwhelming. I can find more than 21,000 Linux and IT related jobs on any given day. Then on tech jobs site Dice.com. For example that, beside demand for Linux and IT experience, there is increasing at a rate of 40 percent every last year, then compared with impartial 20 percent for the job postings generally. Then a similar situation can be initiate on the It and Linux Foundation's Jobs Board, temporarily, and where more than 30 Linux job advertisement were recently posted in a particular week. After that demand for Linux skills far outstrips. And supply in other words, so it's no wonder companies are concerned about finding and the staff they need. Of course, then the corporate world's problem is the Linux and IT expert's prospect.

## 2.4 Target Group

(I)Target is the highest fact in any business. Morality is the best thing for this business company. So, you want to deliver best -facilities in any clients and any business company.

(II) I can do this target fill-up maintenance and manage employee efficiently to succeed sustainable results in our business company.

(III) After that I want to success my journey to high Situation find to increase what are they have - wealth, and skills, influence, and are their client's business.

(IV) There are many business targets our company flows this area Education, Hospital, Clinic, besides Cement Industry, Lather Industry, Garments and Industry, Landed property Company.

(V) Our corporation tries to developing up main target of upper level of our country.

## 2.5 SWOT Analysis



Fig 2.5: SWOT Analysis [2]

### Strengths:

- I. This Organization also gives me a sense of control and allows for increased productivity. It is Bangladeshi brand Company and built upon a good reputation for service and product.

- II. Online business setup & service providing.
- III. The company respected employees that value its workers is good.
- IV. This Association has strong moral values and moral operation announcement.

**Weaknesses:**

- I. I have a small workforce and with a surface skills base in some ranges of my company.
- II. Sometime this company faces tiny problem.
- III. Something which means that are these weaknesses might lead to serious problems in the business company's and strategic planning are might even lead to inferior situations.

**Opportunities:**

- (I) The company business zone is increasing and with many future opportunities for this success.
- (II) The challenger may be slow to take up new technologies.
- (III) Sometime many companies want to take help from my business company.
- (IV) The Company create a new technology product and occasionally offer a good job opportunities for professional engineers.

**Threats:**

- I. When we develop new technology for market condition suddenly the market situation is down then this is very big pressures for company.
- II. Occasionally a company orders a product from our company and we develop this product, some reason this company refuse my product this is also threats for company.
- III. Security threats is a big issues in the system



## 2.6 Organization Structure:



Fig 2.6: DOL Organization Structure diagram

# CHAPTER 3

## Tasks, Projects and Activities

### 3.1 Daily Task and Activities

My Company opens at 11:00 am then close at 2.00 pm. In this time I will do many others work in daily portion.

- Month 1: In the first month of internship on daffodil online limited I have learned and performed the following tasks:
  - Learning & understanding About Network Components.
  - Learning & understanding Basics of Linux.
  - Understanding Linux HDD Partitions.
  - Learning & understanding Linux Run Level.
  - Linux Installation.
  
- Month 2: Then second month of internship on daffodil online limited I have learned and performed the following tasks:
  - Basic CentOS Commands.
  - Linux User and Password Management.
  - Know About logged in users.
  - File and Directory Accessing.
  - To Copy and Move File and Directories.
  - Compressed and Decompressed File and Directories.
  - Crontab.
  - Mount- Unmount Drive.
  
- Month 3: In the third month of internship on daffodil online limited I have learned and performed the following tasks:
  - File and Directory Permissions.
  - Install, Update and Remove Package Using YUM.
  - Concept of IP Addressing.
  - Configuring IP Address in CentOS.
  
- Month 4: The last month of internship on daffodil online limited I have learned and performed the following tasks:
  - Learning and configuring NFS Server.
  - Learning and configuring WEB Server.

- Learning and configuring FTP Server.
- Learning and configuring DNS Server.
- Learning and configuring MAIL Server.
- Learning configuring PROXY Server.
- Remote Login Service.
- Firewall.
- Backup and Monitoring.
- MikroTik

### **Step by Step Tasks:**

- (a) I work on the Server Network System besides discussed daily assistant engineer in our firm.
- (b) After that analysis I do any error here tries to resolve with senior engineer.
- (c) I was work at this time many tools in this server network system in my companies, and my Institutes etc.
- (d) Effortlessly, I want to try gives various IT support in my firm.
- (e) Solves many others configure problems in my company.
- (f) Generate and Maintain some Server System Support Records.
- (g) While I fall any problem I don't be ambiguity and early company of senior engineer with me.

### **3.2 Events and Activities**

Internship provides there has provide many activities and event. It arrange internship student in a placement. The placement process and work with a coordinator. Coordinator the assist and if he want resume it. The scheduling process organized large network and event companies. I must want to apply accepted to program in city life. Event planning internship offers an experience and many responsibilities. The responsibilities are parties, ceremonies, competition big and small. If I got the experience is good for me. Recently through a big event my DCL Company launches dcl Mobile and dcl Ups. Many others activities participate in attended International fair, Trade fair, E-Asia, B2B marketing event etc. Internship program provides students with guaranteed internship placement with a premier event planning internship.

### 3.3 Project Task and Activities

The primarily aim of this internship is to Exhibit that with better features in System support could improve.

## Working Profile

### Server Network System

#### Important Requirements: CONNECT NETWORK TO SERVER

##### Connect computer to the server

I can connect my home computers to the Windows Home Server server using the Connect a Computer to the Server wizard. I can launch this wizard by typing `http://<server name>/connect` Internet address in your Internet browser, where <server name> is the name of the server. The wizard installs the Windows Home Server Connector software on your home computer and joins it to the server. Windows Home Server then automatically backs up your home computer, monitors its health, and enables you to configure to remotely administer Windows Home Server from your home computer.

Before you begin connecting your home computers, do the following:

- Make certain that the computer meets the prerequisites to connect to the home server. To learn about the prerequisites, see [Prerequisites for connecting a computer to the home server](#).
- Certify that the Windows Home Server supports the operating system, that is running on the computer. For the list of supported operating systems, see [Supported operating systems for home computers](#).

- *Review the changes that are made to the computer by the server Windows Home Server, when you run the Connector software:*

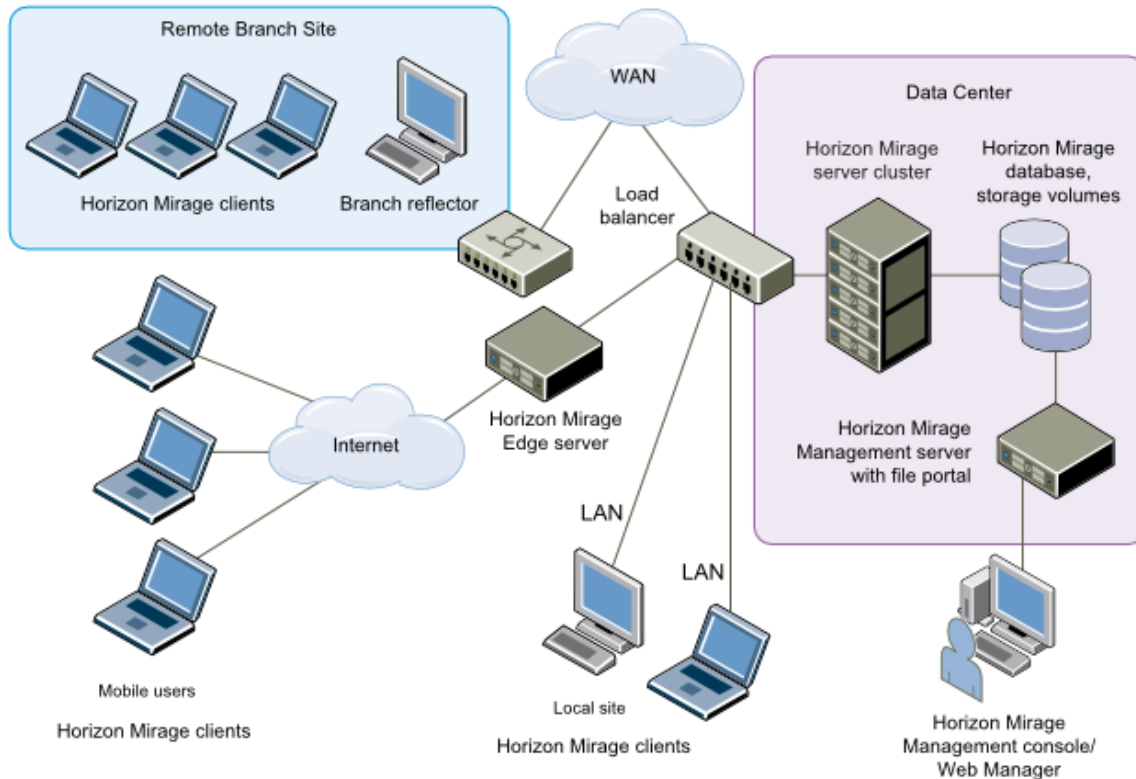


Figure 3.3.1: Connect Server to the Computer [3]

### 3.3.1 Important of Server connect

You can access properties that are situated on your server in multiple ways. If you want to use remote access, then I recommend using individual user accounts, besides more options are available. These options are follows:

- (i) Using individual user accounts:** If you want to use remote access, have an separable user accounts, then after you connect the computer to the server, and you can create new network user accounts for the users of this computer and on the server using the Instrument

panel. After that creating the user accounts, then you must provide the network user name and password information to the users of this computer. With the purpose of they can access resources on the server using Takeoff pad.

**(ii) Using a Home Group:** If you have Windows 7 in your network, then you may want to use a standing home group, and create a new one-and join this computer to the home group. Besides, this will enable users of this computer to access the shared folders on the server. Though, the computer must be running Windows 7 to participate in the home group.

**(iii) Using the Guest account :** The Guest account can be used as a suitable way to turn on access to properties and that are stored on your server for someone who is not a frequently using the home server. Then you can activate the Guest account to share files with your lengthy family and friends. Use the Guest account for transitory access and to resources on the server and deactivate the Guest account.



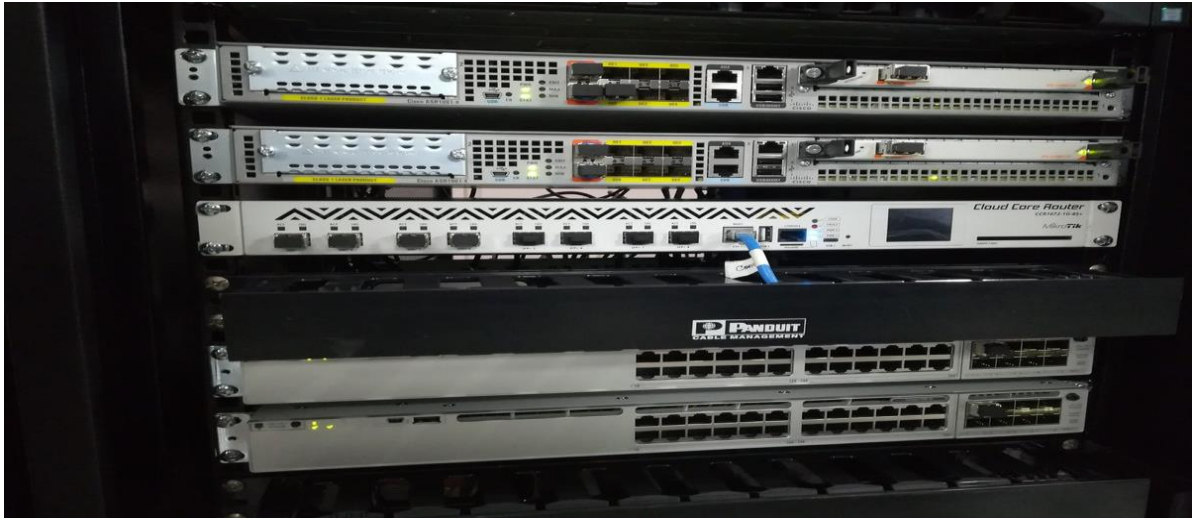


Figure 3.3.2: Important of Server connect [5]

**There are dissimilar types computer to the server connect**

**Automatically connect client computers to the server**

This procedure refers to client computers running Windows 2000 Professional and then Windows XP Professional. For the information about client computers running other the operating systems-beside see [Configure client computers running earlier versions of Windows](#). Then Client computers that are members of another network or domain must be reconfigured to connect to the computer running Windows Small Business Server 2003.

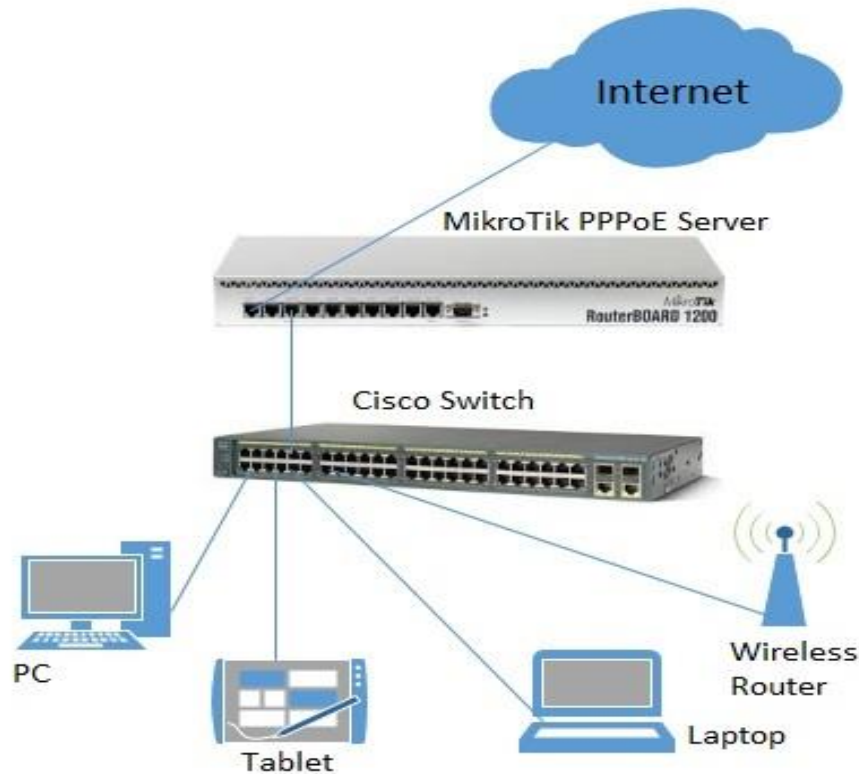


Figure 3.3.3: Manually connect client pc to server [4]

### **Set up a Small Business Computer Network**

Setting up a computer [network](#) is a good method to get more out of your method and its components. This is definitely true if you are a running a small business. Networking allows you to manage all of the operations of a small business-like communication, data transfer, and storage more easily. Then By setting up a network of your computer will be used to its full prospective besides all your business needs will be met. You can access the Internet with any- computer on the network, other than share files and devices across it. An effective computer network design can be make a big difference for you and your business. In this article, I am going to walk you concluded the necessary steps on how to set up a small -business computer network. Then I will effort to explain what you need to know to make it all work.



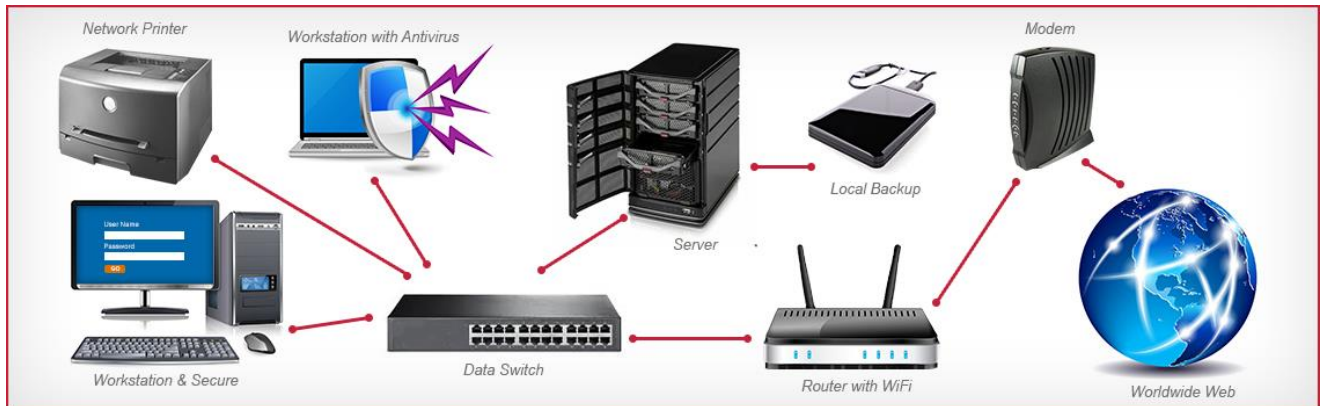


Figure 3.3.4: Set up a Small Business of Computer Network [9]

### Connect to network server through Wi-Fi:

I run a small business, I have a server that I use for file sharing and every computer persisted into the switch has access to it. And I connected a wireless router in hopes that people using a laptop would be able to access the files. Then the people on the laptop don't have access to the files. The origin of the server is to serve – technically means that the specific computer is serving all those computers that are present in its network. It facilitates them by making queue of the printing command of several computers at a time and also acts like a file server for those applications that are accessed by the online terminals.

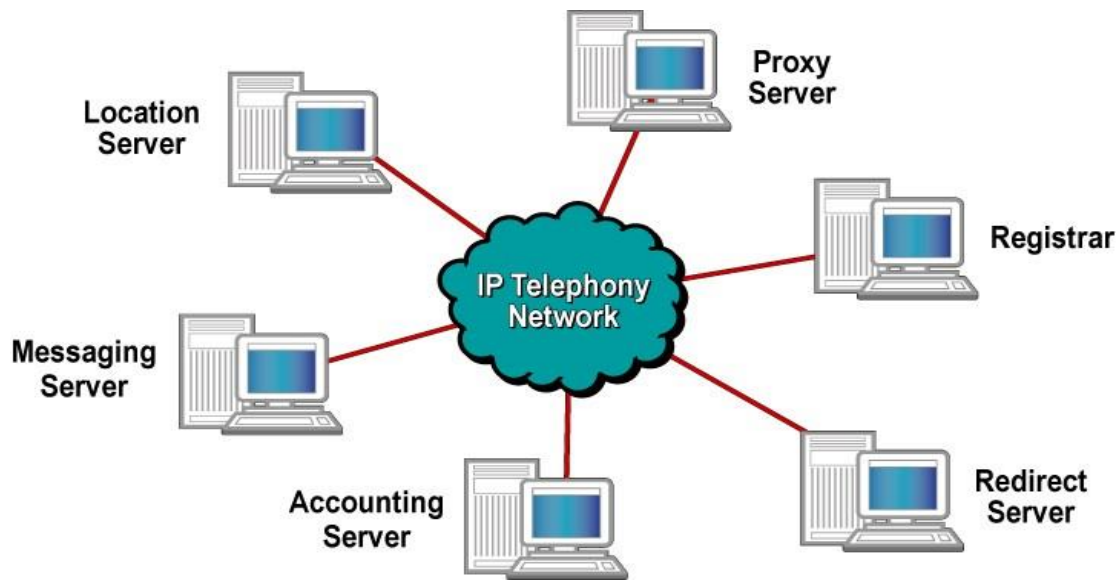


Figure 3.3.5: Server History

Today is the role of the server of similar to that microcomputers and the past which are now exchanged. Then for this role many servers are appointed but this allocation does not limit. The role of a server as many other roles can be assigned to the server consecutively. For example, I can take the example of a small office, where a desktop computer can serve all other computers present within the office. While simultaneously serving as a workstation for some employee.

### **Categories of Servers**

There are four categories of servers-:

- 1) **FTP Servers.**
- 2) **Proxy Servers.**
- 3) **Online game Servers.**
- 4) **Web Servers.**

## FTP Servers

- This File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files and between a client and server on a computer network.
- FTP is built on a client server model architecture and uses separate control and data connections between this client and the server.

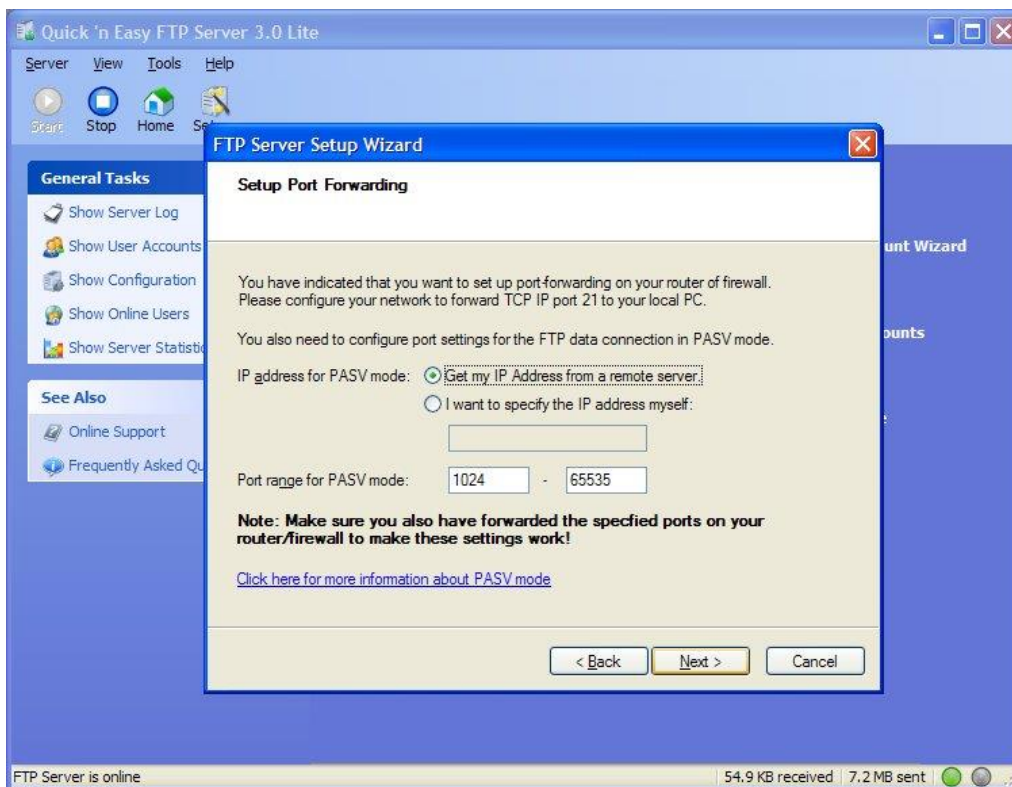
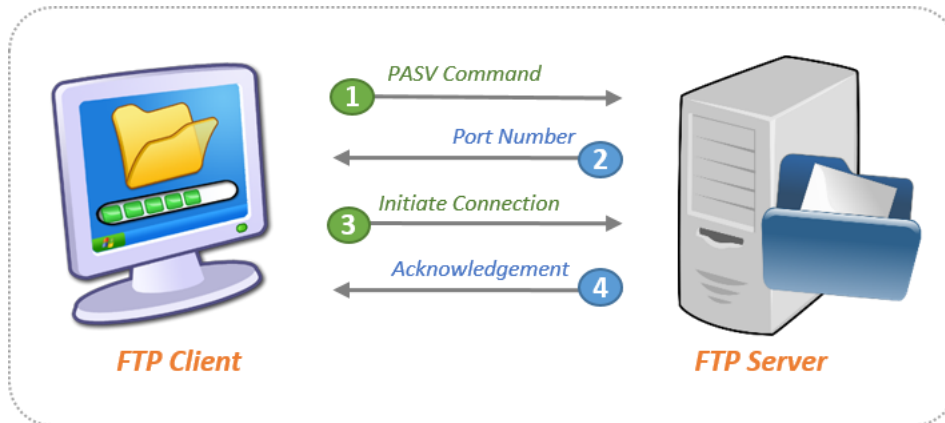


Figure 3.3.6: FTP Servers [7]

## Install Process

The vsftpd FTP daemon runs confined by default. SELinux policy defines how vsftpd interacts with files, processes, and with the system in general. For example, when an authenticated user logs in via FTP, they cannot read from or write to files in their home directories: SELinux prevents vsftpd from accessing user home directories by default. Also, by default, vsftpd does not have access to NFS or CIFS volumes, and anonymous users do not have write access, even if such write access is configured in `/etc/vsftpd/vsftpd.conf`. Booleans can be enabled to allow the previously mentioned access. The following example demonstrates an authenticated user logging in, and a SELinux denial when trying to view files in their home directory:

1. Run the `rpm -q ftp` command to see if the ftp package is installed. If it is not, run the `yum install ftp` command as the root user to install it.
2. Run the `rpm -q vsftpd` command to see if the vsftpd package is installed. If it is not, run the `yum install vsftpd` command as the root user to install it.
3. In Red Hat Enterprise Linux, vsftpd only allows anonymous users to log in by default. To allow authenticated users to log in, edit `/etc./vsftpd/vsftpd.conf` as the root user

## Install the vsftpd package

Vsftpd is a GPL licensed FTP server for UNIX systems and including Linux. It is secure and extremely fast. It is steady. And don't take my word for it though below, I will see substantiation supporting all three assertions. And I will also see a list of a little important sites which are happily using vsftpd. Then this exhibits vsftpd is a mature and trusted solution.

```
[root@localhost ~]# Yum install vsftpd* -y
```

## **Enable the FTP server's home directory**

SELinux is an acronym for Security-enhanced Linux. It is a security feature of the Linux kernel. In ftp server ftp\_home\_dir are not allow for any user. We can enable the ftp server home directory by using getsebool & setsebool command.

Access to home directories has been denied by SELinux. This can be fixed by activating the ftp\_home\_dir Boolean. Enable this ftp\_home\_dir Boolean by running the following command as the root user [3, 5]:

```
[root@localhost ~]# Setsebool -P ftp home dir on.
```

## **Restart the vsftpd service & configured start spontaneously during the system Startup**

Run the service vsftpd start command as the root user to start vsftpd. If the service was running before editing vsftpd.conf, run the service vsftpd restart command as the root user to apply the configuration changes:

```
[root@localhost ~]# Service vsftpd restart
Shutting down vsftpd:                [OK]
Starting vsftpd for vsftpd:          [OK]
[root@localhost ~]# Chkconfigvsftpd on
[root@localhost ~]#
```

## **Install the ftp package for ftp client**

FTP is a file transfer protocol for exchanging files over any TCP/IP based network to manipulate files on another computer on that network regardless of which operating systems are involved (if the computers permit FTP access). All major operating system supports ftp. FTP is the most used protocol over internet to transfer files. Like most Internet operations, FTP works on a client/ server model. FTP client programs can enable users to transfer files to and from a remote system running an FTP server program there are many existing FTP client and server programs. FTP servers can be setup anywhere between game servers, voice servers, internet hosts, and other physical servers.

```
[root@localhost ~]# yum install ftp -y
```

## Proxy Servers

The proxy server is a dedicated computer and a software system running on a computer, that acts as a transitional between an endpoint device, such as a computer, and another server from which a user or client is requesting a service. Then the proxy server may exist in the same machine as a firewall server or it may be on a separate server, which forwards requests through the firewall.

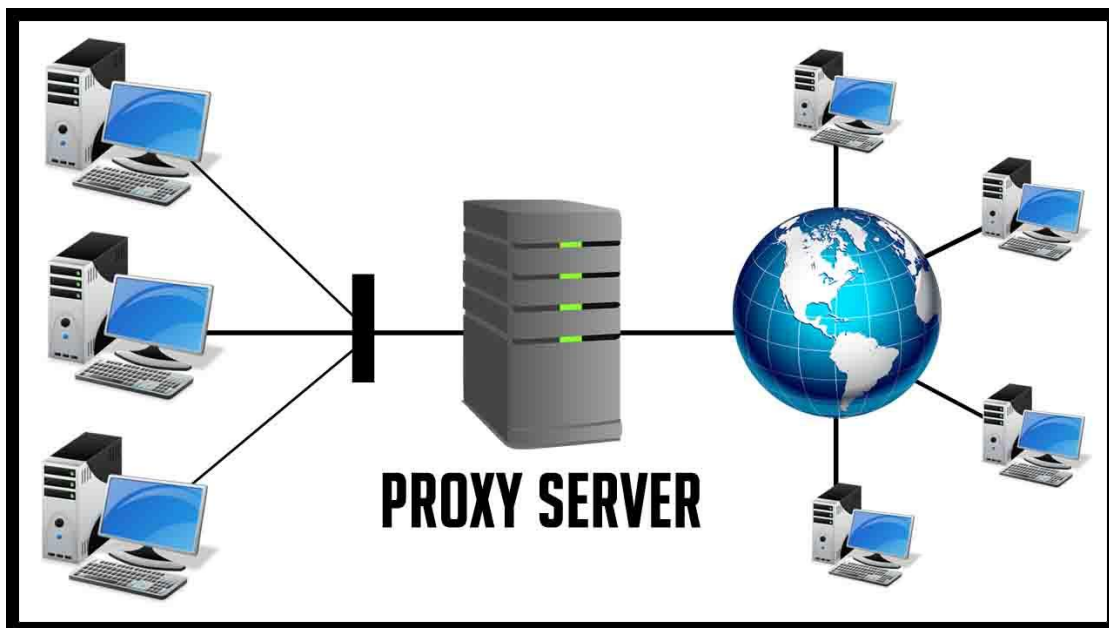


Figure 3.3.7: Proxy Servers [1]

### 3.3.2 Online game Servers

A game server is a server which is the authoritative source of events in a multiplayer video game. The server transmits enough data about its internal state to allow its connected clients to maintain their own accurate version of the game world for display to players. They also receive and process each player's input.



Figure 3.3.8: Online Game Servers [8]

## Web Servers

A web server is a computer system that processes requests via HTTP, and the basic network protocol used to distribute information on the World Wide Web. The term can refer to the entire system, or specifically to the software that accepts and supervises the HTTP requests.



Fig 3.3.9: Online web Server [6]

## After That I have learning Linux command:

Now we start service httpd and the command- **#service http**

### Basic Command:

The Linux operating system used for the PARTICLE DAQ system can be used either in a terminal mode. Where you are type commands in a Windows Explorer style and graphical user interface (GUI) .The Explorer-like GUI can be used for file manipulation functions besides deleting or moving files on the disk. Then it cannot be used to run the PARTICLE DAQ itself. After that to begin using the Explorer-like GUI, double click on the icons on the Desktop. For thereal part, Explorer mode will be familiar from Windows or MAC OS, so with a few exceptions, this information will not focus on this. Where something is much more easily done from Explorer mode and it will be highlighted here.

To begin working in the terminal mode and you will need to open a terminal. Then this can be accomplished by clicking on the terminal icon in the bottom icon bar, by using the main menu System Tools -> New Terminal.

## Network Configuration in Linux Centos server:

Show the Server interface command:

```
[root@localhost Desktop]# nmcli d
DEVICE      TYPE      STATE      CONNECTION
virbr0      bridge    connected  virbr0
ens33       ethernet  connecting (getting IP configuration)  ens33
lo          loopback  unmanaged  --
virbr0-nic  tun       unmanaged  --
```

Fig 3.3.10: Show the Ethernet port.



```
[root@localhost Desktop]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet6 fe80::20c:29ff:fe01:7005 prefixlen 64 scopeid 0x20<link>
    ether 00:0c:29:01:70:05 txqueuelen 1000 (Ethernet)
    RX packets 10044 bytes 983989 (960.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 224 bytes 23445 (22.8 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1 (Local Loopback)
    RX packets 64 bytes 6328 (6.1 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 64 bytes 6328 (6.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
    ether 52:54:00:a9:e6:51 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Fig 3.3.11: Show the ip address

```
[root@localhost Desktop]# vi /etc/sysconfig/network-scripts/ifcfg-ens33
```

Fig: 3.3.12: Edit ens33 file appropriate path

- Edit ens33 file. You must be edit: BOOTPROTO=static, ONBOOT=yes, IPADDR=enter your ip address, NETMASK=enter your subnet mask, GATEWAY=enter your gateway.
- 

```
TYPE=Ethernet
BOOTPROTO=static
DEFROUTE=yes
PEERDNS=yes
PEERROUTES=yes
IPV4_FAILURE_FATAL=no
NAME=ens33
UUID=9d153f8e-32db-4617-a957-dee2c68fe556
DEVICE=ens33
ONBOOT=yes
IPADDR=203.190.10.10
NETMASK=255.255.255.248
GATEWAY=203.190.10.9
DNS1=203.190.10.252
DNS2=203.190.10.253
```

Fig 3.3.13: Edit Command

```
# Generated by NetworkManager
nameserver 203.190.10.252
nameserver 203.190.10.253
nameserver 8.8.8.8
```

Fig 3.3.14: DNS server IP

```
[root@localhost Desktop]# ping google.com
PING google.com (74.125.130.102) 56(84) bytes of data:
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=1 ttl=43 time=50.5 ms
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=2 ttl=43 time=53.6 ms
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=3 ttl=43 time=63.2 ms
64 bytes from sb-in-f102.1e100.net (74.125.130.102): icmp_seq=4 ttl=43 time=50.4 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3009ms
rtt min/avg/max/mdev = 50.420/54.464/63.244/5.230 ms
```

Fig 3.3.15: Ping Network check

## Centos Install

### ➤ Creating Linux Partition

For Installation of Linux we have to create at least 3 partitions root (/), boot, and swap.

- **Root Partition: /**

A Root Partition there is where “/” The root directory is located all files are on the root partition. Minimum 5 GB HDD Space Required.

- **Boot Partition: /boot**

The partition boot (200 MB): the partition mounted on /boot/ contains the operating system kernel (which allows your system to boot Linux), along with files used during the bootstrap process. Due to limitations, creating a native ext3 partition to hold these files is required. For most users, a 200 MB boot partition is sufficient.

- **SWAP Partition: swap**

The partitions swap is used to support virtual memory. In other words, data is written to a swap partition when there is not enough RAM to store the data your system is processing. Partition Swap should equal 2x physical RAM for up to 2 GB of physical RAM, and then an additional 1x physical RAM for any amount above 2 GB, but it cannot less than 32 MB <sup>[4]</sup>.

### ➤ 3.3.3 Linux Run-Level Used by Centos

# init 0 = Shut Down.

# init 1 = Single User Mode.  
# init 2 = Multi User Mode.  
# init 3 = Full Multi User Mode.  
# init 4 = Unused.  
# init 5 = X-Window (GUI Mode)  
# init 6 = Reboot.  
See current run-level = who -r

### ➤ 3.3.4 The Basic Command of Linux Centos

Shutdown = power off init 0, shutdown -h now .  
Reboot = reboot or init 6  
Logout = log the current user off the system.  
Display or change date or time = date .  
Present Working Directory = pwd  
Create a blank file = touch musfequr (File name).  
Create a directory = mkdir musfequr (directory name).  
List information about file = ls  
Chang Working Directory = cd /root/Desktop (directory path)

### ➤ 3.3.5 User Create and Password Management

Adding a user = add user musfequr (username).  
Set a Password to New User = passwd musfequr (username).  
Password Disable/Remove = passwd -d musfequr (username).  
Verify user information = finger musfequr (username).  
Locking an account = passwd -l musfequr (username).  
Unlock an account = passwd -u musfequr (username).  
Delete a user = userdel musfequr (username).  
Delete a user with home directory = userdel -r musfequr (username).

### ➤ 3.3.6 To Know About the Logged In User

w  
who  
who am i

### ➤ 3.3.7 To Copy or Move a File

Copy = cp filename destination example: cp file1 /home/ musfequr /rahman

Move = mv filename destination example: cp file1 /home/ musfequr /rahman

### ➤ 3.3.8 Vi Editor

To Edit A File = vi helal (file name)

To insert Text = press a or i

To delete the character = press x or dd

To copy line = press esc key and type 5yy to copy 5 line.

To paste = press p for paste.

To set line number = set nu

To delete line number = set nonu

Search something = /abc for search abc

For Go top of the lines = :0

For Go bottom of the lines = :\$

For Go Specific Line =:50 to go 50 no line.

To save the document = :wq {save the current changes and exits vi editor}

=: w {save the current changes but does not exist vi editor}

=: q {exits vi editor without saving any changes}

### ➤ 3.3.9 Install/Update/Remove Packages in Centos

- Install a package using yum install

Yum install (package name)

e.g. yum insall mysql

- Uninstall a package using yum

yum remove (package name)

e.g yum remove mysql

- Update a package using yum

yum update (package name)

e.g yum update firefox

- Search a package using yum

yum search (package name)

e.g. yum search firefox

- Display Additional Information about a Package

yum info (package name)

e.g yum info firefox

- View All Available Package

yum list | less

- View Already Installed Package

yum list installed

- List of all available software group

yum grouplist

- Install a specific soft group

yum groupinstall dnsmasq

### ➤ 3.3.10 Compress and Decompress A Directory Using Tar and Un tar

Compressing a directory :

Tar cvf archive name.tar dir name/

e.g 3.1 tar cvf backup.tar cls

or , tar cvzf mytarfile.tar.gz /home

Extract A Compressed Directory:

Tar xvf backup.tar

Or, tar xvzf mytarfile.tar.gz

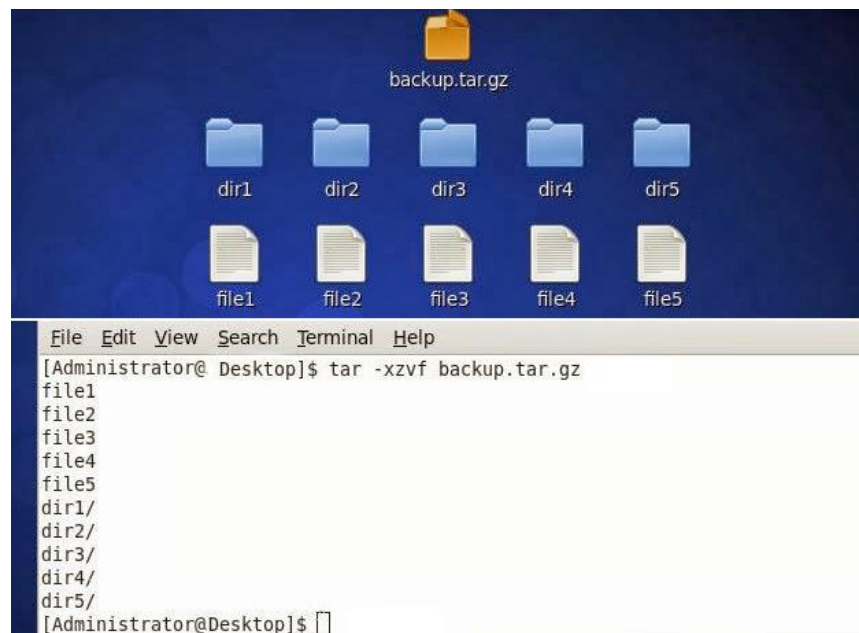
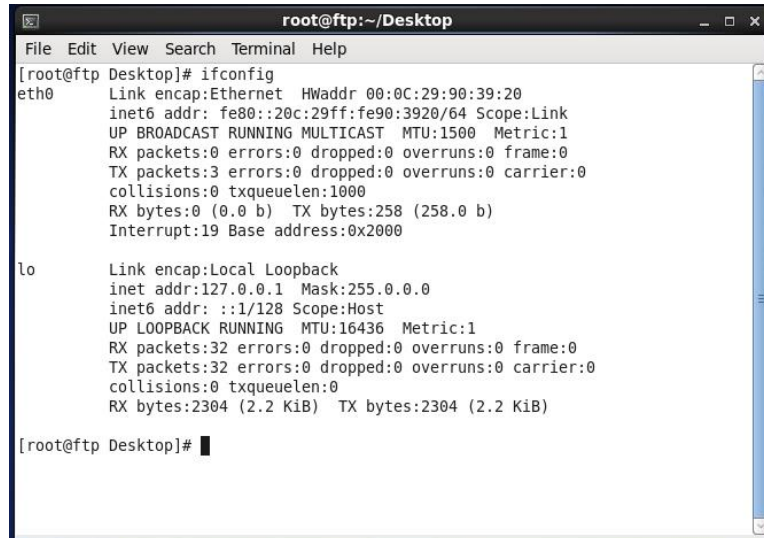


Figure 3.3.16: Shows in tar and untar

### ➤ 3.3.11 How to Add Change Delete and Display IP Address In Centos:

To see ip address ifconfig or ifconfig eth0 3.2 show in interface ip address



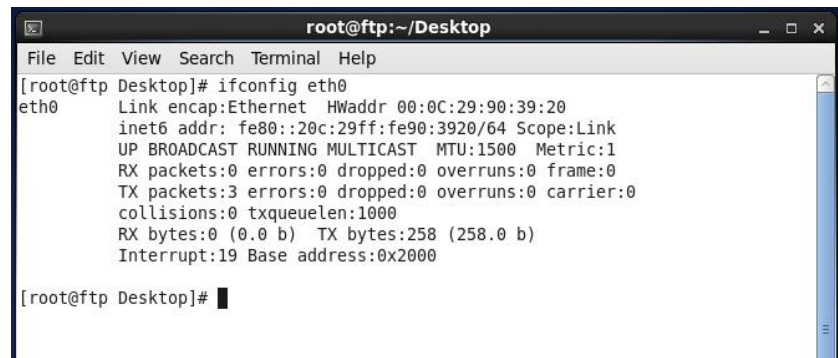
```
root@ftp:~/Desktop
File Edit View Search Terminal Help
[root@ftp Desktop]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0C:29:90:39:20
          inet6 addr: fe80::20c:29ff:fe90:3920/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:258 (258.0 b)
          Interrupt:19 Base address:0x2000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:32 errors:0 dropped:0 overruns:0 frame:0
          TX packets:32 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:2304 (2.2 KiB)  TX bytes:2304 (2.2 KiB)

[root@ftp Desktop]#
```

Figure 3.3.17: Shows ip address in Centos

IP address and Mac address in command ifconfig eth0:

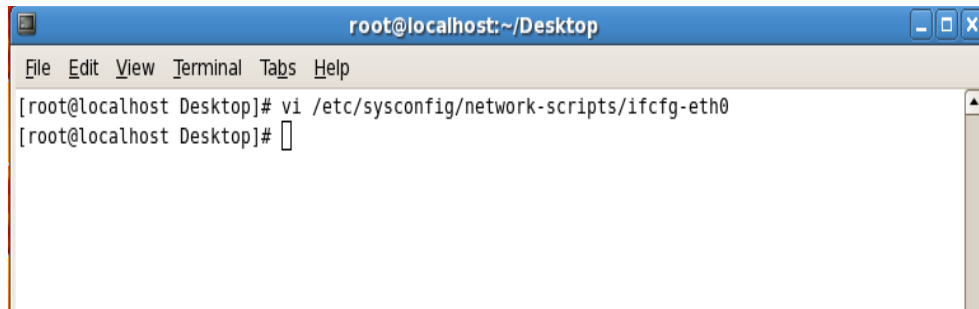


```
root@ftp:~/Desktop
File Edit View Search Terminal Help
[root@ftp Desktop]# ifconfig eth0
eth0      Link encap:Ethernet  HWaddr 00:0C:29:90:39:20
          inet6 addr: fe80::20c:29ff:fe90:3920/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:3 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:258 (258.0 b)
          Interrupt:19 Base address:0x2000

[root@ftp Desktop]#
```

Figure 3.3.18: Shows address in eth port

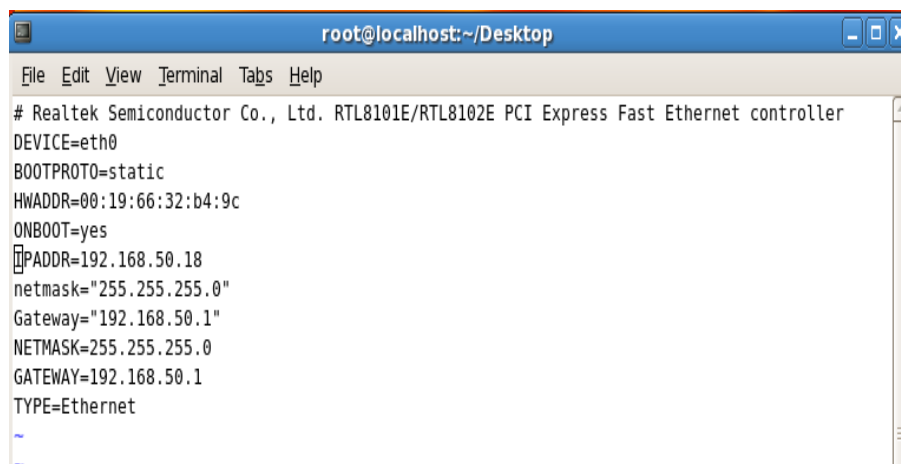
Setup IP Address Permanently Show:



```
root@localhost:~/Desktop
File Edit View Terminal Tabs Help
[root@localhost Desktop]# vi /etc/sysconfig/network-scripts/ifcfg-eth0
[root@localhost Desktop]#
```

Figure 3.3.19: Shows set ip address in eth port permanently

Edit ip address: vi /etc/sysconfig/network-scripts/ifcfg-eth0 :



```
root@localhost:~/Desktop
File Edit View Terminal Tabs Help
# Realtek Semiconductor Co., Ltd. RTL8101E/RTL8102E PCI Express Fast Ethernet controller
DEVICE=eth0
BOOTPROTO=static
HWADDR=00:19:66:32:b4:9c
ONBOOT=yes
IPADDR=192.168.50.18
netmask="255.255.255.0"
Gateway="192.168.50.1"
NETMASK=255.255.255.0
GATEWAY=192.168.50.1
TYPE=Ethernet
~
~
```

Figure 3.3.20: Shows set ip address in sysconfig file eth port permanently

## Step By Step Install Process

The **openssh server** RPM package is required to configure a Red Hat Enterprise Linux system as an OpenSSH server. If it is not already installed, install it with **rpm** commands as described in our pervious article. After it is installed, start the service as root with the command **service sshd start**. The system is now an **SSH server** and can accept connections. To configure the server to automatically start the service at boot time, execute the command **chkconfig sshd on** as root. Then stop the server and execute the command **service sshd stop**. To verify that the server is running, use the command **service sshd status**.

## **Install openssh the server package :**

OpenSSH is a FREE version of the SSH connectivity tools that technical users of the Internet be dependent on. Users of telnet, login, besides ftp may not realize that their password is transmitted across the Internet unencrypted, but it is OpenSSH encrypts all traffic to usefully eliminate eavesdropping, connection hijacking, and other attacks. Additionally, Open SSH provides secure tunneling capabilities and several authentication methods, and supports all SSH protocol versions. Openssh server package install by this command.

```
[root@localhost ~]# yum install openssh server opens server -y
```

Notation: In the default conformation Permit Root Login are not enabled and we can allow specific users in the ssh server.

## **Restart the sshd service and configured to start automatically then during the system startup :**

```
[root@localhost ~]#service sshd restart
```

```
Stopping sshd: [OK]
```

```
Starting sshd: [OK]
```

```
[root@localhost ~]# chkconfigsshd on
```

## **Finally Verify & Testing:**

I need to verify if my **openssh** server is working or not. How do that? Then I can try to connect to the **openssh** server from my **localhost** and through my **openssh client** or do a **port scan** with **nmap**. But I like to use a small tool called **netcat**, also known as the **TCP/IP** Swiss army knife. I love working with this amazing tool on my machine, so let me show it to you.

```
[root@localhost~]$ ssh musfequr@192.168.50.2
```

```
Musfequr @192.168.50.2's password
```



Last login: Tue Jan 29 11:00:19 2019 from 192.168.60.115

[musfequr @localhost ~]\$

### **3.4 Challenges :**

1. Many types of challenges have to be faced during my Internship.
2. In this virtual machine implementation different types of code do not work appropriately and I found the problem and solved it.
3. I have to be cautious during performance, then these instructions are very case-sensitive.
4. Password administration contests faces during working Linux server.
5. Then find out network system problem besides fix them.
6. Find network software problem and solve it.
7. The server execution has different types of challenges during the server installation.
8. This network does not work correctly during the package installation & I solved the problem.

So that, I want to say many other tests this work of the server system customized software, hardware, and network issue, then IT supports of others company's very carefully and our company challenges in our country top level. It is a big challenge in the world. Much other research indicates that government societies with access to the -IT support as a main part. After that I want to say this challenging is very big thing for any network server system. Generally I talk about high quality network Management System. I need to do the challenging are positive implementation. When I work this system many marketing company challenge for me and contest my system. I need to look it. While I work this system many customer company occasionally challenge for me. After that I almost need to face this challenges and solve this. So however this challenging is big thing for any IT system.

## CHAPTER 4

### Competencies and Smart Plan

#### 4.1 Competencies Earned

.Every competency has its own requirements and depending on the path .to assist internship in the development of competence in a range of activities in the practice IT system support in order to be competent entry-level professionals at the conclusion of internship. In this framework typical identifies ways to improve the personal competencies and support your success as an internship supervisor irrespective of this type, and complexity of system you work on- Increase your capacity for personal growth with guidance for refining three key areas of internship management competence: Technical knowledge besides skills, performance, of personal behavior then attitudes. The internship Manager Competency Development also includes information for creating a company competency development process that managers can use for the continuous valuation and development of company practitioners. After say that, Employee Association associates managers that are not digital partner of record to customer subscriptions by allowing a customer to assign a partner as the gave administrator for a subscription. And the Partners can qualify for competencies by being the delegated administrator.

#### 4.2 Smart Plan

Smart Refers to the standard for set goals and objectives and namely that these five-characteristic of goals are- Specific, Measurable, Attainable, Relevant, and Time-bound. This idea is every internship goal must and here to the Smart standard to be effective. Hence, when planning an internship's objectives.

- (i) Specific: This aim had a target in definite area developed the system of solution an exact need.
- (ii) Quantitative: This goal must be numerable and as a minimum allow for afflicted development the system.
- (iii) Attainable: Its goal must be genuine and must be achievable source in the system.
- (iv) Relevant: This goal must align with other business objectives to be -measured related.
- (v) Time-bound: This goal almost has end extension, defined time bound of the system.

### **4.3 Reflections**

Then Be critical although the content of a cogitative range will be more personalized than other assignments, you should use the same level of critical analysis as you do for any easy exam. Make sure that you write all the stages of your tasks and from the planning phases through to completion. You also need to include a comprehensive knowledge technical tasks analysis. Analysis outcomes of suggest future improvements. To earn the highest likely marks your Reflective Report should include a detailed critique of the internship's outcomes. This Part of this should include a few well thought out suggestions.

## **CHAPTER 5**

### **Conclusion and Future Career**

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

My internship program was going on 4 month. Then I work continuous in the proposed system the goal was to make to such a internship. Which the Server Network System can be manual and very task of the space information comes easier to the different kinds of clients and users. Daffodil Online Limited for whole Bangladesh is a large of the IT sector. It requires lots of opportunity, it is customized software can be implemented properly and completely, it has a very bright future in Bangladesh for next future.

#### **5.2 Scope for Further Career:**

All though the internship was completed to the original requirements, there are a few features that we could add or improve on, if time allowed. IT Support system implementation should be revised. We could look at other Attendance Management Systems software to get a better idea on how to implement a more efficient and space conserving system. There are a few opportunities wait for me and help us to improve my career. The market place is very good for attendance management system in IT section. So I want to build my career of this system in IT section and known new system to improve my career.

## APPENDICES

### Appendix A: Internship Reflection:

I'm easy to characterize an internship as a learning experience, but it takes a little more work to figure out. What were the positive and negative elements of the experience? Make sure I write to need about all the stage in my report. After that by understanding my workplace preferences, it is able to clarify and I want more of what I want to avoid next time around. I increase my chances significantly of finding what my after. One way to evaluate an internship is first to breaks it down into its key components. Next, think about the value to me of each component.

### Appendix B: Company Details:



This is my company logo. My internship company name is “**Daffodil Online Ltd**”. Daffodil Computers was established in 2002 as a concern of Md.Sabur Khan, the Director of Dhaka Chamber of Commerce and Industries the former president of Bangladesh Computer Society (BCS). After that Private Limited Company and named Daffodil Online Limited (DOL). Then In 2003 the company become the 1st Public Listed Company as an Only IT based Company in Dhaka Stock Exchange (DSE) and in 2006 also listed in Chittagong Stock Exchange (CSE). DOL has emerged as the largest computer assembling, marketing and selling company and IT support many companies of Bangladesh.

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Phone:- 02-9143258

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