Kathmandu University

Department of Computer Science and Engineering

Dhulikhel, Kavre

A Project Report

On

'Mail Server'

[Code No: 204]

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Submission Date:

May 9, 2023

Chapter 1: Introduction

1.1 Introduction

A mail server is a computer program or software application that manages and facilitates the sending, receiving, and storage of email messages. It acts as the central hub of an email communication system, allowing users to send and receive emails through their email clients, such as Microsoft Outlook, Apple Mail, or Gmail.

When an email is sent, the email client communicates with the mail server to send the message to its intended recipient. The mail server then receives the message, performs various checks, and delivers it to the recipient's email client or mail server.

Mail servers can be configured in a variety of ways, including as standalone servers, part of a larger network, or as cloud-based services. They can also be configured to work with different email protocols, such as SMTP (Simple Mail Transfer Protocol), POP3 (Post Office Protocol version 3), or IMAP (Internet Message Access Protocol).

Mail servers are essential components of modern communication systems, providing individuals and businesses with a reliable and efficient means of communicating through email

1.2 Objectives

- To send and receive emails between email clients and servers.
- To manage email accounts, including creating and deleting email accounts, changing passwords, and assigning permissions.
- To provide security by encrypting emails, ensuring that email clients authenticate before accessing email accounts.
- To offer features and functionality such as email forwarding, auto-responders, mailing lists, and email archiving.

Chapter 2: Project setup and implementation

We used hMailServer, which is a free, open source, e-mail server for Microsoft Windows. This allowed us to set up our own mail server and test various features and functionalities.In addition, we used Thunderbird, which is a free and open-source application for managing email, news feeds, chat, and news groups. This application served as our email client, allowing us to send and receive emails from our hMailServer.Lastly, we used Oracle VirtualBox, which is an open-source application for creating, managing, and running virtual machines (VMs). This allowed us to set up a virtual environment for our hMailServer and Thunderbird, ensuring that we could test everything without impacting our actual email accounts.

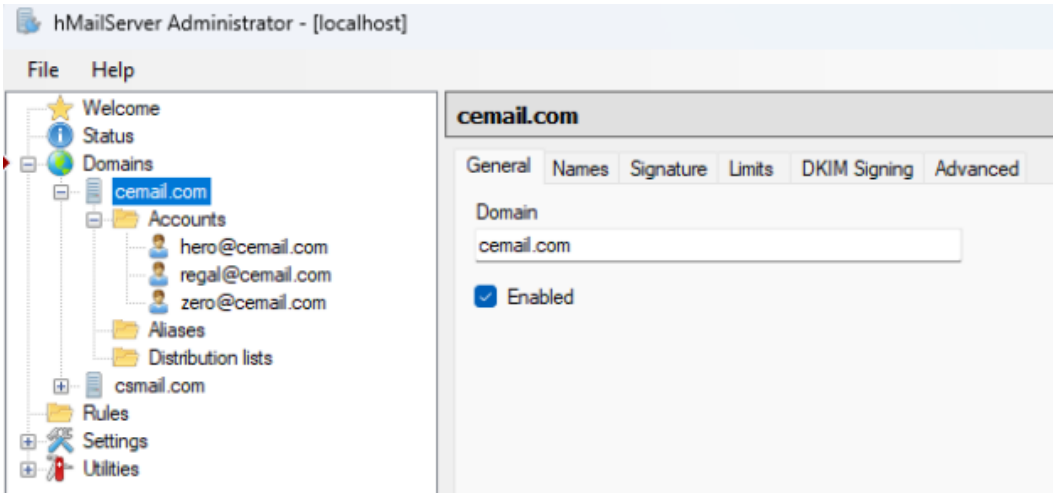
2.1 Install hMailserver

hMail Server required tools were installed as:

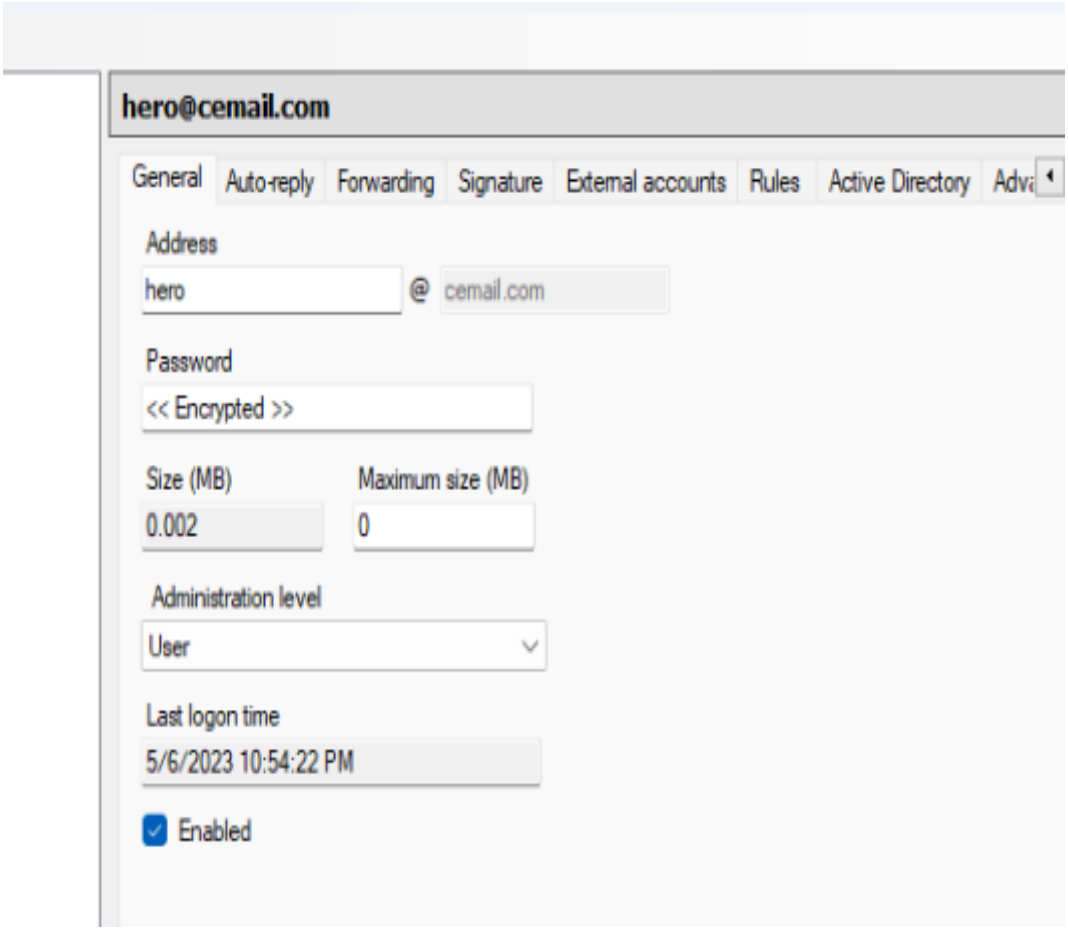
a. Firstly download hMail server and set up:

https://www.hmailserver.com/download

b. Then create a domain in hMailserver

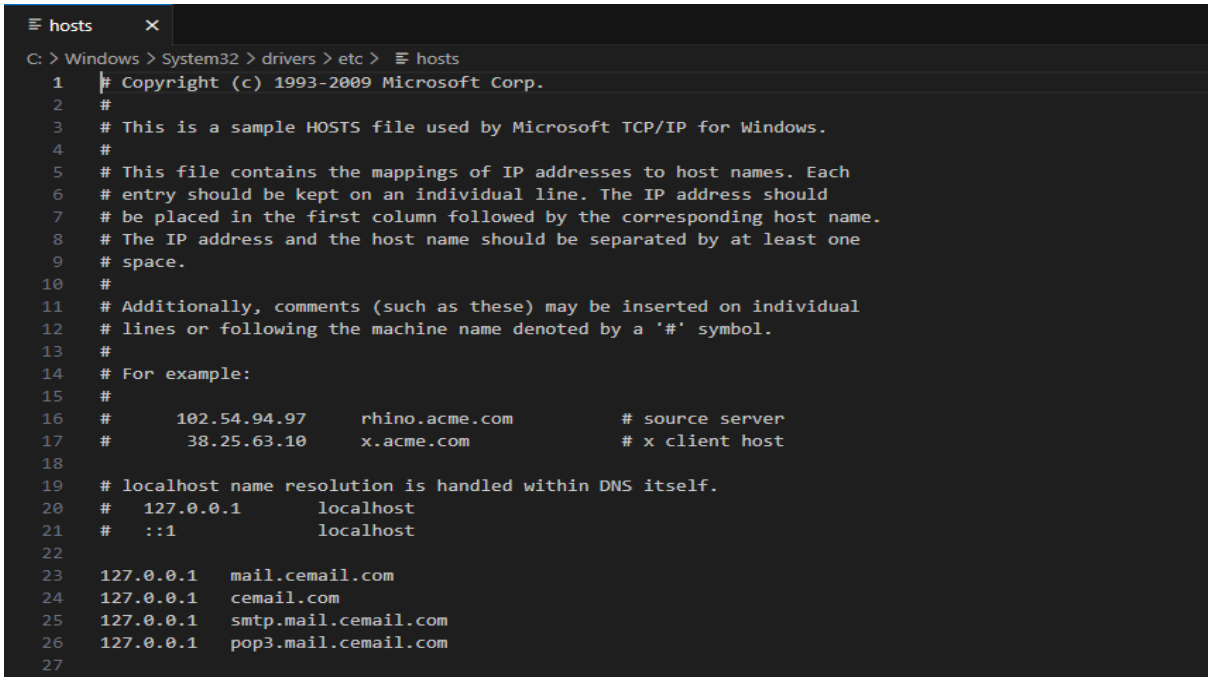


c. Then create an account and save it



d) Host file saved in the device as:

Go to `C:/Windows/System32/ drivers/etc/host` and edit the domain name and save POP3, SMTP

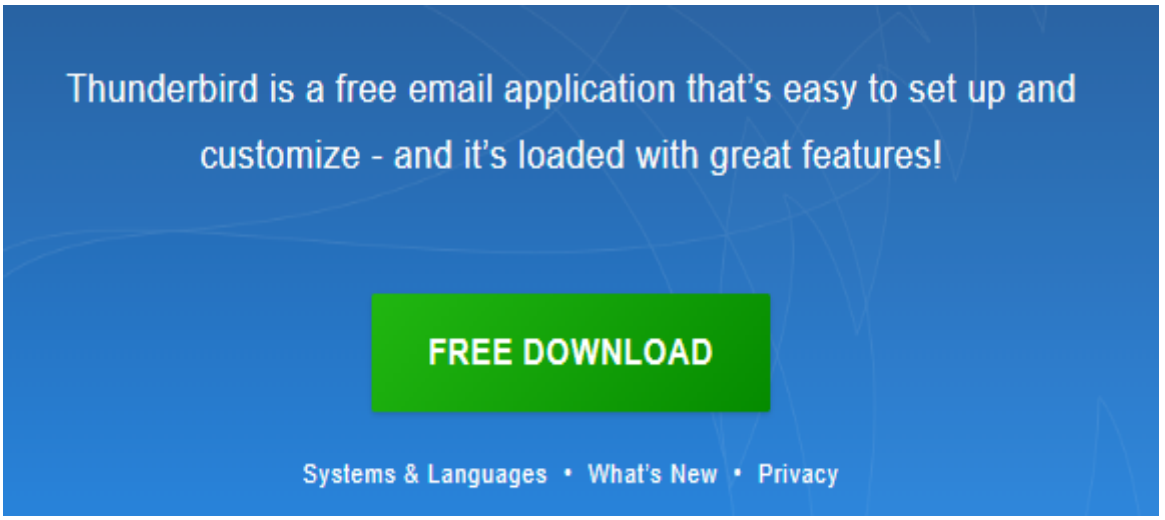


2.2 Install Thunderbird on your PC

After the installation of the hMail server, and adding the local host network on the host file.We need to install thunderbird for managing email, News feeds and chats. It will help in user Authentication and Management.

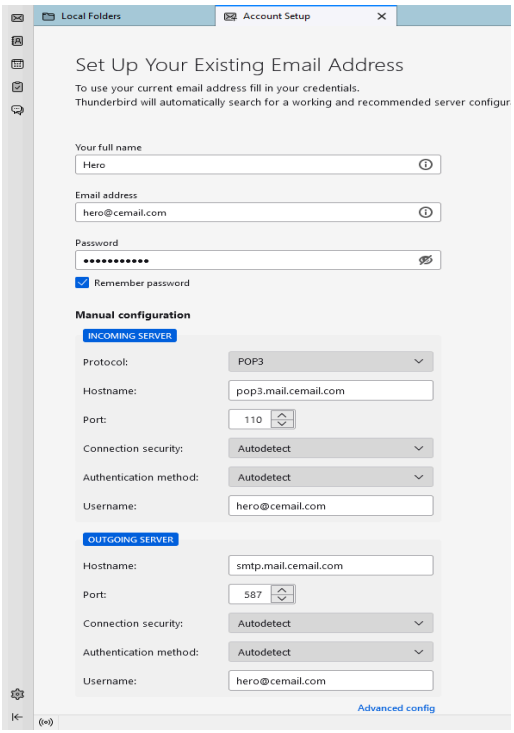
a. Firstly download Thunderbird and set up:

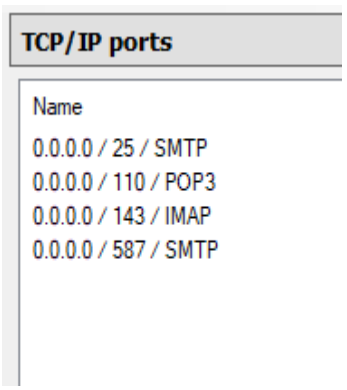
https://www.thunderbird.net/en-US/download/?downloaded=True&download_channel=esr

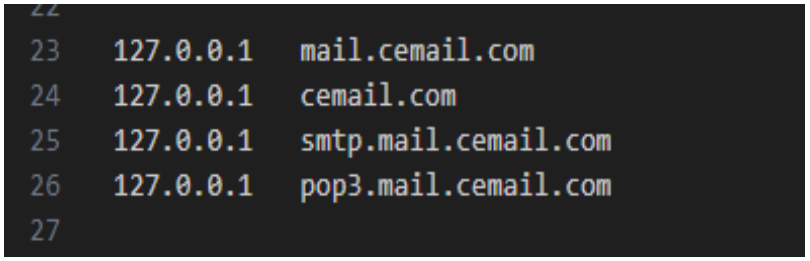


b. Setting up account on the thunderbird:

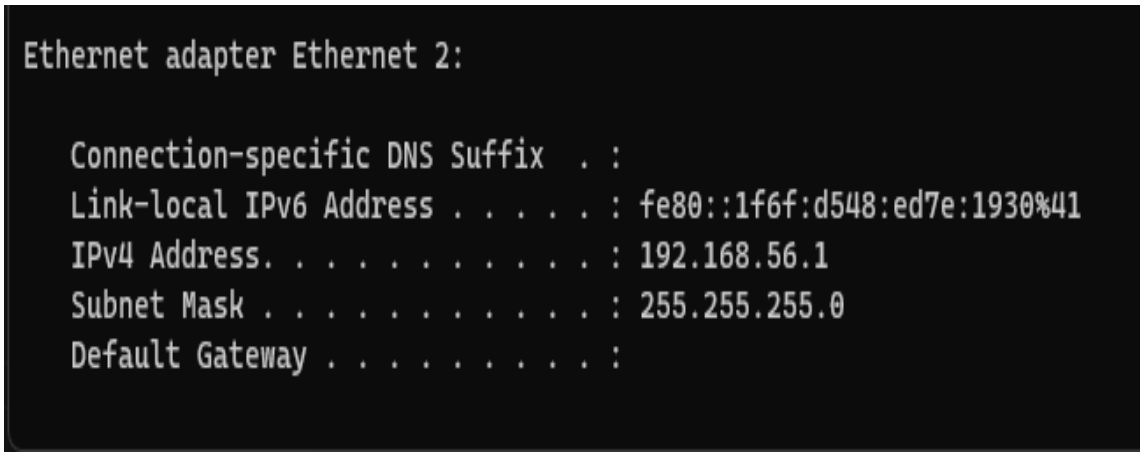
On Account Setting, set up your existing email address and configure POP3 , SMTP and their Ports as shown in figure.



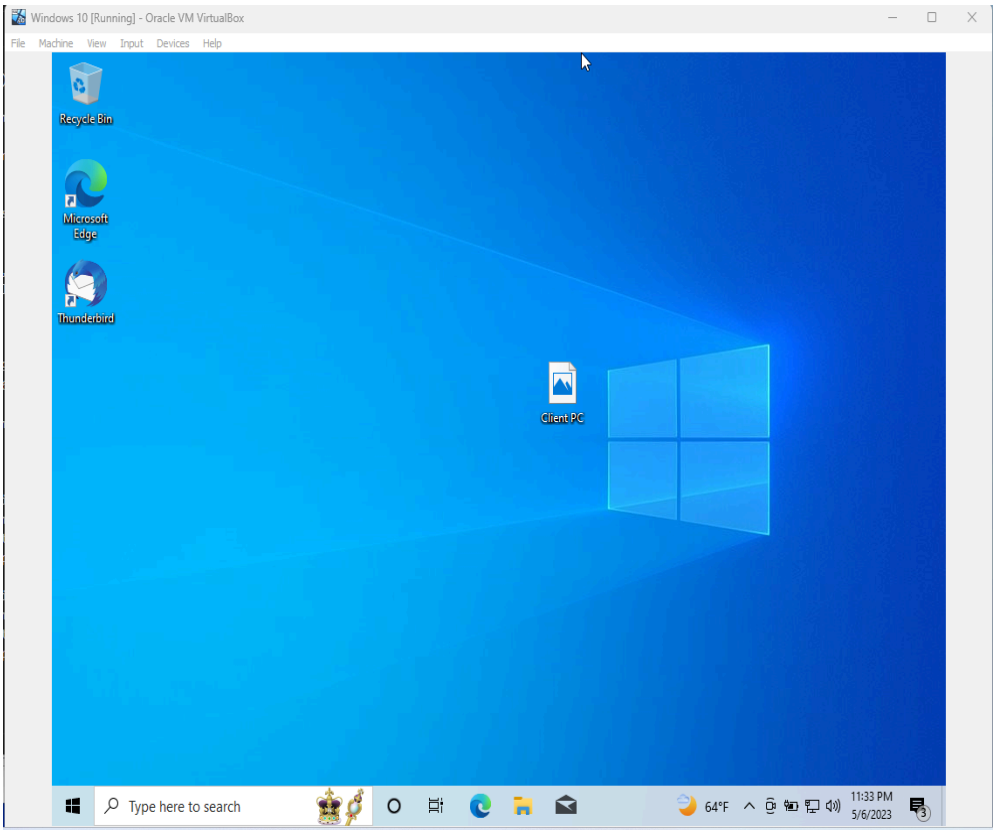




After all these steps have been conducted,Our server PC is now fully functional. We are now going to configure our Client PC. Then, Copy the IP address of Server PC.



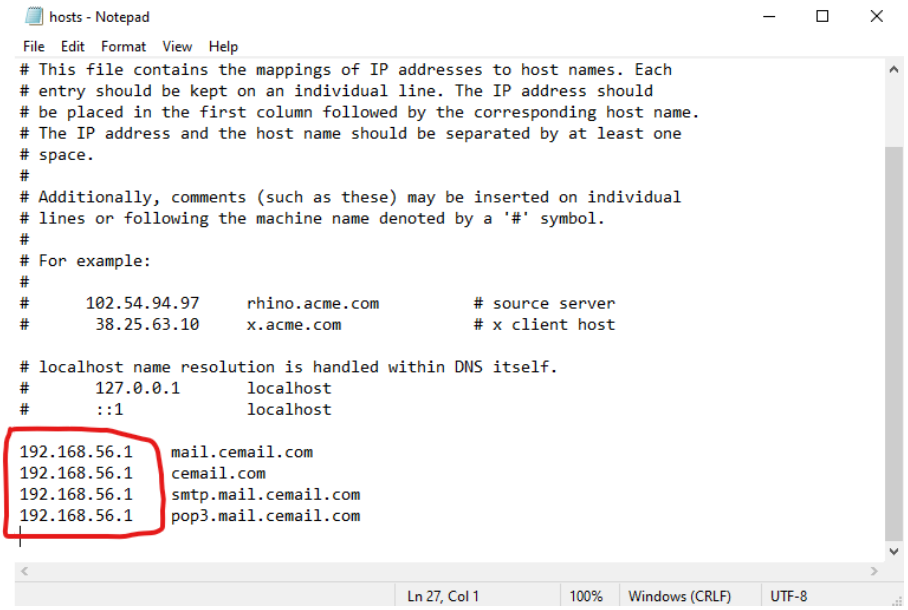
2.3 Install and configure Oracle Virtualbox



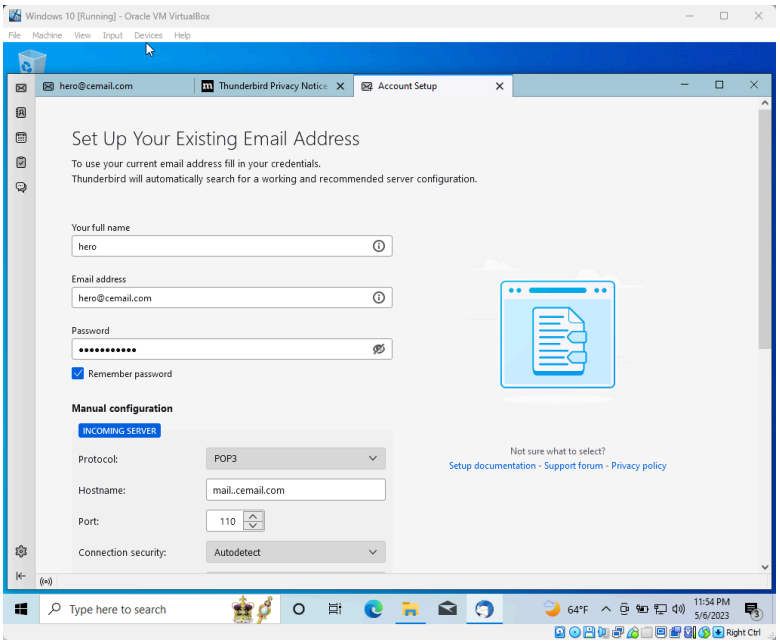
a.Inserting IP address of Server PC

`Go to C:/Windows/System32/ drivers/etc/host`

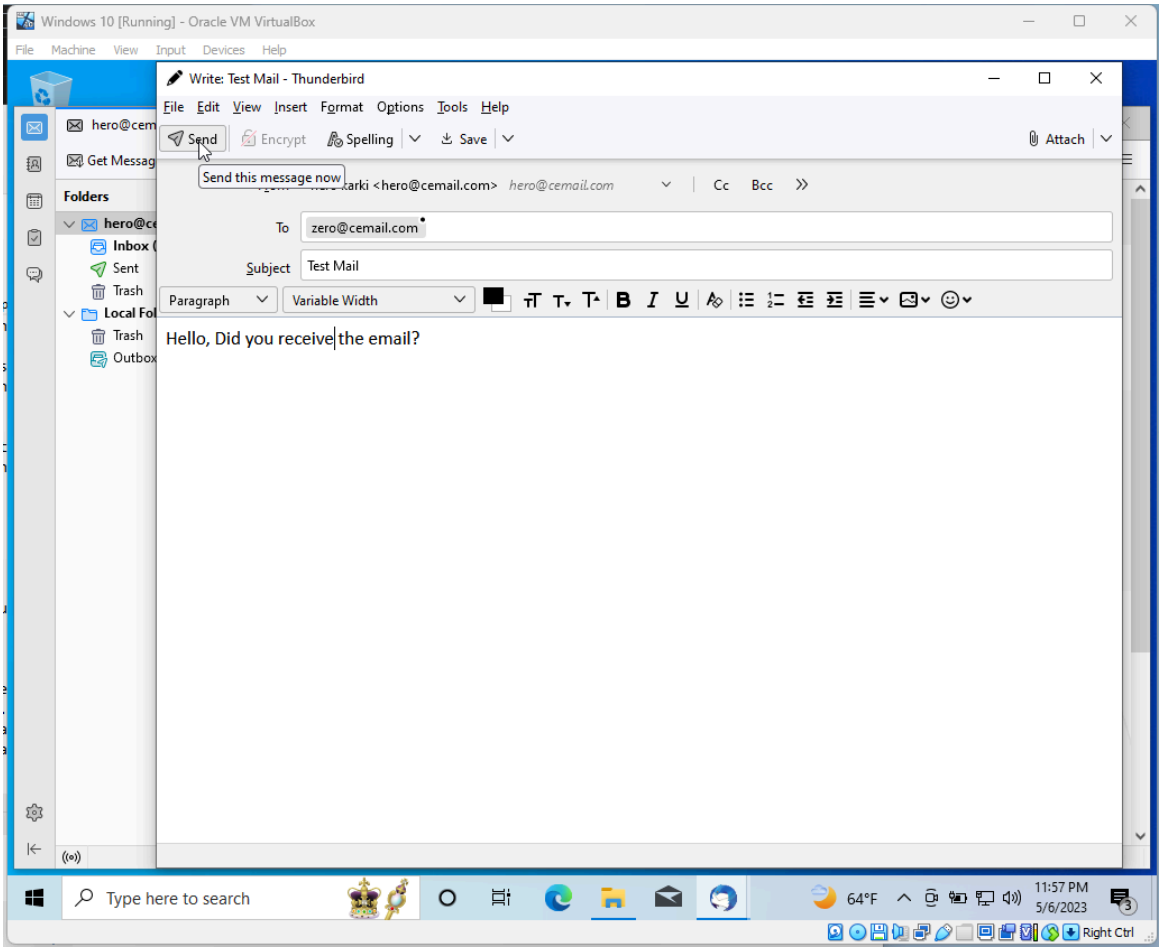
This time, we insert the ip addresses of server PC.



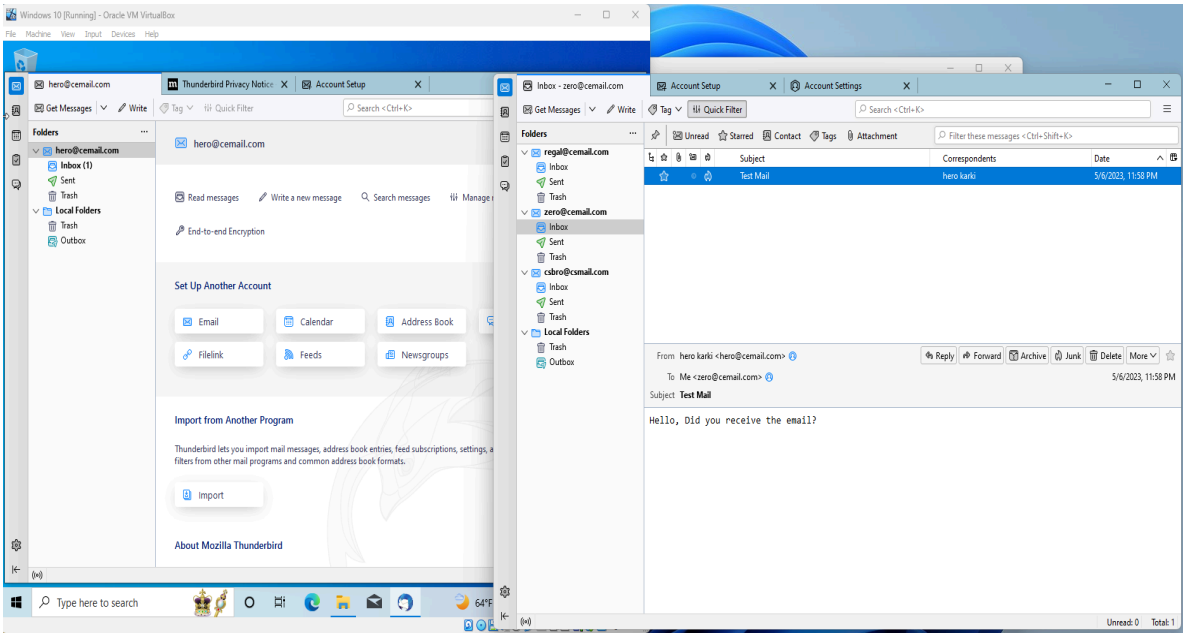
b. Setting up existing email address in client PC



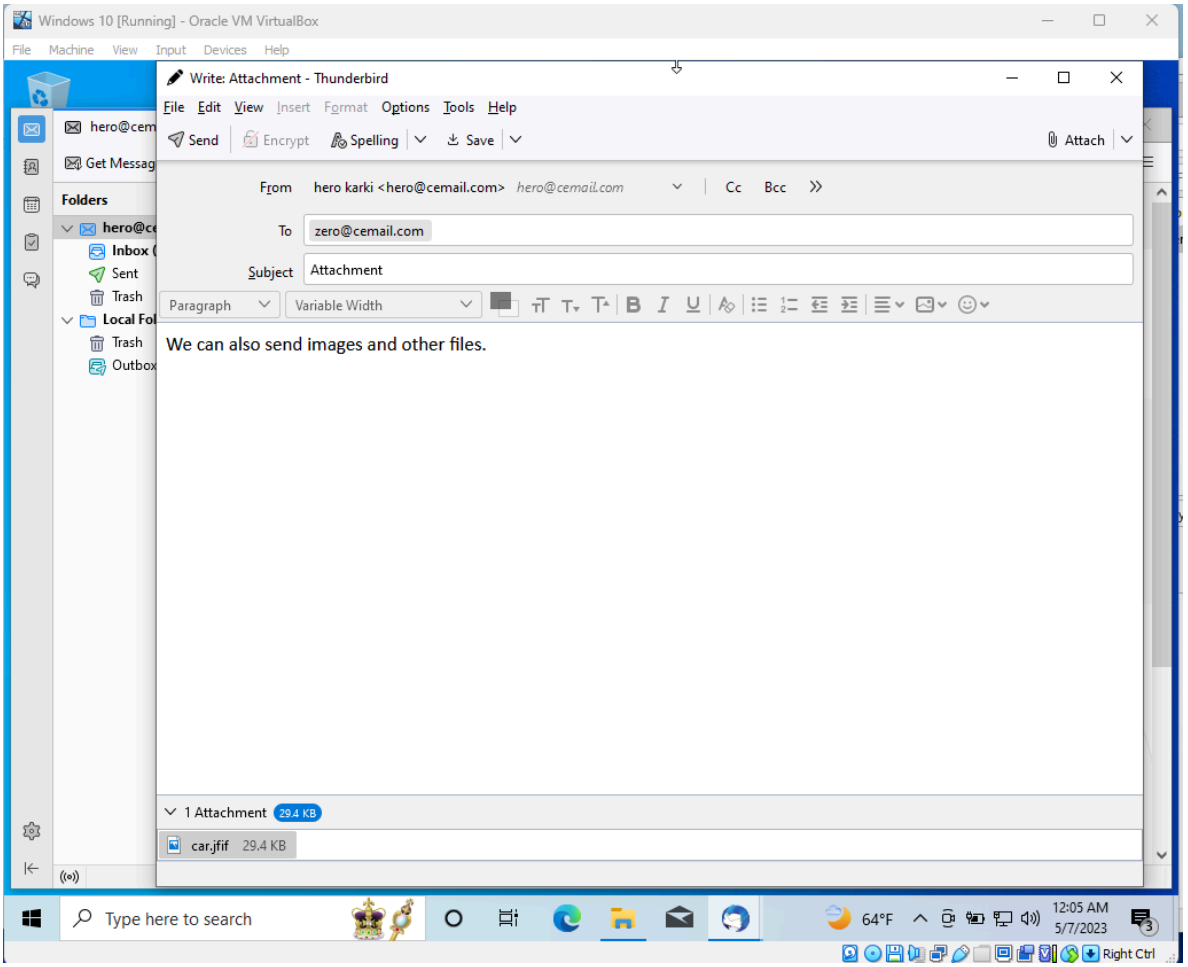
c. Writing a Test mail from our client PC to send it to the server

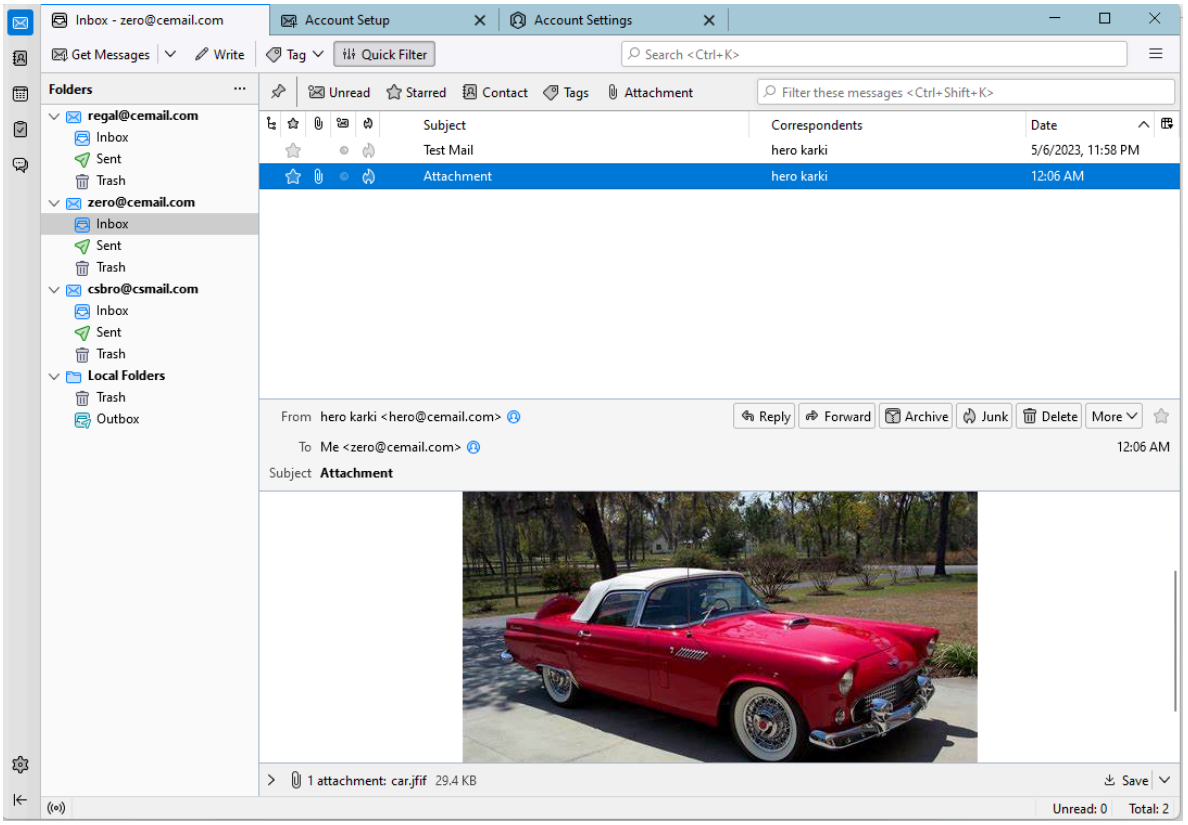


d. Message received which was sent by the client



e. Images sent via thunderbird





Chapter 3: Observations

When the mail server was tested, the IP addresses of the SMTP and POP3 were 127.0.0.1 in which the port of POP3 was 110 and SMTP was 25. Similarly, the IP address of the server computer was found to be 192.168.56.1. These IP addresses can change depending on the network.

3.1 Email access

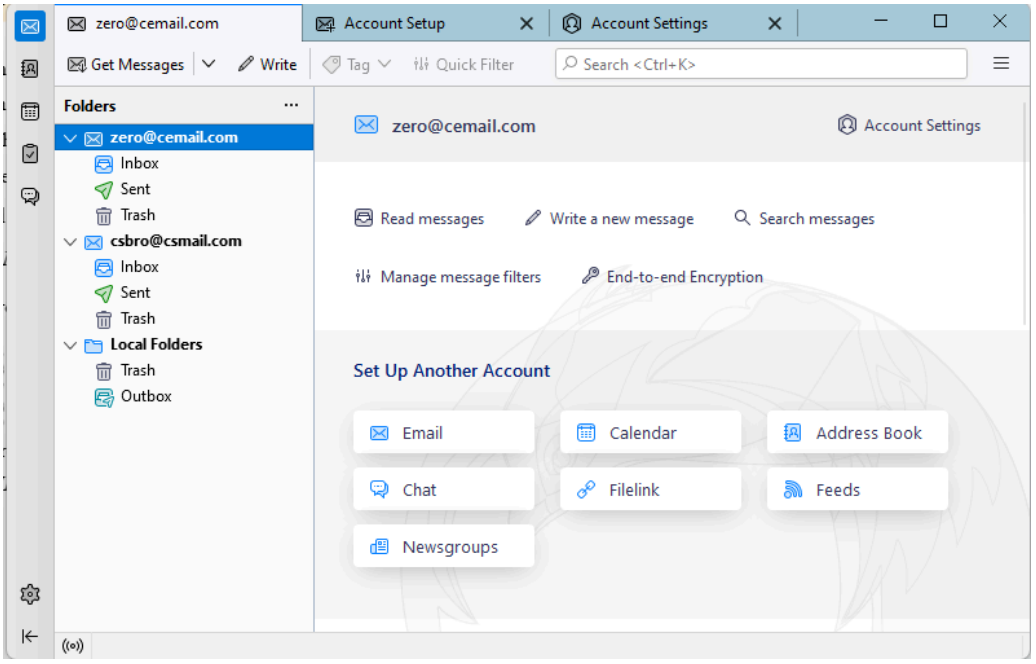


Figure 3.1.1: Access portal to email server

3.2 Compose Mail

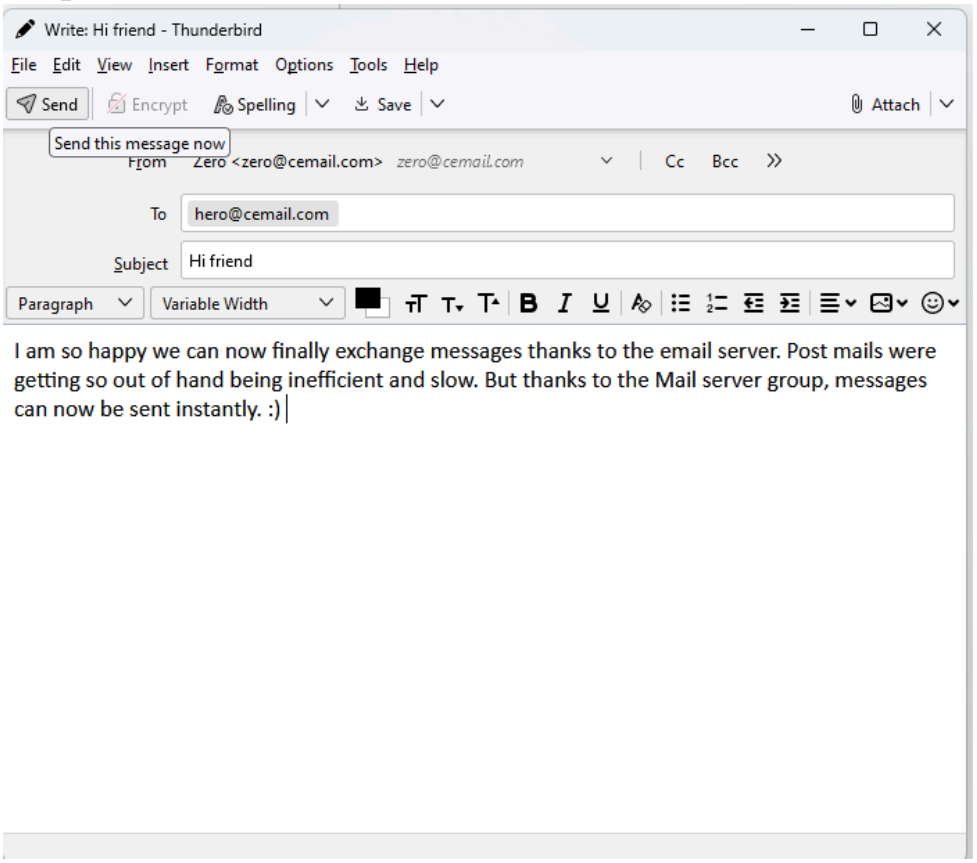


Figure 3.2: An example showing mail being composed

3.3 Auto Reply

We can also configure to reply to messages automatically

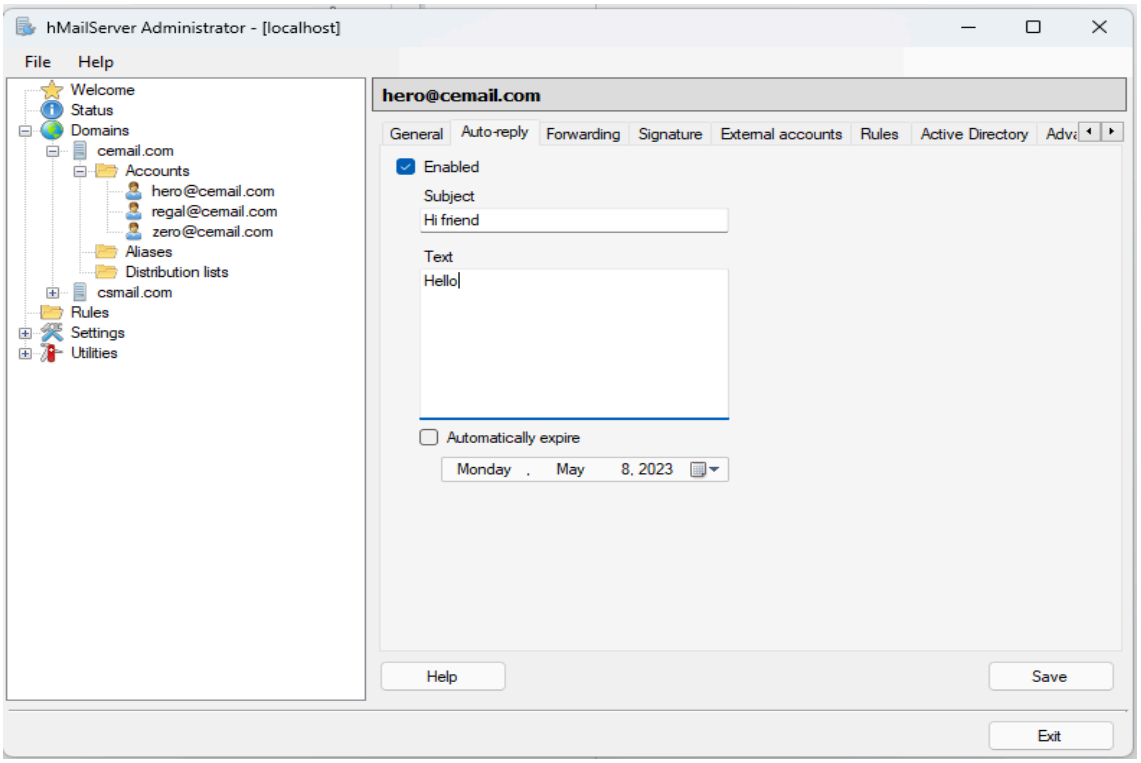


Fig 3.3: Auto reply in action

3.4 Sending Images

We can also send Images via this mail server.

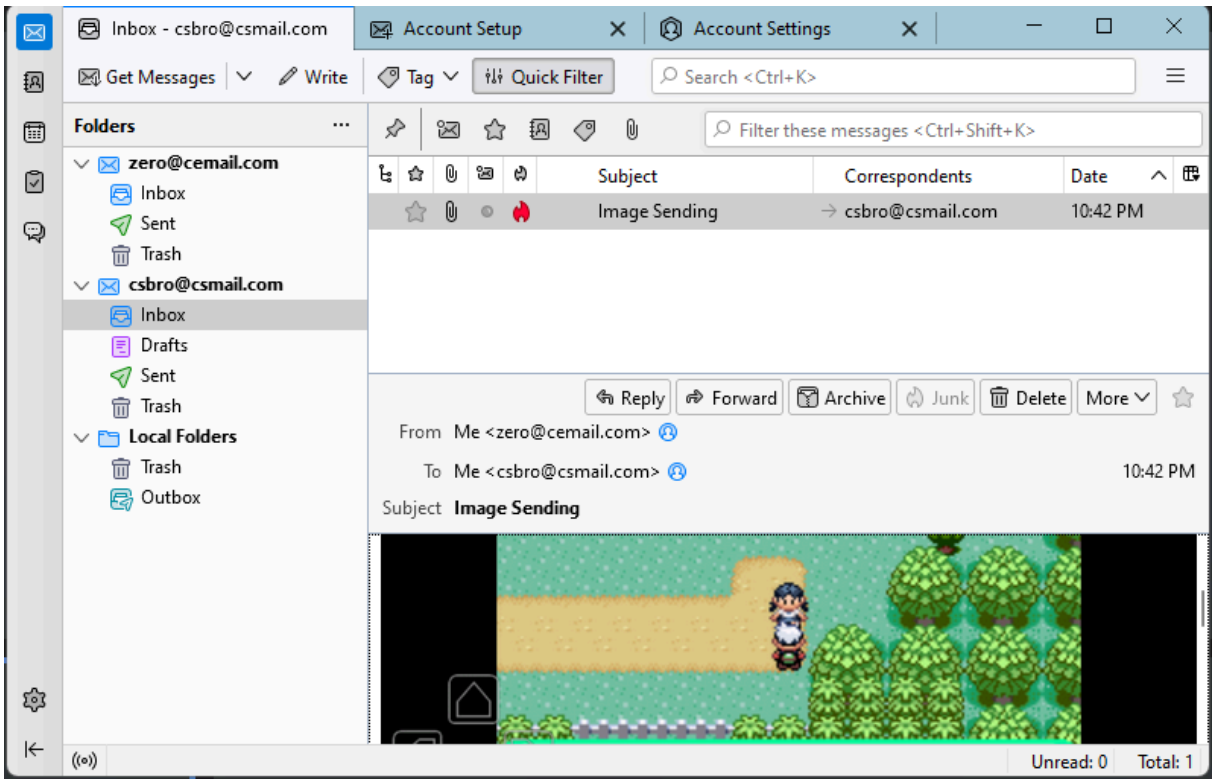


Fig 3.4: Image being sent

Chapter 4: Conclusion

With the completion of this project, all of its objectives were well achieved. A mail server was built with hMailServer and Thunderbird and clients were allowed to create and set up their respective emails. The clients can send, receive, forward and reply to the emails. Auto reply feature is also implemented. In addition, clients can also exchange images.

In conclusion, creating a mail server using Thunderbird, Oracle, and VirtualBox involves setting up a virtual machine with a server operating system, installing and configuring the necessary software, and configuring DNS and other networking settings.