Internship On Computer Networking

BY

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

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APPROVAL

This Extend titled **"Internship on Computer Networking",** submitted by **"Md. Mahfuj Khan",** ID No: 183-15-11804 to the Division of Computer Science and Engineering, Daffodil International University has been acknowledged as palatable for the halfway fulfillment of the necessities for the degree of B.Sc. in Computer Science and Building and endorsed as to its fashion and substance. The presentation has been held on January 6, 2022

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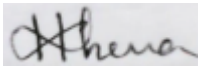

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DECLARATION

We thusly pronounce that this venture has been done by us beneath the supervision of **Md. Sazzadur Ahamed, Senior Teacher, and Department of CSE** at Daffodil International University. We too announce that not one or the other this venture any portion of this venture has been submitted somewhere else for the grant of any degree or recognition.

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To begin with, we express our heartiest much appreciated and gratefulness to all-powerful God for His divine favoring makes us conceivable to total the ultimate year venture successfully.
We truly thankful and wish our significant our obligation to **Md. Sazzadur Ahamed, Senior Lecturer, Department of CSE** Daffodil International University, Dhaka. Profound Information & sharp interest of our boss within the field of "web application development" to carry out this venture. His unending persistence, academic direction, nonstop support, steady and lively supervision, helpful feedback, profitable exhortation, perusing numerous second-rate drafts and adjusting them at all organize have made it conceivable to total this project.

We would like to specific our heartiest appreciation to **Professor Dr. Touhid Bhuiyan, Head, Department of CSE,** for his kind help to wrap extend conjointly to other staff part and the staff of CSE office of Daffodil Worldwide University. We would like to thank our whole course mate in Daffodil Universal College, who took portion in this talk about whereas completing the course work. Finally, we must recognize with due regard the steady bolster and tolerance of our parents.

ABSTRACT

The report completes my internship effectively beneath the supervision Md. Sazzadur Ahmed, Sr. Lecture of the Department of Computer Science and Building of Daffodil International University. I worked as an internship within the organization "GS Sweater Ltd". This company I worked on Organizing and IT and CCTV and Participation gadgets arrangements And Outlook/Webmail Server. I moreover worked on different switches. My internship was full of distinctive circumstances and duties. I got the opportunity to work with different other people groups and higher ups amid my internship. This report appears which steps I taken after and the works that I have learned and done. I have worked on different switches and associated them. I have given different data around the works which I secured through my internship. I moreover got the opportunity to type in openly and given all the points of interest as required. I attempted my most extreme to show my capabilities through the report and appear you all.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 Introduction

In this time, we can't think without IT course of action and organizing. In all over we must require web. There are not numerous offices, industry and established without web. Each industry, office and set up must utilize computer and communication contraption. They utilize web for the communication. They utilize numerous sorts of Equipment, each business, workplaces and establishing require numerous individuals who knows Organizing and keep up all kind of communicating gadget. It could be exceptionally imperative portion of any Organization, Individuals who keep up all kind of communicating gadget are exceptionally cautious around this portion. It may make numerous issues. And typically, very destructive for any industry, office and organized. I think everyone must have to be know how to utilize all sorts of communicative gadget. The most portion of IT arrangement division is keeping up all kind of gadget which are associated with web. And organizing alludes to connecting numerous gadgets which can share data and program assets. I got the opportunity to do partner on this division, I have learned various things and unraveled various circumstances.

1.2 Motivation

I am right now seeking after my Lone rangers in CSE Building at Daffodil Worldwide College. I am exceptionally fortunate of the opportunity of internship. Since, without viable information it is exceptionally troublesome to outlive in each division. Commonsense information offer assistance a more extensive viewpoint of the reading material information. Amid internship I confront numerous and numerous issues. When I stand up to any issue, I will endeavor my best to get it. I think it is conventional way to empower information and I am completely twist insides the straightforward components of

organizing and IT division and CCTV arrangement and time participation gadget arrangement. In future, I construct up my carrier as a organize Engineer.

1.3 Objective

The Foremost or objective this internship was I got to finished up a Orchestrate and IT Construct. Since in this world there are no any office, fabricating plant and businesses without Organize and IT officer. In all over they must require a parson who player know roughly Organize and IT related issues. Organizing and IT back is exceptionally challenging and dedicated work. It is exceptionally responsively and delicate work. A back officer must do up to date each single contraptions gear, program and keep up the organize suitably. I am to tolerating the challenge and attempting to be a extraordinary IT back design. I wish it offer help on my up-and-coming career. My goals are not because it were reasonable doing work in this organize, but additionally I will be endeavoring to be making something modern development for the better future.

1.4 Report Layout

Basically, I worked on Six chapters here and they are...

In “Chapter 1” Introduction:

Chapter number one is said the presentation, inspiration, destinations, and anticipated result of the extend have been examined which was taken after by the report format later.

In “Chapter 2’’ Organization:

Here I portrayed almost the organization I did my internship

In “Chapter 3” Networking & Networking Device:

In Chapter 3 the concept of Networking, which is Router, Cable and connector, Switch, NIC card etc.

In “Chapter 4” Mikrotik Router Basic Configuration:

In chapter we discuss about MikroTik routerOS and MikriTik router basic configuration.

In “Chapter 5” CCTV Configuration:

In this chapter we will discuss how to configure cctv and nvr configuration.

In “Chapter 6” Outlook and Webmail Control:

This chapter we will discuss how to control and maintain outlook/webmail server.

CHAPTER 2

Organization

2.1 About this Company

GS Sweaters Ltd 100% export-oriented sweater manufacturer in Bangladesh. The fully compliant manufacturing plant is located at Saiham Nagar, Madhabpur, Habiganj. https://www.gssweaters.com/ [1]

2.2 Branches

i) Headquarters:

House: 26, Lake Drive Road, Nikunja 1,

Dhaka - 1229, Bangladesh

info@gssl.email

ii) Branch Office:

Saiham Skyview Tower, Suite: C17, 195

Kazi Nazrul Islam Sarani, Ramna

Dhaka - 1000, Bangladesh

info@gssl.email

iii) Manufacturing complex:

Shahpur Bazar, Saiham Nagar, Madhabpur, Habiganj - 3333, Bangladesh

info@gssl.email

2.3 Company Profile

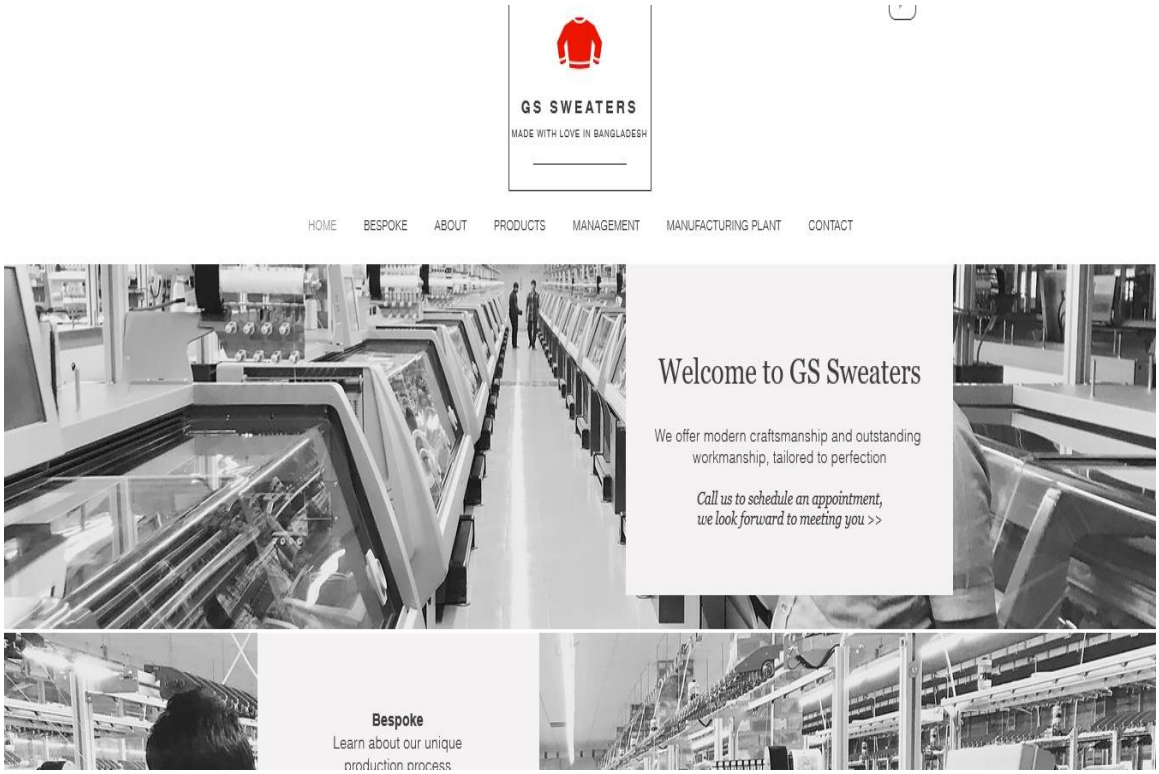

Figure 2.1: Company Home Page

2.3.1 Products

Our Company's Production

From yarn sourcing to examining to generation to shipment – the whole prepare is closely observed & controlled by the merchants. The whole generation prepare takes put at our expertly sorted out manufacturing plant premises where we combine involvement and ability of our administration and representatives to fabricate tall quality sweaters. What separates us most is the adore and care we work with for our items, our representatives and our offices. We center on setting the benchmark for quality and smart sweaters, utilizing amazing crude materials and accessories.

We are accessible 24/7 to supply our clients with devoted proficient back and to guarantee on time delivery. Gauge Run: 1.5gg, 3gg, 5gg, 7gg, 10gg, 12gg, 14gg Type Specialization: Sweater, Jumper, Pullover, Cardigan, Vest, Beat and Scarf Size Specialization: All measure for Men, Ladies and Children Style Specialization: Fundamental, Full Cable, Jacquard, Intarsia, Pointal, Full Design, Argyle Production Strategy Connected: Incline Generation, Add up to Quality Administration, Green Manufacturing Factory Generation Handle: Winding, Weaving, Connecting, Trimming, Repairing, Washing, Drying, Adornments Connection, Sewing, Quality Check, Packing

Our Export Markets

United Kingdom, Germany, Netherlands, France, Poland, Spain, Italy, Brazil, Peru, Chilly, USA, Canada, Australia, Japan

Compliance

We are the most conscious about the COMPLIANCE requirement as of today. The line of production designed with knitting machines of 1.5, 3, 5, 7, 10, 12 and 14 gauges that assured yearly production capacity of around 120,000 Dzns. Our manufacturing plants are

completely compliant with the necessities of National Labor law and "Commerce Social Compliance Activity". We emphasize on our human resource's security, office, clean environment and amusement to the most noteworthy level of satisfaction.

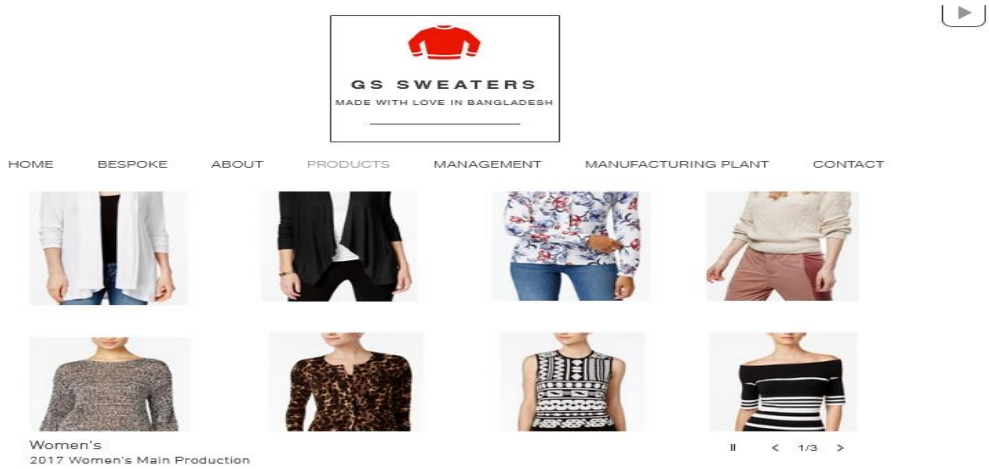

Figure 2.2: Company Products

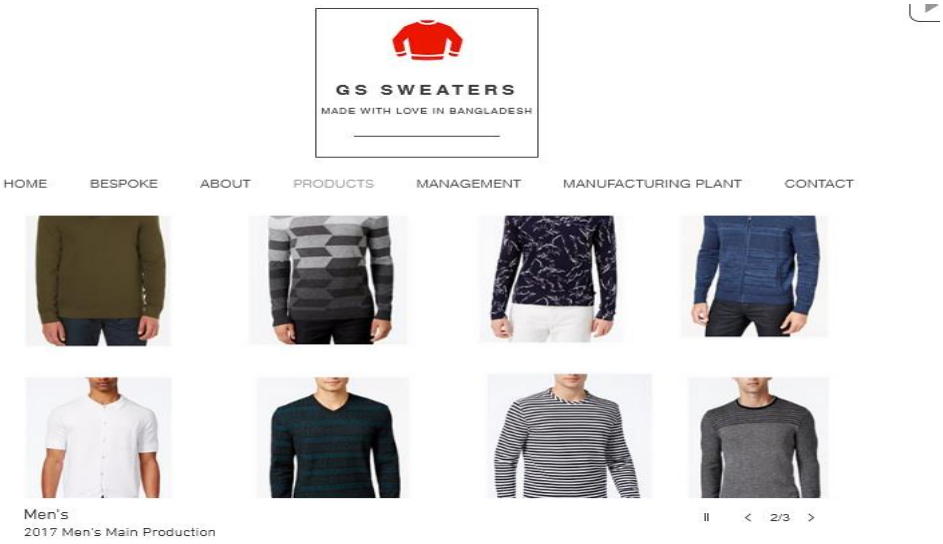

Figure 2.3: Company Products

CHAPTER 3

NETWORKING & NETWORKING DEVICE

3.1 Introduction of Networking

A computer arrange or information arrange could be a broadcast communication arrange which permits computers to trade information. In computer systems, organized computing gadgets pass information to each other along organize joins (information associations. Course and conclusion the data are called orchestrate centers. Centers can consolidate has such as person computers, phones, servers as well as organizing gear. Two such contraptions can be said to be organized together when one contraption is able to contraption, whether or not they have a arrange affiliation to each other.

3.1.1 Networking Categories https://goo.gl/2gfTov [3]

Local Area Network (LAN)

Metropolitan Area Network (MAN)

Wide Area Network (WAN)

3.1.2 Local Area Network (LAN)

A Local Area Network (LAN) may well be a collection of contraptions related together in one physical range, such as a building, office, or residential. A LAN can be small or broad, expanding from a residential organize with one client to an undertaking organize.

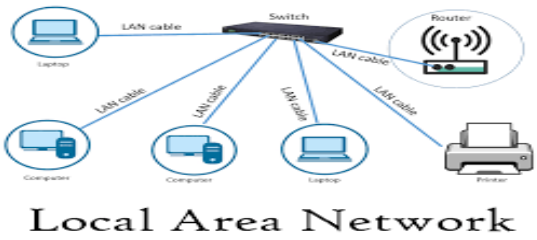

Figure 3.1: Local Area Network (LAN)

3.1.3 Metropolitan Area Network (MAN)

A metropolitan area network (MAN) may well be a computer organize that interfaces computers interior a metropolitan extends, which can be a single tremendous city, various cities and towns, or any given broad extend with diverse buildings. A MAN is greater than a neighborhood range organizes (LAN) but more diminutive than a wide locale organizes (Blurred). MANs do not need to be in urban zones; the term "metropolitan" proposes the appraise of the organize.

Figure 3.2: Metropolitan Area Network (MAN)

3.1.4 Wide Area Network (WAN)

A wide locale organize may well be a tremendous organize of data that's not tied to a single extend. WANs can enable communication, the sharing of data and much more between contraptions from around the world through a Pale supplier.

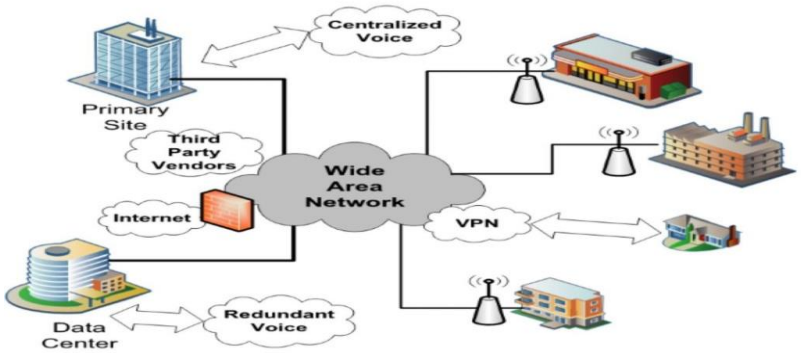

Figure 3.3: Wide Area Network

3.2 Fiber Optical Cable

A fiber optic cable may be a organize cable that contains strands of glass strands internal parts an guarantees casing. They're laid out for long-distance, high-performance information organizing, and broadcast communications. Compared to wired cables, fiber optic cables permit higher trade speed and transmit information over longer divisions. Fiber optic cables back much of the world's web, cable tv, and phone frameworks. https://goo.gl/HD5yNp [5]

Figure 3.4: Fiber Optical Cable

3.2.1 RJ45 Connector

RJ stands for Registered Jack and RJ45 is used for connecting network cables particularly CAT 3, 5, 5e, and 6 cables to mounted face plate containing the modular jack of corresponding size. The following figure 3.7 showing RJ45 Connector. https://goo.gl/xPmwBJ [7]

Figure 3.5: RJ45 Connector

3.2.2 NIC Card

An NIC could be a network interface controller, or organize interface card, that's built into the computer in arrange for the computer to get to organizing and information. Using NIC, computers are able to connect to a network for data communication purpose. The following figure 3.4 showing a NIC (Network Interface Card). https://goo.gl/S3R5rx [4]

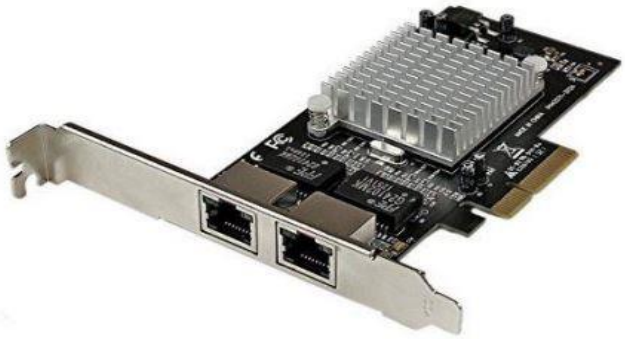

Figure 3.6: Network Interface Card (NIC)

3.2.3 UTP And STP Cable

Protected Turned Combine cable (STP). Helpless to strike and electric recurrence impedances. This may be overcome with extra protecting in any case this could be bulky. Unshielded Turned Match cable (UTP). These cables are littler, more adaptable and less costly than Protected Bent Combine. The taking after figure 3.6 appearing UTP & STP Cable. https://goo.gl/j6hE13 [6]

Figure 3.7: UTP And STP Cable

3.3 Router

A switch may be a gadget that works like a activity cop, choosing when and where information voyages. It serves to direct and transmit data between different computers or systems. It can recover signals, concentrate different associations, undercover information transmission formats, and oversee information exchanges. It could be a gadget that passes information bundles between systems based on IP addresses contained inside the information bundles. https://goo.gl/iZ5dKn [8]

Figure 3.8: Router Network Device

3.3.1 Switch

A kind of network gadget that's utilized to forward information parcels segment to another segment. Switch is like but operates at higher speed than a typical bridge. That is why, a switch is also known as Multi-Port Bridge. Switches increases the number of collision domain but does not increase its size.

Figure 3.9: Switch Network Device

CHAPTER 4

MIKROTIK ROUTER BASIC CONFIGURATION

4.1 Introduction

This Chapter we describe RouterOS features or some basic configuration for example: Routes, DNS, DHCP, Hotspot server, PPPoE server etc. of MikroTik RouterOS and reasons of that function to configure to run a network. This chapter is very important because everything's include here is directly connected to the project.

4.1.1 Mikrotik RouterOS

Working system is the foremost thing Mikrotik based on Linux bit, known as Switch OS. Presented on the company Gear (Switch board course of action). Its turns into a computer organize switch and executes the such highlights, Firewall, VPN advantage, quality of advantage, Transmission capacity shaping and inaccessible get to centers capacities.

Figure 4.1: Mikrotik Router

4.1.2 Mikrotik History

- Established in 1995
- 1997: RouterOS software for x86 (PC)
- Router BOARD is born in 2002
- 2006: First MUM

4.1.3 Network Diagram of Mikrotik Configuration

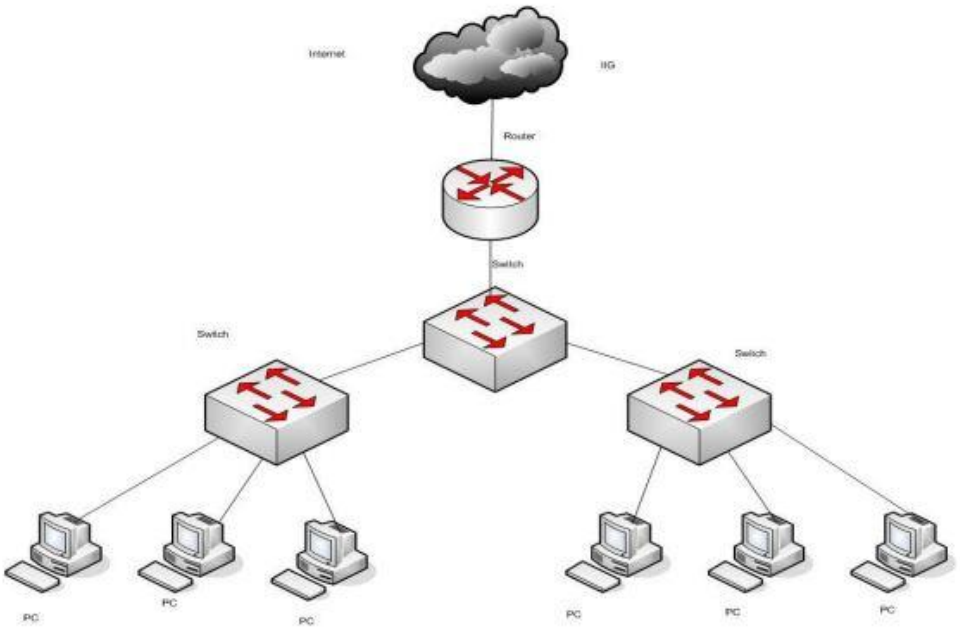

Figure 4.2: Network Diagram Mikrotik Configuration

4.1.4 Mikrotik Advantages

• Winboox GUI over IP and MAC,Web interface.

• Inactive, DHCP, PPPOE, Hotspot arrangement.

• VLAN

• Firewall , NAT, Harbour sending, Address List, Layer7 Convention configuration.

• Steering arrangement back RIPv1 & v2, OSPF v2, BGPv4, mikrotik.

• VPN arrangement PPPoE, PPPTP, L2TP, Open VPN, GRE Burrow etc.

• Remote arrange setup AP mode

• Transfer speed oversee.

• Web intermediary arrangement.

• Fetched effective.

• Smooth organize

4.2 WinBox Login Page

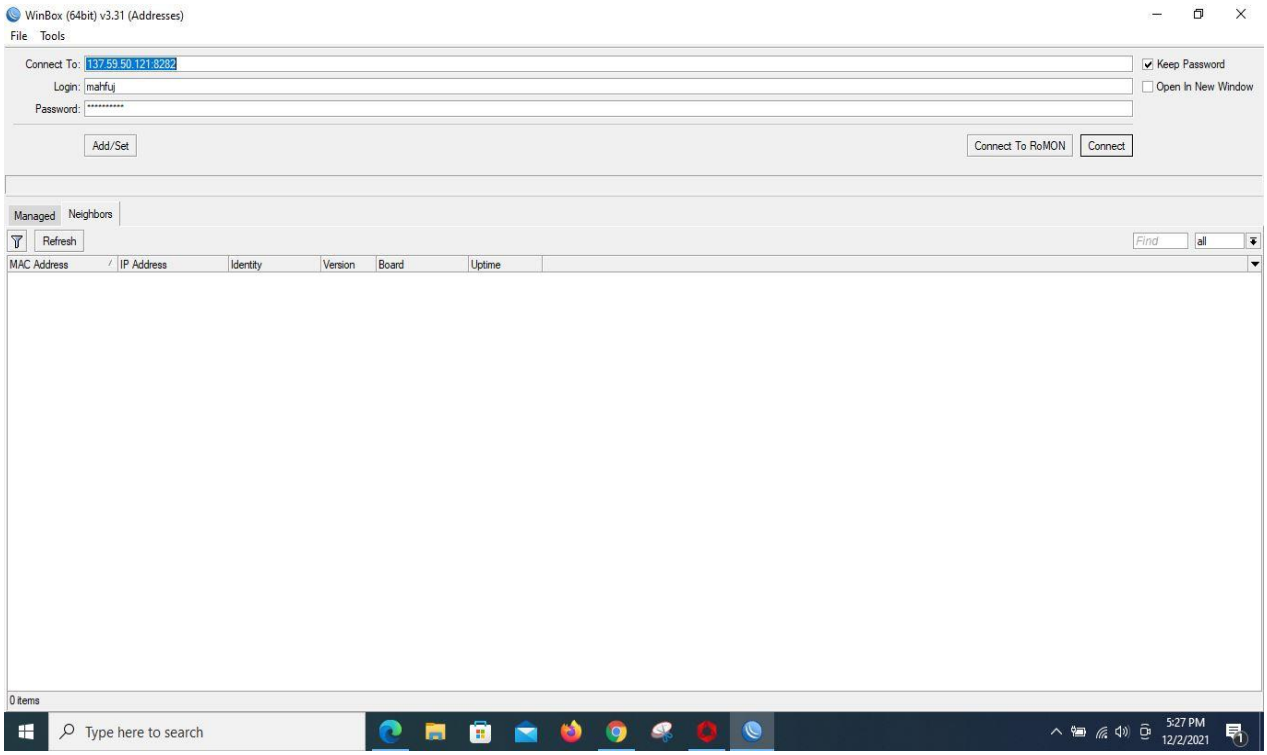

Figure 4.3: WinBox Login

4.2.1 WinBox Dashboard

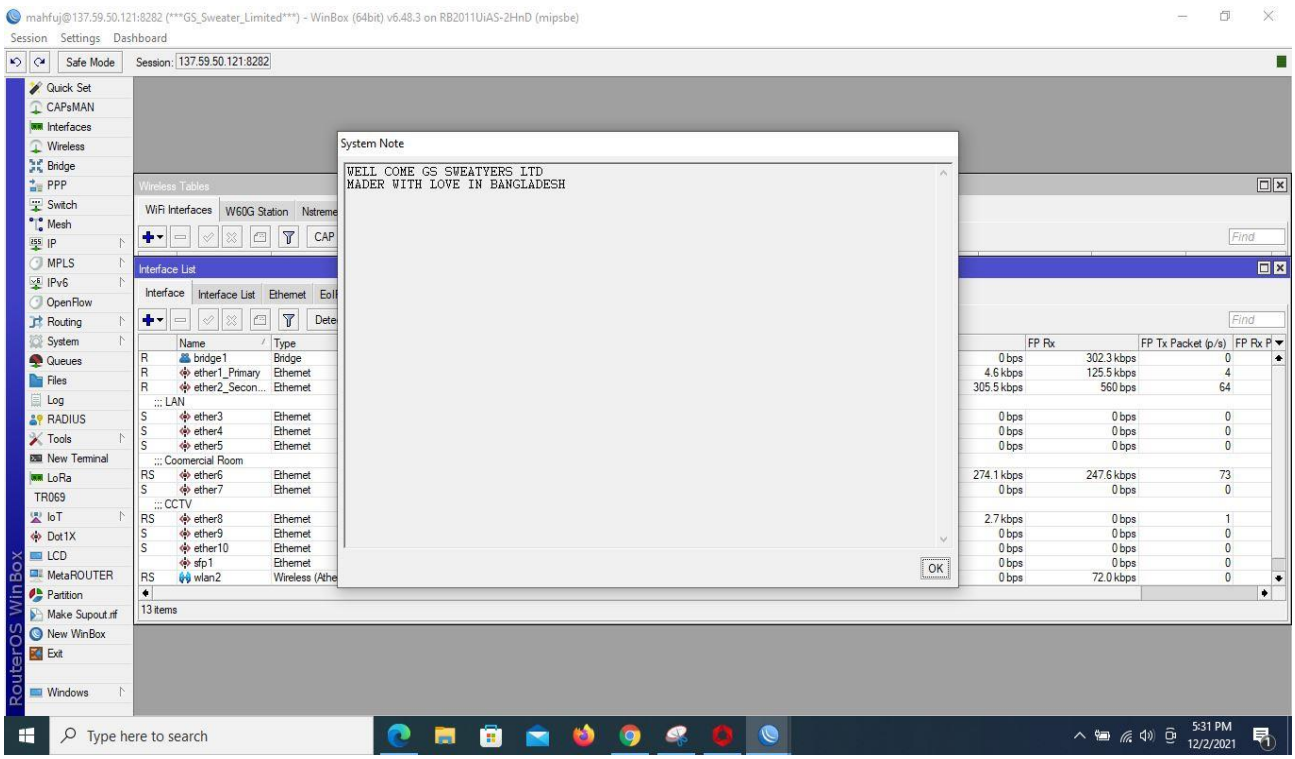

Figure 4.4: WinBox Dashboard

4.2.2 Mikrotik Config

Configuration below:

• Static

• DHCP

• PPPOE Network LAN gives internet 4 ways:

• Static

• DHCP

• PPPOE

• Hotspot

4.2.3 Static Config

In Dormant setup IP address set physically and Setup Pale and LAN organize advantage in manual way. In Inert directing course of action ISP grant IP address, Subnet Shroud, Entryway and DNS.

Step1:

• Press control button to Mikrotik switch.

• Interface the Mikrotiklan harbour and the other harbour with UTP cable to the computer.

• Browse with Winbox. To begin with open WinBOX.After appear the switch MAC Address and IP Address. By Default, username admin and watchword are null, but I already access this router, so I already login my Ip and pass. Next press the connect button.

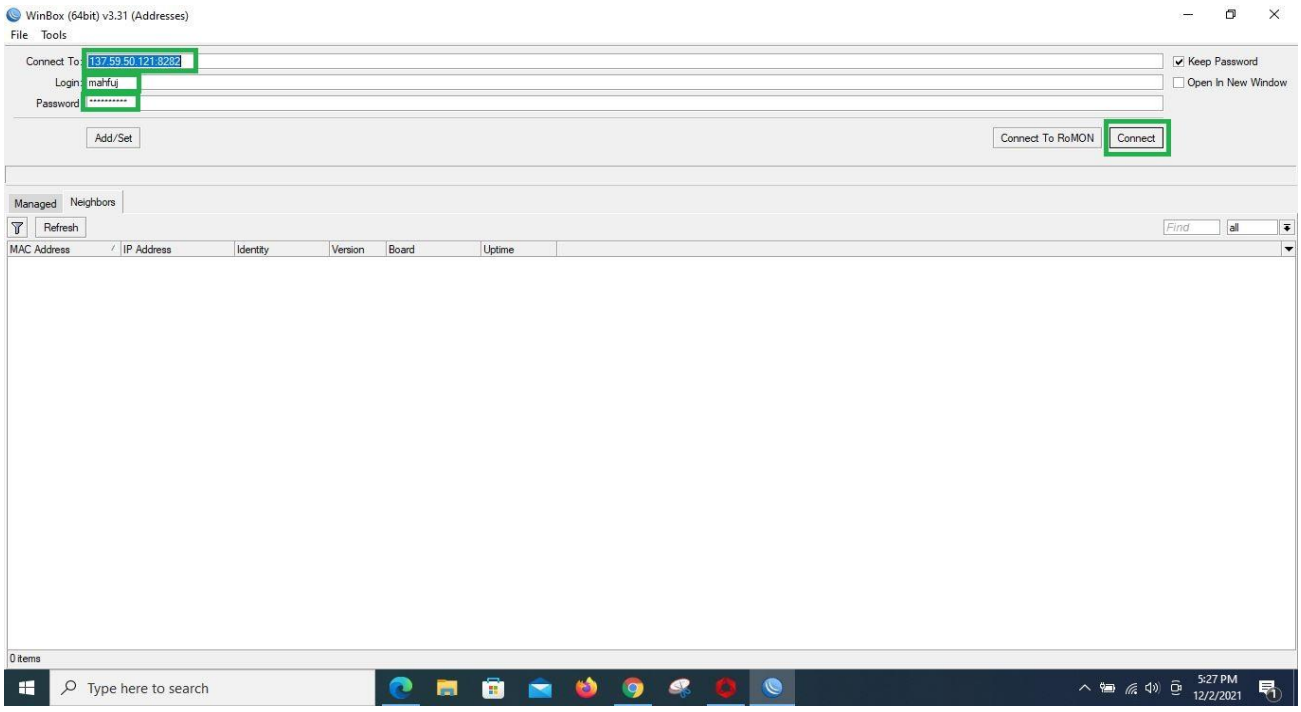

Figure 4.5: Winbox Login Box

Open Mikrotik GUI Mode and you'll be able see which client login, switch interface MAC, switch title, winbox demonstrate, Mikrotik switch show.

Figure 4.6: Winbox Tools

Presently press interface and select WAN and LAN Interface.

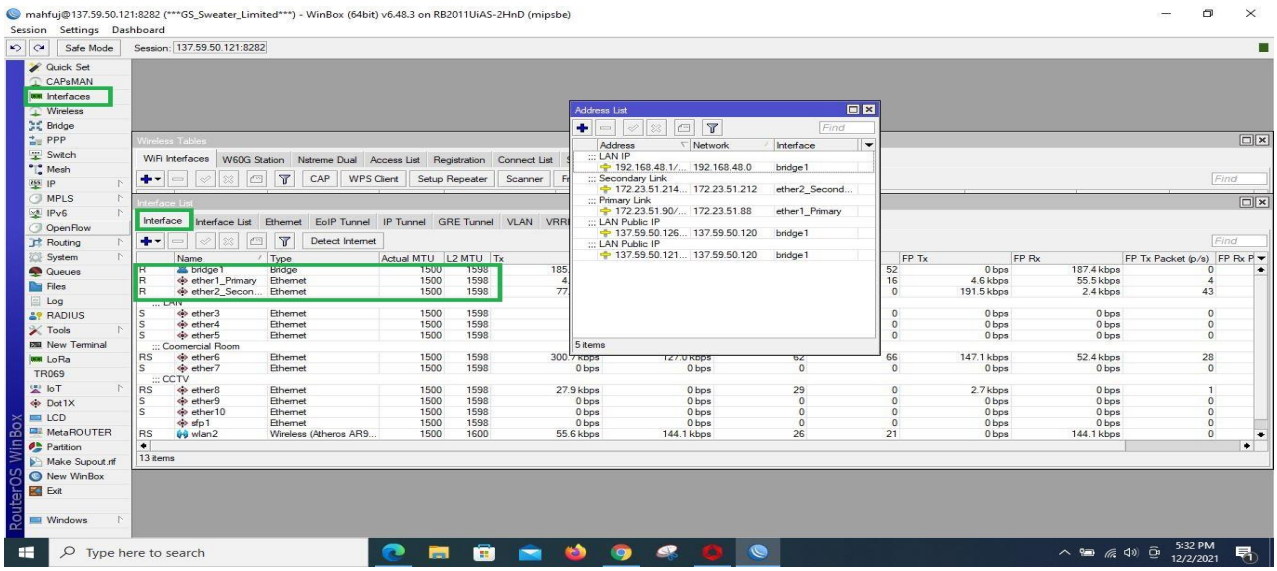

Figure 4.7: Lan, Wan interface

ISP Company deliver pale IP address and set faded interface. At that point LAN interface set LAN IP address.

Step 2:

Handle: Set IP address

Ip Address>"+"→WAN

Ip Address>"+"→LAN

10.10.10.102/24>Network>10.10.10.0>Interface>Ether1-WAN

IP>Address>"+">Address>192.168.48.1/24>Network>192.168.48.0>Interface>Ether LAN

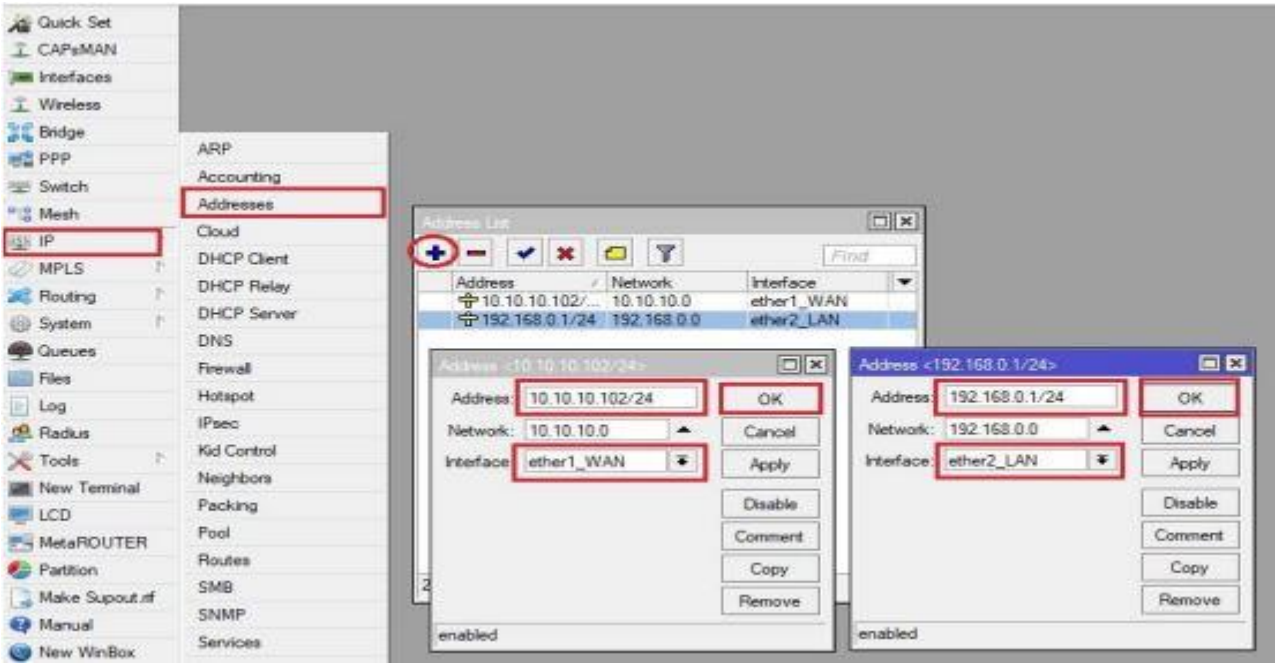

Figure 4.8: Lan Wan Ip Address

Faded Portal IP set in IP to courses at that point ok.

Step3:

Setting up portal and Characterizing Routes.

Process:

IP>Route>"+">Gateway>10.10.10.0

Appy>ok

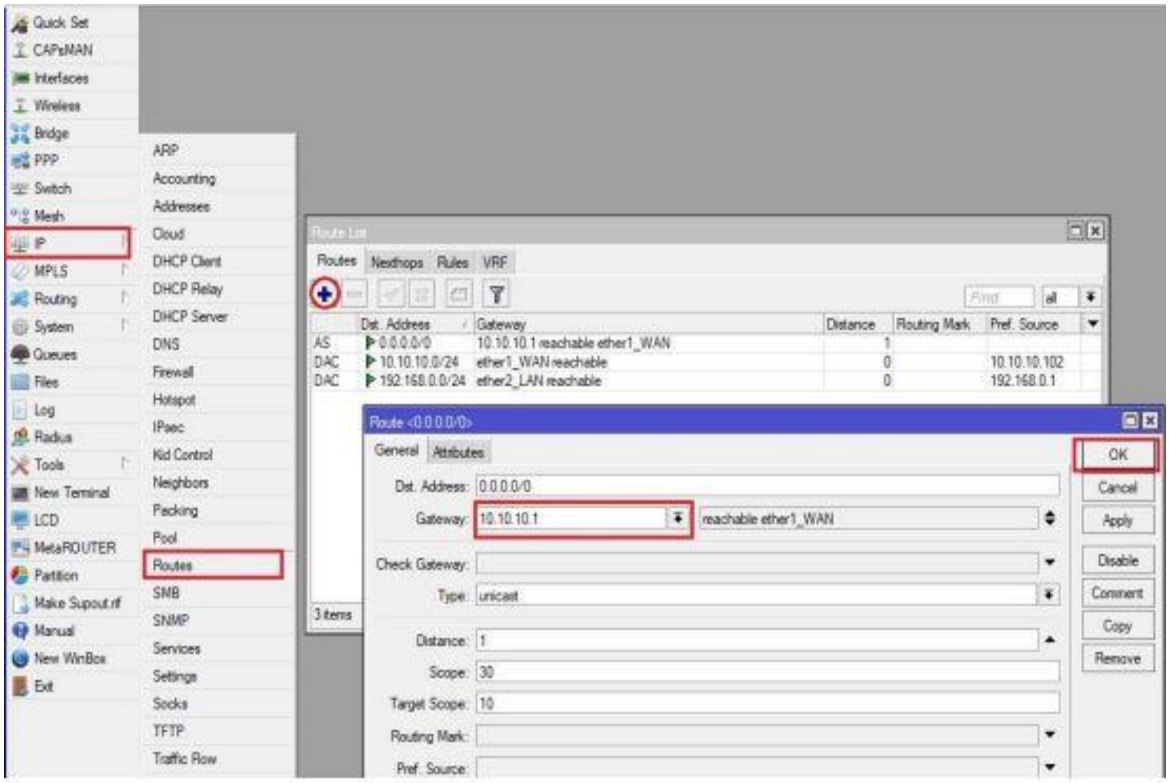

Figure 4.9: Gateway Route

Step4:

IP>DNS>Server>202.191.120.2

Alternate DNS Server >8.8.8.8

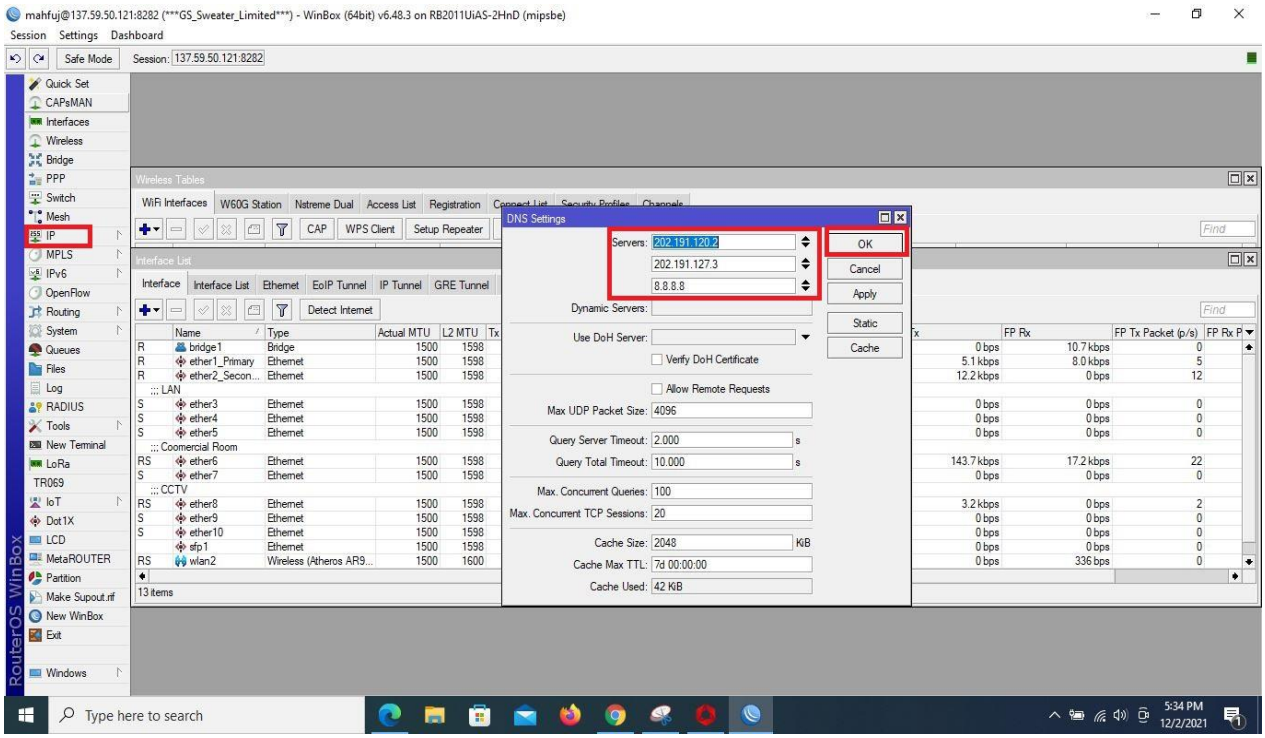

Figure 4.10: Setup DNS Server

Step5:

Process:

IP >Firewall>"+">NAT>Action>viber

Apply>ok

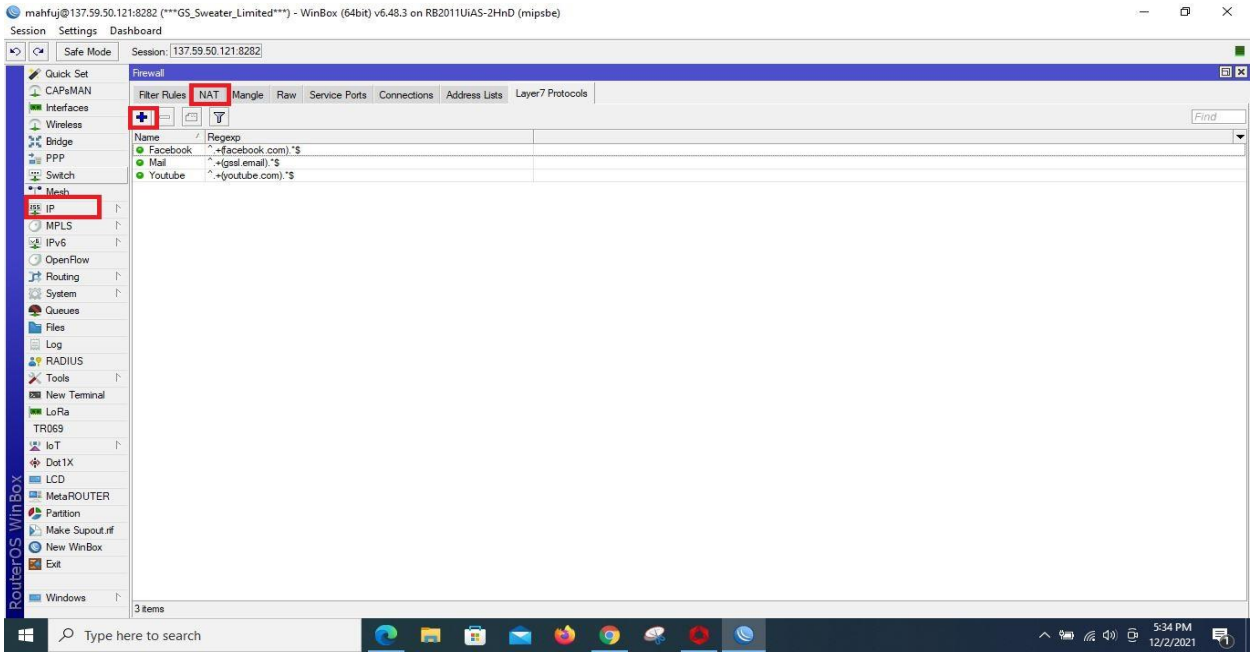

Figure 4.11: NAT

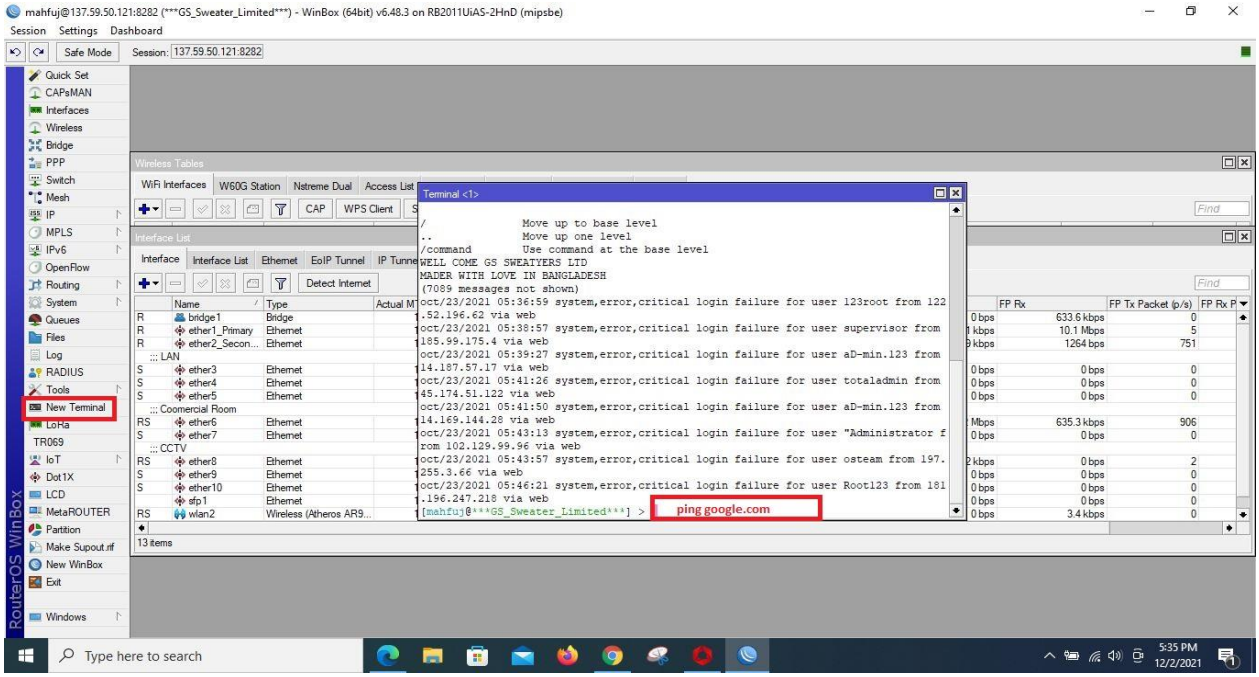

Figure 4.12: Check Network Google

Open the unused terminal (google.com) or we are ready ping the IP address. In case google get ping at that point get it that the setup has setup viably.

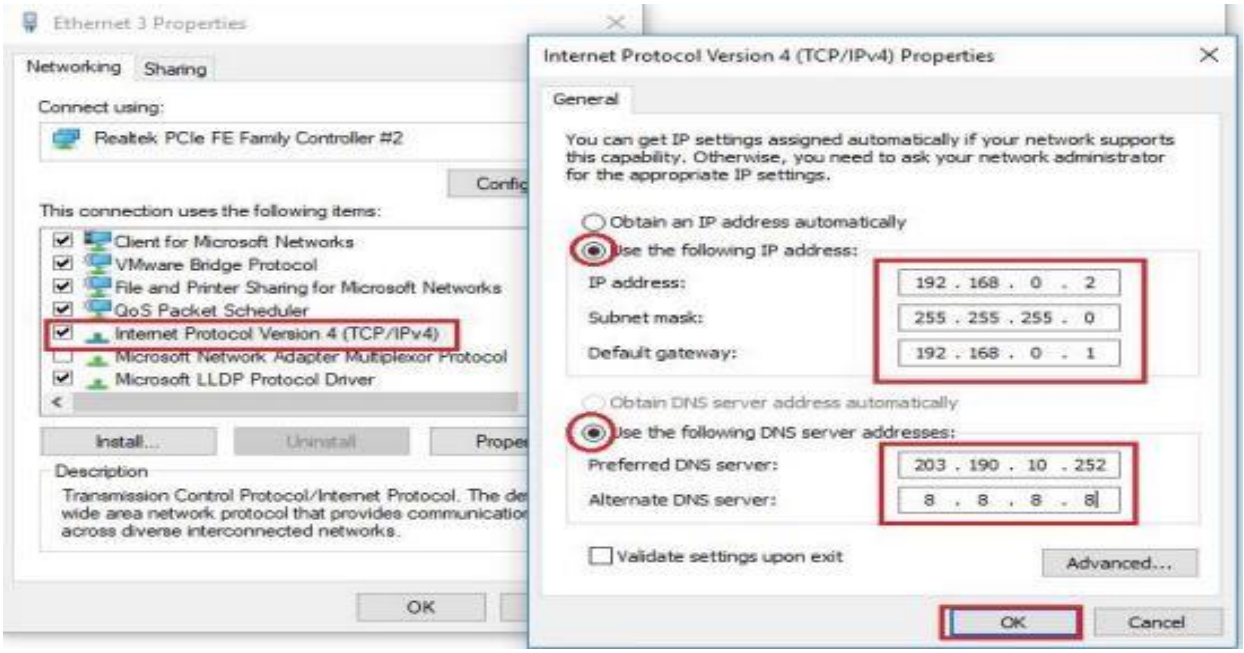

Figure 4.13: Setup IP Address In PC

Set up IP in PC:

Select web convention form 4 (TCP/IPv4)

IP address>192.168.48.2>

Subnet Mask>255.255.255.0>

Default gateway>192.168.48.1 DNS Server>203.192.10.255>8.8.8.8

Apply>ok

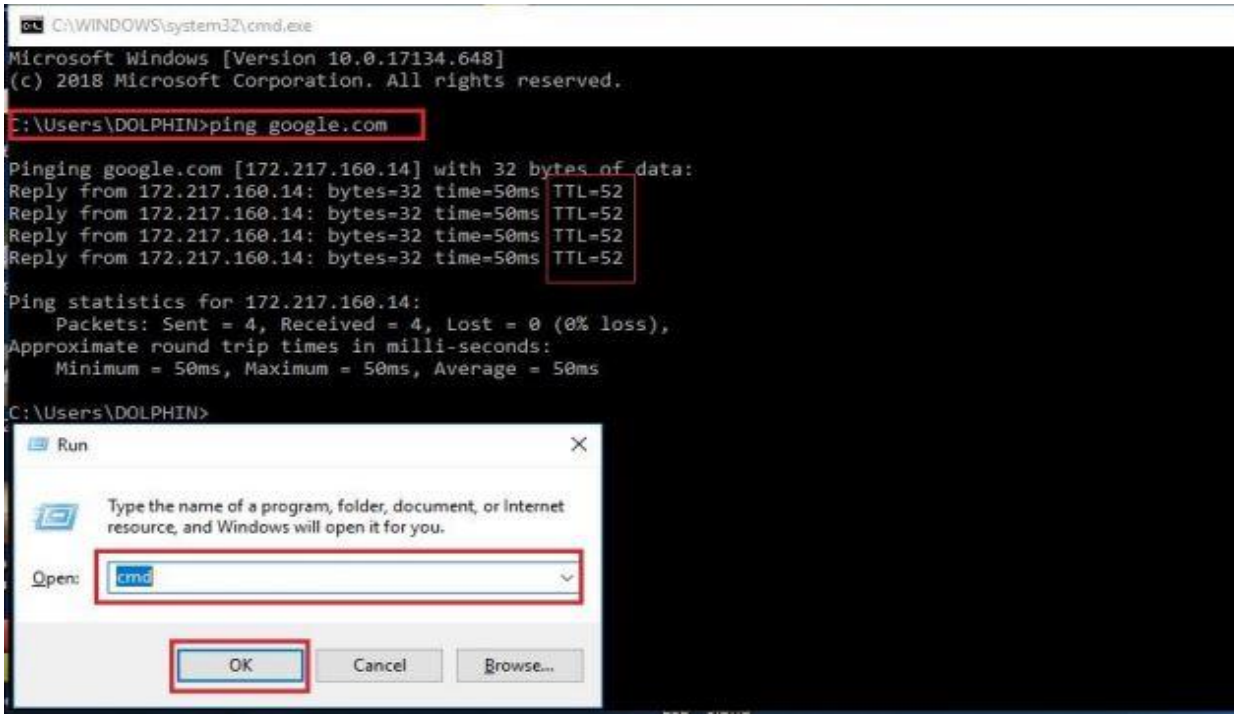

Figure 4.14: Check Network Computer

Open the PC command and ping (google.com). In case PC get ping the inert Course of action setup successfully.

CHAPTER 5

CCTV CONFIGURATION

5.1 Access Annke NVR

connect your computer to the **same network/router** of the DVR/NVR, then run this software. It will detect the DVR/NVR's IP address automatically.

1. Plug the DVR/NVR into the router with a network cable.

2. Find DVR/NVR's IP address. There are two ways to find the IP address:

Method #1

1) Find the IP address on the TV/monitor.

Please go to **Menu--Configuration--Network--General**.

Now I access my devices-----

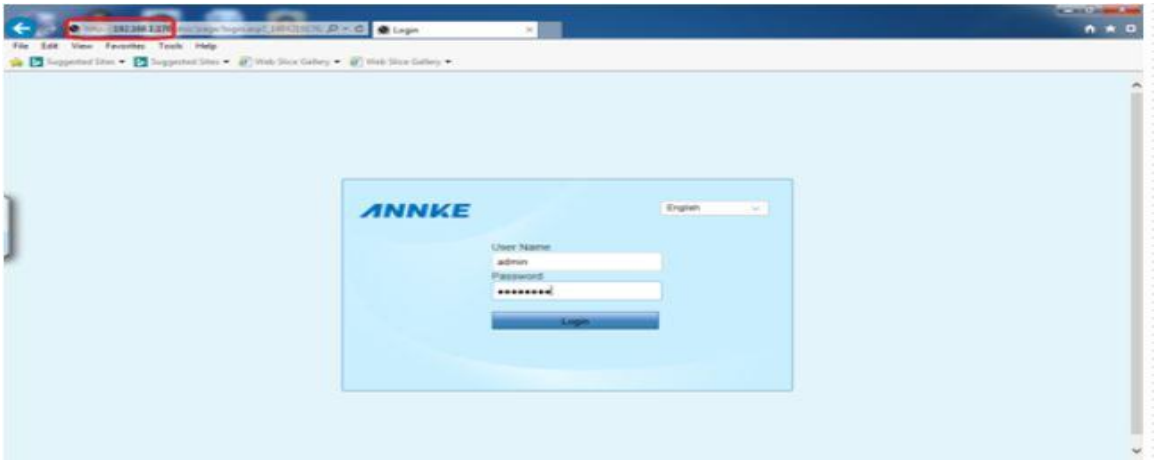

Figure 5.1: Annke Login Page

5.2 Configure Annke NVR and Camera Step by Step

Figure 5.2: Annke NVR Home Page

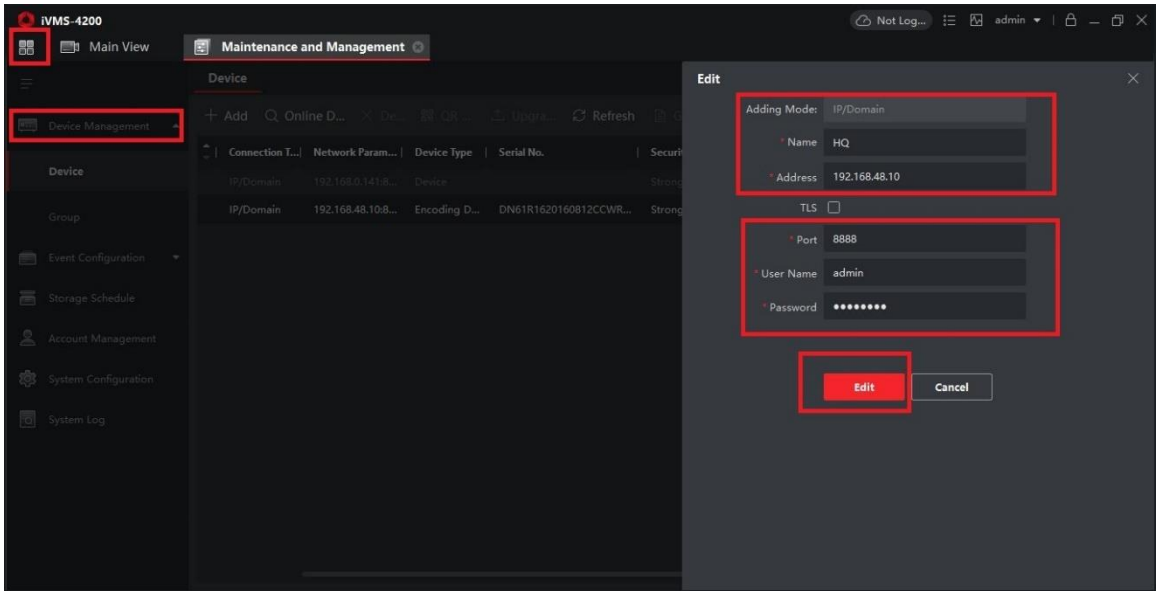

Figure 5.3: Device Management

Go to>device management>device>system>device information

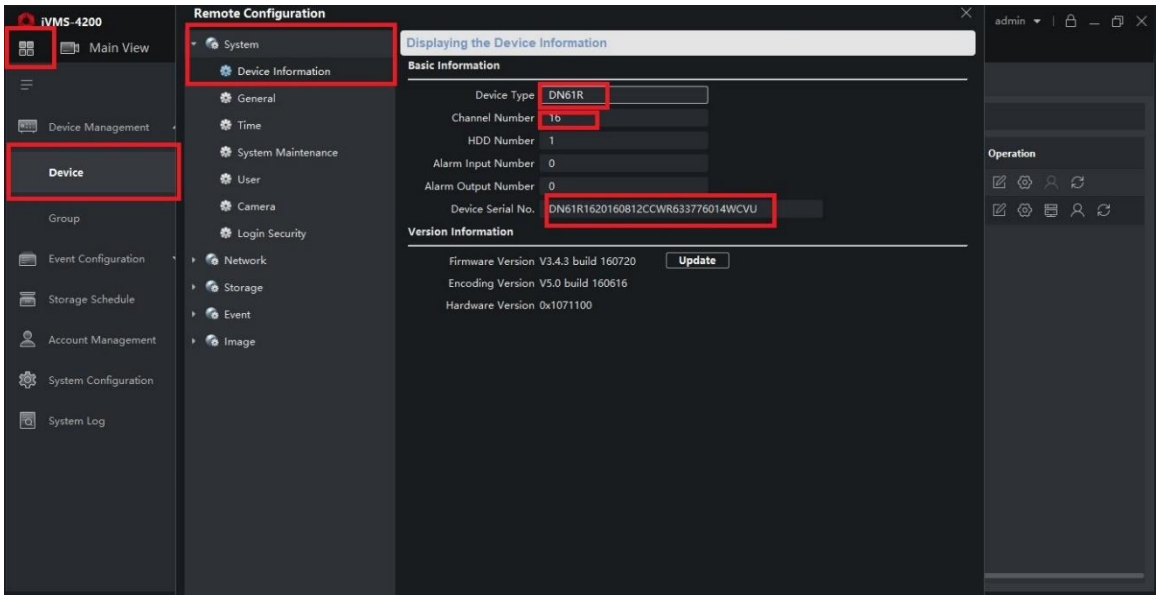

Figure 5.4: Device Information

Go to>device management>device>system>time

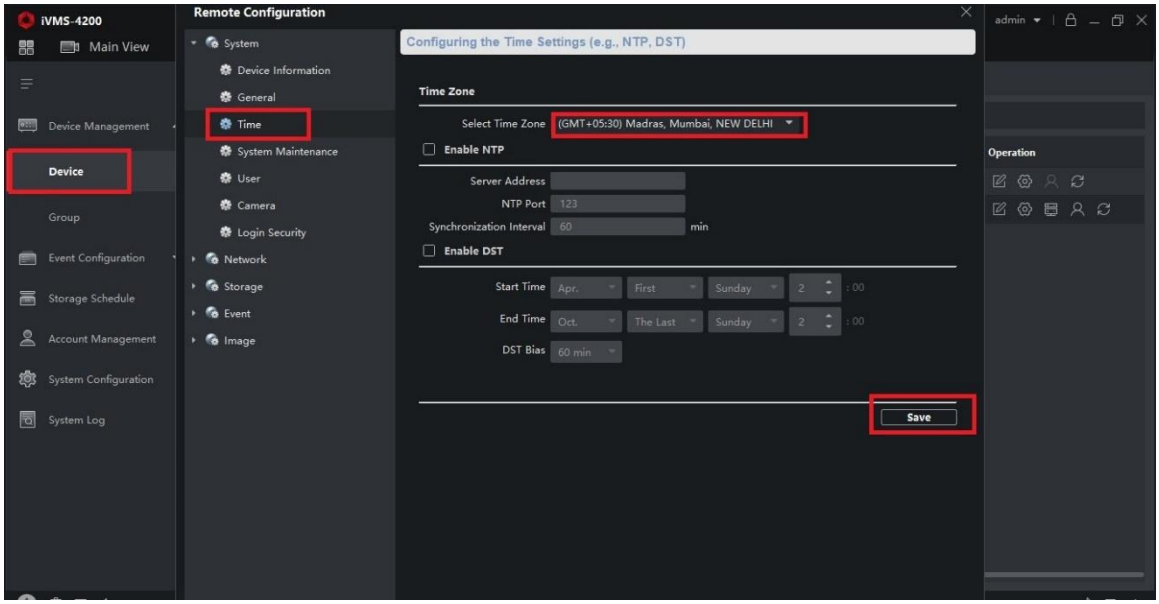

Figure 5.5: Camera Time Setup

Go to>device management>device>system>system maintains

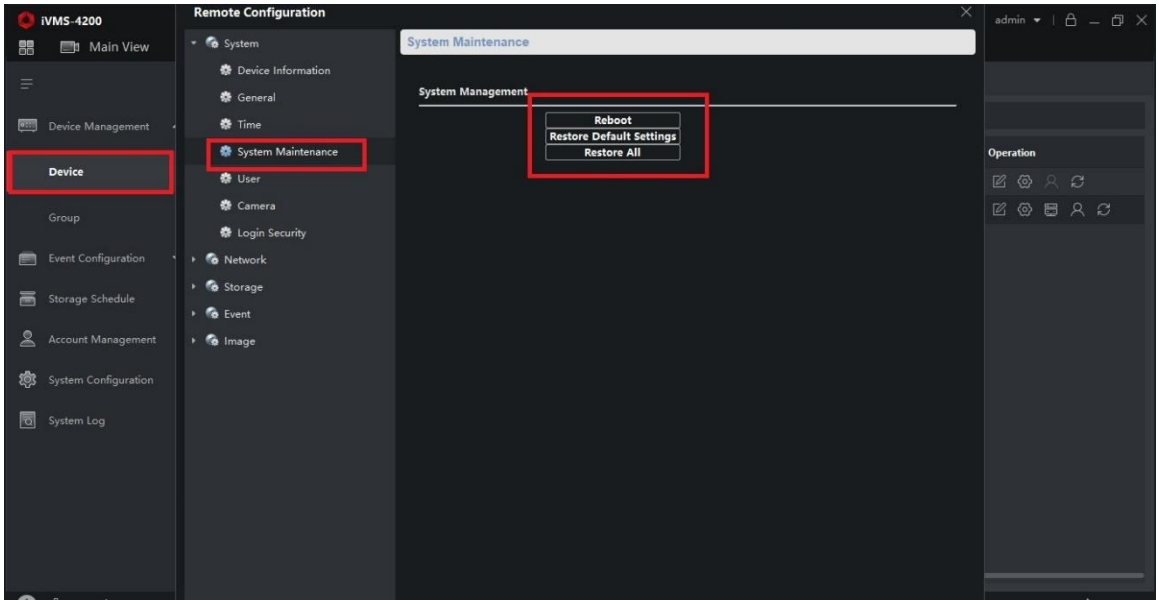

Figure 5.6: Device Reboot/Restore

Go to>device management>device>system>user

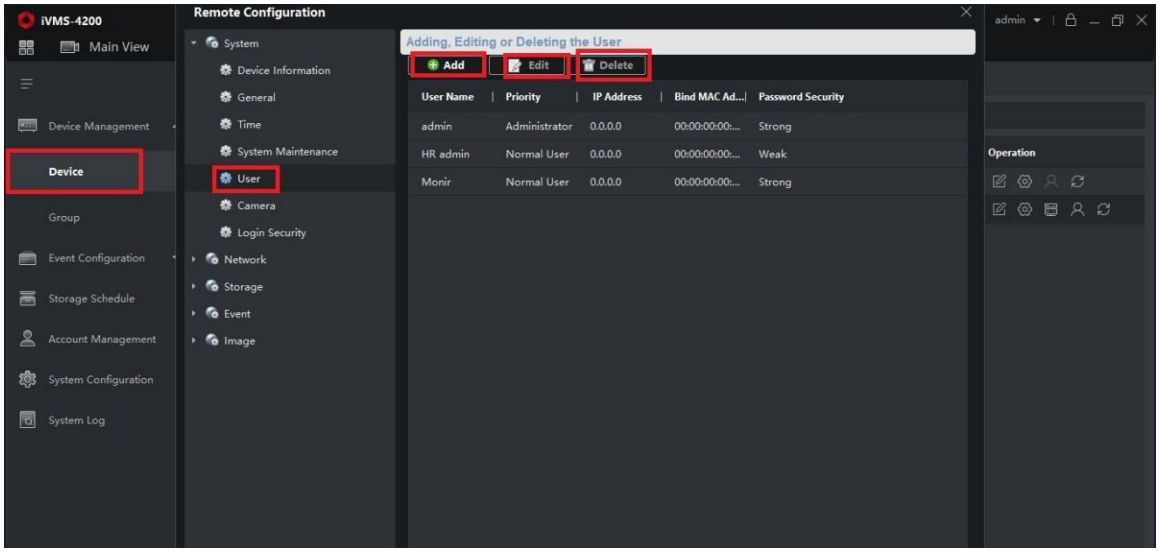

Figure 5.7: User Add/Edit/Delete

Go to >device management>device>system>camera

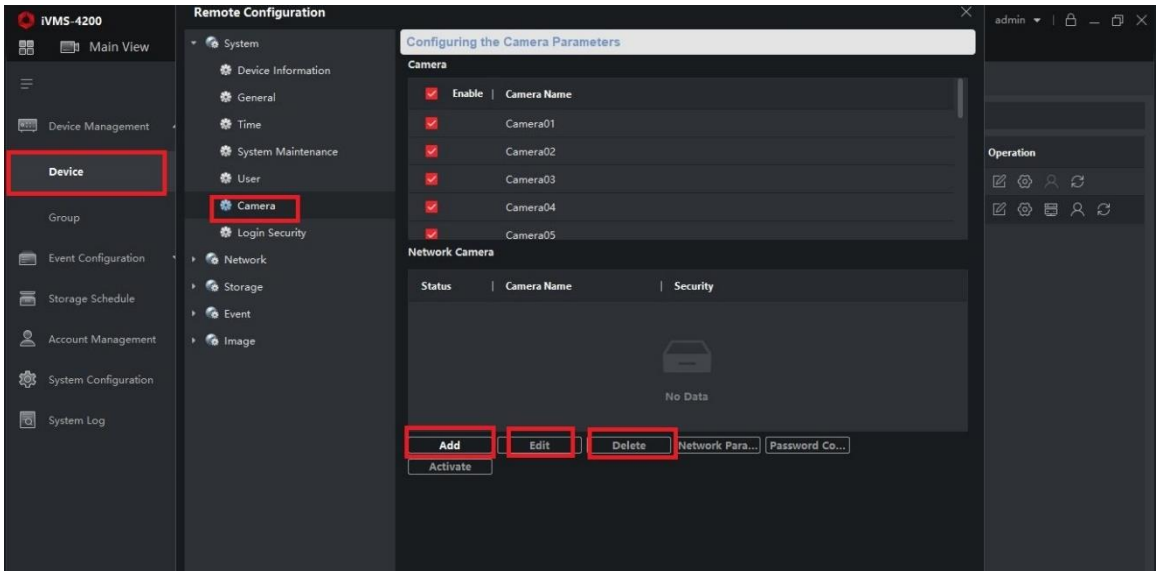

Figure 5.8: Camera Add/Edit/Delete

Go to>device management>device>system>login security

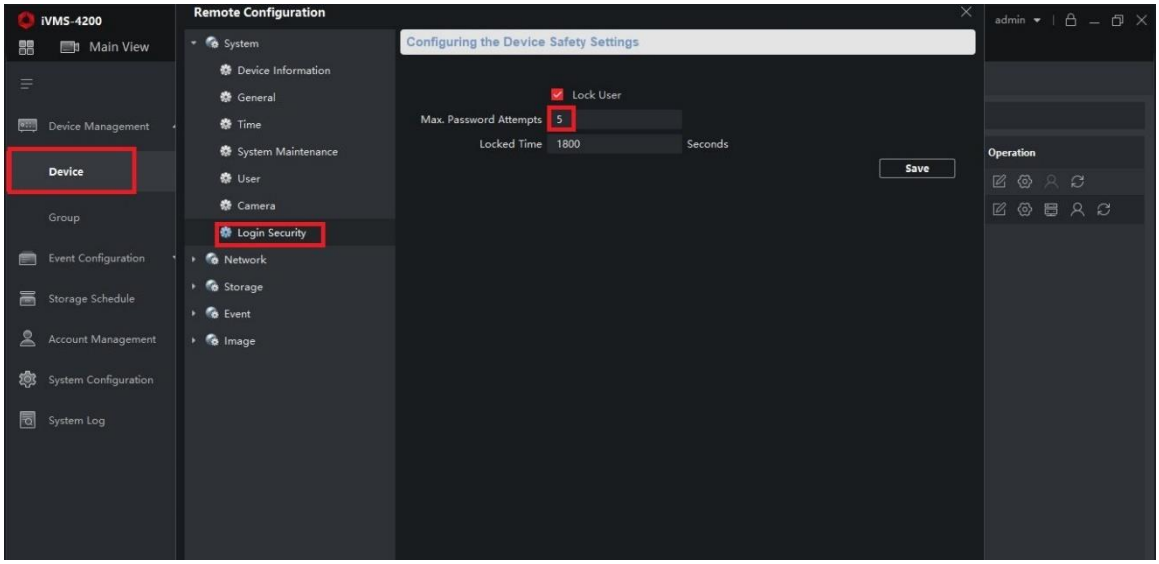

Figure 5.9: Login Security

Go to>device management>device>network>general

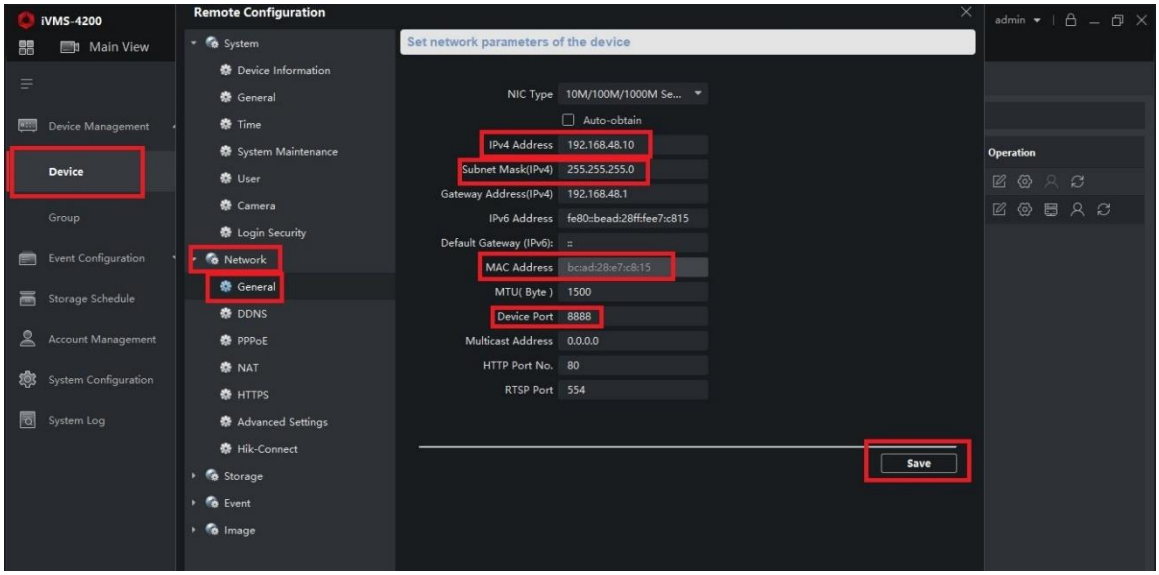

Figure 5.10: IP Assign

Go to>device management>device>storage>general

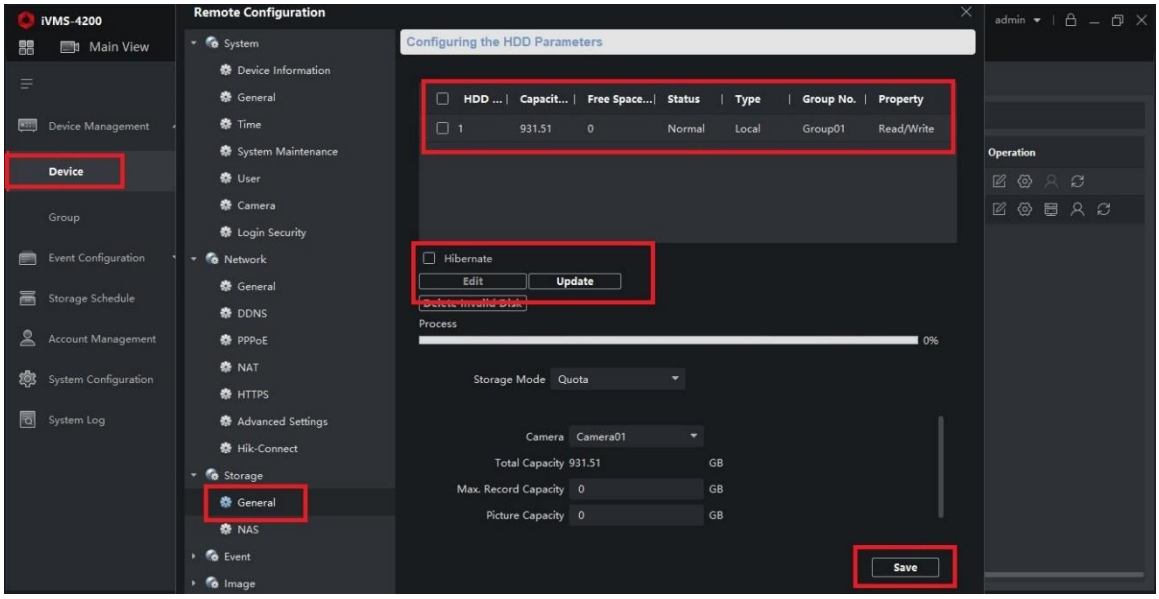

Figure 5.11: HDD View

Go to>device management>device>event>video diction

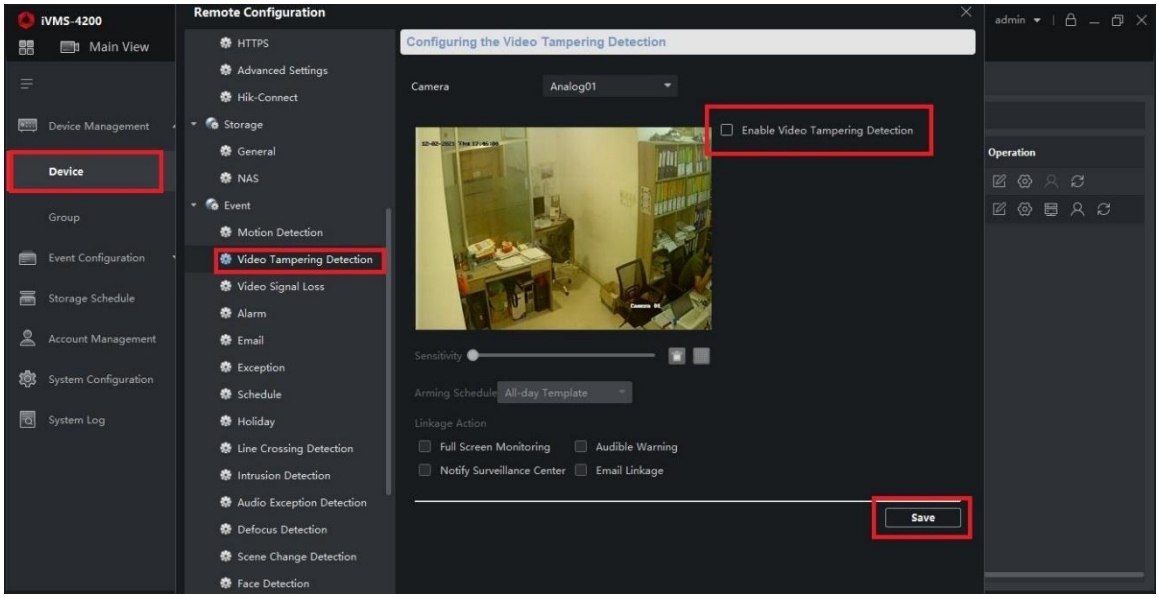

Figure 5.12: Video Detection

Go to>device management>device>image>video/audio

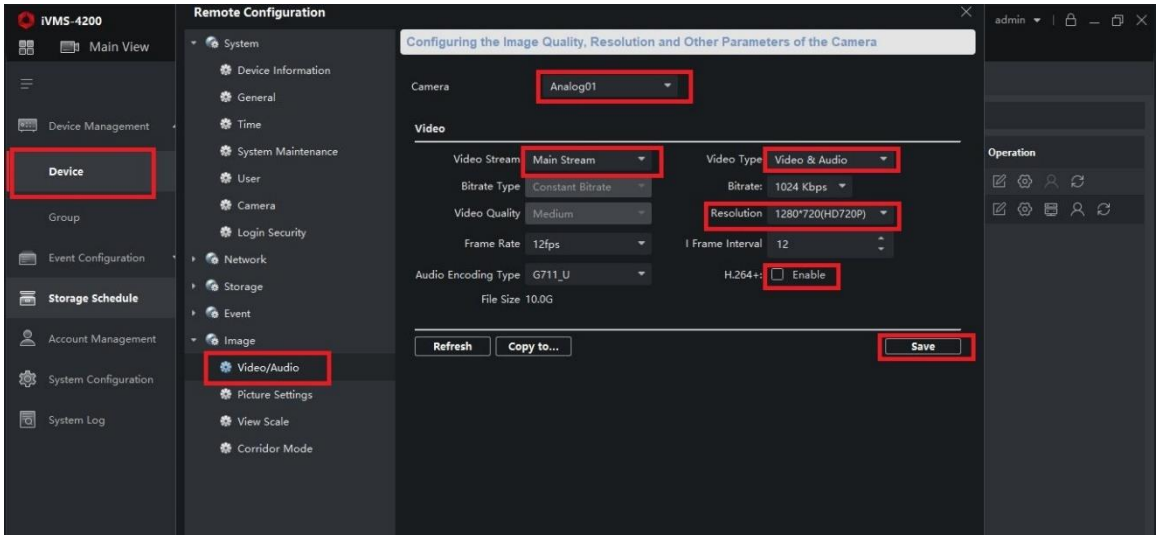

Figure 5.13: Video/Audio Format

Go to>Account management>

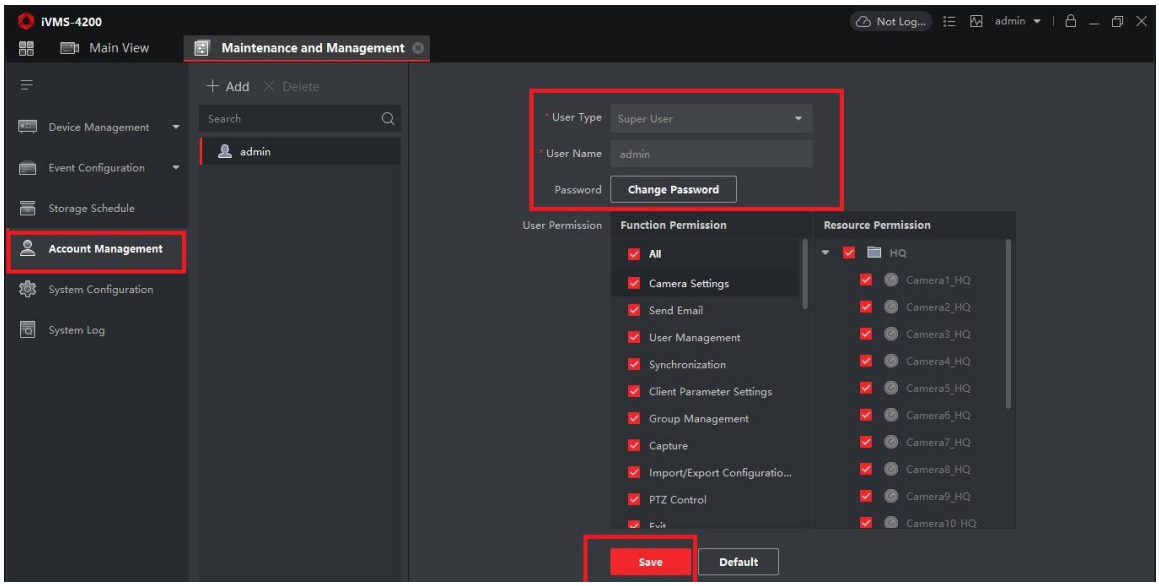

Figure 5.14: Password Change

Go to>system configuration>

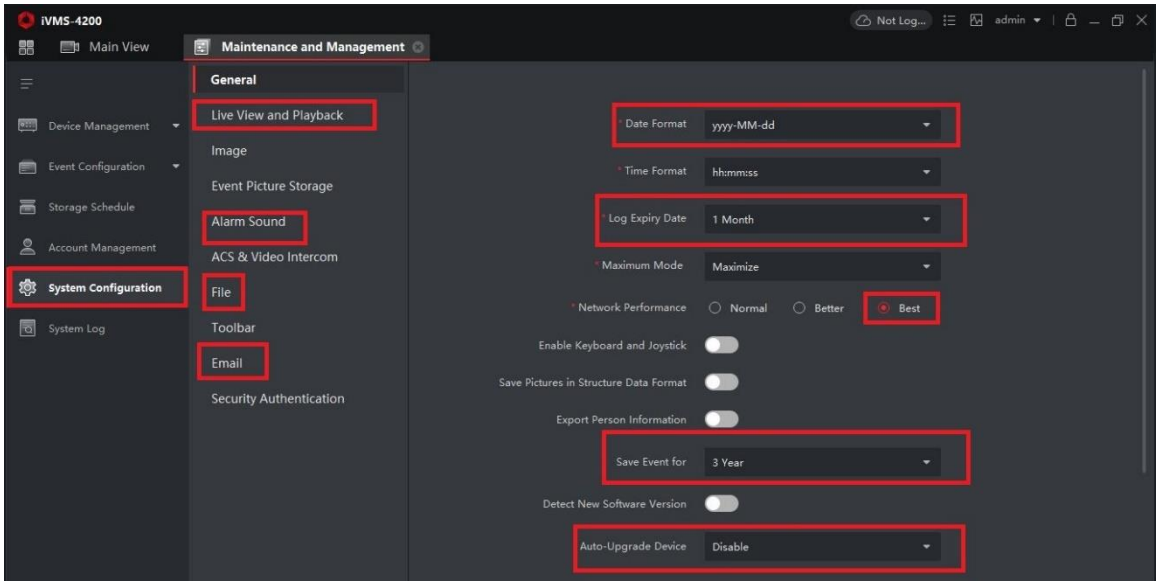

Figure 5.15: Add Email/File Download/Playback

Go to>main view>

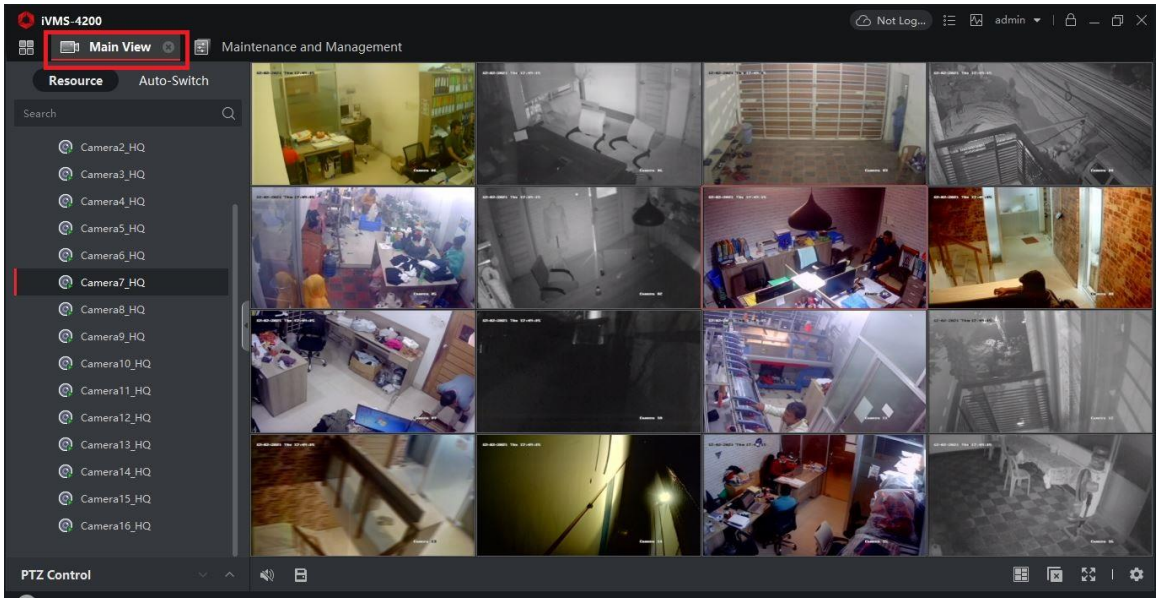

Figure 5.16: Camera View

CHAPTER 6

OUTLOOK AND WEBMAIL CONTROL

6.1 Outlook and Webmail Control Step by Step

First off, all user login webmail link> https://www.webmail.gssl.email/ [2]

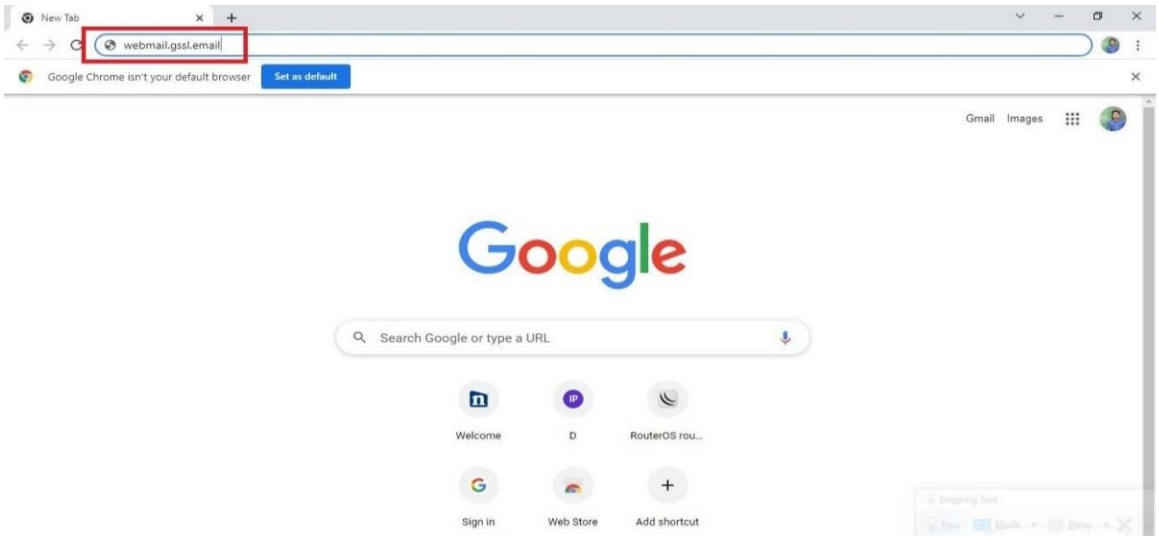

Figure 6.1: Webmail link

Then go to user email and password>login

Figure 6.2: Webmail Login

Here 6.3 figure we can see, webmail home page

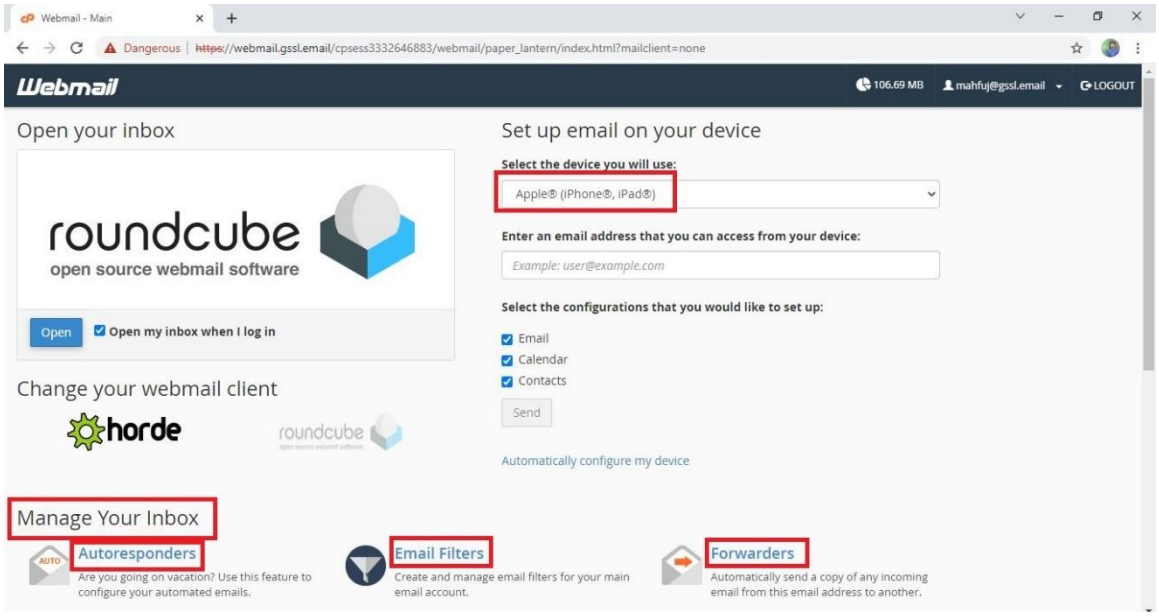

Figure 6.3: Webmail Home Page

Now we can change or control my email/outlook setting, then go> Edit your setting>

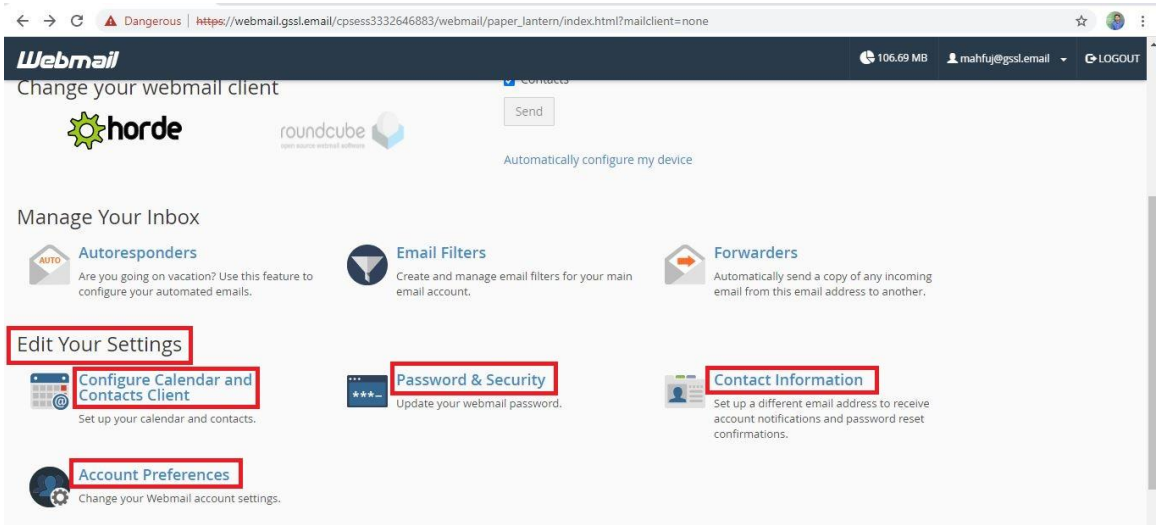

Figure 6.4: Change or Edit Account

Configure mail client, we can see every detail in email.

Figure 6.5: Configure Mail

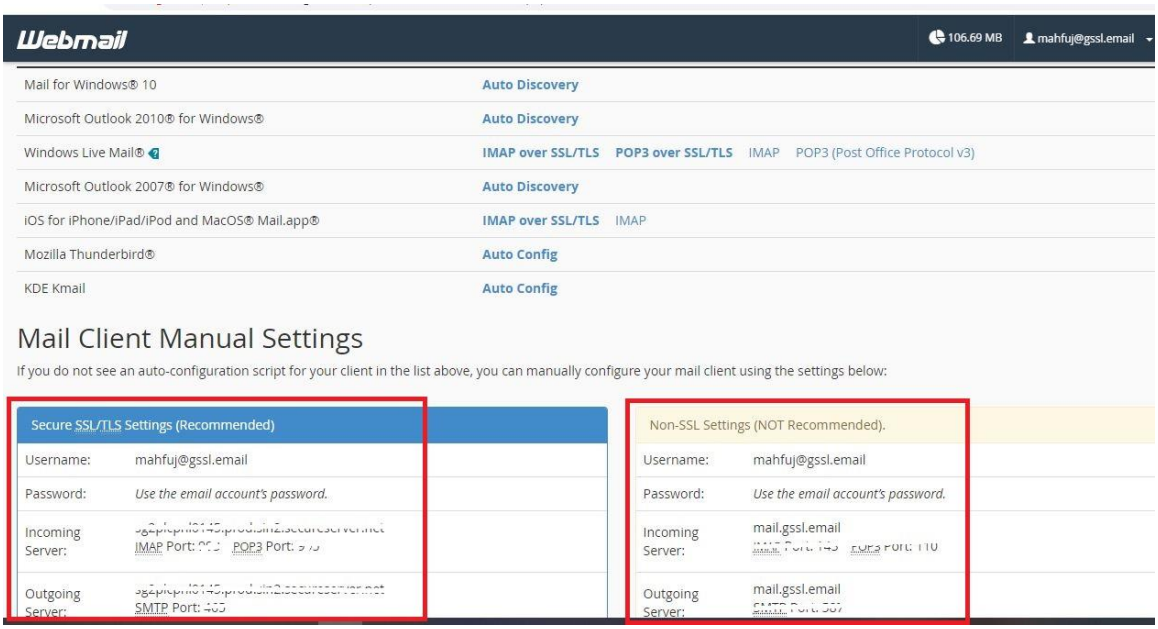

Figure 6.6: Manual Settings

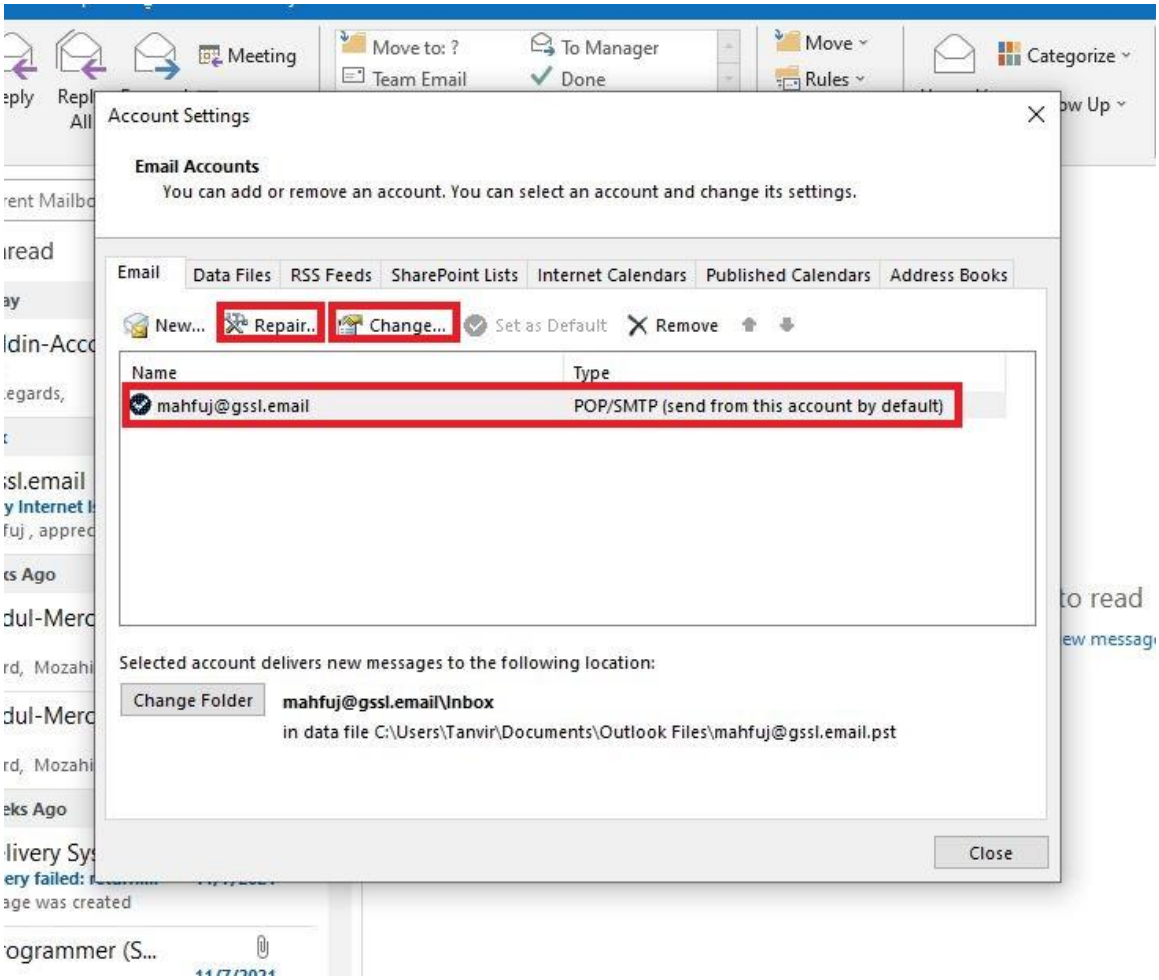

Figure 6.7: Outlook Direct Change/Repair

REFRENCE

[1] About Company, available at https://www.gssweaters.com/ last accessed 10:40am 02/11/21. {Used in 4-5no page}

[2] Company mail, available at https://www.webmail.gssl.email/ last accessed 10:05am 09/11/21. {Used in 36-39no Page}

[3] Learn About Network devices, available at https://goo.gl/2gfTov last accessed on 25/10/21. {Used in 8-9no Page}

[4] Learn About NIC Card, available at https://goo.gl/S3R5rx last accessed on 07:10pm 25/10/21. {Used in 11no Page}

[5] Learn About Fiber Optical Cable, available at https://goo.gl/HD5yNp last accessed on 07:35pm 26/10/21. {Used in 10no Page}

[6] Learn About STP & UTP, available at https://goo.gl/j6hE13 last accessed on 10:10pm 26/10/21. {Used in 12no Page}

[7] Learn About RJ45 Connectors, available at https://goo.gl/xPmwBJ last accessed on 09:10pm 27/10/21. {Used in 10no Page}

[8] Learn About Switch & Router, available at https://goo.gl/iZ5dKn last accessed on 09:15pm 28/10/21. {Used in 12-13no Page}

[9] Mikrotik Router, Personal last accessed on 11:25am 28 /10/21. {Used in 14no Page}

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