Workshop Administrasi dan Manajemen Jaringan

Project 2

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Dasar Teori :

DNS Server :

DNS adalah sistem yang meringkas pekerjaan ini untuk Anda. Kini, Anda tinggal mengingat nama domain dan memasukkannya dalam address bar. DNS kemudian akan menerjemahkan domain tersebut ke dalam IP Address yang komputer pahami.Misalkan, Anda ingin mengakses Google. Alih-alih menulis 172.217.0.142 ke dalam address bar, Anda tinggal memasukkan alamat Google.com.

Mail Server :

Mail server adalah server yang bertugas mengirim dan menerima email. Meskipun terlihat simpel, sebenarnya prosesnya pengiriman email cukup kompleks. Email yang Anda kirim akan melewati serangkaian proses rumit di mail server untuk dapat sampai ke penerima. Secara sederhana, mail server berfungsi sama seperti kantor pos. Ia menyimpan surat masuk, lalu mengirimkannya ke penerima.

- MUA (Mail User Agent)
  MUA adalah aplikasi yang digunakan untuk menyusun, mengirim, dan menerima email. Contoh MUA misalnya adalah Thunderbird, Gmail, Outlook, dan layanan email yang lain.

- MTA (Mail Transport Agent)
  MTA merupakan salah satu komponen mail server yang bertugas menerima dan mengirim email dari komputer yang satu ke komputer yang lain. MTA memainkan peranan penting dalam sistem penanganan pesan internet

- MDA (Mail Delivery Agent)
  MDA adalah sebuah software komputer yang bertanggung jawab mengantarkan email dari MTA sever. MDA juga dikenal sebagai LDA atau Local Delivery Agent. Beberapa MTA dapat mengisi peran MDA ketika mereka menambahkan pesan email baru ke file pesan pengguna lokal.

- SMTP atau Simple Mail Transfer Protocol
  SMTP adalah protokol standar untuk transmisi atau pengiriman email. Protokol ini bertugas melakukan komunikasi dengan server untuk mengirimkan email dari lokal email ke server email. Dalam proses kerjanya, SMTP dikontrol oleh MTA yang ada pada email server Anda.

- POP3 atau Post Office Protocol
  POP 3 adalah versi ketiga dari metode penerimaan email. POP3 menerima dan menyimpan email untuk seseorang sampai mereka mengambilnya. POP3 adalah protokol server/client tempat di mana email dikirimkan dari server menuju email lokal. POP3 bekerja dengan mengontak server email Anda, lalu mengunduh semua pesan baru dari email lokal. Setelah Anda mengunduhnya, mereka akan hilang dari server.

- IMAP atau Internet Message Access.
  IMAP memungkinkan Anda dapat mengakses email Anda di mana pun Anda berada, biasanya diakses melalui internet. Ketika Anda membaca email menggunakan IMAP, Anda sebenarnya tidak mengunduh atau menyimpannya ke komputer, tetapi membacanya melalui server.
  Untuk Anda yang sering bepergian dan sering menggunakan berbagai gadget untuk mengakses email, kami sarankan untuk menggunakan servis email berbasis IMAP.

- Postfix
  Postfix adalah jenis mail server MTA yang merupakan versi pengembangan lebih baik dari Sendmail.Postfix juga memiliki tingkat keamanan yang jauh lebih baik daripada Sendmail

karena memang itulah tujuan utamanya. Selain itu, Postfix juga mempunyai performa yang sangat tinggi. Sehingga, Postfix digadang-gadang akan menggantikan Sendmail di masa depan.

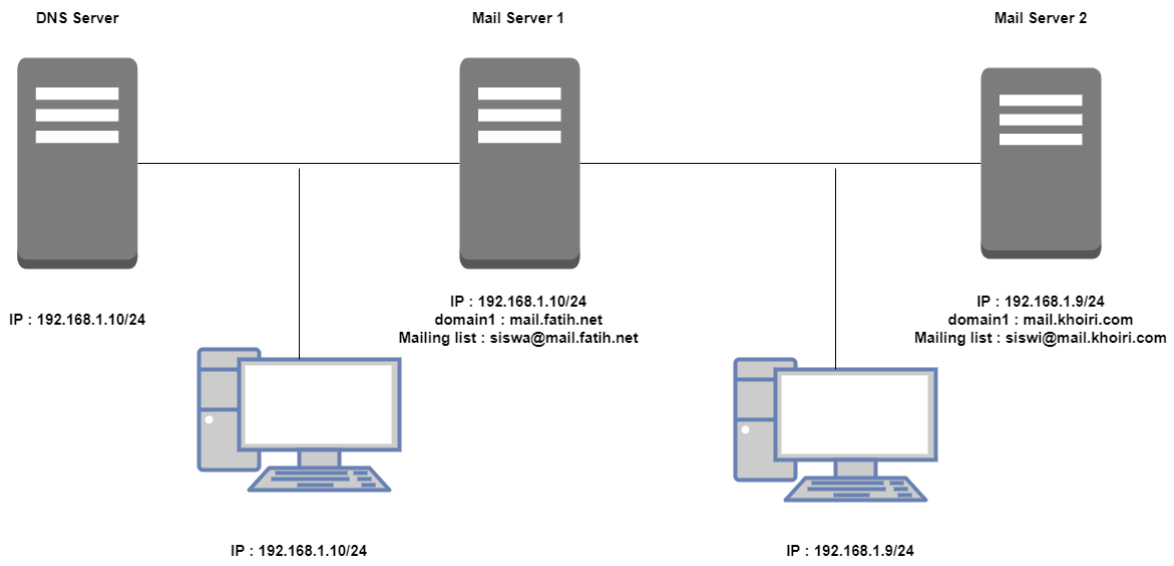
Mailing List

Mailing list adalah sebuah layanan untuk dapat mengirim email ke banyak orang dalam sebuah kelompok yang sudah ditentukan. Layanan ini juga biasa disebut milis. Kelebihan mailing list bukan hanya karena informasi bisa lebih mudah disebarkan, tapi upaya promosi juga akan lebih tepat menjangkau audiens yang relevan.

Spam Assassin

Spam Assassin adalah proyek sumber terbuka yang banyak digunakan secara luas yang berfungsi sebagai filter email untuk mengidentifikasi Spam. Spam Assassin menggunakan berbagai mekanisme termasuk analisis header dan teks, pemfilteran Bayesian, daftar blokir DNS, dan basis data penyaringan kolaboratif.Spam Assassin berjalan di server, dan filter spam sebelum mencapai kotak surat Sobat. Baca lebih lanjut tentang SpamAssassin.

Topologi :



KONFIGURASI SERVER 1

- Installasi Bind 9

```
fatih@fatih:~$ sudo apt install bind9
[sudo] password for fatih:
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

- Konfigurasikan /etc/bind/named.conf.local, setting untuk DNS untuk server ini dan tambahkan juga zone dari server yang satunya. Kemudian buat file untuk konfigurasi file zone nya

```
  GNU nano 4.8                    /etc/bind/named.conf.local
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "fatih.net" {
        type master;
        file "/var/cache/bind/db.fatih";
};

zone "khoiri.com" {
        type master;
        file "/var/cache/bind/db.khoiri";
};

zone "1.168.192.in-addr.arpa" {
        type master;
        file "/var/cache/bind/db.reverse";
};
```

- Konfigurasikan untuk /etc/bind/named.conf.options

```
  GNU nano 4.8                    /etc/bind/named.conf.options
options {
        directory "/var/cache/bind";

        // If there is a firewall between you and nameservers you want
        // to talk to, you may need to fix the firewall to allow multiple
        // ports to talk.  See http://www.kb.cert.org/vuls/id/800113

        // If your ISP provided one or more IP addresses for stable
        // nameservers, you probably want to use them as forwarders.
        // Uncomment the following block, and insert the addresses replacing
        // the all-0's placeholder.

        allow-query { 192.168.1.0/24; localhost; };
        forwarders {
                192.168.1.1;
        };

        //========================================================================
        // If BIND logs error messages about the root key being expired,
        // you will need to update your keys.  See https://www.isc.org/bind-keys
        //========================================================================
        dnssec-validation auto;
        auth-nxdomain no;
        listen-on-v6 { any; };
};
```

- Buat file untuk konfigurasi forwarders dan reversenya sesuai dengan nama file yang sudah kita atur pada /etc/bind/named.conf.local

```
  GNU nano 4.8                    /var/cache/bind/db.fatih
;
; BIND reverse data file for broadcast zone
;
$TTL    604800
@       IN      SOA     fatih.net. root.fatih.net. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      fatih.net.
@       IN      MX  10  mail.fatih.net.
@       IN      A       192.168.1.10
mail    IN      A       192.168.1.10
```

```
  GNU nano 4.8                    /var/cache/bind/db.khoiri
;
; BIND reverse data file for broadcast zone
;
$TTL    604800
@       IN      SOA     khoiri.com. root.khoiri.com. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      khoiri.com.
@       IN      MX  10  mail.khoiri.com.
@       IN      A       192.168.1.9
mail    IN      A       192.168.1.9
```

```
  GNU nano 4.8                    /var/cache/bind/db.reverse
;
; BIND reverse data file for local loopback interface
;
$TTL    604800
@       IN      SOA     fatih.net. root.fatih.net. (
                              1         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      fatih.net.
10      IN      PTR     mail.fatih.net
@       IN      MX  10  mail.fatih.net
9       IN      PTR     khoiri.com
9       IN      PTR     mail.khoiri.com
9       IN      MX  10  mail.khoiri.com
```

- Restart untuk bind9

```
fatih@fatih:~$ sudo systemctl restart bind9
```

- Tambahkan pada /etc/resolv.conf

```
  GNU nano 4.8                        /etc/resolv.conf
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "systemd-resolve --status" to see details about the actual nameservers.

nameserver 192.168.1.10
```

- Kemudian restart resolvconf

```
fatih@fatih:~$ sudo systemctl restart resolvconf
```

- Installasi mail server, menggunakan courier-imap courier-pop

```
fatih@fatih:~$ sudo apt install courier-imap courier-pop
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

- Kemudian install postfix

```
fatih@fatih:~$ sudo apt install postfix
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

```
General type of mail configuration:

                        No configuration
                        Internet Site
                        Internet with smarthost
                        Satellite system
                        Local only

                  <Ok>                        <Cancel>
```

```
                        Postfix Configuration
The "mail name" is the domain name used to "qualify" _ALL_ mail addresses
without a domain name. This includes mail to and from <root>: please do not
make your machine send out mail from root@example.org unless root@example.org
has told you to.

This name will also be used by other programs. It should be the single, fully
qualified domain name (FQDN).

Thus, if a mail address on the local host is foo@example.org, the correct
value for this option would be example.org.

System mail name:

mail.fatih.net

                  <Ok>                        <Cancel>
```

- Buat folder Maildir untuk tiap user yang akan dibuat nantinya sebagai tempat mail direktorynya pada /etc/skel

```
fatih@fatih:~$ cd /etc/skel
fatih@fatih:/etc/skel$ sudo maildirmake Maildir/
fatih@fatih:/etc/skel$
```

- Tambahkan user Agus(L), Anton(L) , Ana(P), Ani(P) dengan **sudo adduser namausernya**

- Kemudian untuk konfigurasi postfix, tambahkan home_mailbox = Maildir/ pada file konfigurasi /etc/postfix/main.cf, kemudian pada my network tambahkan local area network anda

```
  GNU nano 4.8                    /etc/postfix/main.cf


# TLS parameters
smtpd_tls_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
smtpd_tls_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
smtpd_tls_security_level=may

smtp_tls_CApath=/etc/ssl/certs
smtp_tls_security_level=may
smtp_tls_session_cache_database = btree:${data_directory}/smtp_scache


smtpd_relay_restrictions = permit_mynetworks permit_sasl_authenticated defer_unauth_d>
myhostname = fatih.fatih.net
alias_maps = hash:/etc/aliases
alias_database = hash:/etc/aliases
myorigin = /etc/mailname
mydestination = khoiri.com, $myhostname, mail.fatih.net, fatih, localhost.localdomain>
relayhost =
mynetworks = 192.168.1.0/24 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128
home_mailbox=Maildir/
mailbox_size_limit = 0
recipient_delimiter = +
inet_interfaces = all
inet_protocols = all
```

- Restart postfix

```
fatih@fatih:~$ sudo systemctl restart postfix
```

- Kemudian install webserver apache2 & php

```
fatih@fatih:/etc/skel$ sudo apt install apache2 php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapache2-mod-php7.4 libapr1
  libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap php-common php7.4
```

- Kemudian installasi squirrelmail, untuk awalnya download file squirrelmail

```
fatih@fatih:~$ wget http://downloads.sourceforge.net/project/squirrelmail/stable/1.4.2
2/squirrelmail-webmail-1.4.22.zip
--2021-06-21 12:35:25--  http://downloads.sourceforge.net/project/squirrelmail/stable/
1.4.22/squirrelmail-webmail-1.4.22.zip
Resolving downloads.sourceforge.net (downloads.sourceforge.net)... 216.105.38.13
Connecting to downloads.sourceforge.net (downloads.sourceforge.net)|216.105.38.13|:80.
```

- Pindahkan file download ke /var/www/html kemudian unzip file

```
fatih@fatih:~$ sudo mv squirrelmail-webmail-1.4.22.zip /var/www/html
fatih@fatih:~$ cd /var/www/html
fatih@fatih:/var/www/html$ ls
index.html  squirrelmail-webmail-1.4.22.zip
fatih@fatih:/var/www/html$ sudo unzip squirrelmail-webmail-1.4.22.zip
Archive:  squirrelmail-webmail-1.4.22.zip
   creating: squirrelmail-webmail-1.4.22/
   creating: squirrelmail-webmail-1.4.22/class/
  inflating: squirrelmail-webmail-1.4.22/class/index.php
   creating: squirrelmail-webmail-1.4.22/class/mime/
  inflating: squirrelmail-webmail-1.4.22/class/mime/index.php
  inflating: squirrelmail-webmail-1.4.22/class/mime/Disposition.class.php
```

- Copy direktori dari folder hasil unzip menjadi folder baru

```
fatih@fatih:/var/www/html$ sudo cp -R squirrelmail-webmail-1.4.22 squirrelmail
fatih@fatih:/var/www/html$
```

- Ubah owner folder dan mod dari folder hasil copynya

```
fatih@fatih:/var/www/html$ sudo chown -R www-data:www-data squirrelmail-webmail-1.4.22
fatih@fatih:/var/www/html$ sudo chmod 755 -R squirrelmail-webmail-1.4.22
fatih@fatih:/var/www/html$
```

- Edit untuk diaktifkan pada webmail, dengan membuat file configurasi pada directory apache webmail

```
  GNU nano 4.8                                webmail.conf
<VirtualHost *:80>
        # The ServerName directive sets the request scheme, hostname and port that
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header to
        # match this virtual host. For the default virtual host (this file) this
        # value is not decisive as it is used as a last resort host regardless.
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin webmaster@localhost
        ServerName mail.fatih.net
        DocumentRoot /var/www/html/squirrelmail
```

- Restart apache2 setelah mengaktifkan file konfigurasinya

```
fatih@fatih:/etc/apache2/sites-available$ sudo nano webmail.conf
fatih@fatih:/etc/apache2/sites-available$ sudo a2ensite webmail.conf
Enabling site webmail.
To activate the new configuration, you need to run:
  systemctl reload apache2
fatih@fatih:/etc/apache2/sites-available$ sudo systemctl restart apache2
fatih@fatih:/etc/apache2/sites-available$
```

- Lakukan konfigurasi untuk squirrelmail dengan memilih opsi 2 dan 4 nantinya.

```
fatih@fatih:/var/www/html$ cd squirrelmail
fatih@fatih:/var/www/html/squirrelmail$ cd config/
fatih@fatih:/var/www/html/squirrelmail/config$ sudo perl conf.pl
```

- Setting pada opsi 4 dengan memasukkan tempat direktori data dan attach direktori pada tempat squirrelmail berada

```
SquirrelMail Configuration : Read: config.php (1.4.0)
---------------------------------------------------------
General Options
1.  Data Directory               : /var/www/html/squirrelmail/data/
2.  Attachment Directory         : /var/www/html/squirrelmail/attach/
3.  Directory Hash Level         : 0
4.  Default Left Size            : 150
5.  Usernames in Lowercase       : false
6.  Allow use of priority        : true
7.  Hide SM attributions         : false
8.  Allow use of receipts        : true
9.  Allow editing of identity    : true
    Allow editing of name        : true
    Remove username from header  : false
10. Allow server thread sort     : false
```

- Setting pada opsi 2 dengan memasukkan nama domain yang digunakan untuk mail server

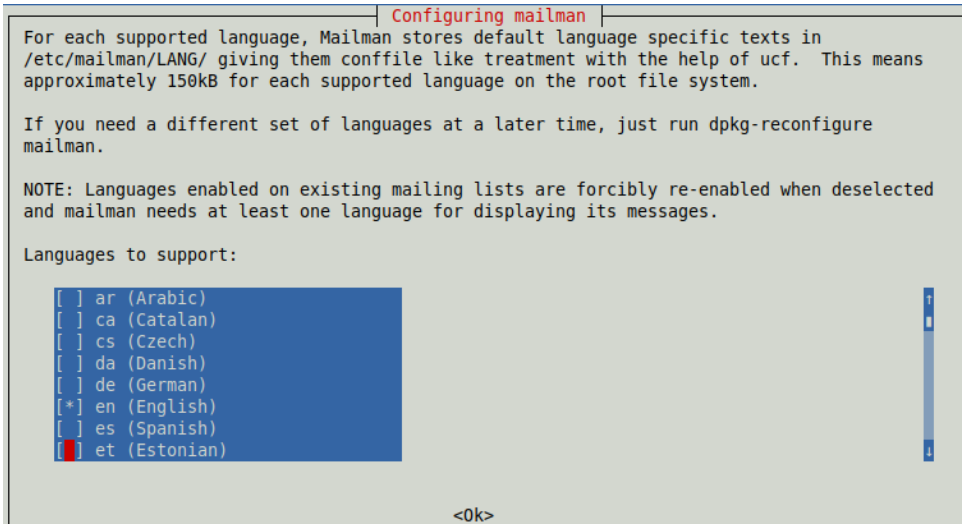
```
Server Settings

General
-------
1.  Domain                  : mail.fatih.net
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 >>
```

- Ujicoba pada website untuk mengakses squirrelmail

- Installasi mailman

```
fatih@fatih:~$ sudo apt install mailman
[sudo] password for fatih:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib python-dnspython python2
  python2-minimal python2.7 python2.7-minimal
Suggested packages:
  mailman3-full spamassassin lynx listadmin python2-doc python-tk python2.7-doc binfmt-support
```

- Melakukan pemilihan bahasa



- Melakukan setting postfix sebagai MTA, dengan membuka /etc/mailman/mm_cfg.py dengan uncomment MTA='Postfix'

```
  GNU nano 4.8                    /etc/mailman/mm_cfg.py                    Modified
# beginning with "if mm_cfg.SUBSCRIBE_FORM_SECRET:" in Mailman/Cgi/listinfo.py
# for the details of the hidden data.
SUBSCRIBE_FORM_SECRET = 'QvXOSDUKz9KMSbTbBZsYd8BP'

#-----------------------------------------------------------------
# Uncomment this if you configured your MTA such that it
# automatically recognizes newly created lists.
# (see /usr/share/doc/mailman/README.Exim4.Debian or
# /usr/share/mailman/postfix-to-mailman.py)
# MTA=None   # Misnomer, suppresses alias output on newlist

#-----------------------------------------------------------------
# Uncomment if you use Postfix virtual domains (but not
# postfix-to-mailman.py), but be sure to see
# /usr/share/doc/mailman/README.Debian first.
MTA='Postfix'
```

- Aktifkan module cgi

```
fatih@fatih:~$ sudo a2enmod cgi
Enabling module cgi.
To activate the new configuration, you need to run:
  systemctl restart apache2
fatih@fatih:~$ sudo systemctl restart apache2
fatih@fatih:~$
```

- Sebagai permulaan buat mailing list bernama mailman

```
fatih@fatih:~$ sudo newlist mailman
Enter the email of the person running the list: admin@mail.fatih.net
Initial mailman password:
Hit enter to notify mailman owner...
```

- Start service mailman

```
fatih@fatih:~$ sudo systemctl start mailman.service
fatih@fatih:~$
```

- Cek pada website **nama-server-mail/cgi-bin/mailman/listinfo/**

mail.fatih.net Mailing Lists

Welcome!

Below is a listing of all the public mailing lists on mail.fatih.net. Click on a list name to get more information about the list, or to subscribe, unsubscribe, and change the preferences on your subscription. To visit the general information page for an unadvertised list, open a URL similar to this one, but with a '/' and the list name appended.

List administrators, you can visit the list admin overview page to find the management interface for your list.

If you are having trouble using the lists, please contact mailman@mail.fatih.net.

- Tambahkan pada konfigurasi postfix, alias_maps = hash:/etc/aliases, hash:/var/lib/mailman/data/aliases

```
  GNU nano 4.8                          /etc/postfix/main.cf


# TLS parameters
smtpd_tls_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
smtpd_tls_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
smtpd_tls_security_level=may

smtp_tls_CApath=/etc/ssl/certs
smtp_tls_security_level=may
smtp_tls_session_cache_database = btree:${data_directory}/smtp_scache


smtpd_relay_restrictions = permit_mynetworks permit_sasl_authenticated defer_una
myhostname = fatih.fatih.net
alias_maps = hash:/etc/aliases, hash:/var/lib/mailman/data/aliases
```

- Kemudian restart postfix

```
fatih@fatih:~$ sudo systemctl restart postfix
fatih@fatih:~$ sudo systemctl status postfix
● postfix.service - Postfix Mail Transport Agent
     Loaded: loaded (/lib/systemd/system/postfix.service; enabled; vendor preset
     Active: active (exited) since Mon 2021-06-21 14:46:46 WIB; 5s ago
    Process: 15094 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
   Main PID: 15094 (code=exited, status=0/SUCCESS)

Jun 21 14:46:46 fatih systemd[1]: Starting Postfix Mail Transport Agent...
Jun 21 14:46:46 fatih systemd[1]: Finished Postfix Mail Transport Agent.
fatih@fatih:~$
```

- Buat list bernama siswa

```
fatih@fatih:~$ sudo newlist siswa
Enter the email of the person running the list: admin@mail.fatih.net
Initial siswa password:
Hit enter to notify siswa owner...

fatih@fatih:~$
```

- Kemudian kita tambahkan list pada **nama-server-mail/cgi-bin/mailman/admin/siswi/members/add**

Enter one address per line below...

```
agus@mail.fatih.net
anton@mail.fatih.net
toni@mail.khoiri.com
tono@mail.khoiri.com
admin@mail.fatih.net
```

...or specify a file to upload: Browse... No file selected.

5 members total

unsub	member address member name	mod	hide	nomail [reason]	ack	not metoo	nodupes	digest	plain	language
☐	admin@mail.fatih.net	☐	☐	☐	☐	☐	☑	☐	☑	English (USA)
☐	agus@mail.fatih.net	☐	☐	☐	☐	☐	☑	☐	☑	English (USA)
☐	anton@mail.fatih.net	☐	☐	☐	☐	☐	☑	☐	☑	English (USA)
☐	toni@mail.khoiri.com	☐	☐	☐	☐	☐	☑	☐	☑	English (USA)
☐	tono@mail.khoiri.com	☐	☐	☐	☐	☐	☑	☐	☑	English (USA)

Submit Your Changes

- Installasi spamassassin

```
fatih@fatih:~$ sudo apt install spamassassin spamc
[sudo] password for fatih:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libc-dev-bin libc6 libc6-dbg libc6-dev libcommon-sense-perl libcrypt-dev
  libcrypt-openssl-bignum-perl libcrypt-openssl-random-perl libcrypt-opens
  liberror-perl libio-socket-inet6-perl libjson-perl libjson-xs-perl
```

- Membuat user untuk spamassassin

```
root@fatih:~# groupadd spamd
root@fatih:~# useradd -g spamd -s /bin/false -d /var/log/spamassassin spamd
root@fatih:~# mkdir /var/log/spamassassin
root@fatih:~# chown spamd:spamd /var/log/spamassassin
root@fatih:~#
```

- Melakukan konfigurasi pada /etc/default/spamassassin

```
  GNU nano 4.8                /etc/default/spamassassin

SAHOME="/var/log/spamassassin/"

OPTIONS="--create-prefs --max-children 5 --username spamd --helper-home-dir
${SAHOME} -s ${SAHOME}spamd.log"

# Pid file
# Where should spamd write its PID to file? If you use the -u or
# --username option above, this needs to be writable by that user.
# Otherwise, the init script will not be able to shut spamd down.
PIDFILE="/var/run/spamd.pid"

# Set nice level of spamd
#NICE="--nicelevel 15"

# Cronjob
# Set to anything but 0 to enable the cron job to automatically update
# spamassassin's rules on a nightly basis
CRON=1
```

- Restart daemon spamassassin

```
root@fatih:~# service spamassassin start
root@fatih:~# service spamassassin status
● spamassassin.service - Perl-based spam filter using text analysis
     Loaded: loaded (/lib/systemd/system/spamassassin.service; disabled; vendor prese
     Active: active (running) since Wed 2021-06-23 11:23:11 WIB; 4s ago
    Process: 8059 ExecStart=/usr/sbin/spamd -d --pidfile=/run/spamd.pid $OPTIONS (cod
   Main PID: 8071 (spamd)
      Tasks: 3 (limit: 1069)
     Memory: 96.7M
     CGroup: /system.slice/spamassassin.service
             ├─8071 /usr/bin/perl -T -w /usr/sbin/spamd -d --pidfile=/run/spamd.pid -
             ├─8072 spamd child
             └─8073 spamd child

Jun 23 11:23:06 fatih systemd[1]: Starting Perl-based spam filter using text analysis
Jun 23 11:23:11 fatih systemd[1]: Started Perl-based spam filter using text analysis.
root@fatih:~#
```

- Konfigurasi pada /etc/postfix/master.cf

```
  GNU nano 4.8                    /etc/postfix/master.cf
# on-line: http://www.postfix.org/master.5.html).
#
# Do not forget to execute "postfix reload" after editing this file.
#
# ==========================================================================
# service type  private unpriv  chroot  wakeup  maxproc command + args
#               (yes)   (yes)   (no)    (never) (100)
# ==========================================================================
smtp      inet  n       -       y       -       -       smtpd
        -o content_filter=spamassassin
```

- Tambahkan pada bagian akhir file

```
spamassassin unix -     n       n       -       -       pipe
        user=spamd argv=/usr/bin/spamc -f -e
        /usr/sbin/sendmail -oi -f ${sender} ${recipient}
```

- Restart postfix

```
root@fatih:~# service postfix restart
root@fatih:~#
```

- Edit file /etc/spamassassin/local.cf

```
#   Add *****SPAM***** to the Subject header of spam e-mails
#
rewrite_header Subject *****SPAM*****
```

```
required_score 5.0


#   Use Bayesian classifier (default: 1)
#
use_bayes 1

#   Bayesian classifier auto-learning (defau
#
bayes_auto_learn 1
```

- Restart spamassassin

```
root@fatih:~# service spamassassin restart
root@fatih:~#
```

KONFIGURASI SERVER 2

- Tambahkan IP kita yang kita punya pada /etc/resolv.conf yang sudah di daftarkan pada DNS Server

```
  GNU nano 4.8                    /etc/resolv.conf
# Dynamic resolv.conf(5) file for glibc resolver(3) generated
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OV
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "systemd-resolve --status" to see details about the actu

nameserver 192.168.1.10
```

- Kemudian restart resolvconf

```
khoiri@khoiri:~$ sudo systemctl restart resolvconf
```

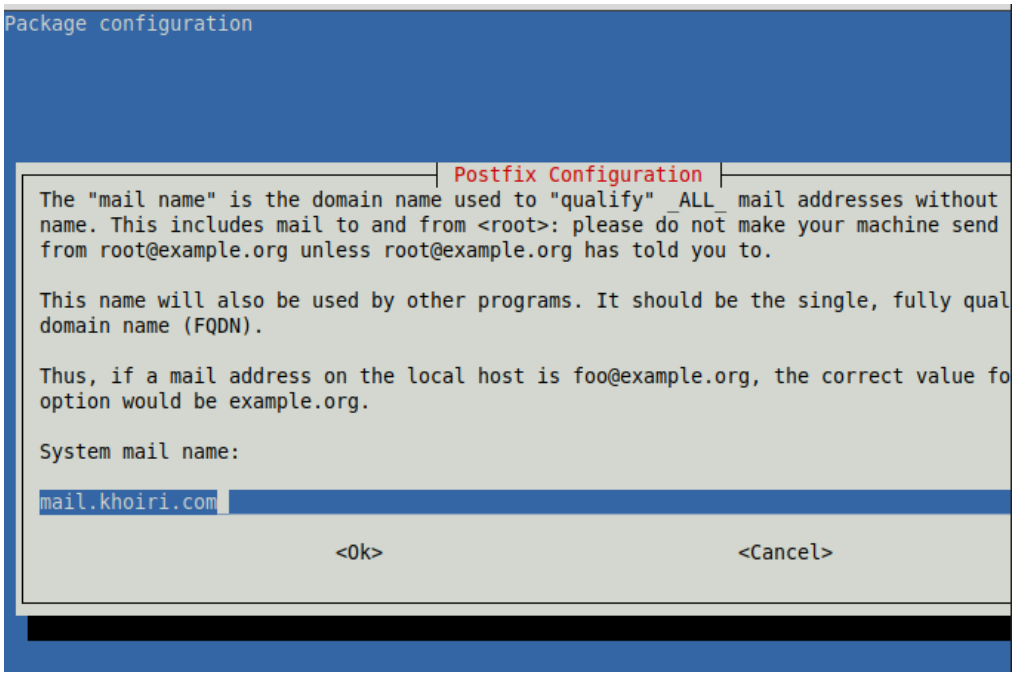
- Installasi mail server, menggunakan courier-imap courier-pop

```
khoiri@khoiri:~$ sudo apt install courier-imap courier-pop
Reading package lists... Done
Building dependency tree
Reading state information... Done
courier-imap is already the newest version (5.0.6+1.0.6-1build2).
courier-pop is already the newest version (1.0.6-1build2).
0 upgraded, 0 newly installed, 0 to remove and 291 not upgraded.
khoiri@khoiri:~$
```

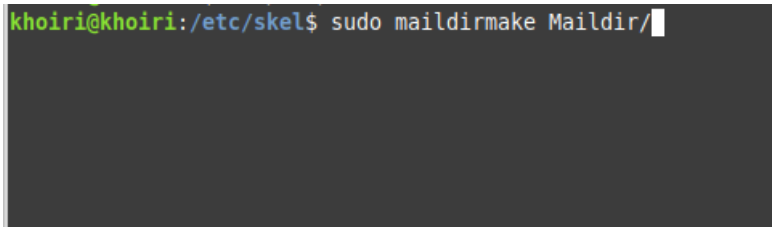
- Kemudian install postfix

```
khoiri@khoiri:~$ sudo apt install postfix
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

```
General type of mail configuration:

                        No configuration
                        Internet Site
                        Internet with smarthost
                        Satellite system
                        Local only

                 <Ok>                        <Cancel>
```

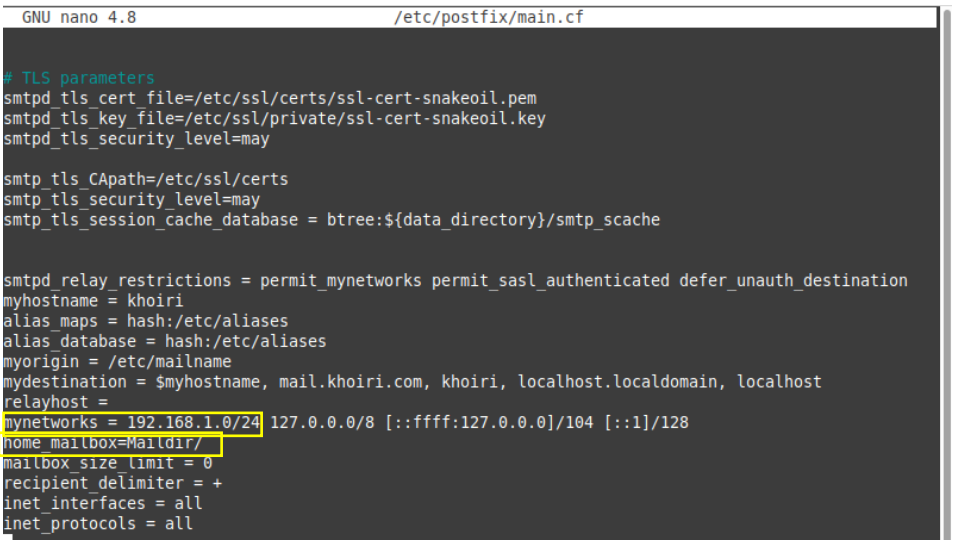


- Buat folder Maildir untuk tiap user yang akan dibuat nantinya sebagai tempat mail direk torynya pada /etc/skel



- Tambahkan user Tono(L), Toni(L) , Tini(P), Tina(P) dengan **sudo adduser namausernya**

- Kemudian untuk konfigurasi postfix, tambahkan home_mailbox = Maildir/ pada file konfigurasi /etc/postfix/main.cf, kemudian pada my network tambahkan local area network anda



- Restart postfix

```
khoiri@khoiri:~$ sudo systemctl restart postfix
```

- Kemudian install webserver apache2

```
khoiri@khoiri:~$ sudo apt install apache2 php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapache2-mod-php7.4 libapr1
  libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap php-common php7.4
  php7.4-cli php7.4-common php7.4-json php7.4-mysql php7.4-opcache
```

- Kemudian installasi squirrelmail, download file squirrelmail

```
khoiri@khoiri:~$ wget http://downloads.sourceforge.net/project/squirrelmail/stable/1.
mail-webmail-1.4.22.zip
```

- Pindahkan file download ke /var/www/html kemudian unzip file

```
khoiri@khoiri:~$ sudo mv squirrelmail-webmail-1.4.22.zip /var/www/html
khoiri@khoiri:~$ cd /var/www/html
khoiri@khoiri:/var/www/html$ sudo unzip squirrelmail-webmail-1.4.22.zip
Archive:  squirrelmail-webmail-1.4.22.zip
   creating: squirrelmail-webmail-1.4.22/
   creating: squirrelmail-webmail-1.4.22/class/
  inflating: squirrelmail-webmail-1.4.22/class/index.php
   creating: squirrelmail-webmail-1.4.22/class/mime/
  inflating: squirrelmail-webmail-1.4.22/class/mime/index.php
  inflating: squirrelmail-webmail-1.4.22/class/mime/Disposition.class.php
  inflating: squirrelmail-webmail-1.4.22/class/mime/SMimeMessage.class.php
```

- Copy kan menjadi folder baru

```
khoiri@khoiri:/var/www/html$ sudo cp -R squirrelmail-webmail-1.4.22 squirrelmail
```

- Ubah owner dan mod access folder dan isinya

```
khoiri@khoiri:/var/www/html$ sudo chown -R www-data:www-data squirrelmail
khoiri@khoiri:/var/www/html$ sudo chmod 755 -R squirrelmail
khoiri@khoiri:/var/www/html$
```

- Edit dengan membuat sebuah file konfigurasi untuk diaktifkan pada webmail

```
  GNU nano 4.8                                webmail.conf
<VirtualHost *:80>
        # The ServerName directive sets the request scheme, hostname and port that
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header to
        # match this virtual host. For the default virtual host (this file) this
        # value is not decisive as it is used as a last resort host regardless.
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin webmaster@localhost
        ServerName mail.khoiri.com
        DocumentRoot /var/www/html/squirrelmail
```

- Restart apache2

```
khoiri@khoiri:/etc/apache2/sites-available$ sudo nano webmail.conf
khoiri@khoiri:/etc/apache2/sites-available$ sudo a2ensite webmail.conf
Enabling site webmail.
To activate the new configuration, you need to run:
  systemctl reload apache2
khoiri@khoiri:/etc/apache2/sites-available$ sudo systemctl restart apache2
khoiri@khoiri:/etc/apache2/sites-available$
```

- Lakukan konfigurasi untuk squirrelmail, kemudian pilih 2 dan 4 pada opsi dan save konfigurasi

```
khoiri@khoiri:~$ cd /var/www/html/squirrelmail
khoiri@khoiri:/var/www/html/squirrelmail$ cd config/
khoiri@khoiri:/var/www/html/squirrelmail/config$ sudo perl conf.pl
```

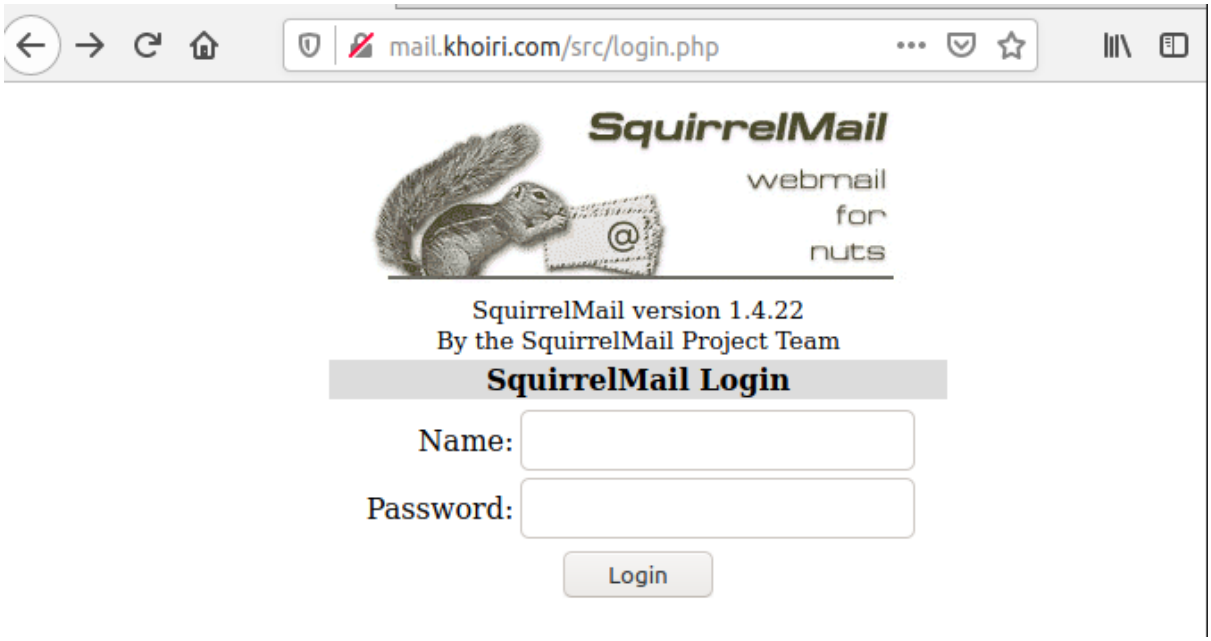
- Setting pada opsi 4, dengan memberi nilai direktori data dan attach pada letak folder squirrelmail

```
General Options
1.  Data Directory                : /var/www/html/squirrelmail/data/
2.  Attachment Directory          : /var/www/html/squirrelmail/attach/
3.  Directory Hash Level          : 0
4.  Default Left Size             : 150
5.  Usernames in Lowercase        : false
6.  Allow use of priority         : true
7.  Hide SM attributions          : false
8.  Allow use of receipts         : true
9.  Allow editing of identity     : true
    Allow editing of name         : true
    Remove username from header   : false
10. Allow server thread sort      : false
11. Allow server-side sorting     : false
```

- Setting pada opsi 2, beri nilai domain dengan nama domain yang digunakna untuk mail server :

```
SquirrelMail Configuration : Read: config.php (1.4.0)
---------------------------------------------------------
Server Settings

General
-------
1.  Domain                  : mail.khoiri.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 >>
```

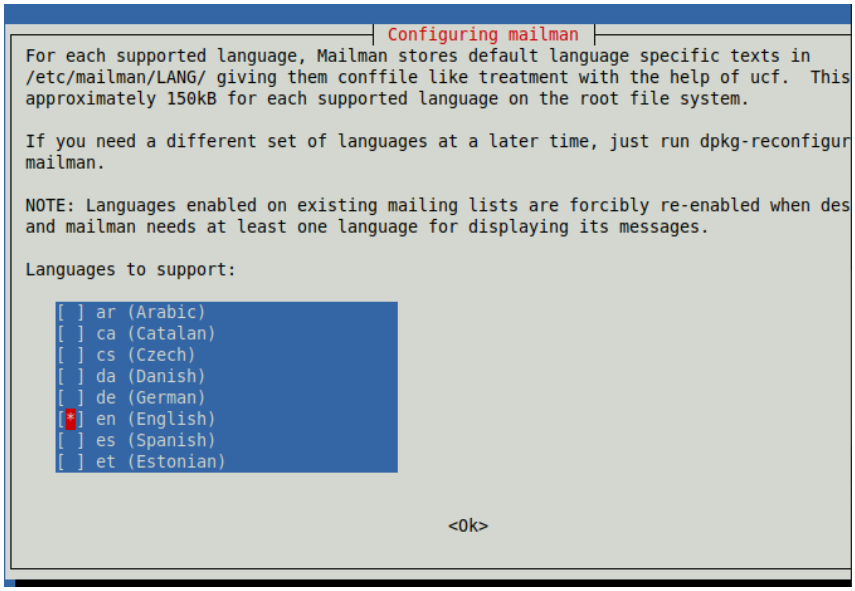
- Ujicoba pada website untuk mengakses squirrelmail



- Installasi mailman

```
khoiri@khoiri:~$ sudo apt install mailman
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib p
  python2-minimal python2.7 python2.7-minimal
Suggested packages:
```

- Melakukan pemilihan bahasa



- Menyetting postfix sebagai MTA, dengan membukan /etc/mailman/mm_cfg.py, dengan uncomment MTA='Postfix'

```
  GNU nano 4.8                          /etc/mailman/mm_cfg.py
# beginning with "if mm_cfg.SUBSCRIBE_FORM_SECRET:" in Mailman/Cgi/listinfo.py
# for the details of the hidden data.
SUBSCRIBE_FORM_SECRET = 'rmQjl0c6UyoACVGrc3UsKv4Q'

#-----------------------------------------------------------------
# Uncomment this if you configured your MTA such that it
# automatically recognizes newly created lists.
# (see /usr/share/doc/mailman/README.Exim4.Debian or
# /usr/share/mailman/postfix-to-mailman.py)
# MTA=None   # Misnomer, suppresses alias output on newlist

#-----------------------------------------------------------------
# Uncomment if you use Postfix virtual domains (but not
# postfix-to-mailman.py), but be sure to see
# /usr/share/doc/mailman/README.Debian first.
MTA='Postfix'
```

- Aktifkan module cgi

```
khoiri@khoiri:~$ sudo a2enmod cgi
Enabling module cgi.
To activate the new configuration, you need to run:
  systemctl restart apache2
khoiri@khoiri:~$ sudo systemctl restart apache2
khoiri@khoiri:~$
```

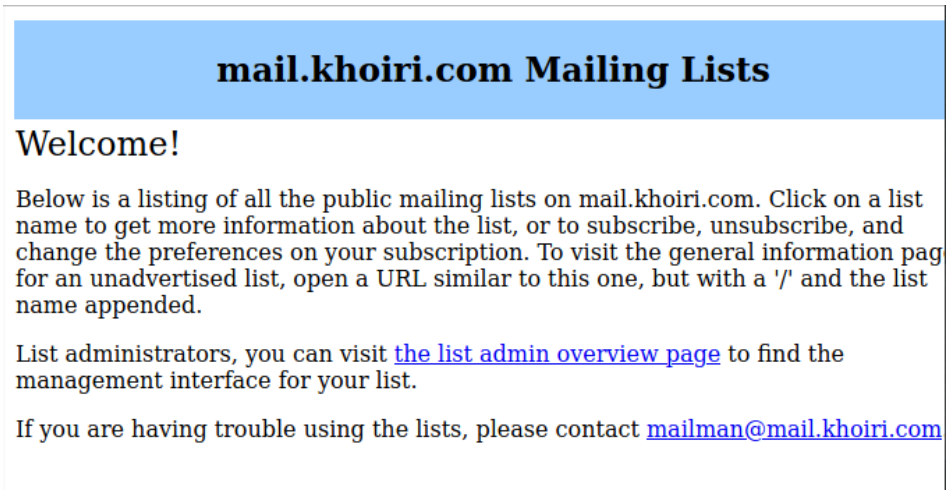
- Sebagai permulaan buat mailing list bernama mailman

```
khoiri@khoiri:~$ sudo newlist mailman
Enter the email of the person running the list: admin@mail.khoiri.com
Initial mailman password:
Hit enter to notify mailman owner...

khoiri@khoiri:~$
```

- Start service mailman

```
khoiri@khoiri:~$ sudo systemctl start mailman.service
khoiri@khoiri:~$
```

- Cek pada website **nama-server-mail/cgi-bin/mailman/listinfo/**



- Tambahkan pada konfigurasi postfix, alias_maps = hash:/etc/aliases, hash:/var/lib/mailman/data/aliases

```
  GNU nano 4.8                          /etc/postfix/main.cf


# TLS parameters
smtpd_tls_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
smtpd_tls_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
smtpd_tls_security_level=may

smtp_tls_CApath=/etc/ssl/certs
smtp_tls_security_level=may
smtp_tls_session_cache_database = btree:${data_directory}/smtp_scache


smtpd_relay_restrictions = permit_mynetworks permit_sasl_authenticated defer_unauth_d
myhostname = khoiri
alias_maps = hash:/etc/aliases, hash:/var/lib/mailman/data/aliases
```

- Kemudian restart postfix

```
khoiri@khoiri:~$ sudo systemctl restart postfix
khoiri@khoiri:~$ sudo systemctl status postfix
● postfix.service - Postfix Mail Transport Agent
     Loaded: loaded (/lib/systemd/system/postfix.service; enabled; vendor preset: ena
     Active: active (exited) since Wed 2021-06-23 14:10:07 WIB; 6s ago
    Process: 11248 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
   Main PID: 11248 (code=exited, status=0/SUCCESS)

Jun 23 14:10:07 khoiri systemd[1]: Starting Postfix Mail Transport Agent...
Jun 23 14:10:07 khoiri systemd[1]: Finished Postfix Mail Transport Agent.
khoiri@khoiri:~$
```

- Buat list bernama siswi

```
khoiri@khoiri:~$ sudo newlist siswi
Enter the email of the person running the list: admin@mail.khoiri.com
Initial siswi password:
Hit enter to notify siswi owner...

khoiri@khoiri:~$
```

- Kemudian kita tambahkan list pada **nama-server-mail/cgi-bin/mailman/admin/siswi/members/add**

Enter one address per line below...

```
ana@mail.fatih.net
ani@mail.fatih.net
tini@mail.khoiri.com
tina@mail.khoiri.com
admin@mail.khoiri.com
```

...or specify a file to upload: Browse... No file selected.

5 members total

unsub	member address member name	mod	hide	nomail [reason]	ack	not metoo	nodupes	digest	plain	languag
☐	admin@mail.khoiri.com	☐	☐	☐	☐	☐	☑	☐	☑	English (USA
☐	ana@mail.fatih.net	☐	☐	☐	☐	☐	☑	☐	☑	English (USA
☐	ani@mail.fatih.net	☐	☐	☐	☐	☐	☑	☐	☑	English (USA
☐	tina@mail.khoiri.com	☐	☐	☐	☐	☐	☑	☐	☑	English (USA
☐	tini@mail.khoiri.com	☐	☐	☐	☐	☐	☑	☐	☑	English (USA

Submit Your Changes

- Installasi spamassassin

```
khoiri@khoiri:~$ sudo apt install spamassassin spamc
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libc-dev-bin libc6 libc6-dbg libc6-dev libcommon-sense-perl libcrypt
  libcrypt-openssl-bignum-perl libcrypt-openssl-random-perl
```

- Membuat user untuk spamassassin

```
root@khoiri:~# groupadd spamd
root@khoiri:~# useradd -g spamd -s /bin/false -d /var/log/spamassassin spamd
root@khoiri:~# mkdir /var/log/spamassassin
root@khoiri:~# chown spamd:spamd /var/log/spamassassin
root@khoiri:~#
```

- Melakukan konfigurasi pada /etc/default/spamassassin

```
  GNU nano 4.8                /etc/default/spamassassin                Modified

SAHOME="/var/log/spamassassin/"

OPTIONS="--create-prefs --max-children 5 --username spamd --helper-home-dir
${SAHOME} -s ${SAHOME}spamd.log"

# Pid file
# Where should spamd write its PID to file? If you use the -u or
# --username option above, this needs to be writable by that user.
# Otherwise, the init script will not be able to shut spamd down.
PIDFILE="/var/run/spamd.pid"

# Set nice level of spamd
#NICE="--nicelevel 15"

# Cronjob
# Set to anything but 0 to enable the cron job to automatically update
# spamassassin's rules on a nightly basis
CRON=1
```

- Restart daemon spamassassin

```
root@khoiri:~# service spamassassin start
root@khoiri:~# service spamassassin status
● spamassassin.service - Perl-based spam filter using text analysis
     Loaded: loaded (/lib/systemd/system/spamassassin.service; disabled; vendor>
     Active: active (running) since Wed 2021-06-23 15:08:43 WIB; 2min 41s ago
    Process: 17328 ExecStart=/usr/sbin/spamd -d --pidfile=/run/spamd.pid $OPTIO>
   Main PID: 17341 (spamd)
      Tasks: 3 (limit: 2277)
     Memory: 93.3M
     CGroup: /system.slice/spamassassin.service
             ├─17341 /usr/bin/perl -T -w /usr/sbin/spamd -d --pidfile=/run/spam>
             ├─17343 spamd child
             └─17344 spamd child

Jun 23 15:08:32 khoiri systemd[1]: Starting Perl-based spam filter using text a>
Jun 23 15:08:43 khoiri systemd[1]: Started Perl-based spam filter using text an>
lines 1-14/14 (END)
```

- Konfigurasi pada /etc/postfix/master.cf

```
  GNU nano 4.8                    /etc/postfix/master.cf
# on-line: http://www.postfix.org/master.5.html).
#
# Do not forget to execute "postfix reload" after editing this file.
#
# ==========================================================================
# service type  private unpriv  chroot  wakeup  maxproc command + args
#               (yes)   (yes)   (no)    (never) (100)
# ==========================================================================
smtp      inet  n       -       y       -       -       smtpd
        -o content_filter=spamassassin
```

- Tambahkan pada bagian akhir file

```
spamassassin unix -     n       n       -       -       pipe
        user=spamd argv=/usr/bin/spamc -f -e
        /usr/sbin/sendmail -oi -f ${sender} ${recipient}
```

- Restart postfix

```
root@khoiri:~# service postfix restart
root@khoiri:~#
```

- Edit file /etc/spamassassin/local.cf

```
#   Add *****SPAM***** to the Subject header of spam e-mails
#
rewrite_header Subject *****SPAM*****
```

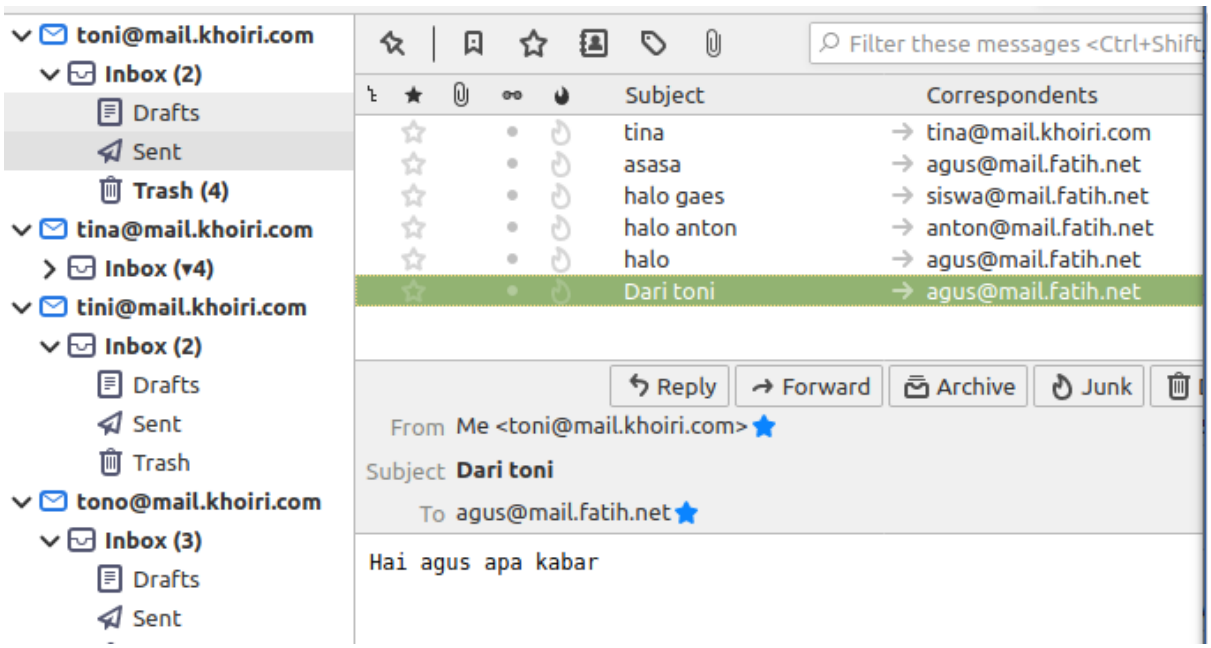
```
required_score 5.0


#   Use Bayesian classifier (default: 1)
#
use_bayes 1

#   Bayesian classifier auto-learning (defau
#
bayes_auto_learn 1
```

- Restart spamassassin

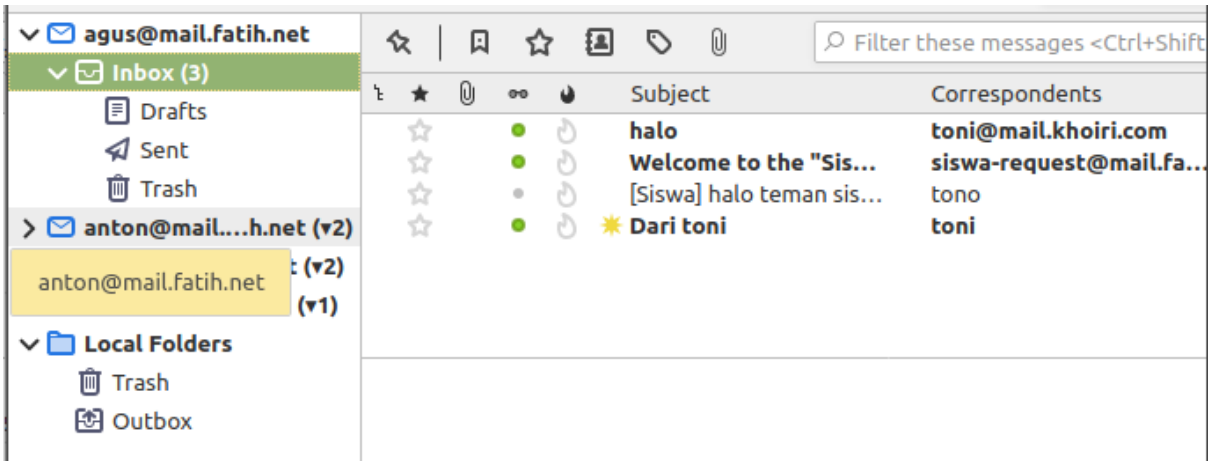
```
root@khoiri:~# service spamassassin restart
root@khoiri:~#
```

Ujicoba Mengirim Email antar Server :

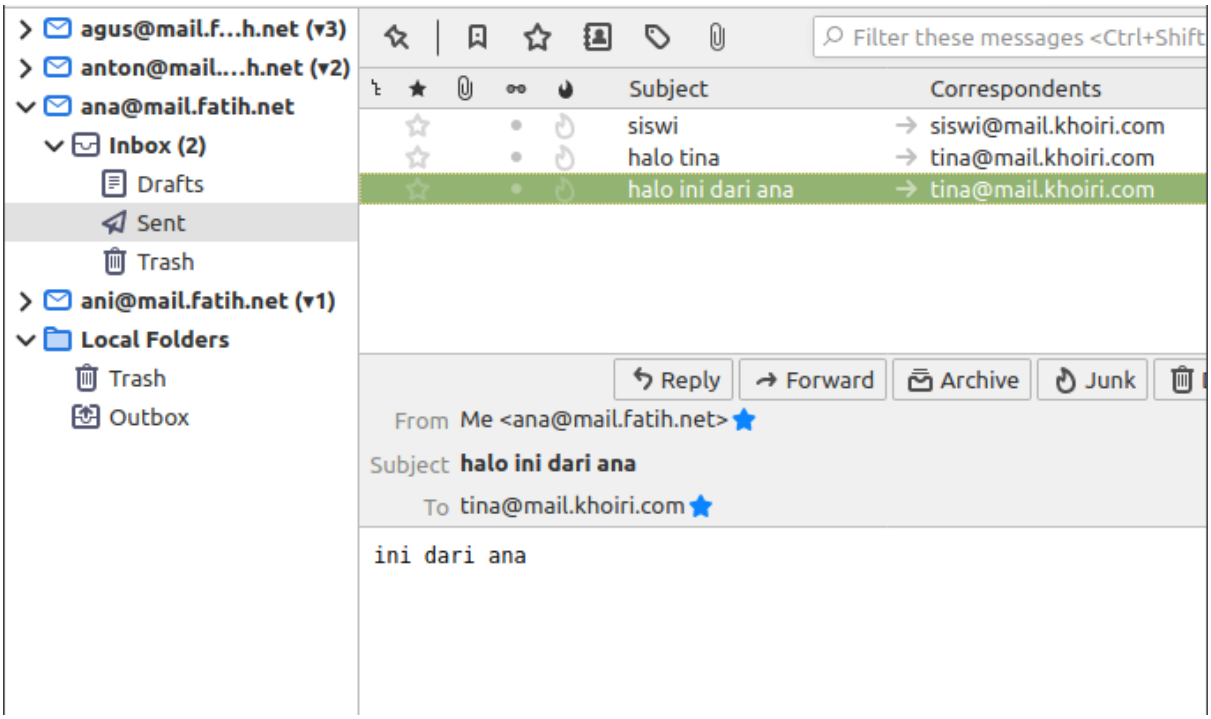
User Toni mengirim ke Agus :



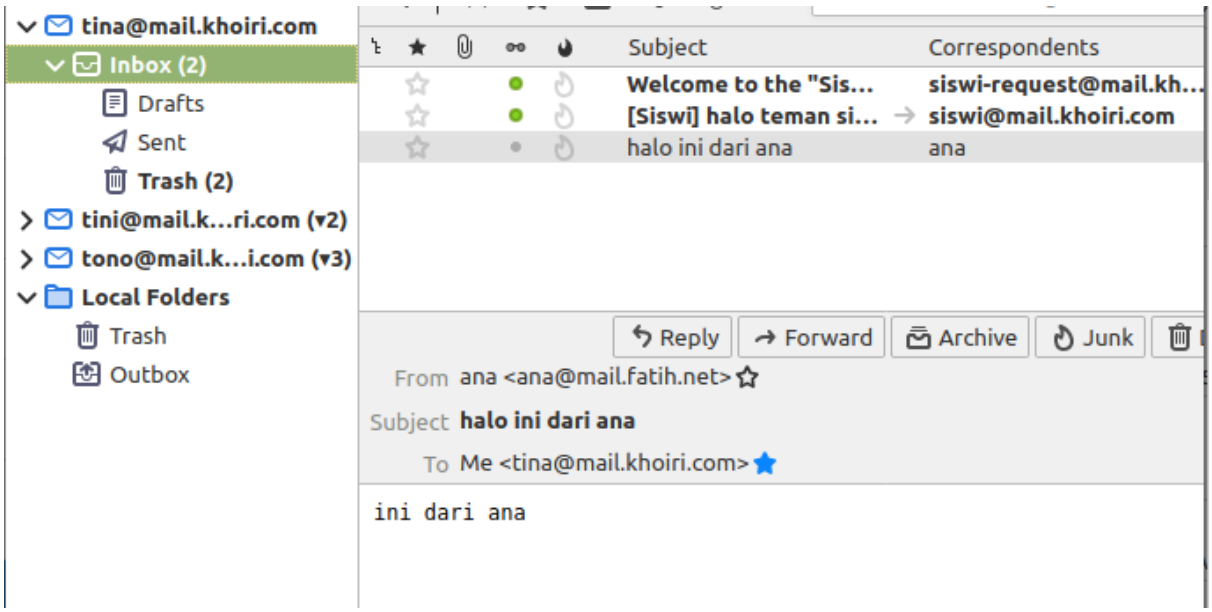
INBOX dari email Agus :



User Ana mengirim kepada Tini

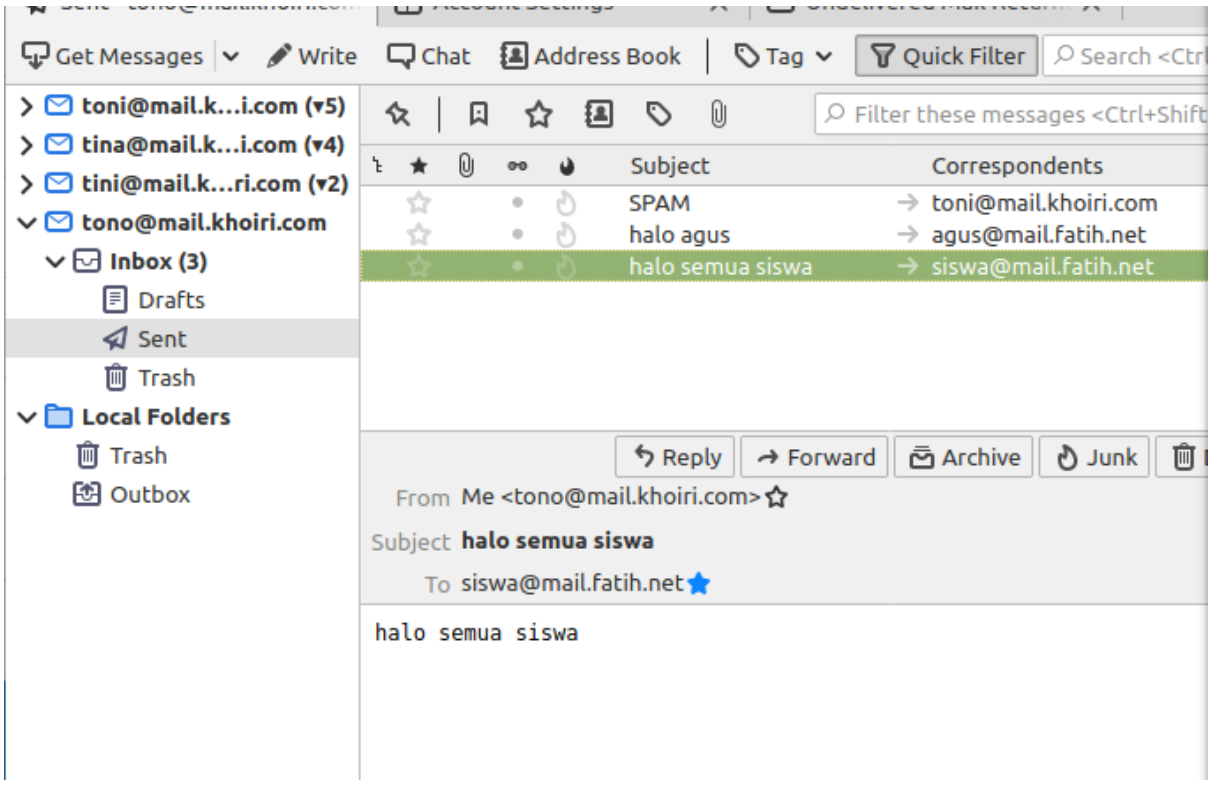


INBOX dari email Tina :

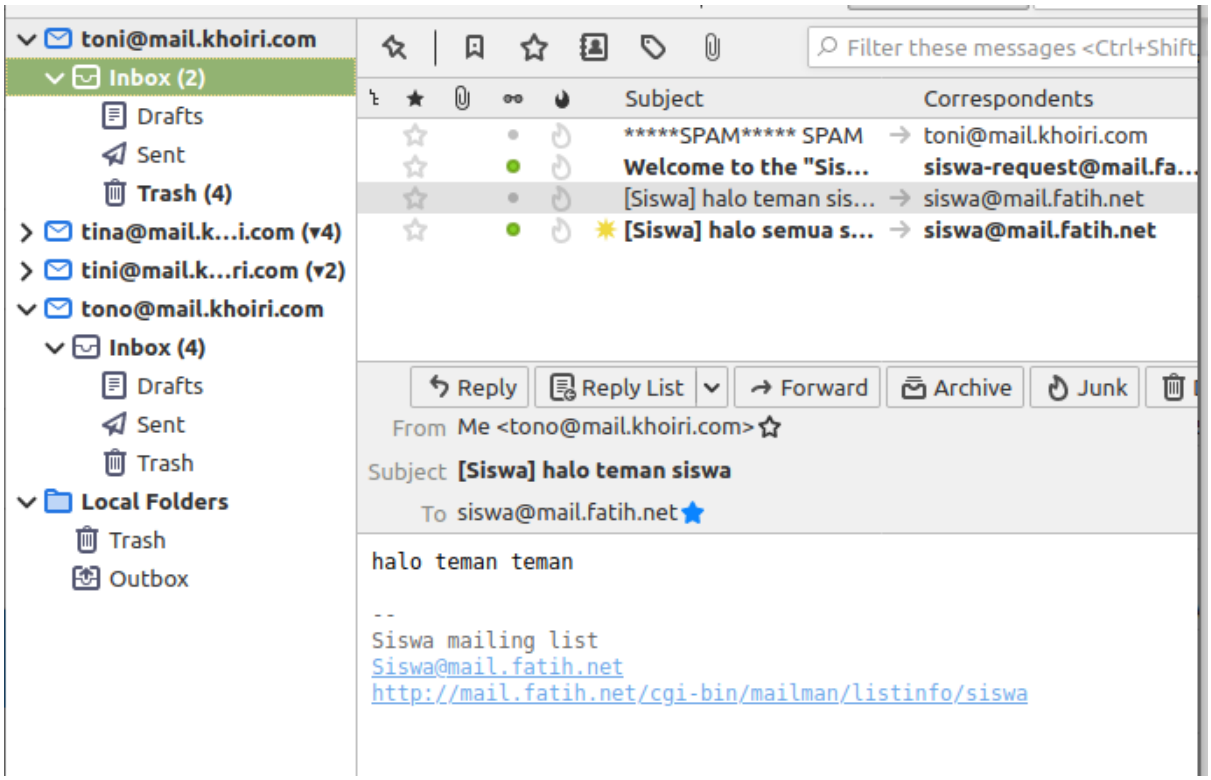


Percobaan Pengiriman pada Mailing List :

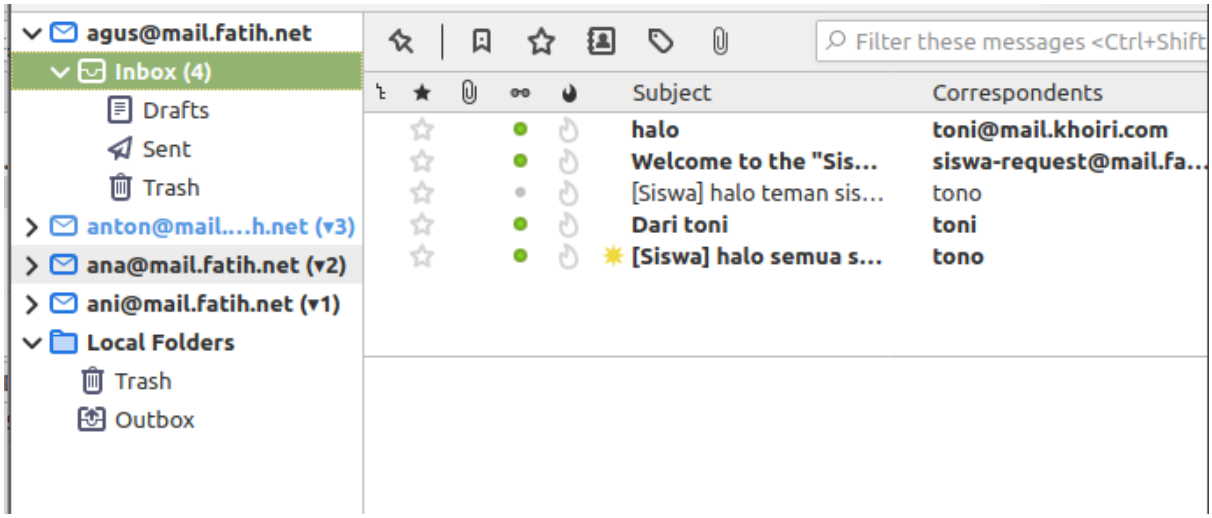
Dirimkan oleh Tono kepada mailing list ***siswa@mail.fatih.net*** :



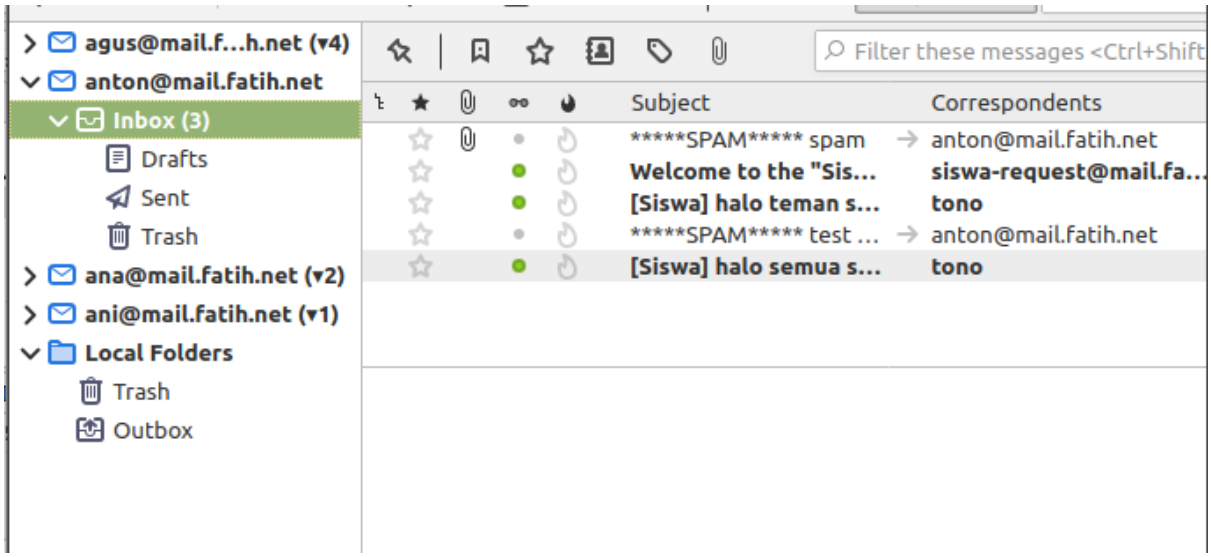
INBOX yang ada pada Toni :



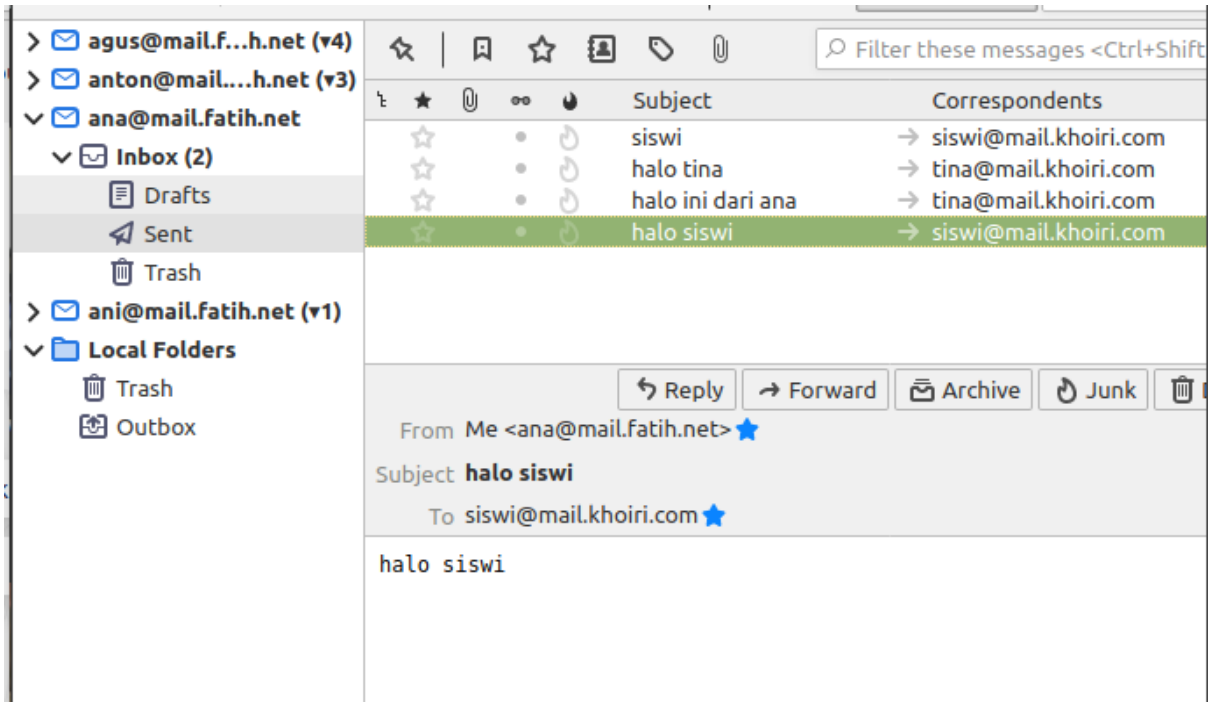
INBOX yang ada pada Agus :



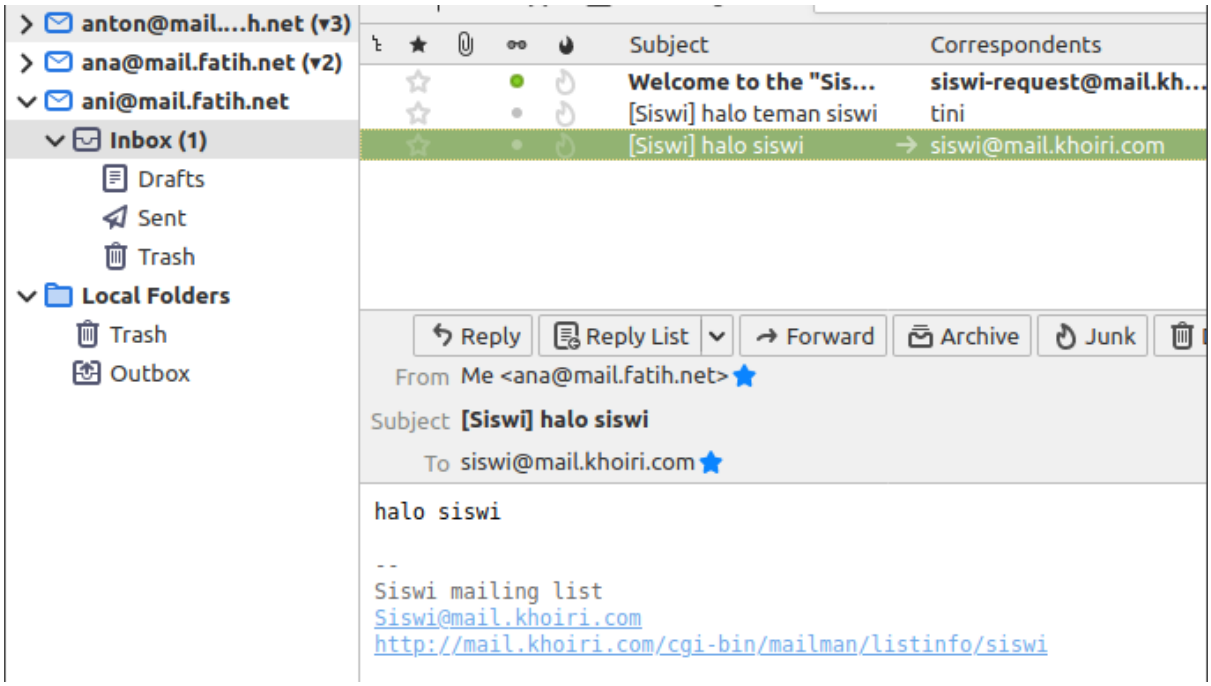
INBOX yang ada pada Anton :



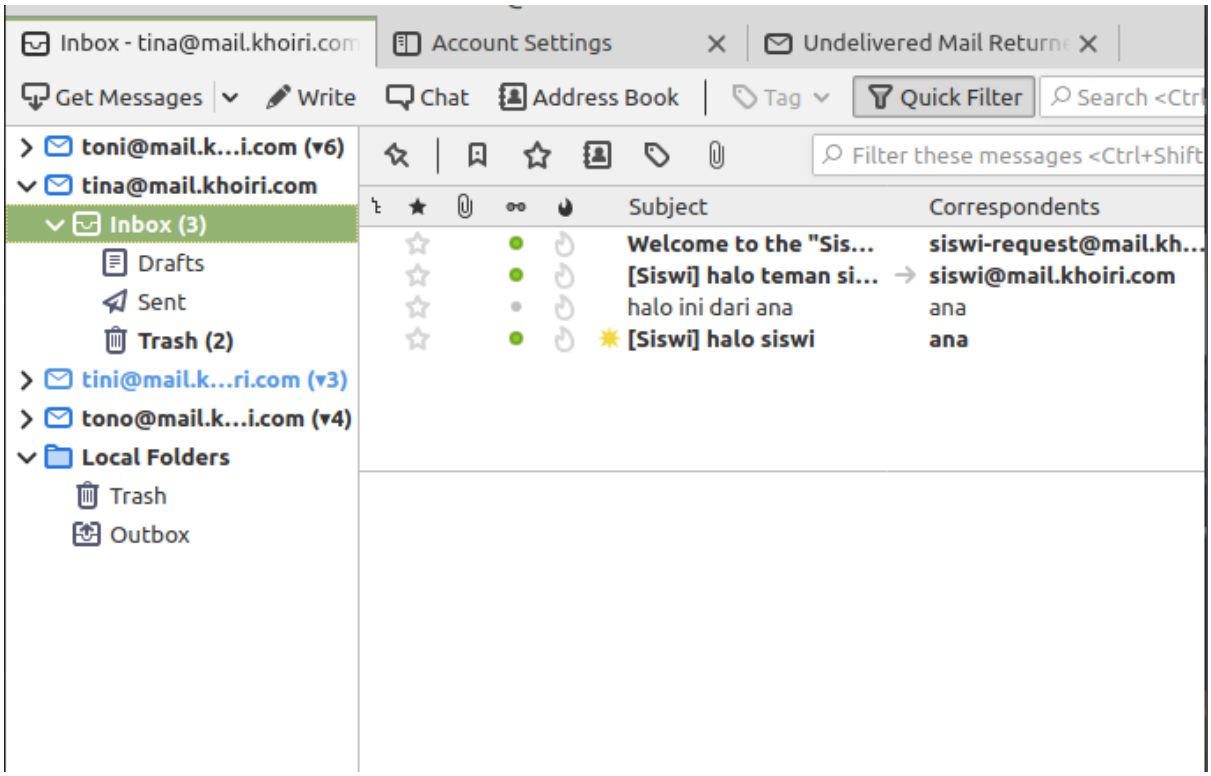
Dirimkan oleh Ana kepada mailing list ***siswi@mail.khoiri.com*** :



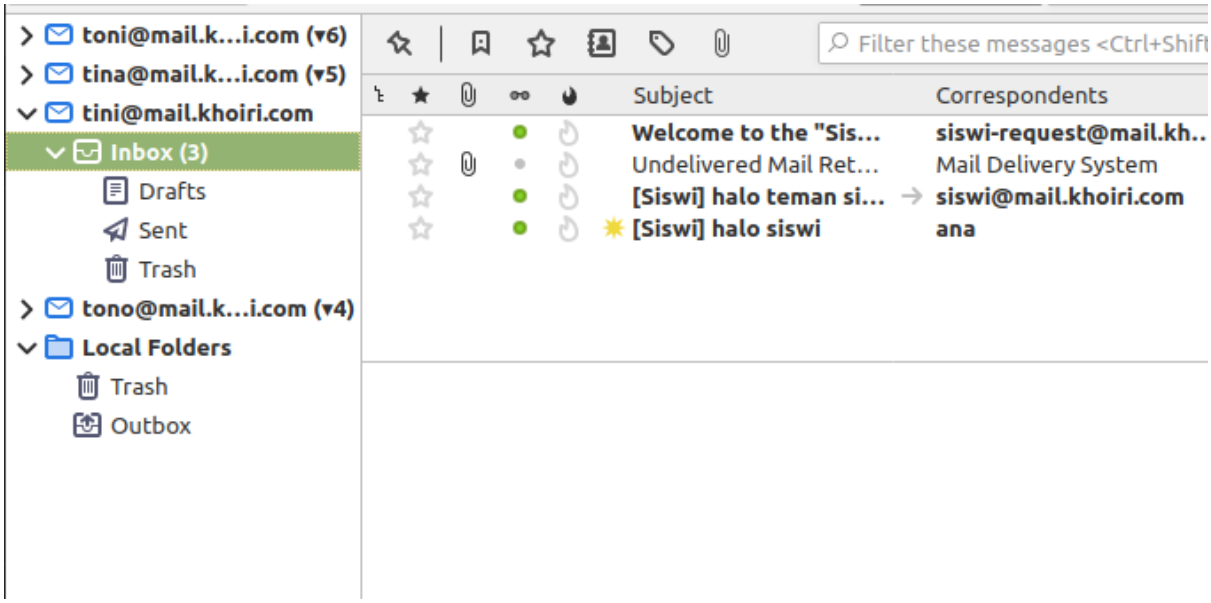
INBOX yang ada pada Ani :



INBOX yang ada pada Tina :

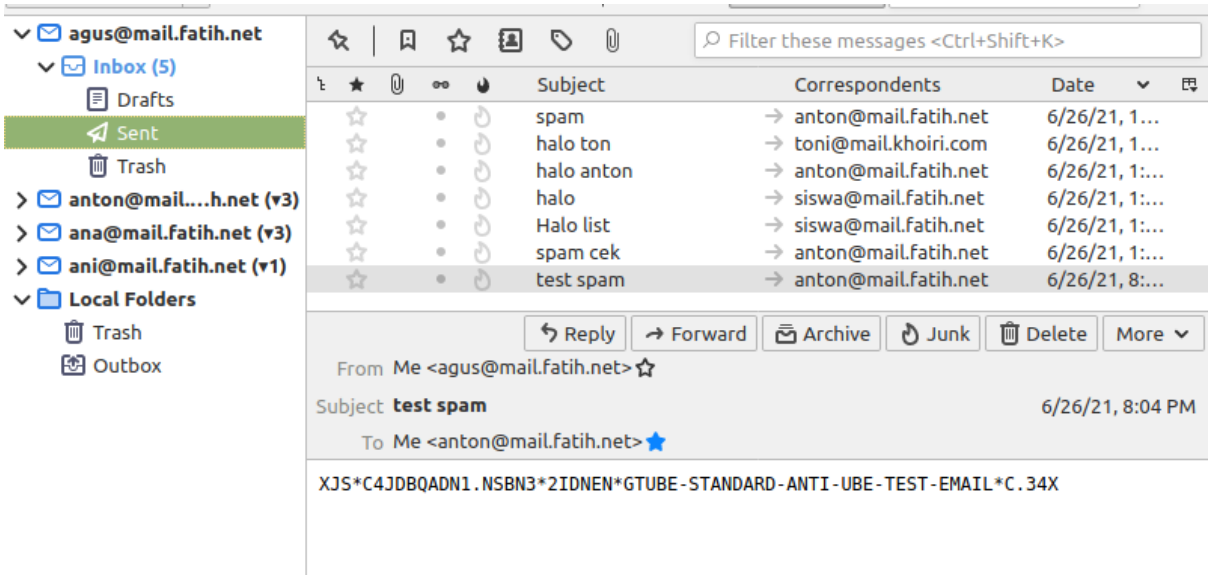
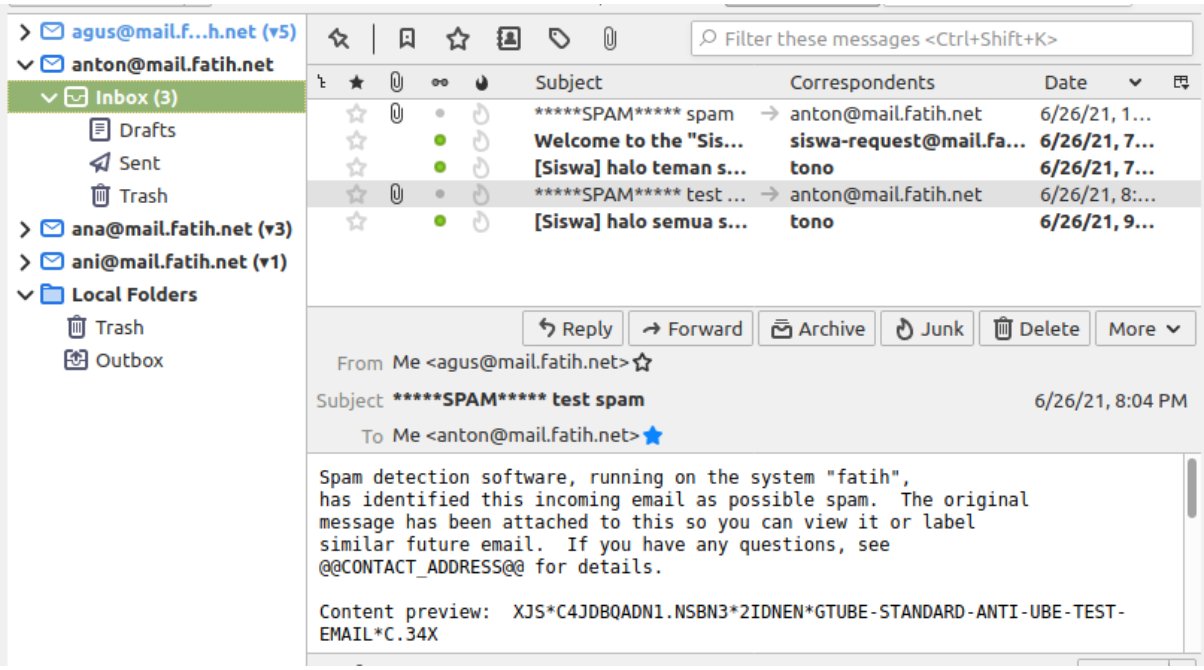


INBOX yang ada pada Tini :



Percobaan Spam Assassin :

Pengiriman oleh Agus kepada Anton :



INBOX pada Anton :