



Mail Server and Web Server Configuration Using Ubuntu 22.04

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CEP CCIT

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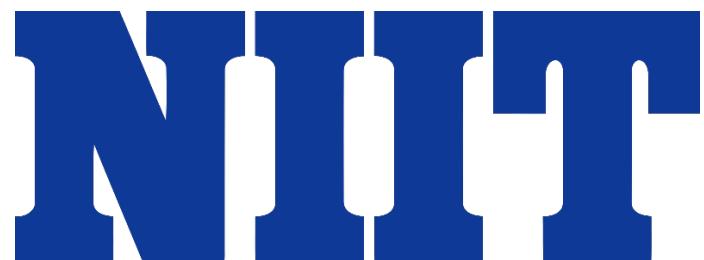
2024

PROJECT ON

Mail Server and Web Server Configuration Using Ubuntu 22.04

Developed by

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- 3. Asia Ilumina Lessy**



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Batch Code : 2CS1

Start Date : April, 2024

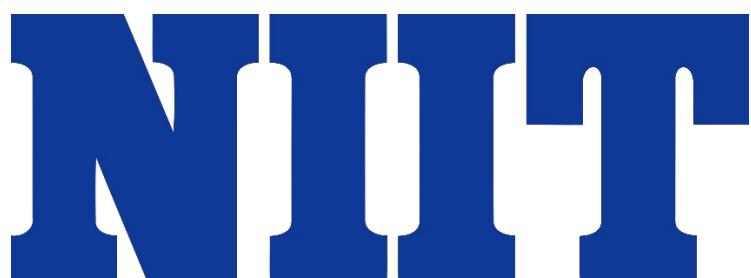
End Date : Mei, 2024

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Date of Submission : 12 April, 2024

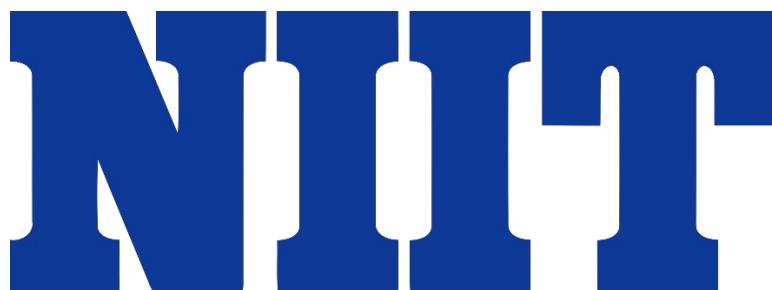


CERTIFICATE

This is to certify that the report titled "Mail Server and Web Server Configuration Using Ubuntu 22.04", embodies the original work done by Muhammad Armed Bintang Pradana, Nur Iqbal Maulana and Asia Ilumina Lessy. Project in partial fulfillment of their course requirement at NIIT.

Coordinator :

Tri Agus Riyadi, S.Kom, MT



ACKNOWLEDGMENT

The author expresses his gratitude to Allah SWT for all the abundance of grace and mercy. His mercy and grace, and do not forget the shalawat and greetings we send to the Prophet Muhammad SAW, so that we can complete this project with the title "Mail Server and Web Server Configuration using Ubuntu 22.04" and without him we would not be able to complete this project on time. Time that has been calculated, and the author also wants to thank Mr. Tri Agus Riyadi, S.Kom., M.T., as the supervisor who has provided suggestions and advice that are very helpful to the author in writing this project. Although there are many challenges and obstacles that we face in making this project, we can finally complete it. Finally, we were able to complete this project. The author realizes that this assignment is still far from perfection, and if colleagues and lecturers are willing to provide suggestions and criticism, then this assignment is not perfect. Supervisors are pleased to provide suggestions and criticism for the sake of the perfection of this project, and we as writers will be greatly helped. We, as writers, will be greatly helped by these suggestions and criticisms.

SYSTEM ANALYST

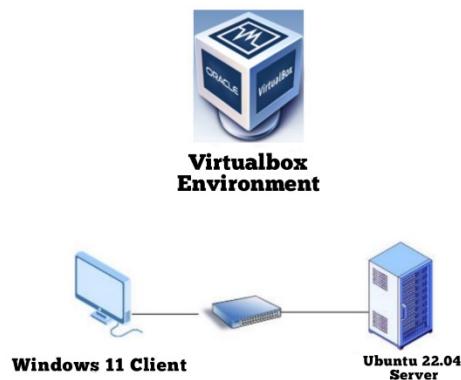
This paper “Mail Server and Web Server Configuration using Ubuntu 22.04” discusses web servers and mail servers. This research aims to research, configure the architecture and resources of the web server in an integrated environment.

The concept of this configuration is to connect to each other and be able to deliver a fully functional mail, fully functional web server by utilizing Apache2 services and users who want to log in using SquirrelMail.

To make all the configurations, the adapters must be configured first. We will primarily use the HostOnly adapter and then set up port forwarding from the Ubuntu virtual machine to the host OS with both DHCP IP addresses.

Ultimately, the goal of this configuration is to build an operational Web Server that utilizes Apache2 and SquirrelMail services.

ENVIRONMENT



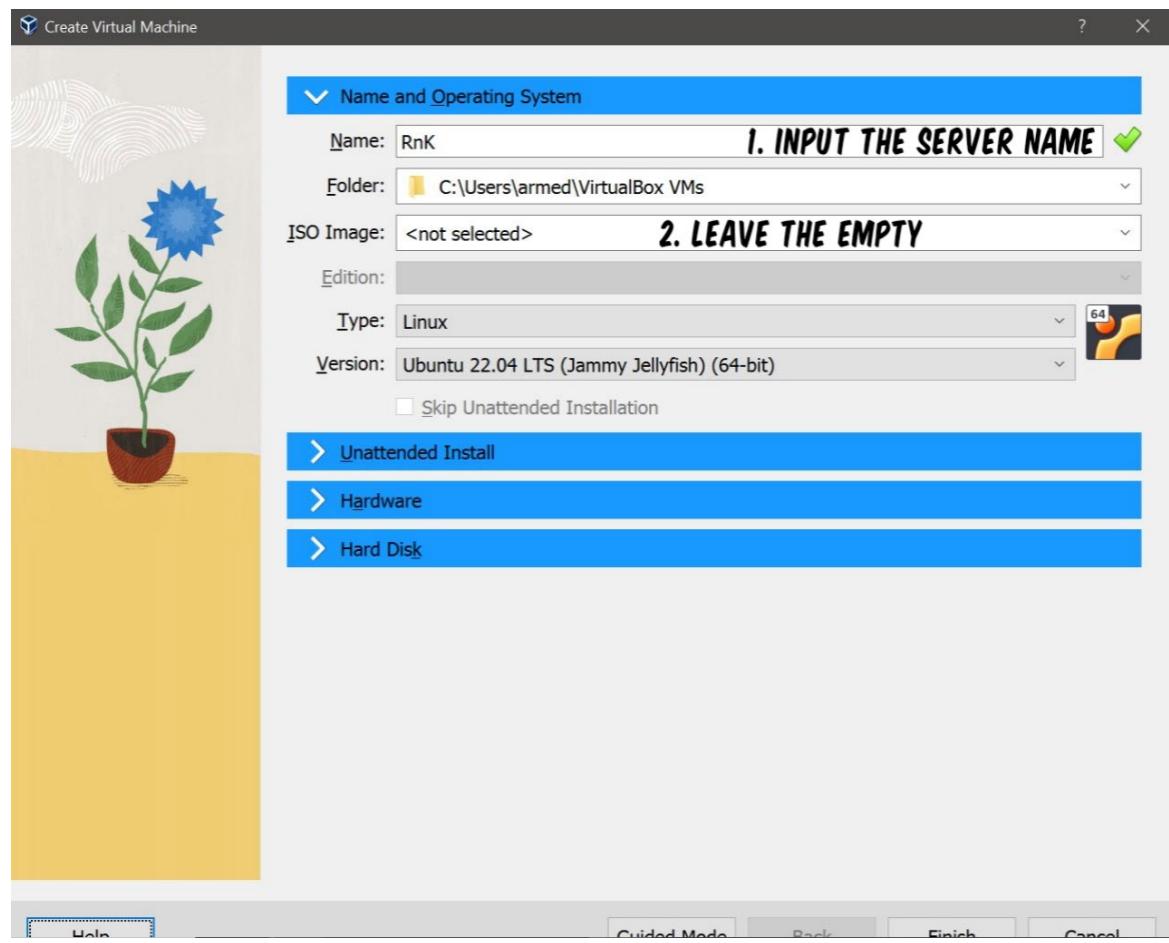
1. On this project, the Author use a device with Windows 10 Operating System and use Virtualbox for running Ubuntu Desktop 22.04 Operating System for configurating the server needs.
2. Ubuntu must have its network adapter set to bridge.
3. The Server's IP is 192.168.100.232
4. The host's IP is 192.168.100.175
5. The testing for the Mail and Web service can be using any desktop browser.
6. If the configuration proved successful, the two users assigned will have access to send email to each other.

PREPARATION

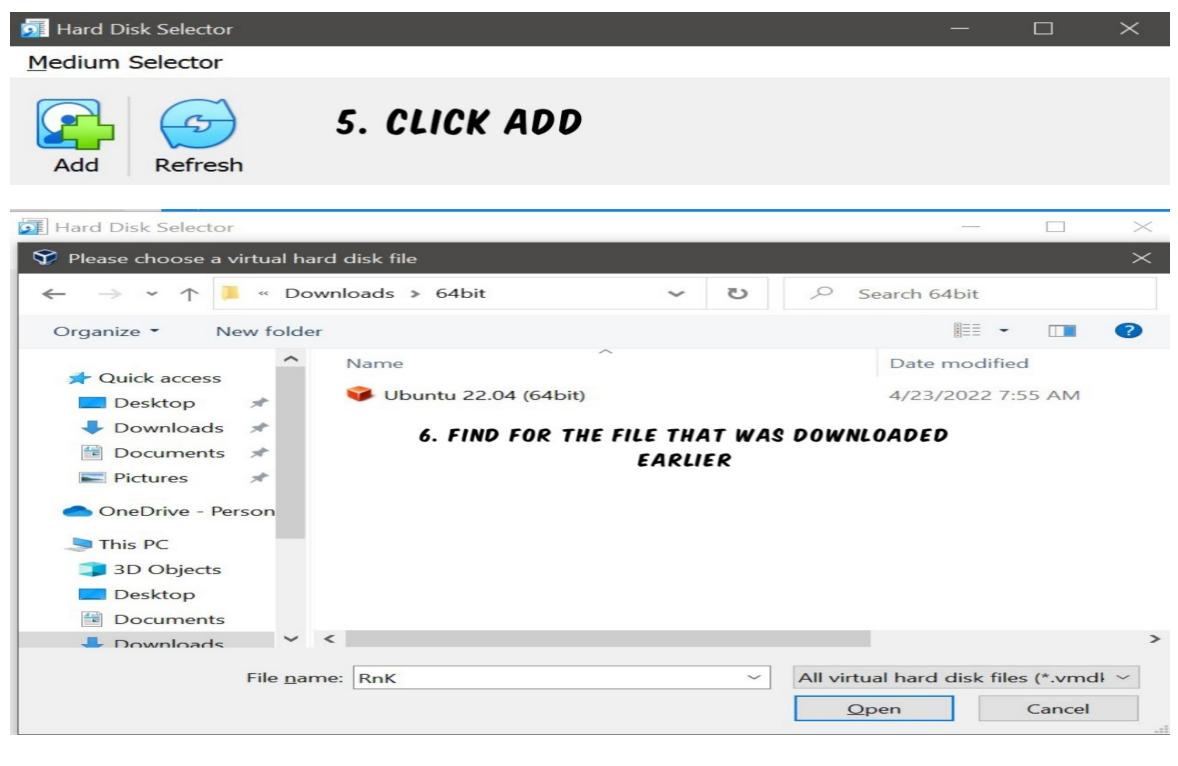
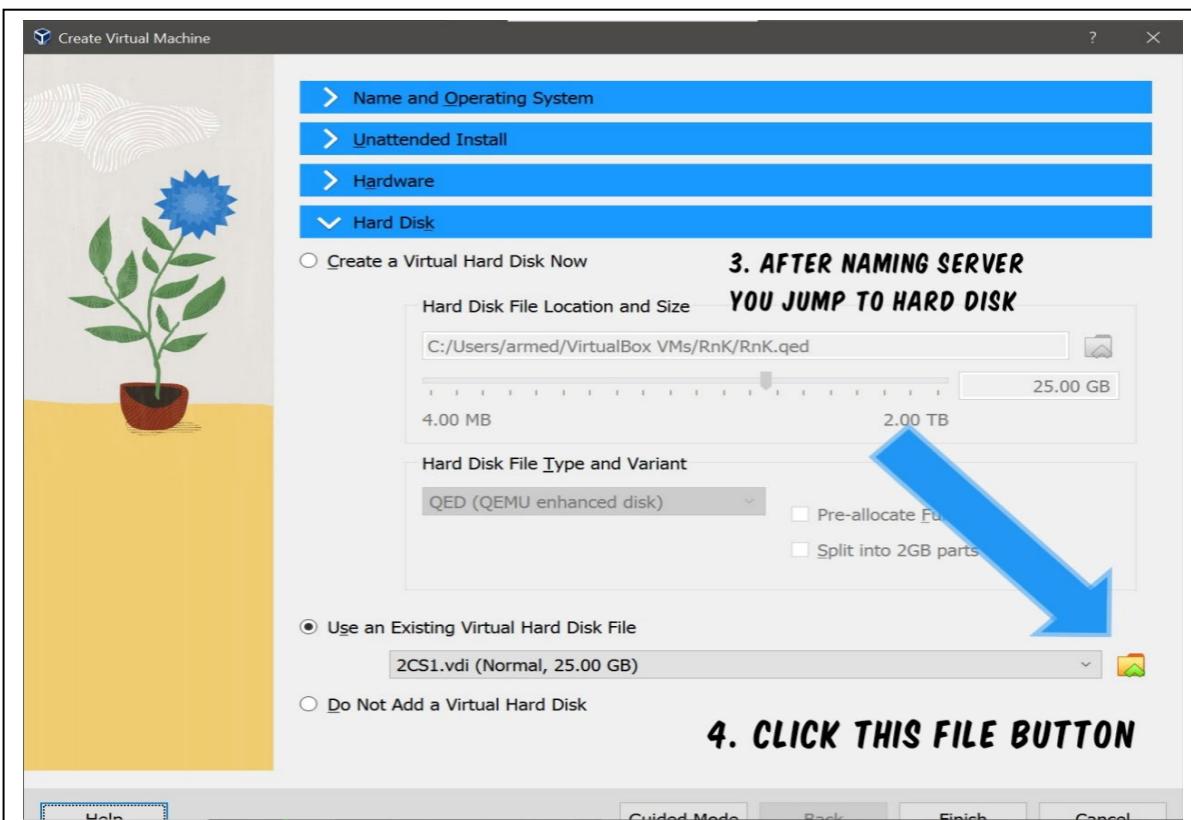
Setting up the Ubuntu virtual machine is a must before starting the configuring procedure. There are two methods to do this: First, using an ISO file for installation, adhere to the <https://linuxways.net/ubuntu/how-to-install-ubuntu-22-04-on-virtual-box/> is a suggested instruction.

As an alternative, you may make use of the integrated virtual machine (VM), which offers a ready-to-use environment without requiring an installation procedure. It is available for download at the following link: Ubuntu: <https://www.osboxes.org/>

If readers select choice number two, proceed as follows: Go to the "Machine" option in VirtualBox and choose "New." Then, adhere to the guidelines shown in the picture below:



PREPARATION



SERVICES

1. Apache2

The web server software known as Apache2 is in charge of receiving HTTP requests from users and responding with web pages.

Put another way, it lets users see the information on your website.

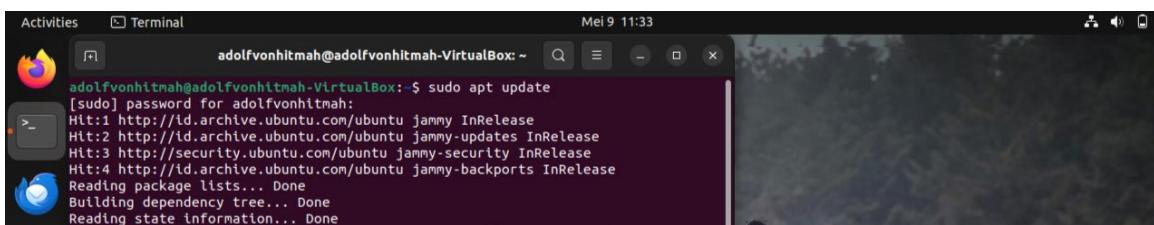
2. SquirrelMail

Using a web interface, users may view and manage emails with SquirrelMail, a program for web-based email. It gives customers an easy-to-use web browser-based method for reading, sending, and organizing their email communications. Because of its lightweight, quick, and user-friendly design, SquirrelMail is a well-liked option for people and businesses looking for a straightforward yet efficient webmail service.

WEB SERVER SERVICES SETUP

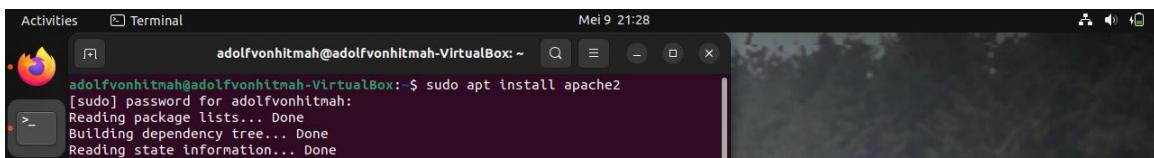
1. Installing Services in Ubuntu 22.04

Before beginning any installs, log in to the server go **update** and **upgrade** the repository if you haven't already. For the reading guide, green indicates system responses, while white indicates user input.



```
adolfvonhitmah@adolfvonhitmah-VirtualBox:~$ sudo apt update
[sudo] password for adolfvonhitmah:
Hit:1 http://id.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://id.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:4 http://id.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

Next, we proceed with installing all the required services, starting from Appache2 and continuing through to SquirrellMail.



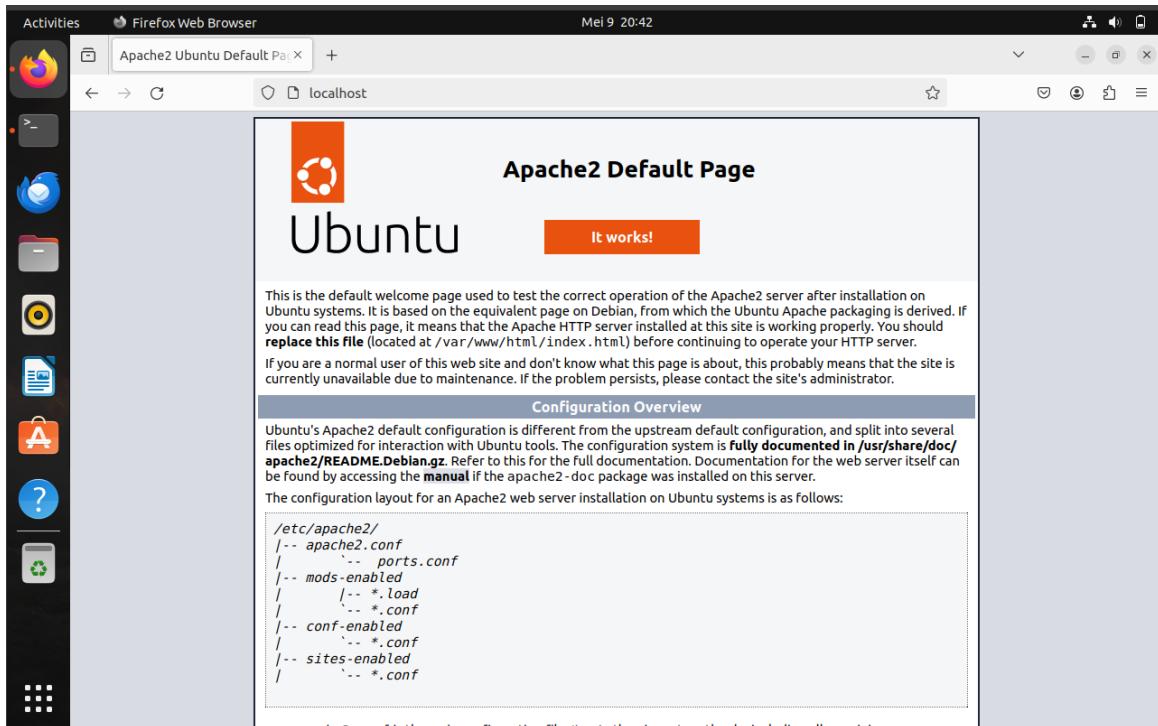
```
adolfvonhitmah@adolfvonhitmah-VirtualBox:~$ sudo apt install apache2
[sudo] password for adolfvonhitmah:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

WEB SERVER SERVICES SETUP

2. Configuration all services

Because the first thing we download is Apache2, so what is checked first is Apache 2 after that is SquirrelMail

Check your localhost after installing Apache2 in Firefox, if it looks like this then your Apache2 is ready to use.

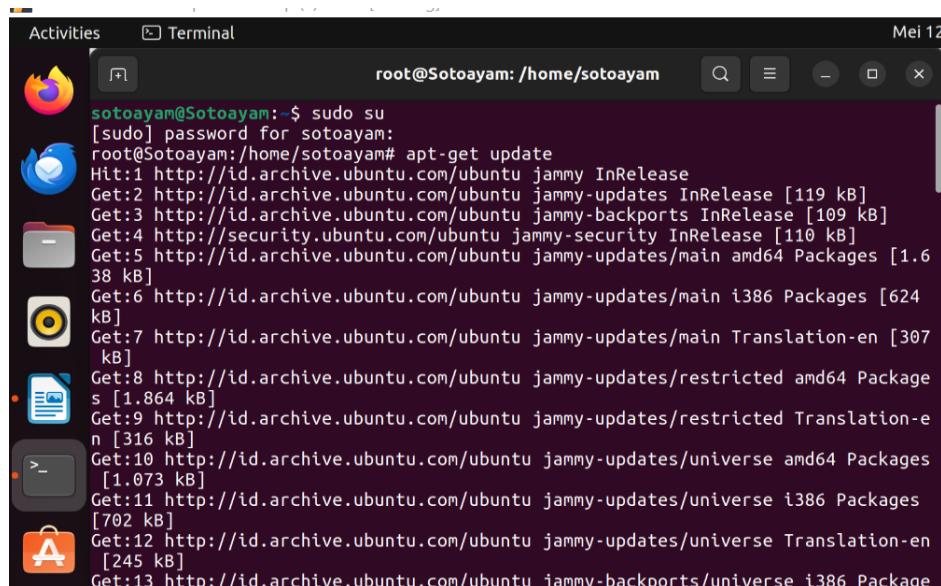


MAIL SERVER SERVICES SETUP

1. Setting Up the Terminal

Open up the Terminal and type **sudo su** followed by your ubuntu user's password to make sure that the terminal will work on superuser access. It will make it easier to type every command that listed on this paper.

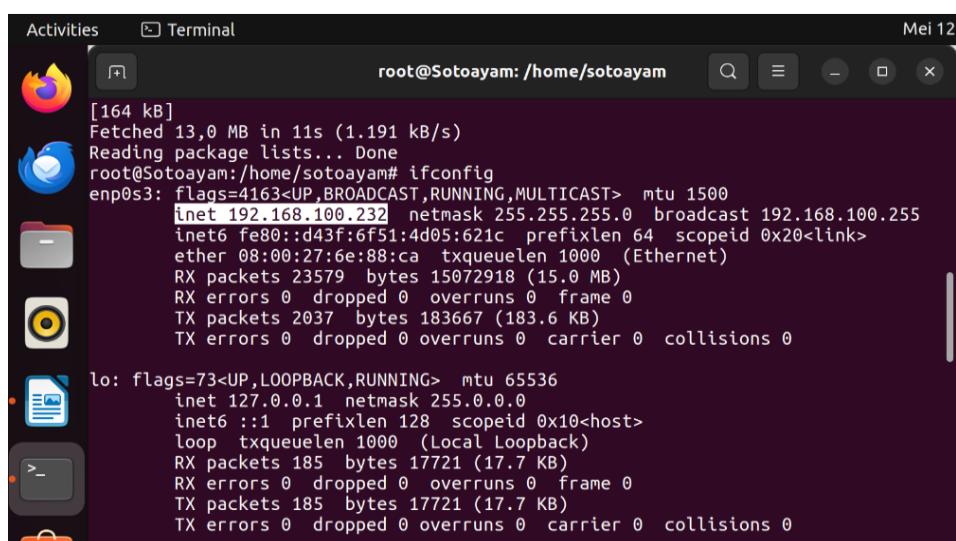
After that type **apt-get update** and hit enter to Update the list of available software packages from official repositories.



```
sotoayam@Sotoayam:~$ sudo su
[sudo] password for sotoayam:
root@Sotoayam:/home/sotoayam# apt-get update
Hit:1 http://id.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://id.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://id.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://id.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1.638 kB]
Get:6 http://id.archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [624 kB]
Get:7 http://id.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [307 kB]
Get:8 http://id.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1.864 kB]
Get:9 http://id.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [316 kB]
Get:10 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1.073 kB]
Get:11 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [702 kB]
Get:12 http://id.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [245 kB]
Get:13 http://id.archive.ubuntu.com/ubuntu jammy-backports/universe i386 Packages
```

2. Configuring Device's IP to Become The Local Host for MailServer

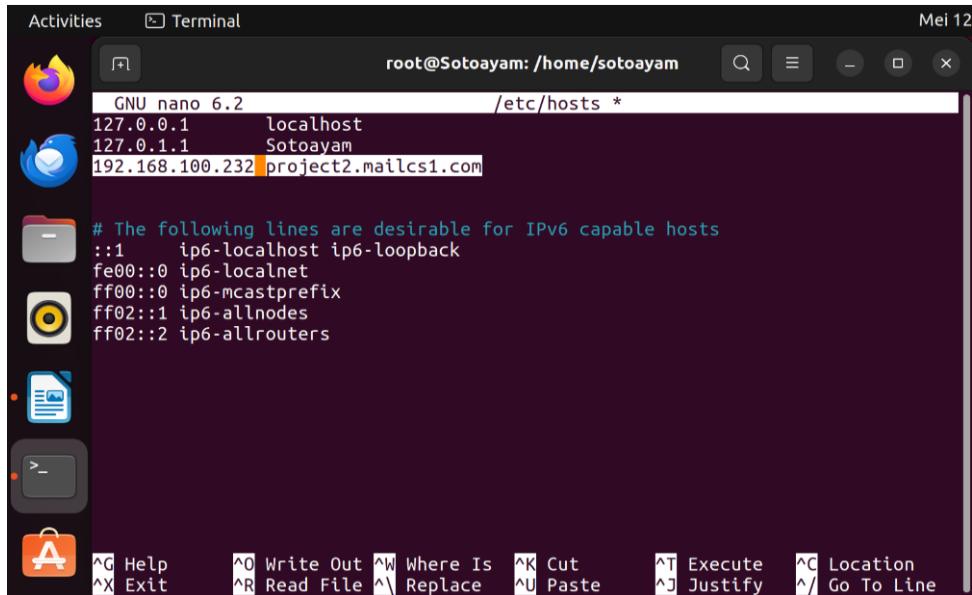
Type **ifconfig** and hit enter to looking up for the device's IP.



```
[164 kB]
Fetched 13.0 MB in 11s (1.191 kB/s)
Reading package lists... Done
root@Sotoayam:/home/sotoayam# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 192.168.100.232 netmask 255.255.255.0 broadcast 192.168.100.255
        inet6 fe80::d43f:6f51:4d05:621c prefixlen 64 scopeid 0x20<link>
          ether 08:00:27:6e:88:ca txqueuelen 1000 (Ethernet)
            RX packets 23579 bytes 15072918 (15.0 MB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 2037 bytes 183667 (183.6 KB)
            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 1000 (Local Loopback)
            RX packets 185 bytes 17721 (17.7 KB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 185 bytes 17721 (17.7 KB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

Type **nano /etc/hosts** and hit enter to register the Ip to be a local Name Server.



```
root@sotoayam: /home/sotoayam
GNU nano 6.2
/etc/hosts *
127.0.0.1      localhost
127.0.1.1      Sotoayam
192.168.100.232|project2.mailcs1.com

# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location
^X Exit ^R Read File ^L Replace ^U Paste ^J Justify ^I Go To Line
```

By default, it wouldn't contain your device's IP Address and you should type it manually. Click your down arrow button for once and click enter. After that, type your IP Address, click Tab button and type down what's your mail server's name want to be. Once you're done, click CTRL+X, Y, and hit Enter button for saving the configuration and back to terminal.

3. Installing The Mail Server's Support Services

Type command below and hit enter. Wait until the process is done.

```
add-apt-repository ppa:ondrej/php -y
```

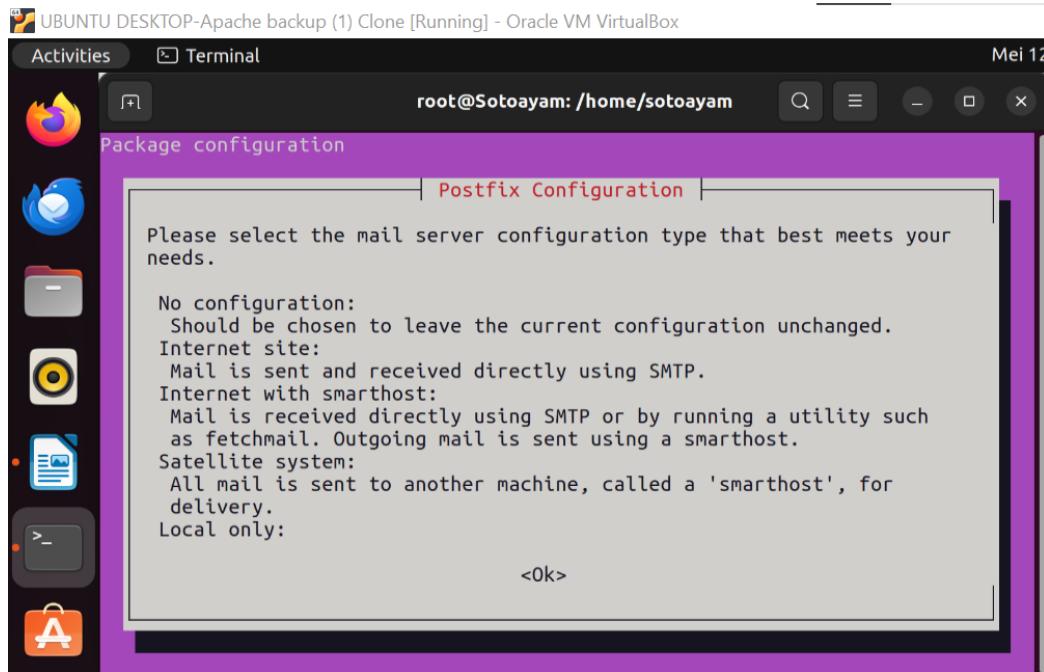
Once it's done, type command below and hit enter, it will Update the list of available software packages from official repositories.

```
apt-get update
```

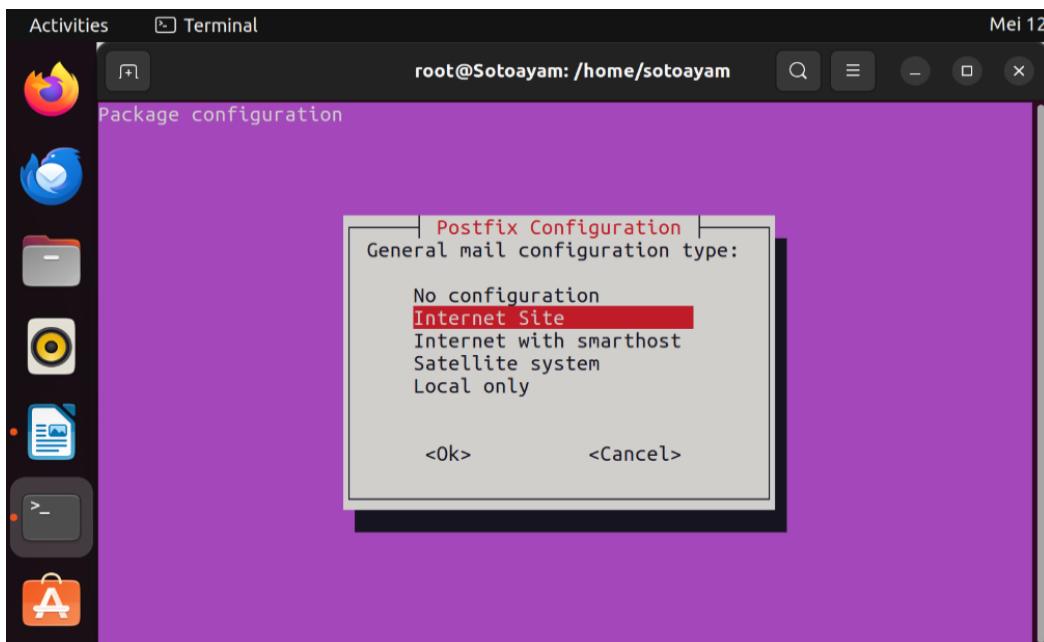
Then, enter all of commands below to install all of any services that needed for a mailserver

```
apt install -y apache2 build-essential mariadb-server mariadb-client php7.2 libapache2-mod-php7.2 php7.2-cli php7.2-fpm php7.2-cgi php7.2-bcmath php7.2-curl php7.2-gd php7.2-intl php7.2-json php7.2-mbstring php7.2-mysql php7.2-opcache php7.2-sqlite3 php7.2-xml php7.2-zip php7.2-snmp php7.2-imap php7.2-common php7.2-tidy php7.2-pgsql php7.2-ldap php7.2-soap php7.2-xsl php7.2-redis php7.2-xmlrpc postfix dovecot-imapd dovecot-pop3d
```

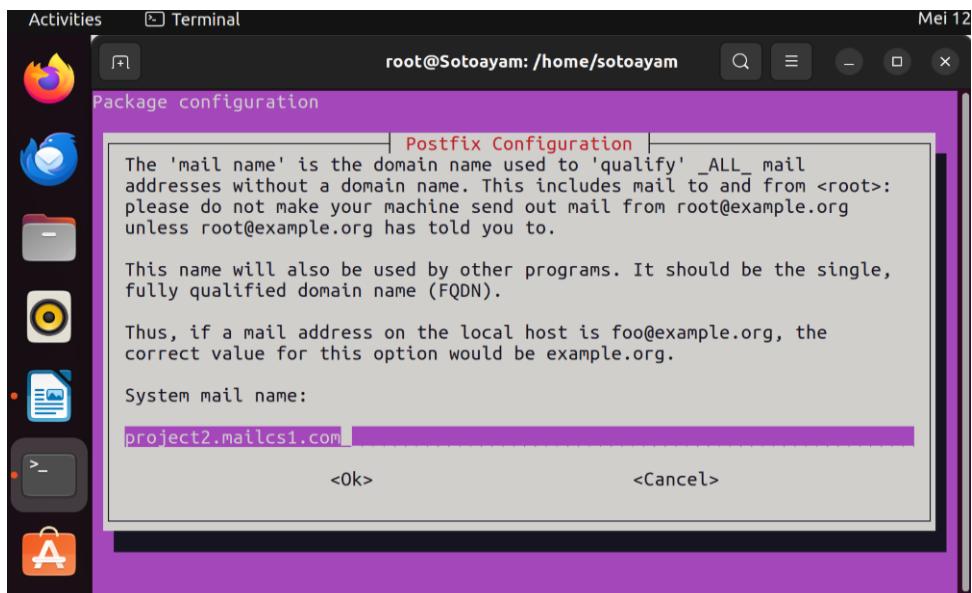
If something like this showed up, don't be panic, click Right Arrow Button and hit enter.



Hit enter on Internet Site Option.



Type down your Mail Server name and hit enter.



After all of the process is done, do commands below to setting up the time and zone

```
a2enmod rewrite expires; sed -i "s;/date.timezone.*;/date.timezone = Asia\Kolkata/g" /etc/php/*/*apache2/php.ini
```

```
root@Sotoayam:/home/sotoayam# a2enmod rewrite expires; sed -i "s;/date.timezone.*;/date.timezone = Asia\Kolkata/g" /etc/php/*/*apache2/php.ini
Enabling module rewrite.
Enabling module expires.
To activate the new configuration, you need to run:
    systemctl restart apache2
root@Sotoayam:/home/sotoayam#
```

Next we enable the service of apache2 and mariadb before installing the SquirrelMail as Mail Server

```
systemctl start apache2 mariadb; systemctl enable apache2
mariadb;
```

```
systemctl restart apache2
root@Sotoayam:/home/sotoayam# systemctl start apache2 mariadb; systemctl enable apache2
mariadb;
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
Synchronizing state of mariadb.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable mariadb
root@Sotoayam:/home/sotoayam#
```

Next, do command below for installing the mysql service

```
Mysql_secure_installation
```

Type your ubuntu user's password

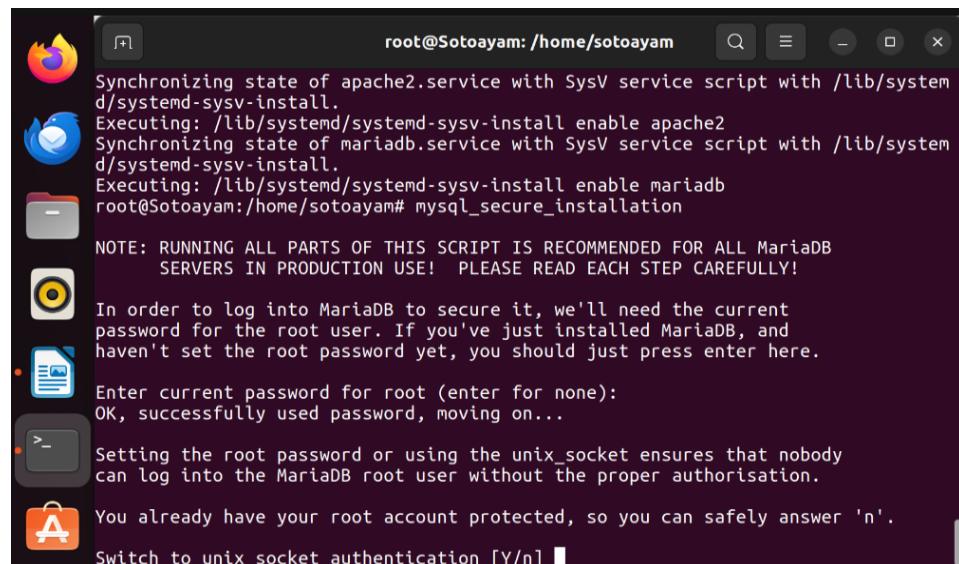
```
root@sotoayam:/home/sotoayam# mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none): 
```

Type **n** on this question



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window titled "root@sotoayam: /home/sotoayam". The terminal displays the MySQL secure installation script. It shows the synchronization of service scripts, the note about running all parts of the script, the prompt for the root password, and the confirmation of successful password entry. It also shows the option to switch to unix_socket authentication, which is skipped because a root account is already protected.

```
root@sotoayam: /home/sotoayam
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
Synchronizing state of mariadb.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable mariadb
root@sotoayam:/home/sotoayam# mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.
Switch to unix_socket authentication [Y/n] 
```

Type **n** on this question

```
Switch to unix_socket authentication [Y/n] n
... skipping.

You already have your root account protected, so you can safely answer 'n'.

Change the root password? [Y/n] n 
```

Type **n** on this question

```
By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them. This is intended only for testing, and to make the installation
go a bit smoother. You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] n 
```

Type **n** on this question

```
Normally, root should only be allowed to connect from 'localhost'. This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] n 
```

Type **n** on this question

```
By default, MariaDB comes with a database named 'test' that anyone can  
access. This is also intended only for testing, and should be removed  
before moving into a production environment.
```

```
Remove test database and access to it? [Y/n]
```

And last, type **y** to this question

```
Reloading the privilege tables will ensure that all changes made so far  
will take effect immediately.
```

```
Reload privilege tables now? [Y/n] y
```

4. Installing the Squirrelmail as Mail Server Service

Do command below for downloading the Squirrelmail and make sure that you're already set superuser to your terminal.

```
wget
```

```
https://sourceforge.net/projects/squirrelmail/files/stable/1.4.22/squirrelmail-webmail-1.4.22.zip
```

```
squirrelmail-webmai 100%[=====] 954,59K 172KB/s in 5,5s  
2024-05-12 13:35:54 (172 KB/s) - 'squirrelmail-webmail-1.4.22.zip' saved [977496  
/977496]  
root@sotoayam:/home/sotoayam#
```

Because the file we already downloaded was compressed in .zip file format, we should unzip it using command below.

```
unzip squirrelmail-webmail-1.4.22.zip
```

We can check the file that we already downloaded and unzipped by typing

```
Ls
```

```
root@sotoayam:/home/sotoayam# ls  
Desktop Music snap Templates  
Documents Pictures squirrelmail-webmail-1.4.22 Videos  
Downloads Public squirrelmail-webmail-1.4.22.zip  
root@sotoayam:/home/sotoayam#
```

We can see that we're already succeed downloading and extracting the squirrelmail file. Next, move the extracted file to /var/www/html by doing command below.

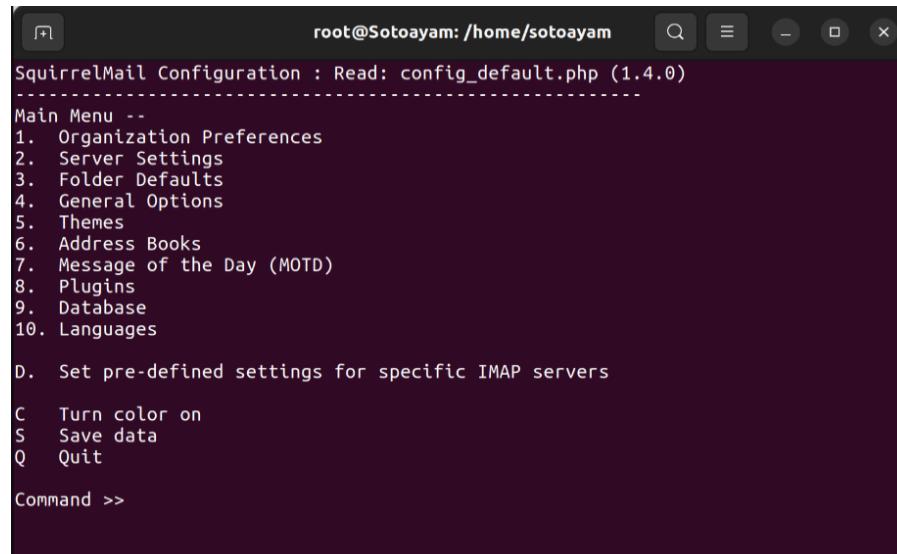
```
mv squirrelmail-webmail-1.4.22 /var/www/html/
```

After that, change the **squirrelmail-webmail-1.4.22** to squirrelmail for easy using on the next steps by using command below.

```
mv /var/www/html/squirrelmail-webmail-1.4.22/ /var/www/html/squirrelmail
```

Then, type command below to configure the config.pl file in squirrelmail directory. Display showed below will appear to configuring the config file.

```
perl /var/www/html/squirrelmail/config/config.pl
```



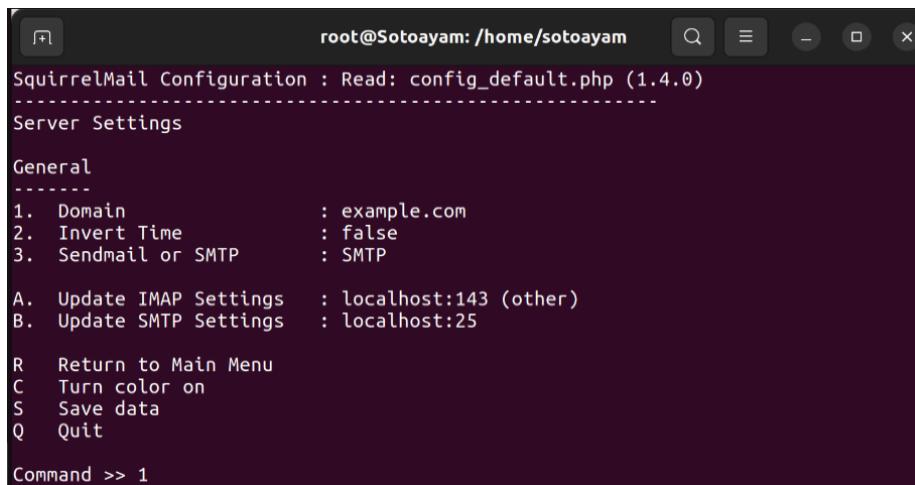
```
SquirrelMail Configuration : Read: config_default.php (1.4.0)
-----
Main Menu --
1. Organization Preferences
2. Server Settings
3. Folder Defaults
4. General Options
5. Themes
6. Address Books
7. Message of the Day (MOTD)
8. Plugins
9. Database
10. Languages

D. Set pre-defined settings for specific IMAP servers

C Turn color on
S Save data
Q Quit

Command >>
```

Type **2** and type **1** after the display below appear.



```
SquirrelMail Configuration : Read: config_default.php (1.4.0)
-----
Server Settings
General
-----
1. Domain : example.com
2. Invert Time : false
3. Sendmail or SMTP : SMTP

A. Update IMAP Settings : localhost:143 (other)
B. Update SMTP Settings : localhost:25

R Return to Main Menu
C Turn color on
S Save data
Q Quit

Command >> 1
```

Enter the name of what is your mail server will be. In this paper, author used the project2.mailcs1.com. Also make sure this name is suitable or same with the server name we discussed in step number **2** and hit enter.

```
root@Sotoayam: /home/sotoayam
-----
Server Settings
-----
General
-----
1. Domain : example.com
2. Invert Time : false
3. Sendmail or SMTP : SMTP
A. Update IMAP Settings : localhost:143 (other)
B. Update SMTP Settings : localhost:25
R Return to Main Menu
C Turn color on
S Save data
Q Quit
Command >> 1
The domain name is the suffix at the end of all email addresses. If
for example, your email address is jdoe@example.com, then your domain
would be example.com.
[example.com]: project2.mailcs1.com
```

The domain is next will show the name that you've been typed.

```
root@Sotoayam: /home/sotoayam
-----
SquirrelMail Configuration : Read: config_default.php (1.4.0)
-----
Server Settings
-----
General
-----
1. Domain : project2.mailcs1.com
2. Invert Time : false
3. Sendmail or SMTP : SMTP
A. Update IMAP Settings : localhost:143 (other)
B. Update SMTP Settings : localhost:25
R Return to Main Menu
C Turn color on
S Save data
Q Quit
Command >>
```

After that, type **S**, and then type **Q** and it will send you back to your terminal. Don't forget to hit enter after you typing any characters from your keyboard.

Next, type command below to change the file Owner or group.

```
chown -R www-data:www-data /var/www/html/; chmod -R 777
/var/www/html/
```

Next, type command below to configuring the .conf file. Make sure to change the bolded name to your project or server name.

```
nano /etc/apache2/sites-available/project2.conf
```

This display below will appear.

```
root@Sotoayam: /home/sotoayam
GNU nano 6.2      /etc/apache2/sites-available/project2.conf

^G Help      ^O Write Out  ^W Where Is  ^K Cut      ^T Execute  ^C Location
^X Exit      ^R Read File  ^A Replace   ^U Paste    ^J Justify  ^/ Go To Line
```

Enter configuration below and make sure to change the bolded phrase and Ip to your project needs and what you've been configured before.

```
<VirtualHost *:80>
ServerAdmin admin@project2.mailcs1.com

DocumentRoot /var/www/html/squirrelmail/
ServerName www. project2.mailcs1.com

<Directory /var/www/html/squirrelmail/>

Options FollowSymLinks
AllowOverride All

Order allow,deny
allow from all

</Directory>

ErrorLog /var/log/apache2/project2.conf-error_log
CustomLog /var/log/apache2/project2.conf-access_log common

</VirtualHost>
```

Once you're done, click **CTRL+X, Y, and hit Enter button** for saving the configuration.

Then do command below and make sure to change the bolded phrase and Ip to your project needs and what you've been configured before.

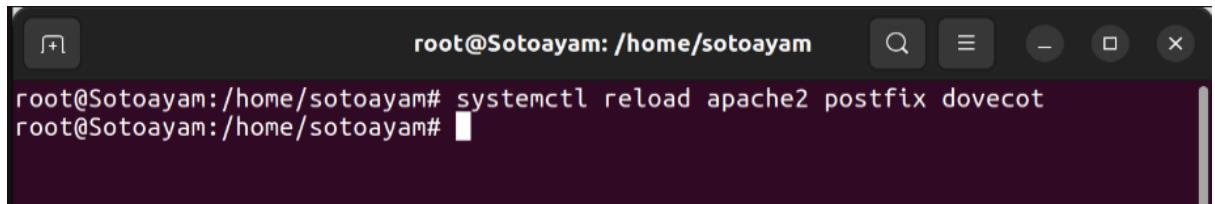
```
a2ensite project2.conf; a2dissite 000-default.conf; apache2ctl
configtest; echo "192.168.100.232 www.project2.mailcs1.com" >>
/etc/hosts;
```

The result will be like this.

```
root@Sotoayam:/home/sotoayam# a2ensite project2.conf; a2dissite 000-default.conf
; apache2ctl configtest; echo "192.168.100.232 www.project2.mailcs1.com" >> /etc
hosts;
Enabling site project2.
To activate the new configuration, you need to run:
    systemctl reload apache2
Site 000-default disabled.
To activate the new configuration, you need to run:
    systemctl reload apache2
AH00526: Syntax error on line 17 of /etc/apache2/sites-enabled/project2.conf:
ErrorLog takes one argument, The filename of the error log
Action 'configtest' failed.
The Apache error log may have more information.
root@Sotoayam:/home/sotoayam# nano /etc/apache2/sites-available/project2.conf
root@Sotoayam:/home/sotoayam# a2ensite project2.conf; a2dissite 000-default.conf
; apache2ctl configtest; echo "192.168.100.232 www.project2.mailcs1.com" >> /etc
hosts;
Site project2 already enabled
Site 000-default already disabled
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Syntax OK
root@Sotoayam:/home/sotoayam#
```

Then, do command below to restarting all of any services involved on the process of configuring the Squirrelmail. If there is no error, there is no output displayed.

```
systemctl reload apache2 postfix dovecot
```

A screenshot of a terminal window titled 'root@Sotoayam: /home/sotoayam'. The window shows the command 'systemctl reload apache2 postfix dovecot' being typed and then executed. The output is empty, indicating no errors.

Next, do command below to make a specified directory for data and change it's permission.

```
mkdir -p /var/local/squirrelmail/data/; chmod -R 777
/var/local/squirrelmail/data/
```

And now, the mail server configuration is done, next we need to add some users to check the service of the server.

5. Adding users

Type command below to your terminal. Change the username, password and all of the bolded word to your needs. (hit enter after you type every line)

```
useradd iqbal
passwd iqbal
mkdir /var/www/html/iqbal; chown -R iqbal:Iqbal /var/www/html/iqbal
```

```
useradd armed  
passwd armed  
mkdir -p /var/www/html/; chown -R armed:armed /var/www/html/armed
```

The display will be like this and for information, the word after **passwd** is not user's password, it only indicated for setting up password for the user. Then type command below.

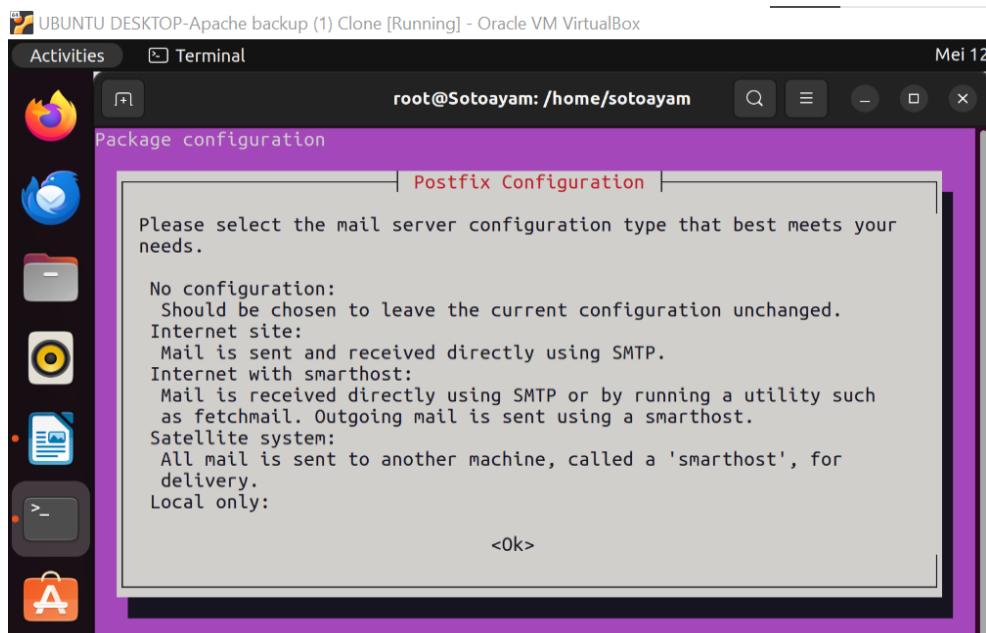
```
mv /var/www/html/squirrelmail/config/config_default.php  
config.php
```

6. Configuring the Postfix

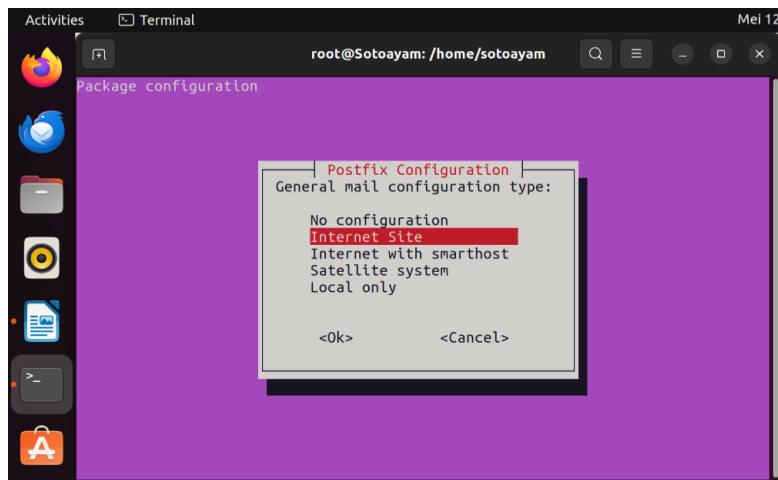
Do command below for setting up the domain name that can send people who type the domain server name to your mail server.

```
dpkg-reconfigure postfix
```

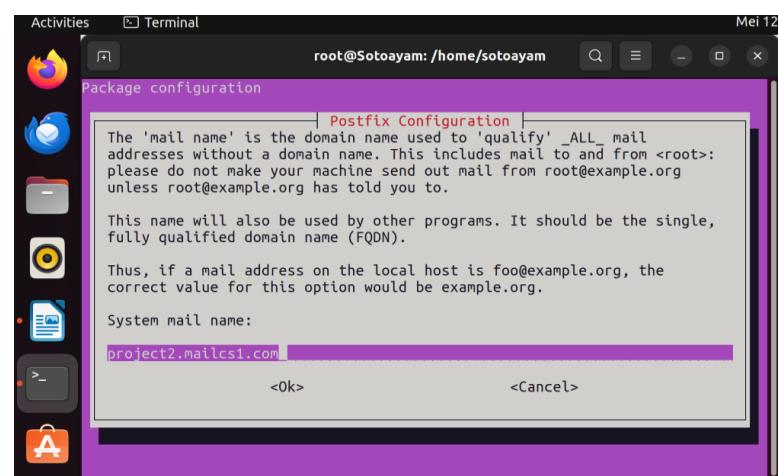
If something like this showed up, don't be panic, click Right Arrow Button and hit enter.



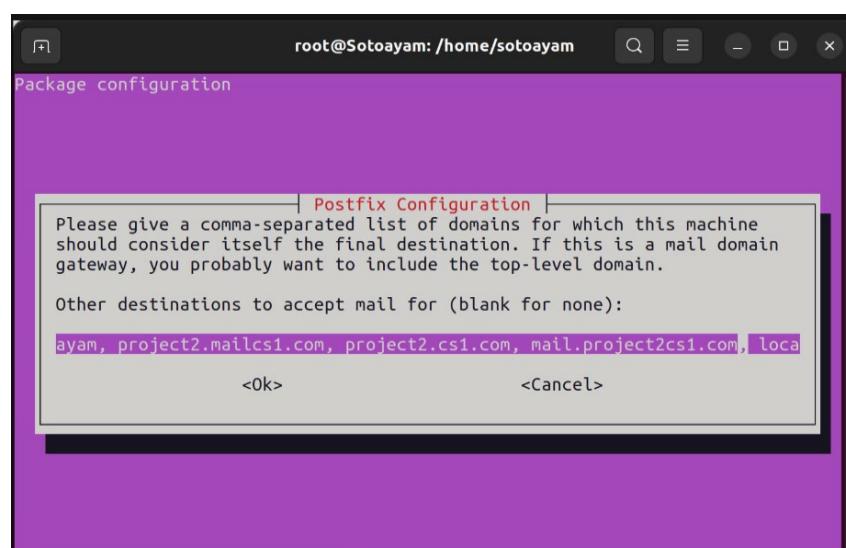
Hit enter on Internet Site Option.



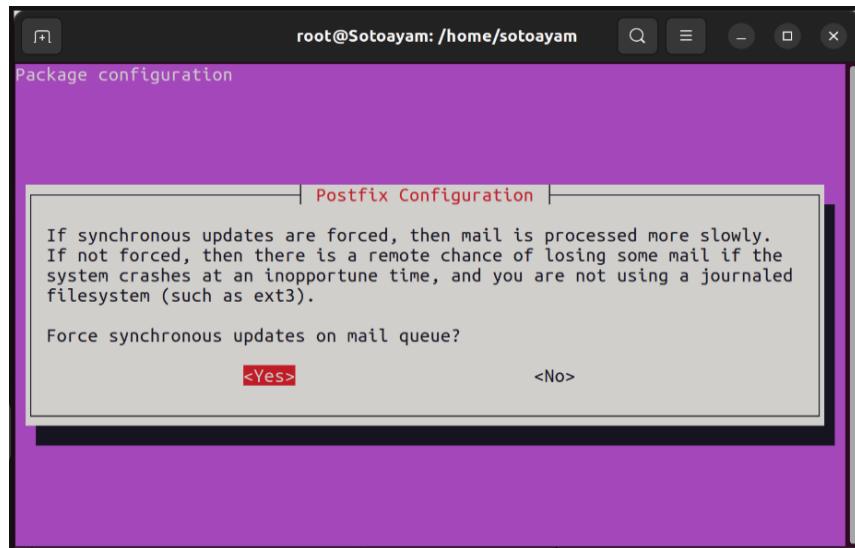
Hit enter because we already configure this part on previous section.



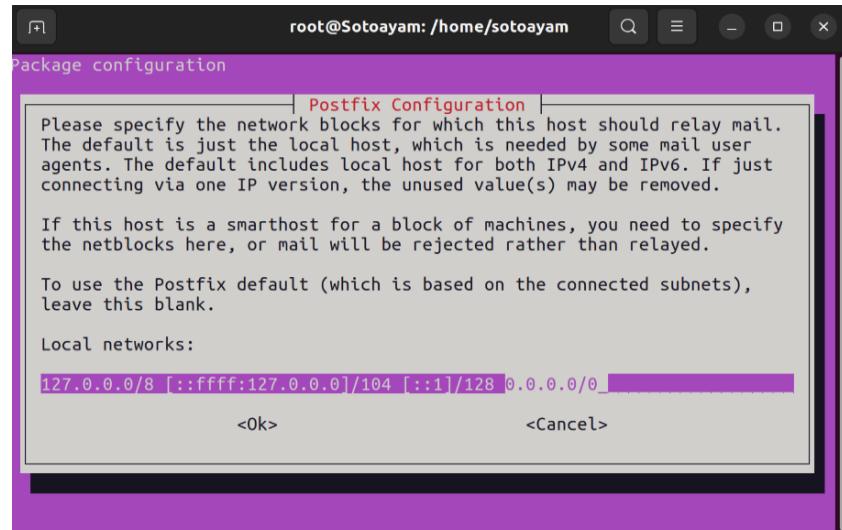
Then type your mailserver's domain name that people can access it not from one domain name server



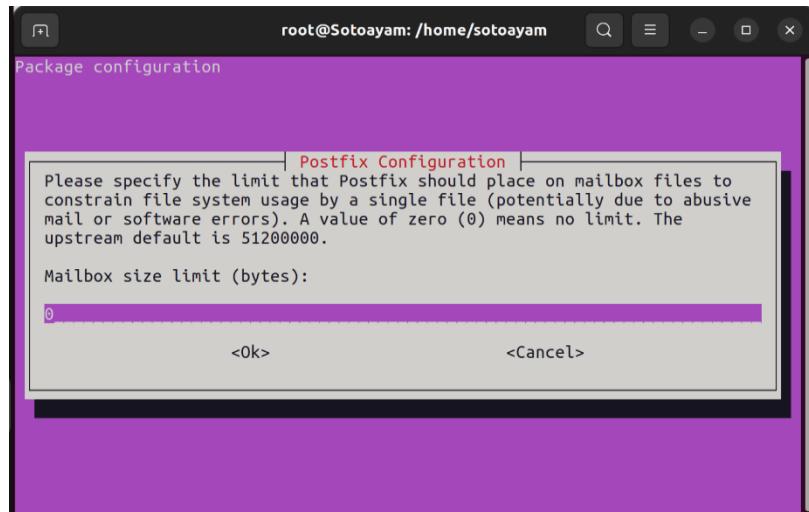
Select Yes and hit enter



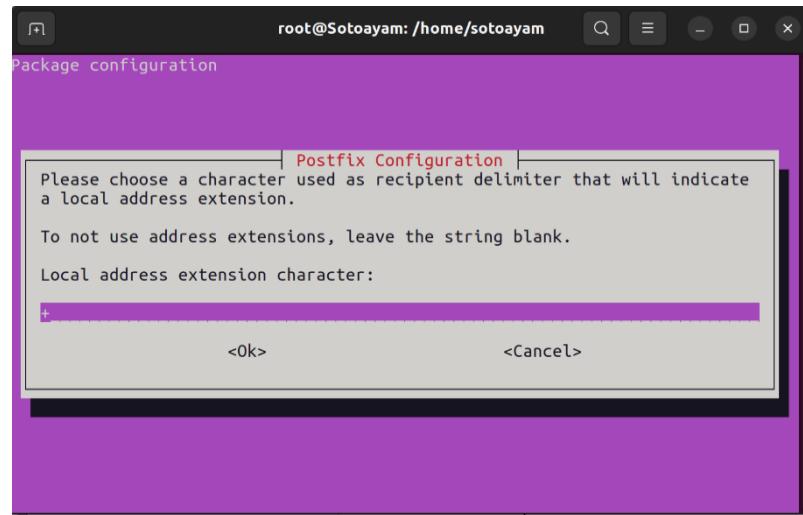
Hit space once and then type **0.0.0.0/0** for the local access. Hit enter.



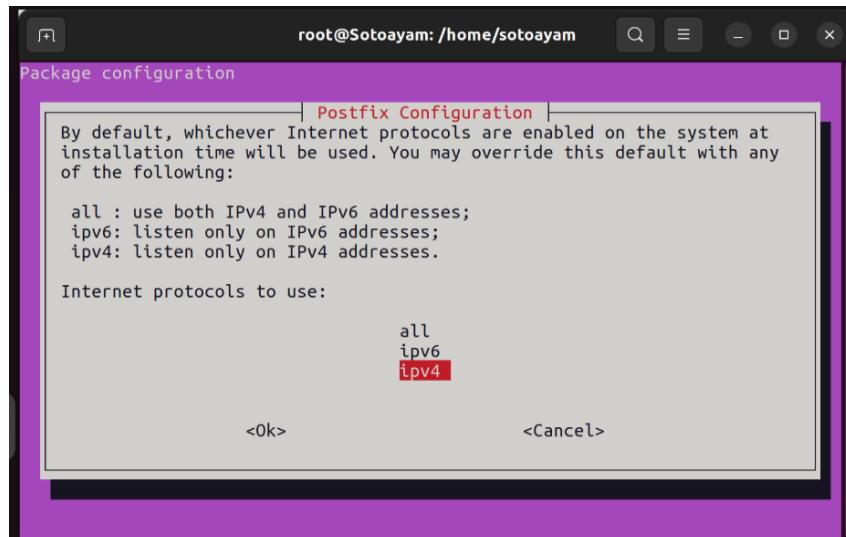
Hit enter on this display.



Hit enter again.



Choose ipv4 and hit enter.



Wait till the process is done and the result should look like this.

```
root@Sotoayam:/home/sotoayam# dpkg-reconfigure postfix
setting synchronous mail queue updates: true
setting myorigin
setting destinations: Sotoayam, project2.mailcs1.com, project2.cs1.com, mail.project2cs1.com, localhost.localdomain, localhost
setting relayhost:
setting mynetworks: 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128 0.0.0.0/0
setting mailbox_size_limit: 0
setting recipient_delimiter: +
setting inet_interfaces: all
setting inet_protocols: ipv4
WARNING: /etc/aliases exists, but does not have a root alias.

Postfix (main.cf) is now set up with the changes above. If you need to make
changes, edit /etc/postfix/main.cf (and others) as needed. To view Postfix
configuration values, see postconf(1).

After modifying main.cf, be sure to run 'systemctl reload postfix'.

Running newaliases
root@Sotoayam:/home/sotoayam#
```

Then type command below to restart the support services.

```
systemctl reload apache2 postfix dovecot
```

TESTING

For testing the services, we can use Ubuntu Desktop or on other operating system such as your Windows or other Operating system.

1. Ubuntu Desktop Testing

In Ubuntu Desktop, you can just open Mozilla Firefox and then type your server's domain name in the search bar. Open another tab in Mozilla Firefox for email testing from two users.



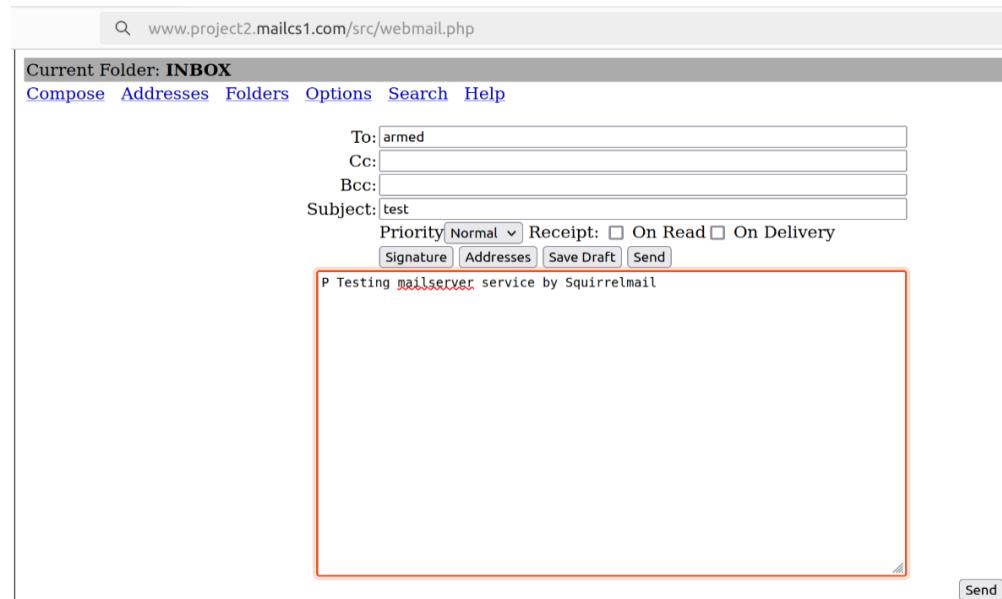
Login by typing username and password that already signed on the configuration process.

Two side-by-side screenshots of the SquirrelMail login page. Both show the squirrel logo, the text "SquirrelMail webmail for nuts", and "SquirrelMail version 1.4.22 By the SquirrelMail Project Team". The left screenshot shows a successful login for "Name: iqbal" and "Password:". The right screenshot shows a successful login for "Name: armed" and "Password:". Both screenshots have a "SquirrelMail Login" form with a "Login" button.

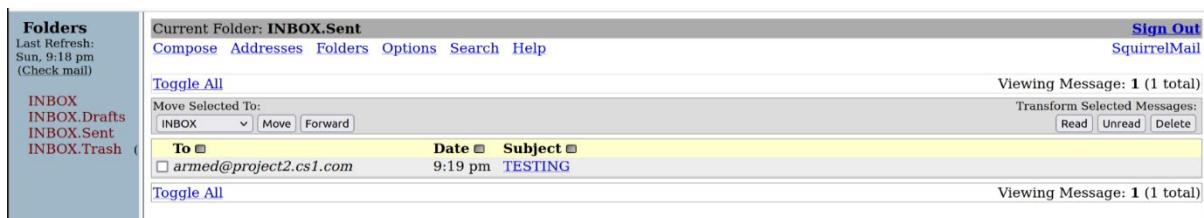
This is the homepage after you logged in



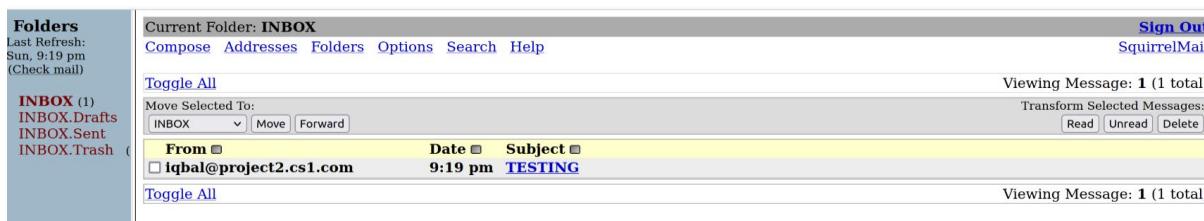
Next, choose one user then click the **Compose**.



On “To:” type the other username that have been signed as user. After the text box was filled, click send and go to another user mail page. The picture below is how the **INBOX.Sent** look like after we sent a message to another user.



The picture below is how the **INBOX** look like after we sent a message from another user.



Picture below is the message adter it opened from other user.



2. WINDOWS or Cross Operating System Testing

When you want to test the service on Windows or another operating system, it's not that far from how we tested it on Ubuntu Desktop Operating System. The difference is on how we accessing the mail server.

UBUNTU DESKTOP	OTHER OPERATING SYSTEM
Project2.mailcs1.com	192.168.100.232

You can type the domain name server of your mail server if you test the service on Ubuntu Desktop Operating system, but not if you test the service on other operating system (for example: Windows). On Windows you should type the IP address of the server for accessing the mail server.



There is no differences on how to send email to one user to another.

REQUIMENTS

Hardware :

1. Lenovo Ideapad Slim 3

Operating System :

1. Linux Ubuntu 22.04
2. Windows 10

Software :

1. Virtual Box
2. Microsoft Word

Services :

1. Apache 2
2. SquirrelMail

PROJECT FILE DETAILS

No	File Name	Remarks
1	Grup 3 Project 2.pdf	Paper File
2	PPT G3 2CS1	Powerpoint Presentation File
3		