

**DOKUMENTASI PROJEK AKHIR
KELOMPOK 3
ADMINISTRASI SISTEM SERVER - C**



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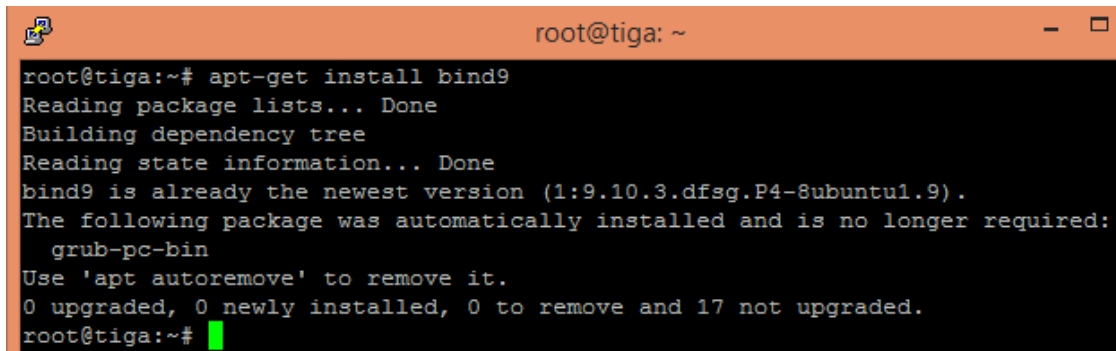
**TEKNIK INFORMATIKA
FAKULTAS ILMU KOMPUTER
UNIVERSITAS BRAWIJAYA
MALANG
2017**

Instalasi dan Konfigurasi BIND9

A. Instalasi

BIND9 atau Berkeley Internet Name Domain Versi 9 adalah salah satu software yang biasa digunakan untuk membuat, membangun dan mengatur sebuah DNS (Domain Name Server) pada sistem operasi Linux.

```
apt-get install bind9
```

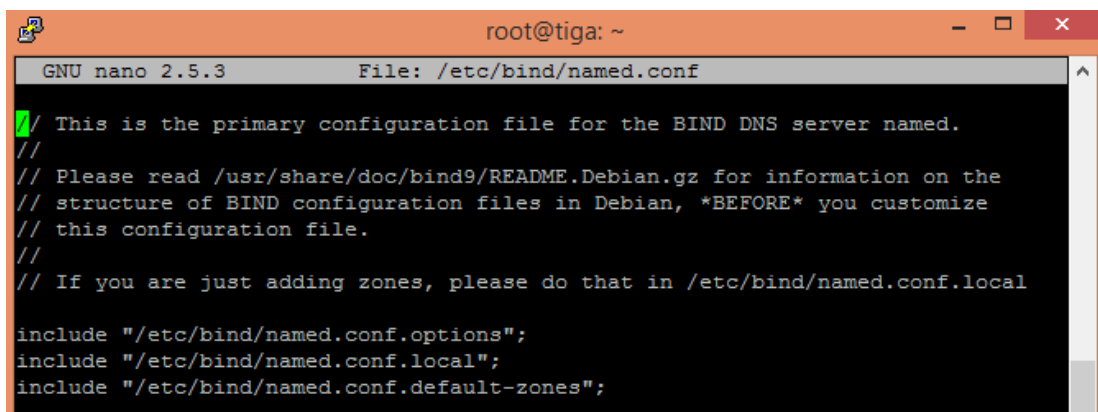


```
root@tiga: ~
root@tiga:~# apt-get install bind9
Reading package lists... Done
Building dependency tree
Reading state information... Done
bind9 is already the newest version (1:9.10.3.dfsg.P4-8ubuntu1.9).
The following package was automatically installed and is no longer required:
  grub-pc-bin
Use 'apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 17 not upgraded.
root@tiga:~#
```

B. Edit file pada named.conf

Lihat isi file tersebut. File tersebut berisi informasi file yang di include didalam konfigurasi

```
nano /etc/bind/named.conf
```

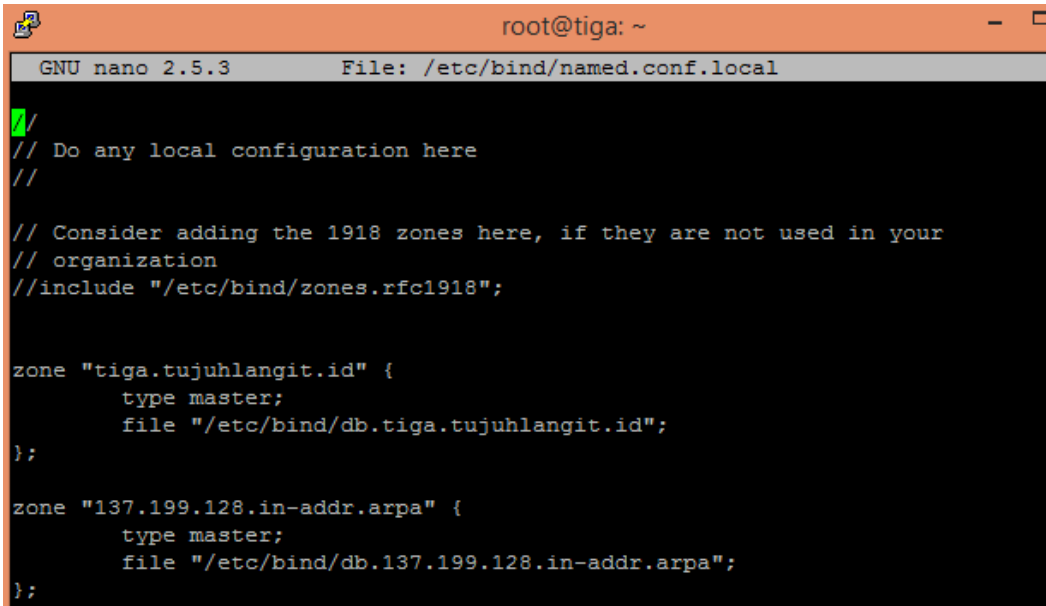


```
GNU nano 2.5.3      File: /etc/bind/named.conf
// This is the primary configuration file for the BIND DNS server named.
//
// Please read /usr/share/doc/bind9/README.Debian.gz for information on the
// structure of BIND configuration files in Debian, *BEFORE* you customize
// this configuration file.
//
// If you are just adding zones, please do that in /etc/bind/named.conf.local

include "/etc/bind/named.conf.options";
include "/etc/bind/named.conf.local";
include "/etc/bind/named.conf.default-zones";
```

C. Konfigurasi pada file named.conf.local

```
nano /etc/bind/named.conf.local
```



```
root@tiga: ~
GNU nano 2.5.3 File: /etc/bind/named.conf.local

//
// Do any local configuration here
//

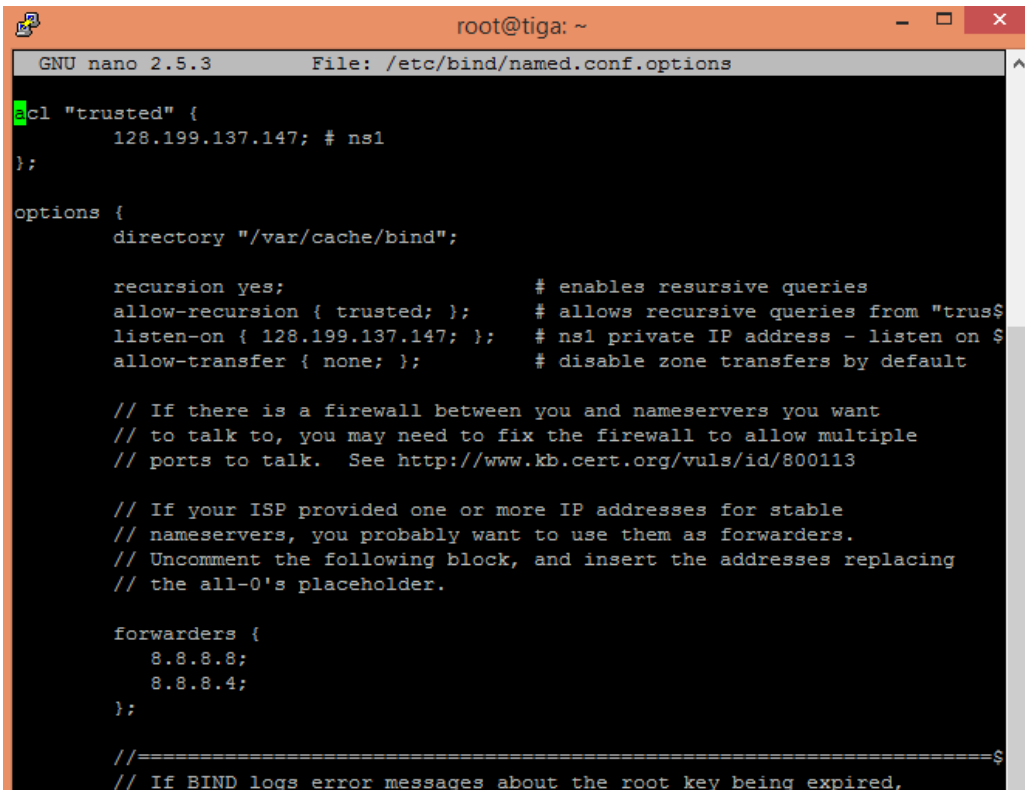
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "tiga.tujuhlangit.id" {
    type master;
    file "/etc/bind/db.tiga.tujuhlangit.id";
};

zone "137.199.128.in-addr.arpa" {
    type master;
    file "/etc/bind/db.137.199.128.in-addr.arpa";
};
```

D. Konfigurasi pada file named.conf.options

```
nano /etc/bind/named.conf.options
```



```
root@tiga: ~
GNU nano 2.5.3 File: /etc/bind/named.conf.options

acl "trusted" {
    128.199.137.147; # ns1
};

options {
    directory "/var/cache/bind";

    recursion yes;                # enables recursive queries
    allow-recursion { trusted; }; # allows recursive queries from "trus$
    listen-on { 128.199.137.147; }; # ns1 private IP address - listen on $
    allow-transfer { none; };     # disable zone transfers by default

    // 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.

    forwarders {
        8.8.8.8;
        8.8.8.4;
    };

    //=====
    // If BIND logs error messages about the root key being expired,
```

```
acl "trusted" {
    128.199.137.147; # ns1
```

```

};

options {
    directory "/var/cache/bind";

    recursion yes;                # enables recursive
queries
    allow-recursion { trusted; }; # allows recursive
queries from "trusted"
    listen-on { 128.199.137.147; }; # ns1 private IP
address - listen on $
    allow-transfer { none; };     # disable zone
transfers by default

    // 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.

    forwarders {
        8.8.8.8;
        8.8.8.4;
    };

    //=====
    =====$
    // If BIND logs error messages about the root key being
expired,

```

E. Konfigurasi db. Copy dan edit file db.local

Forward Zone :

```
cp /etc/bind/db.local /etc/bind/db.tiga.tujuhlangit.id
```

Kemudian edit isinya , ketikkan perintah :

```
nano /etc/bind/db.tiga.tujuhlangit.id
```

Edit seperti ini :

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/bind/db.tiga.tujuhlangit.id

; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      tiga.tujuhlangit.id. root.tiga.tujuhlangit.id. (
                                2          ; Serial
                                604800     ; Refresh
                                86400      ; Retry
                                2419200    ; Expire
                                604800 )   ; Negative Cache TTL
;
;name servers - NS records
                IN      NS      ns1.tiga.tujuhlangit.id.

;name servers - A record
tiga.tujuhlangit.id.  IN      A      128.199.137.147

;other
tiga.tujuhlangit.id.  IN      A      128.199.137.147
ns1                   IN      A      128.199.137.147
webmail               IN      A      128.199.137.147
@                     IN      MX 10  tiga.tujuhlangit.id.

```

```

;
; BIND data file for local loopback interface
;
$TTL      604800
@         IN      SOA      tiga.tujuhlangit.id.
root.tiga.tujuhlangit.id. (
                                2          ; Serial
                                604800     ; Refresh
                                86400      ; Retry
                                2419200    ; Expire
                                604800 )   ; Negative Cache
TTL
;
;name servers - NS records
                IN      NS      ns1.tiga.tujuhlangit.id.

;name servers - A record
tiga.tujuhlangit.id.  IN      A      128.199.137.147

;other
tiga.tujuhlangit.id.  IN      A
128.199.137.147
ns1                   IN      A      128.199.137.147
webmail               IN      A      128.199.137.147
@                     IN      MX 10  tiga.tujuhlangit.id.

```

Reserve Zone

```
cp /etc/bind/db.127 /etc/bind/db.137.199.in-addr.arpa
```

Kemudian edit isinya , ketikkan perintah :

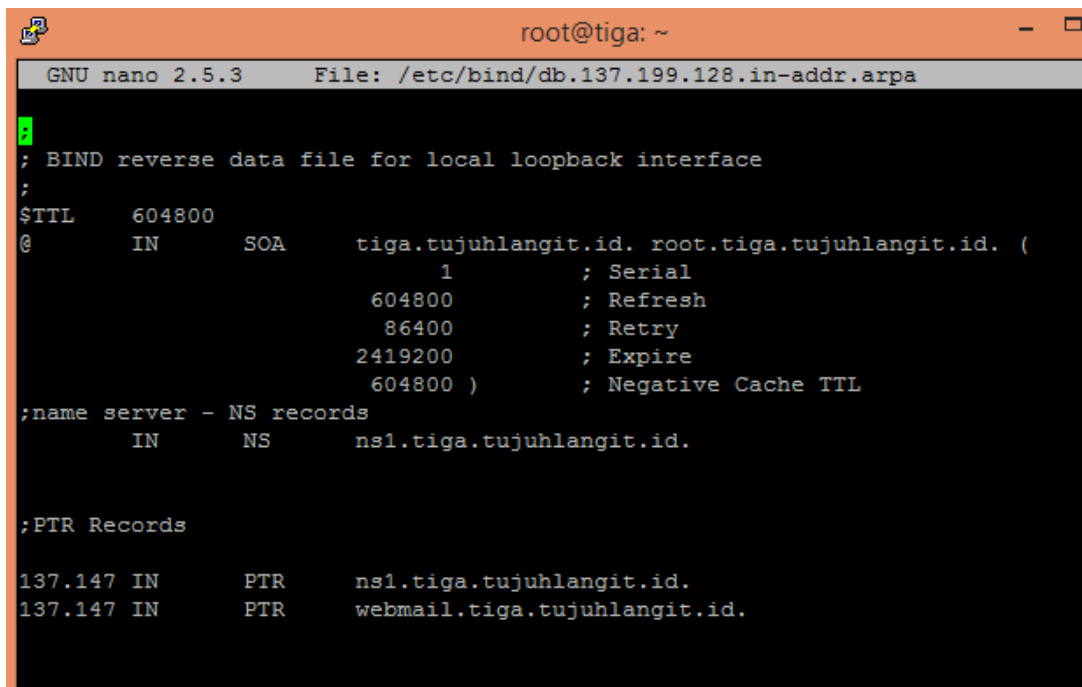
```
nano /etc/bind/db.137.199.128.in-addr.arpa
```

Edit seperti ini :

```
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      tiga.tujuhlangit.id.
root.tiga.tujuhlangit.id. (
                        1          ; Serial
                        604800     ; Refresh
                        86400      ; Retry
                        2419200    ; Expire
                        604800 )   ; Negative Cache
TTL
;name server - NS records
          IN      NS       ns1.tiga.tujuhlangit.id.

;PTR Records

137.147 IN      PTR       ns1.tiga.tujuhlangit.id.
137.147 IN      PTR       webmail.tiga.tujuhlangit.id.
```



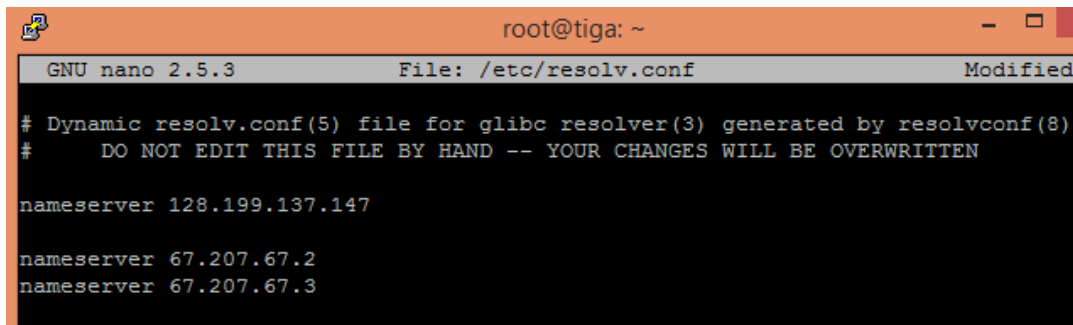
```
root@tiga: ~
GNU nano 2.5.3  File: /etc/bind/db.137.199.128.in-addr.arpa
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      tiga.tujuhlangit.id. root.tiga.tujuhlangit.id. (
                        1          ; Serial
                        604800     ; Refresh
                        86400      ; Retry
                        2419200    ; Expire
                        604800 )   ; Negative Cache TTL
;name server - NS records
          IN      NS       ns1.tiga.tujuhlangit.id.

;PTR Records

137.147 IN      PTR       ns1.tiga.tujuhlangit.id.
137.147 IN      PTR       webmail.tiga.tujuhlangit.id.
```

F. Konfigurasi file resolv.conf

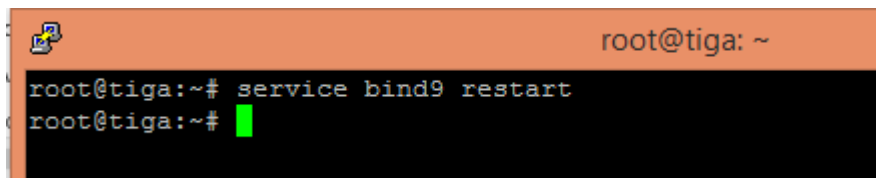
```
nano /etc/resolv.conf
```



```
root@tiga: ~  
GNU nano 2.5.3 File: /etc/resolv.conf Modified  
# 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  
  
nameserver 128.199.137.147  
  
nameserver 67.207.67.2  
nameserver 67.207.67.3
```

G. Restart BIND9

```
service bind9 restart
```



```
root@tiga: ~  
root@tiga:~# service bind9 restart  
root@tiga:~#
```

H. Cek dengan nslookup dan ping ke domain

```
nslookup tiga.tujuhlangit.id
```

```
C:\Users\bhaktiarc>nslookup tiga.tujuhlangit.id  
Server: 192.168.1.1  
Address: 192.168.1.1  
  
Non-authoritative answer:  
Name: tiga.tujuhlangit.id  
Address: 128.199.137.147
```

```
nslookup 128.199.137.147
```

```
C:\Users\bhaktiarc>nslookup 128.199.137.147  
Server: 192.168.1.1  
Address: 192.168.1.1  
  
Name: 147.137.199.128.in-addr.arpa  
Address: 128.199.137.147  
  
C:\Users\bhaktiarc>
```

```
Ping tiga.tujuhlangit.id
```

```
C:\Users\bhaktiarc>ping tiga.tujuhlangit.id

Pinging tiga.tujuhlangit.id [128.199.137.147] with 32 bytes of data:
Reply from 128.199.137.147: bytes=32 time=32ms TTL=53
Reply from 128.199.137.147: bytes=32 time=30ms TTL=53
Reply from 128.199.137.147: bytes=32 time=30ms TTL=53
Reply from 128.199.137.147: bytes=32 time=32ms TTL=53

Ping statistics for 128.199.137.147:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 32ms, Average = 31ms

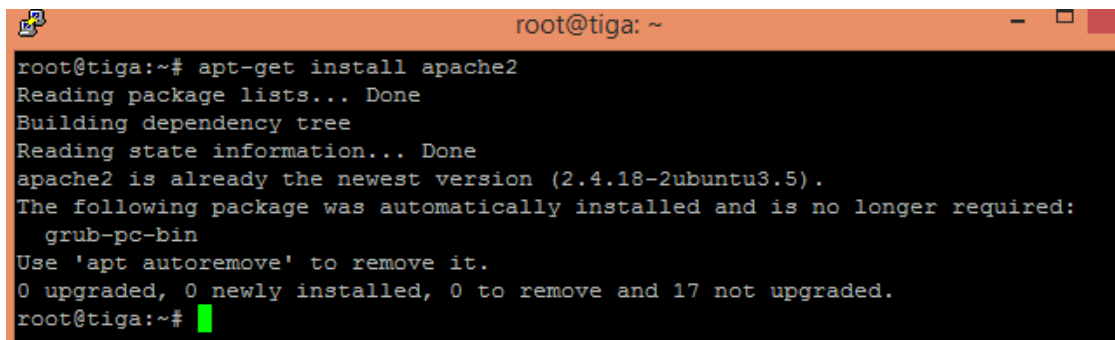
C:\Users\bhaktiarc>
```


Instalasi dan Konfigurasi Apache2

A. Apache2

Apache adalah server web yang dapat dijalankan di banyak sistem operasi (Unix, BSD, Linux, Microsoft Windows dan Novell Netware serta platform lainnya) yang berguna untuk melayani dan memfungsikan situs web. Protokol yang digunakan untuk melayani fasilitas web/www ini menggunakan HTTP

```
apt-get install apache2
```



```
root@tiga: ~  
root@tiga:~# apt-get install apache2  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
apache2 is already the newest version (2.4.18-2ubuntu3.5).  
The following package was automatically installed and is no longer required:  
  grub-pc-bin  
Use 'apt autoremove' to remove it.  
0 upgraded, 0 newly installed, 0 to remove and 17 not upgraded.  
root@tiga:~#
```

B. Buat VirtualHost File

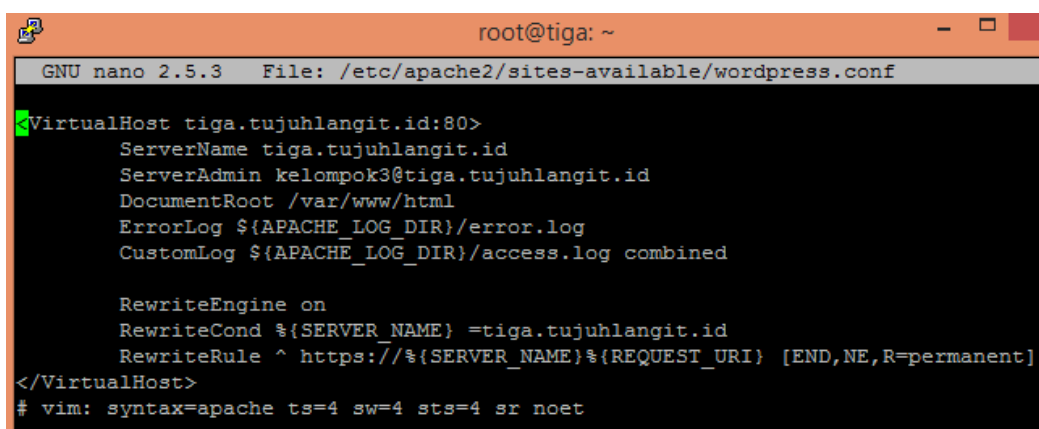
Untuk Webserver

Kita copy konfigurasi default dan kita edit :

```
cp /etc/apache2/sites-available/000-default.conf  
/etc/apache2/sites-available/wordpress.conf
```

Kemudian buka file dan edit seperti dibawah ini :

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



```
GNU nano 2.5.3 File: /etc/apache2/sites-available/wordpress.conf  
VirtualHost tiga.tujuhlangit.id:80>  
    ServerName tiga.tujuhlangit.id  
    ServerAdmin kelompok3@tiga.tujuhlangit.id  
    DocumentRoot /var/www/html  
    ErrorLog ${APACHE_LOG_DIR}/error.log  
    CustomLog ${APACHE_LOG_DIR}/access.log combined  
  
    RewriteEngine on  
    RewriteCond %{SERVER_NAME} =tiga.tujuhlangit.id  
    RewriteRule ^ https://%{SERVER_NAME}%{REQUEST_URI} [END,NE,R=permanent]  
</VirtualHost>  
# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

```
<VirtualHost tiga.tujuhlangit.id:80>  
    ServerName tiga.tujuhlangit.id  
    ServerAdmin kelompok3@tiga.tujuhlangit.id  
    DocumentRoot /var/www/html  
    ErrorLog ${APACHE_LOG_DIR}/error.log
```

```
CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

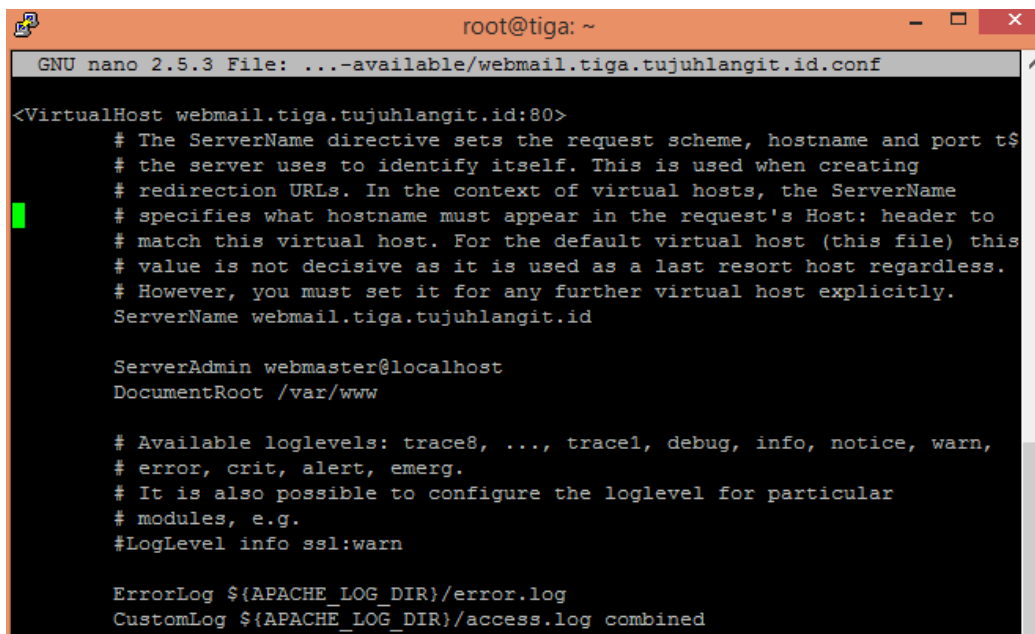
Untuk Webmail

Kita copy konfigurasi default dan kita edit :

```
cp /etc/apache2/sites-available/000-default.conf
/etc/apache2/sites-available/webmail.tiga.tujuhlangit.id.conf
```

Kemudian buka file dan edit seperti dibawah ini :

```
nano /etc/apache2/sites-
available/webmail.tiga.tujuhlangit.id.conf
```



```
root@tiga: ~
GNU nano 2.5.3 File: ...-available/webmail.tiga.tujuhlangit.id.conf
<VirtualHost webmail.tiga.tujuhlangit.id:80>
# The ServerName directive sets the request scheme, hostname and port to
# 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 webmail.tiga.tujuhlangit.id

ServerAdmin webmaster@localhost
DocumentRoot /var/www

# Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
# error, crit, alert, emerg.
# It is also possible to configure the loglevel for particular
# modules, e.g.
#LogLevel info ssl:warn

ErrorLog ${APACHE_LOG_DIR}/error.log
CustomLog ${APACHE_LOG_DIR}/access.log combined

</VirtualHost>
```

```
<VirtualHost webmail.tiga.tujuhlangit.id:80>

    ServerName webmail.tiga.tujuhlangit.id

    ServerAdmin webmaster@localhost
    DocumentRoot /var/www

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined

</VirtualHost>
```

C. Enable Virtual dan restart apache2

```
a2ensite wordpress.conf
a2ensite webmail.tiga.tujuhlangit.id
```

```

root@tiga: ~
root@tiga:~# a2ensite wordpress.conf
Site wordpress already enabled
root@tiga:~# a2ensite webmail.tiga.tujuhlangit.id
Site webmail.tiga.tujuhlangit.id already enabled
root@tiga:~#

```

Restart apache2

```
service apache2 restart
```

```

root@tiga:~# service apache2 restart
root@tiga:~#

```

D. Konfigurasi Local Host File

```

128.199.137.147 tiga.tujuhlangit.id
128.199.137.147 webmail.tiga.tujuhlangit.id
127.0.1.1 tiga.tujuhlangit.id

# 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
ff02::3 ip6-allhosts

```

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/hosts

# Your system has configured 'manage_etc_hosts' as True.
# As a result, if you wish for changes to this file to persist
# then you will need to either
# a.) make changes to the master file in /etc/cloud/templates/hosts.debian.tmpl
# b.) change or remove the value of 'manage_etc_hosts' in
#    /etc/cloud/cloud.cfg or cloud-config from user-data
#

#127.0.1.1 ubuntu-512mb-sgpl-01-adser-03 ubuntu-512mb-sgpl-01-adser-03
#127.0.0.1 localhost
128.199.137.147 tiga.tujuhlangit.id
128.199.137.147 webmail.tiga.tujuhlangit.id
127.0.1.1 tiga.tujuhlangit.id

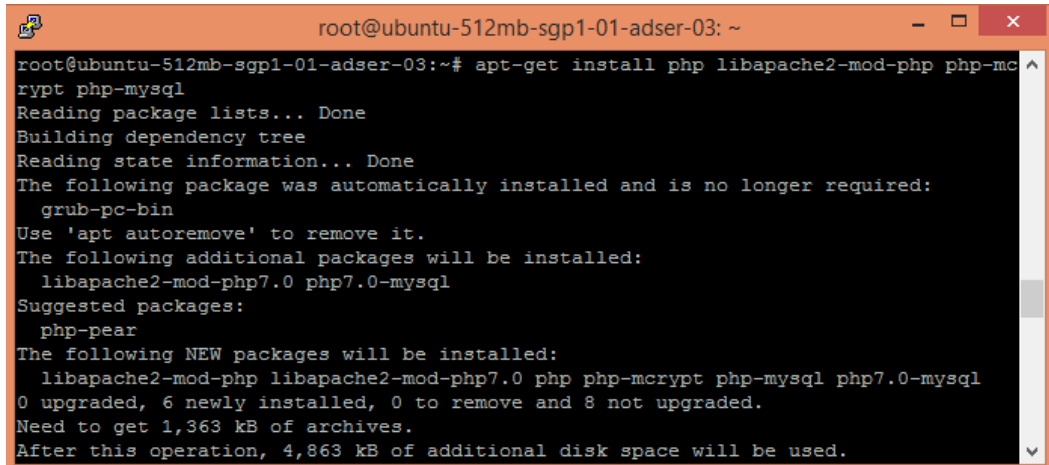
# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts

```

Instalasi dan Konfigurasi PHP

A. Instalasi

```
apt-get install php libapache2-mod-php php-mcrypt php-mysql
```



```
root@ubuntu-512mb-sgp1-01-adser-03: ~  
root@ubuntu-512mb-sgp1-01-adser-03:~# apt-get install php libapache2-mod-php php-mcrypt php-mysql  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  grub-pc-bin  
Use 'apt autoremove' to remove it.  
The following additional packages will be installed:  
  libapache2-mod-php7.0 php7.0-mysql  
Suggested packages:  
  php-pear  
The following NEW packages will be installed:  
  libapache2-mod-php libapache2-mod-php7.0 php php-mcrypt php-mysql php7.0-mysql  
0 upgraded, 6 newly installed, 0 to remove and 8 not upgraded.  
Need to get 1,363 kB of archives.  
After this operation, 4,863 kB of additional disk space will be used.
```

B. Edit file dir.conf

```
nano /etc/apache2/mods-enabled/dir.conf
```

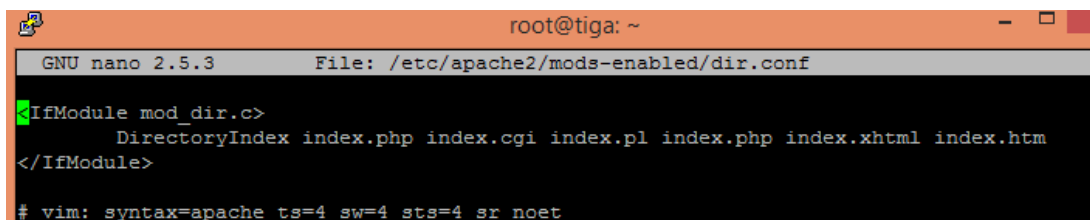
Rubah text berwarna merah :

```
/etc/apache2/mods-enabled/dir.conf  
  
<IfModule mod_dir.c>  
  DirectoryIndex index.html index.cgi index.pl index.php index.xhtml index.htm  
</IfModule>
```

Menjadi seperti ini :

```
/etc/apache2/mods-enabled/dir.conf  
  
<IfModule mod_dir.c>  
  DirectoryIndex index.php index.html index.cgi index.pl index.xhtml index.htm  
</IfModule>
```

Hasil

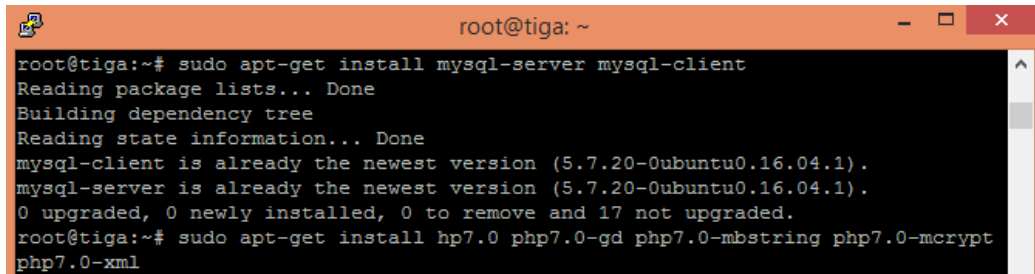


```
root@tiga: ~  
GNU nano 2.5.3      File: /etc/apache2/mods-enabled/dir.conf  
  
<IfModule mod_dir.c>  
  DirectoryIndex index.php index.cgi index.pl index.php index.xhtml index.htm  
</IfModule>  
  
# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

Instalasi Database MYSQL

A. Instalasi

```
apt-get install mysql-server mysql-client
```

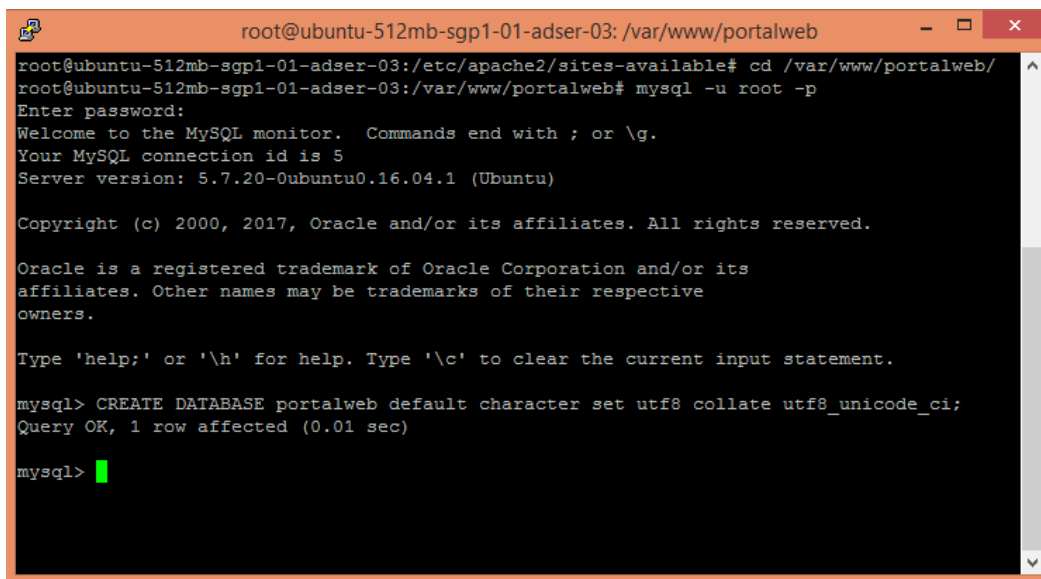


```
root@tiga: ~  
root@tiga:~# sudo apt-get install mysql-server mysql-client  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
mysql-client is already the newest version (5.7.20-0ubuntu0.16.04.1).  
mysql-server is already the newest version (5.7.20-0ubuntu0.16.04.1).  
0 upgraded, 0 newly installed, 0 to remove and 17 not upgraded.  
root@tiga:~# sudo apt-get install hp7.0 php7.0-gd php7.0-mbstring php7.0-mcrypt  
php7.0-xml
```

B. Membuat database

```
mysql -u root -p
```

Password yang digunakan adalah : Kelompok3



```
root@ubuntu-512mb-sgpl-01-adser-03: /var/www/portalweb  
root@ubuntu-512mb-sgpl-01-adser-03:/etc/apache2/sites-available# cd /var/www/portalweb/  
root@ubuntu-512mb-sgpl-01-adser-03:/var/www/portalweb# mysql -u root -p  
Enter password:  
Welcome to the MySQL monitor.  Commands end with ; or \g.  
Your MySQL connection id is 5  
Server version: 5.7.20-0ubuntu0.16.04.1 (Ubuntu)  
  
Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.  
  
Oracle is a registered trademark of Oracle Corporation and/or its  
affiliates. Other names may be trademarks of their respective  
owners.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
mysql> CREATE DATABASE portalweb default character set utf8 collate utf8_unicode_ci;  
Query OK, 1 row affected (0.01 sec)  
  
mysql>
```

Instalasi dan Konfigurasi Wordpress

A. Konfigurasi VirtualHost

Virtualhost untuk wordpress pada alamat tiga.tujuhlangit.id

```

root@tiga: /var/www/html
GNU nano 2.5.3 File: /etc/apache2/sites-available/wordpress.conf
VirtualHost tiga.tujuhlangit.id:80>
    ServerName tiga.tujuhlangit.id
    ServerAdmin kelompok3@tiga.tujuhlangit.id
    DocumentRoot /var/www/html
    ErrorLog $(APACHE_LOG_DIR)/error.log
    CustomLog $(APACHE_LOG_DIR)/access.log combined
</VirtualHost>
# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
Get Help Write Out Where Is Cut Text Justify Cur Pos Prev Page First Line M-W
Exit Read File Replace Uncut Text To Spell Go To Line Next Page Last Line M-]

```

Ket :

- Menggunakan named-header dengan alamat tiga.tujuhlangit.id
- Direktori server menggunakan direktori /var/www/html/

1. A2ensite wordpress.conf
2. Service apache2 reload

B. Konfigurasi Database

```

root@tiga: /var/www/html
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| phpmyadmin |
| postfix |
| roundcube |
| sys |
| wordpress |
+-----+
8 rows in set (0.01 sec)

mysql>

```

```

root@tiga: /var/www/html
8 rows in set (0.01 sec)

mysql> use wordpress
Database changed
mysql> SHOW GRANTS FOR 'kelompok3'@'localhost';
+-----+
| Grants for kelompok3@localhost |
+-----+
| GRANT USAGE ON *.* TO 'kelompok3'@'localhost' |
| GRANT SELECT ON 'postfix'.* TO 'kelompok3'@'localhost' |
| GRANT ALL PRIVILEGES ON 'wordpress'.* TO 'kelompok3'@'localhost' |
+-----+
3 rows in set (0.01 sec)

mysql>

```

Aplikasi web wordpress yang akan di install akan menggunakan databases wordpress yang dimana user 'kelompok3' mendapatkan akses penuh terhadap database wordpress

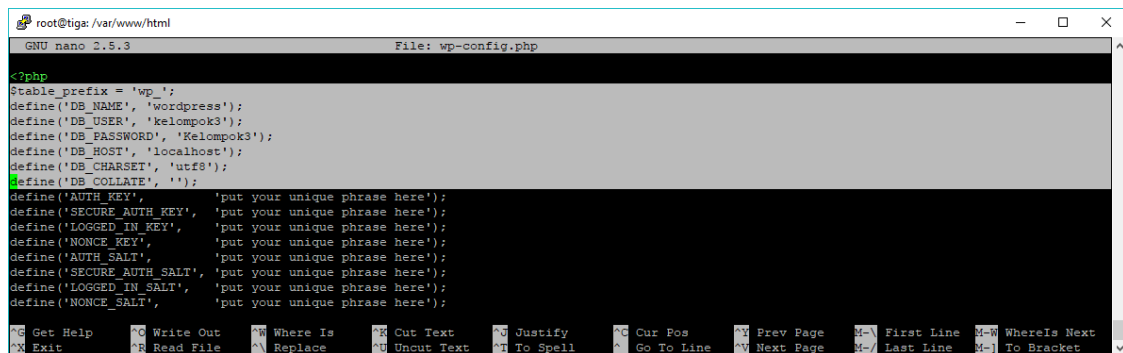
C. Pengunduhan Wordpress dan konfigurasi wp-config.php

1. `wget -c http://wordpress.org/latest.tar.gz`

- gunakan perintah wget untuk mengunduh file-file yang dibutuhkan oleh wordpress
2. `tar -xzf latest.tar.gz`
perintah diatas untuk melakukan proses ekstrasi file wordpress
 3. `rsync -av wordpress/* /var/www/html/`
printah diatas untuk menyalin seluruh file yang ada di direktori wordpress ke direktori document root virtualhost wordpress.conf
 4. `chown -R www-data:www-data /var/www/html/`
 5. `chmod -R 755 /var/www/html/`
perintah diatas untuk melakukan permission pada direktori /var/www/html/
 6. `mv wp-config-sample.php wp-config.php`

D. KONFIGURASI WP-CONFIG.PHP

Konfigurasi pada file wp-config.php adalah mengisi informasi – informasi database agar aplikasi wordpress dapat terhubung ke dalam database , berikut ini adalah isi file wp-config.php



```

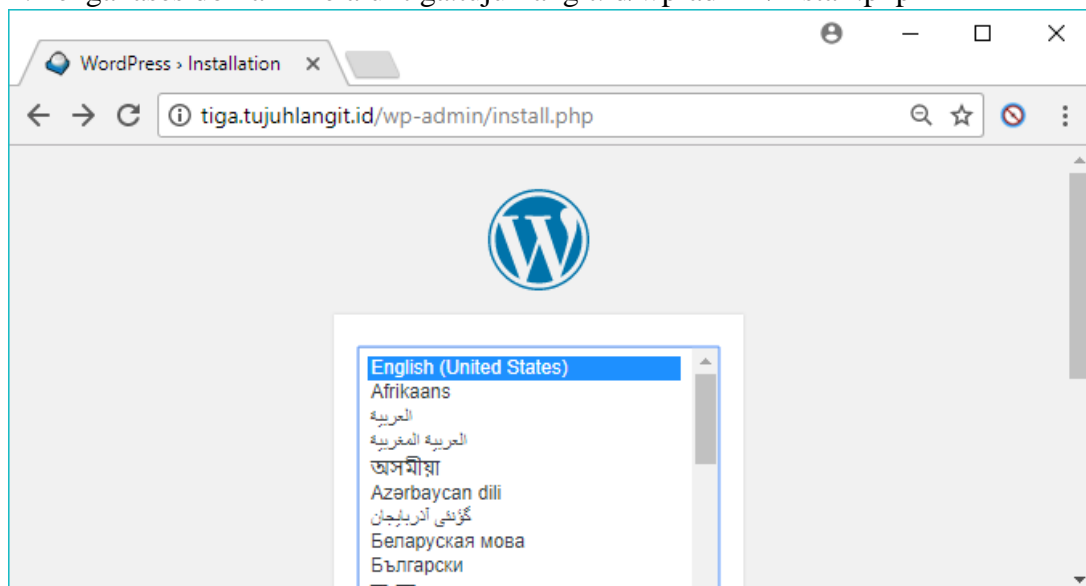
root@tiga: /var/www/html
GNU nano 2.5.3      File: wp-config.php

<?php
$table_prefix = 'wp_';
define('DB_NAME', 'wordpress');
define('DB_USER', 'kelompok3');
define('DB_PASSWORD', 'Kelompok3');
define('DB_HOST', 'localhost');
define('DB_CHARSET', 'utf8');
define('DB_COLLATE', '');

define('AUTH_KEY',         'put your unique phrase here');
define('SECURE_AUTH_KEY',  'put your unique phrase here');
define('LOGGED_IN_KEY',    'put your unique phrase here');
define('NONCE_KEY',        'put your unique phrase here');
define('AUTH_SALT',        'put your unique phrase here');
define('SECURE_AUTH_SALT', 'put your unique phrase here');
define('LOGGED_IN_SALT',   'put your unique phrase here');
define('NONCE_SALT',       'put your unique phrase here');
  
```

E. INSTALASI WORDPRESS

1. mengakses domain melalui tiga.tujuhlangit.id/wp-admin/install.php



2. Masukkan informasi login sebagai admin wordpress

Welcome

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

Information needed

Please provide the following information. Don't worry, you can always change these settings later.

Site Title: ADMINISTRASI SISTEM SERVER

Username: kelompok3
Username can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

Password: Kelompok3
Very weak Hide

Important: You will need this password to log in. Please store it in a secure location.

Confirm Password: ☒ Confirm use of weak password

Your Email: kelompok3@tiga.tujuhlangit.id
Double-check your email address before continuing.

Search Engine Visibility: ☐ Discourage search engines from indexing this site
It is up to search engines to honor this request.

Install WordPress

3. Login sebagai admin wordpress

Log In < ADMINISTRASI S

Not secure | tiga.tujuhlangit.id/wp-login.php

Username or Email Address: kelompok3@tiga.tujuhlar

Password:

☒ Remember Me Log In

Lost your password?

Back to ADMINISTRASI SISTEM SERVER

Apabila berhasil masuk maka proses instalasi wordpress telah berhasil

F. INSTALASI SSL PADA WEBSERVER

SSL yang digunakan adalah letsencrypt sesuai dengan ketentuan pada soal

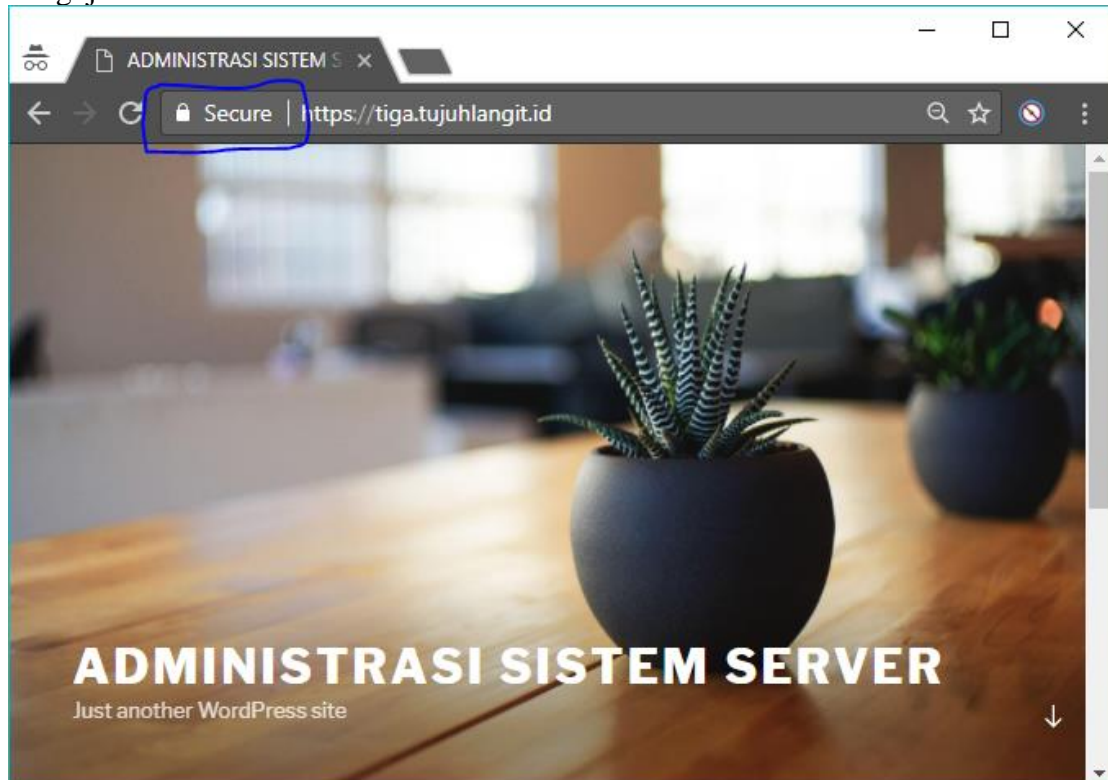
1. Instalasi paket
 - Certbort
2. Instalasi SSL

```
certbot --apache -d tiga.tujuhlangit.id
```



```
root@tiga: /var/www/html
What would you like to do?
-----
1: Attempt to reinstall this existing certificate
2: Renew & replace the cert (limit ~5 per 7 days)
-----
Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 1
Keeping the existing certificate
Deploying Certificate for tiga.tujuhlangit.id to VirtualHost /etc/apache2/sites-enabled/wordpress-le-ssl.conf
Please choose whether or not to redirect HTTP traffic to HTTPS, removing HTTP access.
-----
1: No redirect - Make no further changes to the webserver configuration.
2: Redirect - Make all requests redirect to secure HTTPS access. Choose this for
new sites, or if you're confident your site works on HTTPS. You can undo this
change by editing your web server's configuration.
-----
Select the appropriate number [1-2] then [enter] (press 'c' to cancel):
```

Pengujian



Security overview

This page is secure (valid HTTPS).

- Valid certificate**
The connection to this site is using a valid, trusted server certificate issued by Let's Encrypt Authority X3.
[View certificate](#)
- Secure connection**
The connection to this site is encrypted and authenticated using TLS 1.2 (a strong protocol), ECDHE_RSA with P-256 (a strong key exchange), and AES_128_GCM (a strong cipher).
- Secure resources**
All resources on this page are served securely.

**Certificate Information****This certificate is intended for the following purpose(s):**

- Ensures the identity of a remote computer
- Proves your identity to a remote computer
- 2.23.140.1.2.1
- 1.3.6.1.4.1.44947.1.1.1

* Refer to the certification authority's statement for details.

Issued to: tiga.tujuhlangit.id

Issued by: Let's Encrypt Authority X3

Valid from 28-Dec-17 **to** 28-Mar-18



DST Root CA X3



Let's Encrypt Authority X3



tiga.tujuhlangit.id

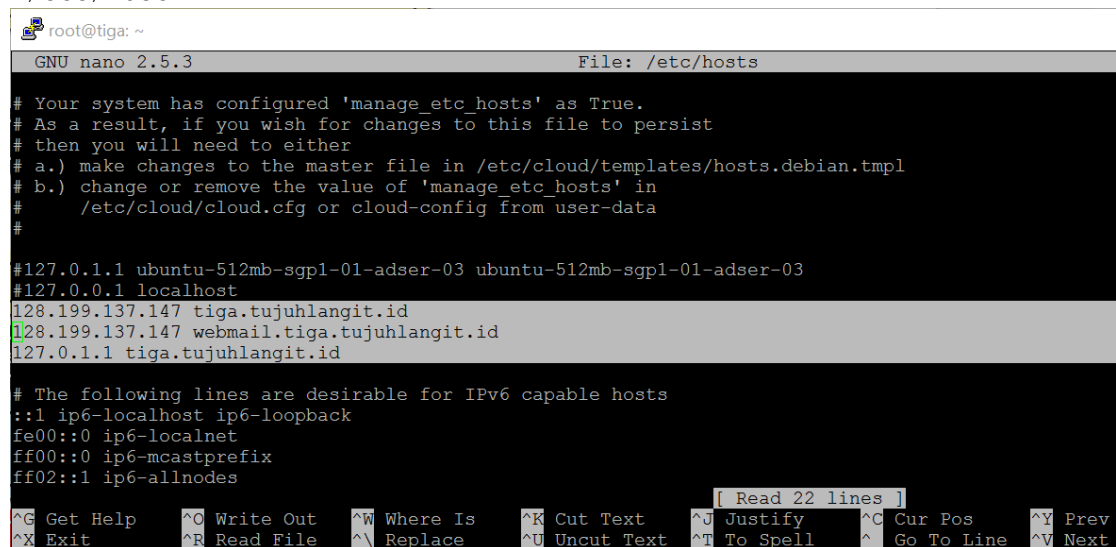
Instalasi dan Konfigurasi Mailserver dan Webmail

A. Instalasi Paket

- mail-stack-delivery
- mailutils
- postfix-mysql
- dovecot-mysql
- dovecot-lmtpd
- mysql-server
- roundcube
- roundcube-mysql
- roundcube-plugins
- roundcube-plugins-extra
- roundcube
- roundcube-mysql
- roundcube-plugins
- roundcube-plugins-extra

B. Konfigurasi Hostname

Konfigurasi hostname adalah menambahkan fully qualified domain name (FQDN) agar dapat diakses, untuk melakukan konfigurasi dapat dilakukan pada file `"/etc/host"`



```

root@tiga: ~
GNU nano 2.5.3 File: /etc/hosts


# Your system has configured 'manage_etc_hosts' as True.
# As a result, if you wish for changes to this file to persist
# then you will need to either
# a.) make changes to the master file in /etc/cloud/templates/hosts.debian.tpl
# b.) change or remove the value of 'manage_etc_hosts' in
#    /etc/cloud/cloud.cfg or cloud-config from user-data
#

#127.0.1.1 ubuntu-512mb-sgpl-01-adser-03 ubuntu-512mb-sgpl-01-adser-03
#127.0.0.1 localhost
128.199.137.147 tiga.tujuhlangit.id
128.199.137.147 webmail.tiga.tujuhlangit.id
127.0.1.1 tiga.tujuhlangit.id

# 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

[ Read 22 lines ]
^G Get Help      ^O Write Out    ^W Where Is     ^K Cut Text     ^J Justify      ^C Cur Pos      ^Y Prev
^X Exit          ^R Read File    ^\ Replace      ^U Uncut Text   ^T To Spell     ^_ Go To Line    ^V Next
  
```

Kemudian lakukan reboot pada system dengan syntax `"systemctl reboot"` dan lakukan pengecekan terhadap hostname dengan syntax: `"hostname --fqdn"`



```

root@tiga: ~
root@tiga:~# hostname --fqdn
tiga.tujuhlangit.id
root@tiga:~#
  
```

C. Konfigurasi POSTFIX

Postfix adalah software Ubuntu yang bertugas sebagai pengirim email di mail server, dengan hanya melakukan instalasi kita sudah dapat melakukan pengiriman email tetapi hanya secara local dan sesama pengguna yang terdaftar di dalam os linux Dalam proses instalasi kami memilih opsi sebagai berikut :

- General type of mail configuration: Internet Site
- System mail name: tiga.tujuhlangit.id

Langkah selanjutnya kami melakukan konfigurasi lokasi email yang dimana yang akan menentukan lokasi penyimpanan email masuk dengan syntax :

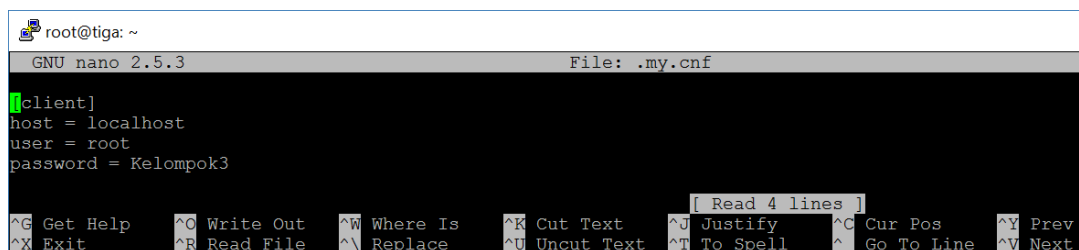
```
"postconf -e 'home_mailbox = Maildir/'&& export MAIL=~ /Maildir "
```

D. Konfigurasi MYSQL-SERVER dan POSTFIX Mapping

Penggunaan MYSQL-SERVER disini adalah menjadi acuan dari mail server untuk melakukan pengiriman dan penerimaan, datauser, dan direktori email melalui database dari pada hanya mengambil sumber dari sistem user linux itu sendiri yang tentu saja kurang efisien

1. Membuat file script login otomatis

File ini dibuat agar dalam melakukan konfigurasi lebih efisien, file tersebut akan berisi informasi-informasi login agar dapat masuk kedalam console mysql, file yang dibuat dengan nama .my.cnf dan isi file tersebut adalah sebagai berikut :



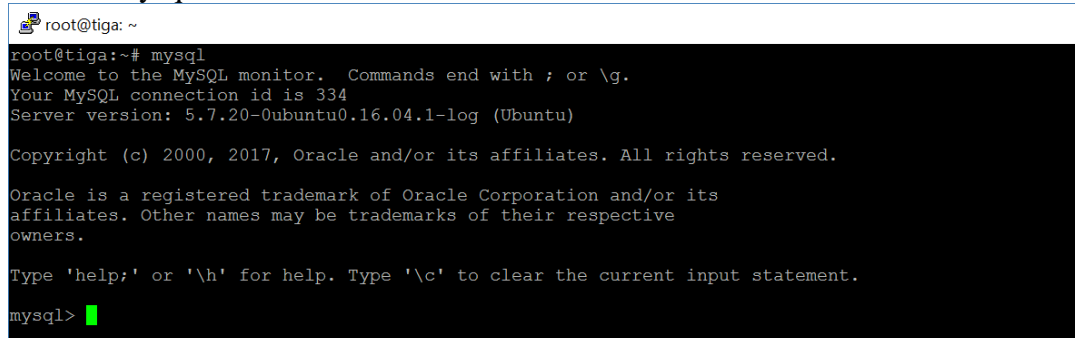
```

root@tiga: ~
GNU nano 2.5.3 File: .my.cnf

[client]
host = localhost
user = root
password = Kelompok3

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify    ^C Cur Pos   ^Y Prev
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line ^V Next
  
```

Sehingga ketika mengetikkan syntax "mysql" akan langsung masuk ke dalam console mysql



```

root@tiga: ~
root@tiga:~# mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 334
Server version: 5.7.20-0ubuntu0.16.04.1-log (Ubuntu)

Copyright (c) 2000, 2017, Oracle and/or its affiliates. All rights reserved.

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
  
```

2. Membuat database

Disini kami membuat 1 database yaitu postfix dan 3 tabel yaitu domain , alias, dan user

```

root@tiga: ~
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables
-> ;
+-----+
| Tables_in_postfix |
+-----+
| alias              |
| domain             |
| user               |
+-----+
3 rows in set (0.01 sec)

mysql>

```

Tahap selanjutnya kami lakukan pembuatan user dengan nama kelompok3 dan membuat user tersebut mendapatkan akses penuh terhadap database postfix, perintah dapat di lakukan dengan syntax :

```

GRANT SELECT ON postfix.* TO kelompok3@localhost IDENTIFIED BY
'Kelompok3';
flush privileges;

```

3. Konfigurasi POSTFIX

Dalam tahap ini terdapat di file yang dikonfigurasi terdapat pada direktori /etc/postfix/ dengan nama file sebagai berikut:

- main.cf
- master.cf.

3.1.main.cf

konfigurasi pada baris 20 – 25

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/main.cf

# TLS parameters
smtpd_tls_cert_file = /etc/dovecot/dovecot.pem
smtpd_tls_key_file = /etc/dovecot/private/dovecot.pem
smtpd_use_tls = yes
smtpd_tls_session_cache_database = btree:${data_directory}/smtpd_scache
smtp_tls_session_cache_database = btree:${data_directory}/smtp_scache

# See /usr/share/doc/postfix/TLS_README.gz in the postfix-doc package for
# information on enabling SSL in the smtp client.

[ line 25/77 (32%), col 1/70 (1%), char 703/2966 (23%) ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M- F
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M- L

```

Konfigurasi diatas adalah membuat postfix menggunakan tls beserta cache dari postfix

Konfigurasi pada baris 25

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/main.cf

myhostname = tiga.tujuhlangit.id
alias_maps = hash:/etc/aliases
alias_database = hash:/etc/aliases
myorigin = /etc/mailname
mydestination = localhost.tujuhlangit.id, localhost
relayhost =
mynetworks = 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128
mailbox_size_limit = 0
recipient_delimiter = +
inet_interfaces = all

[ line 35/77 (45%), col 1/52 (1%), char 1119/2966 (37%) ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M- F
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M- L

```

Variable ini berfungsi untuk menambahkan domain dari tujuan email address
Konfigurasi pada bari 67

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/main.cf

# (=1 hour). RFC 2246 recommends a maximum of 24 hours.
smtpd_tls_session_cache_timeout = 3600s

# We will let the client end use STARTTLS if they want, i.e they _may_ use it.
smtpd_tls_security_level = may
virtual_transport = lmtp:unix:private/dovecot-lmtp

#smtpd_tls_mandatory_protocols = SSLv3, TLSv1
smtpd_tls_mandatory_protocols = !SSLv2, !SSLv3
smtpd_tls_protocols = !SSLv2, !SSLv3

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-
^X Exit ^R Read File ^N Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-

```

Konfigurasi ini adalah agar postfix menggunakan dovecot LMTP
Konfigurasi pada baris 68 – 73

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/main.cf

#smtpd_tls_mandatory_protocols = SSLv3, TLSv1
smtpd_tls_mandatory_protocols = !SSLv2, !SSLv3
smtpd_tls_protocols = !SSLv2, !SSLv3
smtp_tls_mandatory_protocols = !SSLv2, !SSLv3
smtp_tls_protocols = !SSLv2, !SSLv3

virtual_mailbox_domains = mysql:/etc/postfix/mysql-virtual-mailbox-domains.cf
virtual_mailbox_maps = mysql:/etc/postfix/mysql-virtual-mailbox-maps.cf
virtual_alias_maps = mysql:/etc/postfix/mysql-virtual-alias-maps.cf,mysql:/etc/postfix/mysql-virtual-alias-
[ line 73/78 (93%), col 1/36 (2%), char 2660/2967 (89%) ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-
^X Exit ^R Read File ^N Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-

```

Konfigurasi ini adalah konfigurasi protocol keamanan yang digunakan oleh postfix dimana mail server kita hanya akan menggunakan TLS dan tidak menggunakan SSLv2 dan SSLv3 yang keamanannya sangat tidak kuat

3.2.master.cf

pada file master.cf konfigurasi awal adalah menghilangkan tanda “#” pada baris 12, 17 – 21 ,25 – 27

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/master.cf

submission inet n - y - - smtpd
-o syslog_name=postfix/submission
-o smtpd_tls_security_level=encrypt
-o smtpd_sasl_auth_enable=yes
-o smtpd_reject_unlisted_recipient=no
# -o smtpd_client_restrictions=$mua_client_restrictions
-o smtpd_helo_restrictions=$mua_helo_restrictions
# -o smtpd_sender_restrictions=$mua_sender_restrictions
-o smtpd_recipient_restrictions=permit_mynetworks,permit_sasl_authenticated,reject
-o smtpd_relay_restrictions=permit_sasl_authenticated,reject
-o milter_macro_daemon_name=ORIGINATING
#smtps inet n - y - - smtpd
# -o syslog_name=postfix/smtps

```

4. Menghubungkan postfix dan mysql-server dengan file map
Terdapat 4 file yang akan di konfigurasi dan semuanya terdapat pada direktori “/etc/postfix” file-file berisi informasi-informasi alias,domain,dan user dari mail server dan melakukan query terhadap database, baik itu informasi login berupa

username dan password, nama database, dan host database, ketiga file adalah sebagai berikut:

- mysql-virtual-mailbox-domains.cf
- mysql-virtual-mailbox-maps.cf
- mysql-virtual-alias-maps.cf
- mysql-virtual-alias-maps-self.cf

kemudian file berikut di tambahkan ke dalam file konfigurasi postfix dengan syntax :

1. `postconf -e virtual_alias_maps=mysql:/etc/postfix/mysql-virtual-alias-maps.cf`
2. `postconf -e virtual_mailbox_maps=mysql:/etc/postfix/mysql-virtual-mailbox-maps.cf`
3. `postconf -e virtual_mailbox_domains=mysql:/etc/postfix/mysql-virtual-mailbox-domains.cf`
4. `postconf -e virtual_alias_maps=mysql:/etc/postfix/mysql-virtual-alias-maps.cf,mysql:/etc/postfix/mysql-virtual-alias-maps-self.cf`
5. `chgrp postfix /etc/postfix/mysql-*.cf`
6. `chmod 640 /etc/postfix/mysql-*.c`

kami menjalankan syntax tersebut secara satu persatu

4.1.mysql-virtual-mailbox-domains.cf

file ini berfungsi untuk mendapatkan domain email server yang ada di server, misalnya terdapat satu server tetapi akan menjalankan 2 domain email server dapat di lakukan pada table domain dan file ini yang akan menjadi sumber data dari postfix

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/mysql-virtual-mailbox-domains.cf
user = kelompok3
hosts = 127.0.0.1
dbname = postfix
password = Kelompok3
  
```

4.2.mysql-virtual-mailbox-maps.cf

file ini berfungsi untuk sumber data agar postfix dapat membuat direktori penyimpanan email terhadap user beserta domainnya di dalam server, misalnya terdapat user dengan nama email address kelompok3@tiga.tujuhlangit.id maka akan direktori emailnya akan tersimpan pada direktori :
/var/vmail/vhosts/tiga.tujuhlangit.id>/kelompok3

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/mysql-virtual-mailbox-maps.cf
user = kelompok3
hosts = 127.0.0.1
dbname = postfix
password = Kelompok3
query = SELECT email FROM user WHERE email='%s'
  
```

4.3. mysql-virtual-alias-maps.cf

file ini berfungsi sebagai sumber data postfix untuk membuat sebuah postmaster dari mail server misalnya terdapat email info@tiga.tujuhlangit.id yang berfungsi sebagai email perusahaan kemudian email tersebut akan di forward ke email kelompok3@tiga.tujuhlangit.id , file ini juga dapat berfungsi sebagai anti spam yang dapat dilihat secara langsung atau dapat di filter secara manual tanpa menggunakan tambahan software, walaupun kurang efisien terhadap waktu tetapi akurat dalam melakukan filter terhadap email spam

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/mysql-virtual-alias-maps.cf
user = kelompok3
hosts = 127.0.0.1
dbname = postfix
password = Kelompok3
query = SELECT destination FROM alias WHERE source = '%s'

[ Read 5 lines ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-/_ Fi
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-/ La

```

4.4. mysql-virtual-alias-maps-self.cf

File ini menjadi sumber data dari postfix untuk melakukan mapping terhadap email client yang mengirimkan email ke emailnya sendiri, hal ini dilakukan akan client mail server dapat melihat lagi email yang dikirimnya pada folder sentmail atau lainya sebagainya yang berfungsi sebagai laporan email keluar

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/postfix/mysql-virtual-alias-maps-self.cf
user = kelompok3
hosts = 127.0.0.1
dbname = postfix
password = Kelompok3
query = SELECT email FROM user WHERE email = '%s'

[ Read 5 lines ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-/_ Fi
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-/ La

```

5. Konfigurasi Dovecot

Dovecot adalah software yang berfungsi sebagai penyedia layanan imap dan pop3 sehingga email dapat diterima oleh mail server

5.1. Setting permission terhadap direktori Vmail

Syntax :

1. sudo groupadd -g 6004 vmmail
2. sudo useradd -g vmmail -u 6004 vmmail -d /var/vmail -m -s /sbin/nologin
3. sudo mkdir -p /var/vmail/vhosts/dragon.lab
4. sudo chown -R vmmail:vmmail /var/vmail

perintah diatas kami melakukan secara bertahap

5.2. Konfigurasi Dovecot

Terdapat tiga file yang akan di konfigurasi terdapat pada file /etc/dovecot/ yaitu dengan nama sebagai berikut :

- 10-auth.conf
- dovecot-sql.conf.ext
- 99-mail-stack-delivery.conf

5.2.1. 10-auth.conf


```

root@tiga: ~
GNU nano 2.5.3 File: /etc/dovecot/conf.d/10-auth.conf

#!include auth-system.conf.ext
#!include auth-sql.conf.ext
#!include auth-ldap.conf.ext
#!include auth-passwdfile.conf.ext
#!include auth-checkpassword.conf.ext

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-/_ Fi
^X Exit ^R Read File ^_ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-/ La

```

5.2.2. dovecot-sql.conf.ext

pada file ini kami melakukan konfigurasi agar dovecot melakukan konfigurasi login terhadap client mail server

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/dovecot/dovecot-sql.conf.ext

# home AS userdb home, uid AS userdb_uid, gid AS userdb_gid \
# FROM users WHERE userid = '%u'

# Query to get a list of all usernames.
#iterate_query = SELECT username AS user FROM users

# /etc/dovecot/dovecot-sql.conf.ext
driver = mysql
# There is a password on this line update it to the one you are using
connect = host=127.0.0.1 dbname=postfix user=kelompok3 password=Kelompok3
default_pass_scheme = SHA512-CRYPT
password_query = SELECT email as user, password FROM user WHERE email='%u'
user_query = SELECT email as user, 6004 AS uid, 6004 AS gid FROM user WHERE email = '%n@d' AND domain = '%d'

[ line 149/150 (99%), col 1/110 (0%), char 5918/6028 (98%) ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-/_ Fi
^X Exit ^R Read File ^_ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-/ La

```

5.2.3. 99-mail-stack-delivery.conf

file ini berisi bagaimana komunikasi keluar dan masuknya email yaitu port, protocol, keamanan, dan letak direktori dari email dari mail server itu sendiri, di bawah ini adalah konfigurasi protocol pop3 imap dan lokasi email

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/dovecot/conf.d/99-mail-stack-delivery.conf

# Some general options
protocols = imap pop3 sieve lmtp
disable_plaintext_auth = yes
ssl = yes
ssl_cert = </etc/dovecot/dovecot.pem
ssl_key = </etc/dovecot/private/dovecot.pem
ssl_cipher_list = ALL:!LOW:!SSLv2:ALL:!aNULL:!ADH:!eNULL:!EXP:RC4+RSA:+HIGH:+MEDIUM
#mail_location = maildir:~/Maildir

mail_location = maildir:/var/vmail/vhosts/%d/%n

auth_username_chars = abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ01234567890.-_@

# etc/dovecot/conf.d/10-ssl.conf
ssl_protocols = !SSLv2 !SSLv3

# IMAP configuration
protocol imap {
    mail_max_userip_connections = 10
    imap_client_workarounds = delay-newmail
}

# POP3 configuration
protocol pop3 {
    mail_max_userip_connections = 10
    pop3_client_workarounds = outlook-no-nuls oe-ns-eoh
}

# LDA configuration
protocol lda {
    postmaster_address = postmaster
    mail_plugins = sieve
    quota_full_tempfail = yes
    deliver_log_format = msgid=%m: %$
    rejection_reason = Your message to <%t> was automatically rejected:%n%r
}

# Plugins configuration
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M- / Fi
^X Exit ^R Read File ^N Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M- / La

```

Konfigurasi di bawah ini adalah memberitahukan dovecot agar menerima dari service apa dan siapa user yang menjalankannya

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/dovecot/conf.d/99-mail-stack-delivery.conf

# Plugins configuration
plugin {
    sieve=~/.dovecot.sieve
    sieve_dir=~/.sieve
}

# Authentication configuration
auth_mechanisms = plain login

service auth {
    # Postfix smtp-auth
    unix_listener /var/spool/postfix/private/dovecot-auth {
        mode = 0660
        user = postfix
        group = postfix
    }

    unix_listener auth-userdb {
        mode = 0600
        user = vmail
        #group =
    }

    # Auth process is run as this user.
    user = dovecot
}

```

Konfigurasi dibawah ini adalah memberituhukan dovecot agar menjalankan imap dan pop3 pada port tertentu

```

root@tiga: ~
GNU nano 2.5.3 File: /etc/dovecot/conf.d/99-mail-stack-delivery.conf

# conf.d/10-master.conf
service imap-login {
  inet_listener imap {
    port = 143
  }
  inet_listener imaps {
    port = 993
    ssl = yes
  }
}

# conf.d/10-master.conf
service pop3-login {
  inet_listener pop3 {
    port = 110
  }
  inet_listener pop3s {
    port = 995
    ssl = yes
  }
}

# conf.d/10-master.conf
service lmtp {
  unix_listener /var/spool/postfix/private/dovecot-lmtp {
    mode = 0600
    user = postfix
    group = postfix
  }
}

# conf.d/10-master.conf
service auth-worker {
  # Auth worker process is run as root by default, so that it can access

```

6. Uji konfigurasi mail server

Kami melakukan uji coba mail server dengan kedua software yang telah di konfigurasi perintah tersebut dapat dilakukan dengan syntax :

- Service postfix restart && service postfix status
- Service dovecot restart && service postfix status

6.1. POSTFIX

Apabila dilihat dari log file di bawah terjadinya error terhadap konfigurasi POSTFIX

```

root@tiga: ~
postfix.service - LSB: Postfix Mail Transport Agent
Loaded: loaded (/etc/init.d/postfix; bad; vendor preset: enabled)
Drop-In: /run/systemd/generator/postfix.service.d
└─50-postfix-smail-transport-agent.conf
Active: active (running) since Fri 2017-12-29 01:01:32 UTC; 37ms ago
Docs: man:systemd-sysv-generator(8)
Process: 26376 ExecStop=/etc/init.d/postfix stop (code=exited, status=0/SUCCESS)
Process: 26408 ExecStart=/etc/init.d/postfix start (code=exited, status=0/SUCCESS)
Tasks: 1
Memory: 2.3M
CPU: 599ms
CGroup: /system.slice/postfix.service
└─26527 /usr/lib/postfix/sbin/master

Dec 29 01:01:31 tiga.tujuhlangit.id systemd[1]: Stopped LSB: Postfix Mail Transport Agent.
Dec 29 01:01:31 tiga.tujuhlangit.id systemd[1]: Starting LSB: Postfix Mail Transport Agent...
Dec 29 01:01:31 tiga.tujuhlangit.id postfix[26408]: * Starting Postfix Mail Transport Agent postfix
Dec 29 01:01:31 tiga.tujuhlangit.id postfix[26490]: Postfix is running with backwards-compatible default settings
Dec 29 01:01:31 tiga.tujuhlangit.id postfix[26490]: See http://www.postfix.org/COMPATIBILITY_README.html for details
Dec 29 01:01:31 tiga.tujuhlangit.id postfix[26490]: To disable backwards compatibility use "postconf compatibility"
Dec 29 01:01:32 tiga.tujuhlangit.id postfix[26408]: ...done.
Dec 29 01:01:32 tiga.tujuhlangit.id systemd[1]: Started LSB: Postfix Mail Transport Agent.

```

6.2. DOVECOT

Apabila dilihat dari log diibawah ini tidak terjadi permasalahan pada konfigurasi dovecot

```

root@tiga: ~
● dovecot.service - Dovecot IMAP/POP3 email server
   Loaded: loaded (/lib/systemd/system/dovecot.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2017-12-29 01:03:41 UTC; 15ms ago
     Docs: man:dovecot(1)
           http://wiki2.dovecot.org/
   Process: 26580 ExecStop=/usr/bin/doveadm stop (code=exited, status=0/SUCCESS)
   Process: 26587 ExecStart=/usr/sbin/dovecot (code=exited, status=0/SUCCESS)
  Main PID: 26591 (dovecot)
    Tasks: 5
   Memory: 836.0K
      CPU: 27ms
   CGroup: /system.slice/dovecot.service
           └─26591 /usr/sbin/dovecot
             └─26597 dovecot/anvil
               └─26598 dovecot/log
                 └─26599 dovecot/ssl-params
                   └─26601 /usr/sbin/dovecot

Dec 29 01:03:41 tiga.tujuhlangit.id systemd[1]: Starting Dovecot IMAP/POP3 email server...
Dec 29 01:03:41 tiga.tujuhlangit.id systemd[1]: dovecot.service: PID file /var/run/dovecot/master.pid not readable
Dec 29 01:03:41 tiga.tujuhlangit.id dovecot[26591]: master: Dovecot v2.2.22 (fe789d2) starting up for imap, pop3,
Dec 29 01:03:41 tiga.tujuhlangit.id systemd[1]: Started Dovecot IMAP/POP3 email server.
lines 1-22/22 (END)

```

E. INSTALASI ROUND_CUBE

Roundcube adalah interface terhadap pengguna ke mail server, sesuai dengan ketentuan maka halaman web dapat diakses melalui webmail.tiga.tujuhlangit.id

Pada tahap instalasi roundcube kami memilih beberapa opsi sebagai berikut :

- Configure database for Roundcube with dbconfig-common? **Yes**
- MySQL application password for roundcube: Kelompok3

Secara otomatis roundcube akan melakukan konfigurasi database di mysql server

```

root@tiga: ~
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases
->
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| phpmyadmin |
| portalweb |
| postfix |
| roundcube |
| sys |
+-----+
8 rows in set (0.00 sec)

mysql>

```

```

root@tiga: ~
mysql> show tables
-> ;
+-----+
| Tables_in_roundcube |
+-----+
| cache                |
| cache_index          |
| cache_messages       |
| cache_shared         |
| cache_thread         |
| contactgroupmembers  |
| contactgroups        |
| contacts             |
| dictionary           |
| identities           |
| searches             |
| session              |
| system               |
| users                |
+-----+
14 rows in set (0.00 sec)

mysql>

```

```

root@tiga: ~
14 rows in set (0.00 sec)

mysql> SELECT Host, USER, authentication_string FROM mysql.user WHERE USER = 'roundcube';
+-----+-----+-----+
| Host      | USER      | authentication_string |
+-----+-----+-----+
| localhost | roundcube | *393AD5659DFA4C769AC3E173E30903C0F11AAD7F |
+-----+-----+-----+
1 row in set (0.01 sec)

mysql>

```

1. Konfigurasi Roundcube

File konfigurasi Roundcube dapat diakses pada direktori /etc/roundcube/config.inc.php

File ini akan berisi informasi-informasi database dan smtp server

```

root@tiga: ~
GNU nano 2.5.3      File: /etc/roundcube/config.inc.php

<?php
$config = array();
include_once("/etc/roundcube/debian-db-roundcube.php");
$config['default_host'] = 'localhost';
$config['smtp_server'] = 'localhost';
$config['smtp_port'] = 25;
$config['smtp_user'] = '';
$config['smtp_pass'] = '';
$config['support_url'] = '';
$config['product_name'] = 'Kelompok Tiga';
$config['des_key'] = 'nSR3se5Z09z4oBOSc7m3ORiX';
$config['plugins'] = array(
    'archive',
    'zipdownload',
);

$config['skin'] = 'larry';

^G Get Help      ^C Write Out    ^W Where Is     ^K Cut Text     ^U Justify      ^C Cur Pos      ^Y Prev Page    M- First
^X Exit          ^R Read File    ^_ Replace      ^U Uncut Text   ^T To Spell     ^_ Go To Line    ^V Next Page    M- Last

```

2. Konfigurasi VirtualHost

File konfigurasi Roundcube dapat diakses pada direktori /etc/apache2/conf-available/roundcube.conf

File ini berfungsi sebagai konfigurasi web server agar mengakses roundcube dan konfigurasi SSL

```
root@tiga: ~
GNU nano 2.5.3 File: /etc/apache2/conf-available/roundcube.conf

# Force all http connections to be https
RewriteEngine on
RewriteCond %{HTTPS} !on$ [NC]
RewriteRule . https://%{HTTP_HOST}%{REQUEST_URI}

</VirtualHost>

<IfModule mod_ssl.c>
    SSLStrictSNIVHostCheck off

    <VirtualHost webmail.tiga.tujuhlangit.id:443>
        ServerAdmin postmaster@tiga.tujuhlangit.id
        ServerName webmail.tiga.tujuhlangit.id
        ServerAlias webmail.tiga.tujuhlangit.id

        DocumentRoot /var/lib/roundcube

        SSLEngine on
        SSLCertificateFile /etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/fullchain.pem
        SSLCertificateKeyFile /etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/privkey.pem

        <FilesMatch "\.(cgi|shtml|phtml|php)$">
            SSLOptions +StdEnvVars
        </FilesMatch>
    </VirtualHost>
</IfModule>

<Directory /var/lib/roundcube/>
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^Y Prev Page M-^ First
^X Exit ^R Read File ^_ Replace ^U Uncut Text ^T To Spell ^_ Go To Line ^V Next Page M-^ Last
```

3. Menambahkan fitur pendaftaran pada roundcube

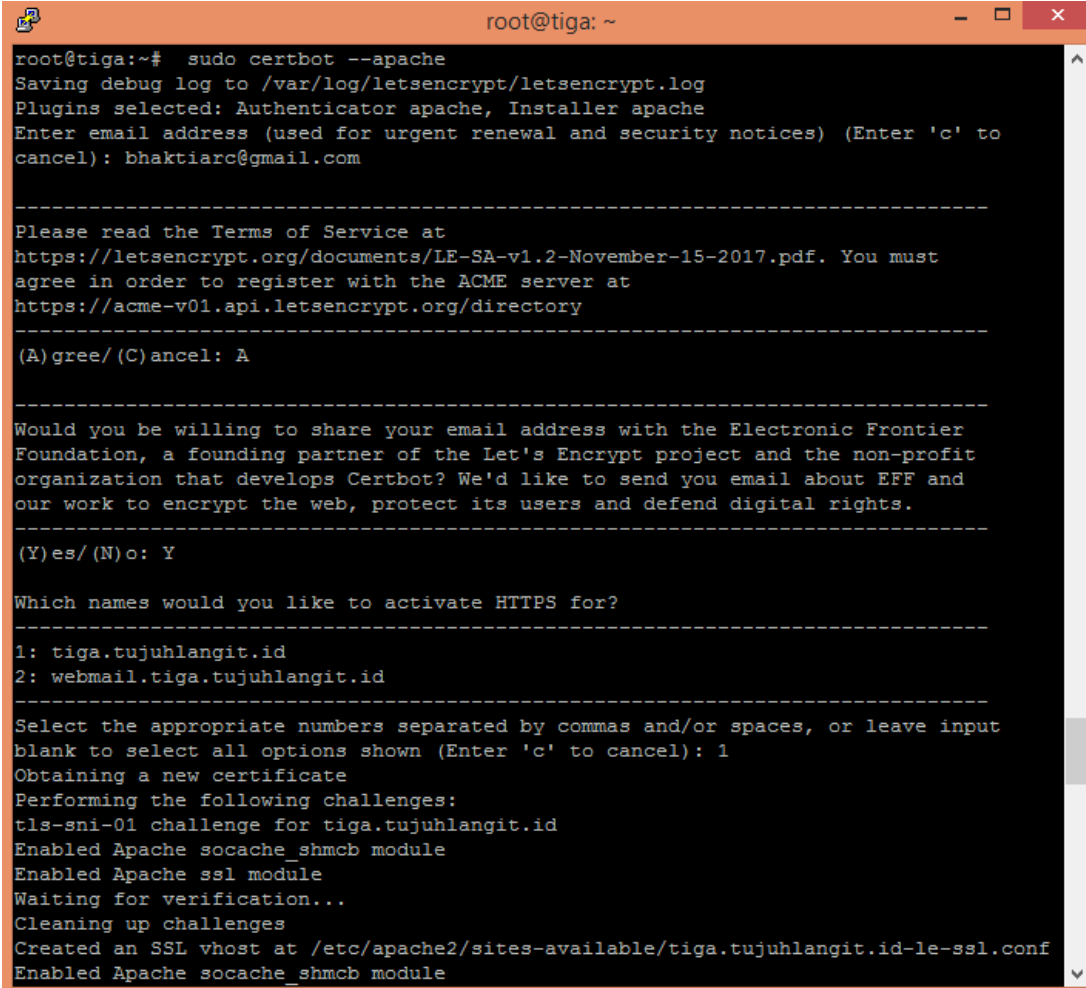
Fitur ini merupakan penambahan didasari oleh inisiatif kami kelompok 3 agar pengguna dapat mendaftarkan email dengan domain @tiga.tujuhlangit.id penambahan yang kami lakukan adalah sebagai berikut :

- Penambahan tombol daftar pada file login.html
- Pembuatan file register.php dan reghandler.php beserta dependencies-nya yang disimpan pada direktori /var/lib/roundcube/register/

F. MEMBERIKAN SSL PADA WEBMAIL

```
sudo certbot --apache
```

Kemudian ikuti apa yang diminta



```
root@tiga: ~
root@tiga:~# sudo certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log
Plugins selected: Authenticator apache, Installer apache
Enter email address (used for urgent renewal and security notices) (Enter 'c' to
cancel): bhaktiarc@gmail.com

-----
Please read the Terms of Service at
https://letsencrypt.org/documents/LE-SA-v1.2-November-15-2017.pdf. You must
agree in order to register with the ACME server at
https://acme-v01.api.letsencrypt.org/directory
-----
(A)gree/(C)ancel: A

-----
Would you be willing to share your email address with the Electronic Frontier
Foundation, a founding partner of the Let's Encrypt project and the non-profit
organization that develops Certbot? We'd like to send you email about EFF and
our work to encrypt the web, protect its users and defend digital rights.
-----
(Y)es/(N)o: Y

Which names would you like to activate HTTPS for?
-----
1: tiga.tujuhlangit.id
2: webmail.tiga.tujuhlangit.id
-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel): 1
Obtaining a new certificate
Performing the following challenges:
tls-sni-01 challenge for tiga.tujuhlangit.id
Enabled Apache socache_shmcb module
Enabled Apache ssl module
Waiting for verification...
Cleaning up challenges
Created an SSL vhost at /etc/apache2/sites-available/tiga.tujuhlangit.id-le-ssl.conf
Enabled Apache socache_shmcb module
```

```

root@tiga: ~
-----
1: No redirect - Make no further changes to the webserver configuration.
2: Redirect - Make all requests redirect to secure HTTPS access. Choose this for
new sites, or if you're confident your site works on HTTPS. You can undo this
change by editing your web server's configuration.
-----
Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 2
Enabled Apache rewrite module
Redirecting vhost in /etc/apache2/sites-enabled/tiga.tujuhlangit.id.conf to ssl vhost
in /etc/apache2/sites-available/tiga.tujuhlangit.id-le-ssl.conf
-----
Congratulations! You have successfully enabled https://tiga.tujuhlangit.id

You should test your configuration at:
https://www.ssllabs.com/ssltest/analyze.html?d=tiga.tujuhlangit.id
-----

IMPORTANT NOTES:
- Congratulations! Your certificate and chain have been saved at:
  /etc/letsencrypt/live/tiga.tujuhlangit.id/fullchain.pem
  Your key file has been saved at:
  /etc/letsencrypt/live/tiga.tujuhlangit.id/privkey.pem
  Your cert will expire on 2018-03-28. To obtain a new or tweaked
  version of this certificate in the future, simply run certbot again
  with the "certonly" option. To non-interactively renew *all* of
  your certificates, run "certbot renew"
- Your account credentials have been saved in your Certbot
  configuration directory at /etc/letsencrypt. You should make a
  secure backup of this folder now. This configuration directory will
  also contain certificates and private keys obtained by Certbot so
  making regular backups of this folder is ideal.
- If you like Certbot, please consider supporting our work by:

  Donating to ISRG / Let's Encrypt:  https://letsencrypt.org/donate
  Donating to EFF:                  https://eff.org/donate-le

root@tiga:~# certbot --apache

```

Menambahkan syntax pada file roundcube.conf

```
nano /etc/apache2/conf-available/roundcube.conf
```

Edit seperti dibawah ini :

```

<VirtualHost webmail.tiga.tujuhlangit.id:80>

    ServerAdmin postmaster@tiga.tujuhlangit.id
    ServerName webmail.tiga.tujuhlangit.id
    ServerAlias webmail.tiga.tujuhlangit.id

    DocumentRoot /var/lib/roundcube

    # Force all http connections to be https
    RewriteEngine on
    RewriteCond %{HTTPS} !^on$ [NC]
    RewriteRule . https://%{HTTP_HOST}%{REQUEST_URI}

</VirtualHost>

<IfModule mod_ssl.c>
    SSLStrictSNIVHostCheck off

    <VirtualHost webmail.tiga.tujuhlangit.id:443>

```



```
ServerAdmin postmaster@tiga.tujuhlangit.id
ServerName webmail.tiga.tujuhlangit.id
ServerAlias webmail.tiga.tujuhlangit.id

DocumentRoot /var/lib/roundcube

SSLEngine on
SSLCertificateFile
/etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/fullch$
SSLCertificateKeyFile
/etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/pri$

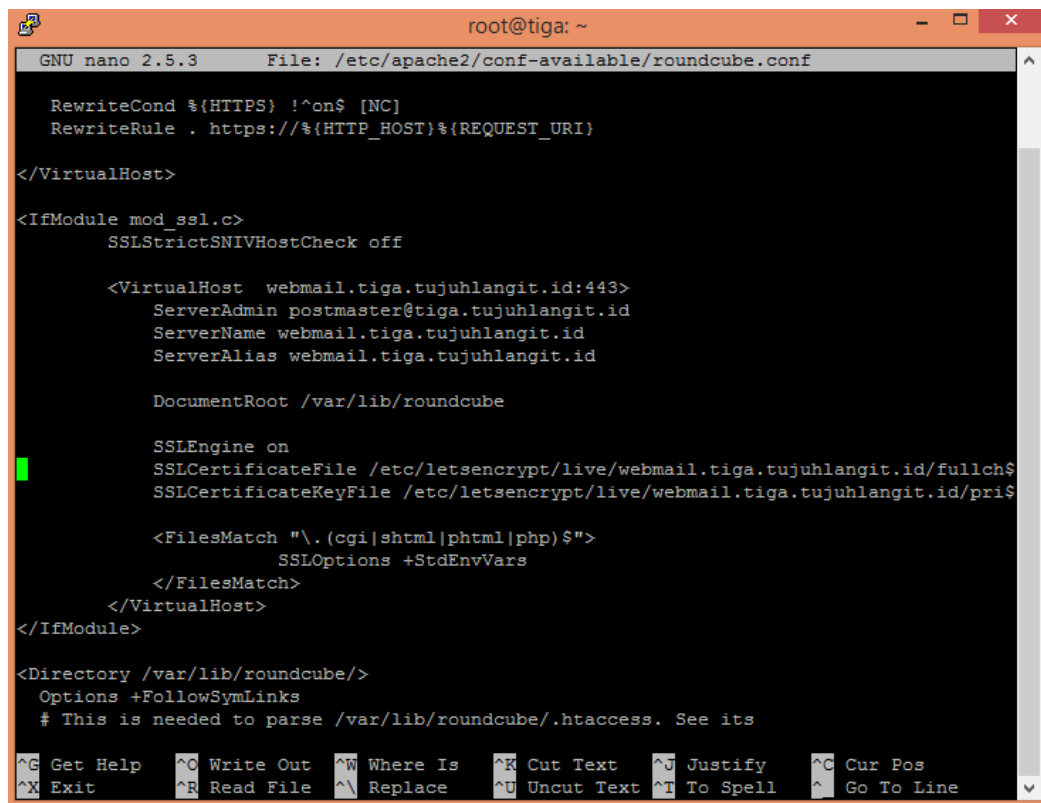
<FilesMatch "\.(cgi|shtml|phtml|php)$">
    SSLOptions +StdEnvVars
</FilesMatch>
</VirtualHost>
</IfModule>

<Directory /var/lib/roundcube/>
    Options +FollowSymLinks
    # This is needed to parse /var/lib/roundcube/.htaccess. See
    its
    # content before setting AllowOverride to None.
    AllowOverride All
    <IfVersion >= 2.3>
        Require all granted
    </IfVersion>
    <IfVersion < 2.3>
        Order allow,deny
        Allow from all
    </IfVersion>
</Directory>

# Protecting basic directories:
<Directory /var/lib/roundcube/config>
    Options -FollowSymLinks
    AllowOverride None
</Directory>

<Directory /var/lib/roundcube/temp>
    Options -FollowSymLinks
    AllowOverride None
    <IfVersion >= 2.3>
        Require all denied
    </IfVersion>
    <IfVersion < 2.3>
        Order allow,deny
        Deny from all
    </IfVersion>
</Directory>

<Directory /var/lib/roundcube/logs>
```



```
root@tiga: ~
GNU nano 2.5.3 File: /etc/apache2/conf-available/roundcube.conf

RewriteCond %{HTTPS} !on$ [NC]
RewriteRule . https://%{HTTP_HOST}%{REQUEST_URI}

</VirtualHost>

<IfModule mod_ssl.c>
    SSLStrictSNIVHostCheck off

    <VirtualHost webmail.tiga.tujuhlangit.id:443>
        ServerAdmin postmaster@tiga.tujuhlangit.id
        ServerName webmail.tiga.tujuhlangit.id
        ServerAlias webmail.tiga.tujuhlangit.id

        DocumentRoot /var/lib/roundcube

        SSLEngine on
        SSLCertificateFile /etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/fullch$
        SSLCertificateKeyFile /etc/letsencrypt/live/webmail.tiga.tujuhlangit.id/pri$

        <FilesMatch "\.(cgi|shtml|phtml|php)$">
            SSLOptions +StdEnvVars
        </FilesMatch>
    </VirtualHost>
</IfModule>

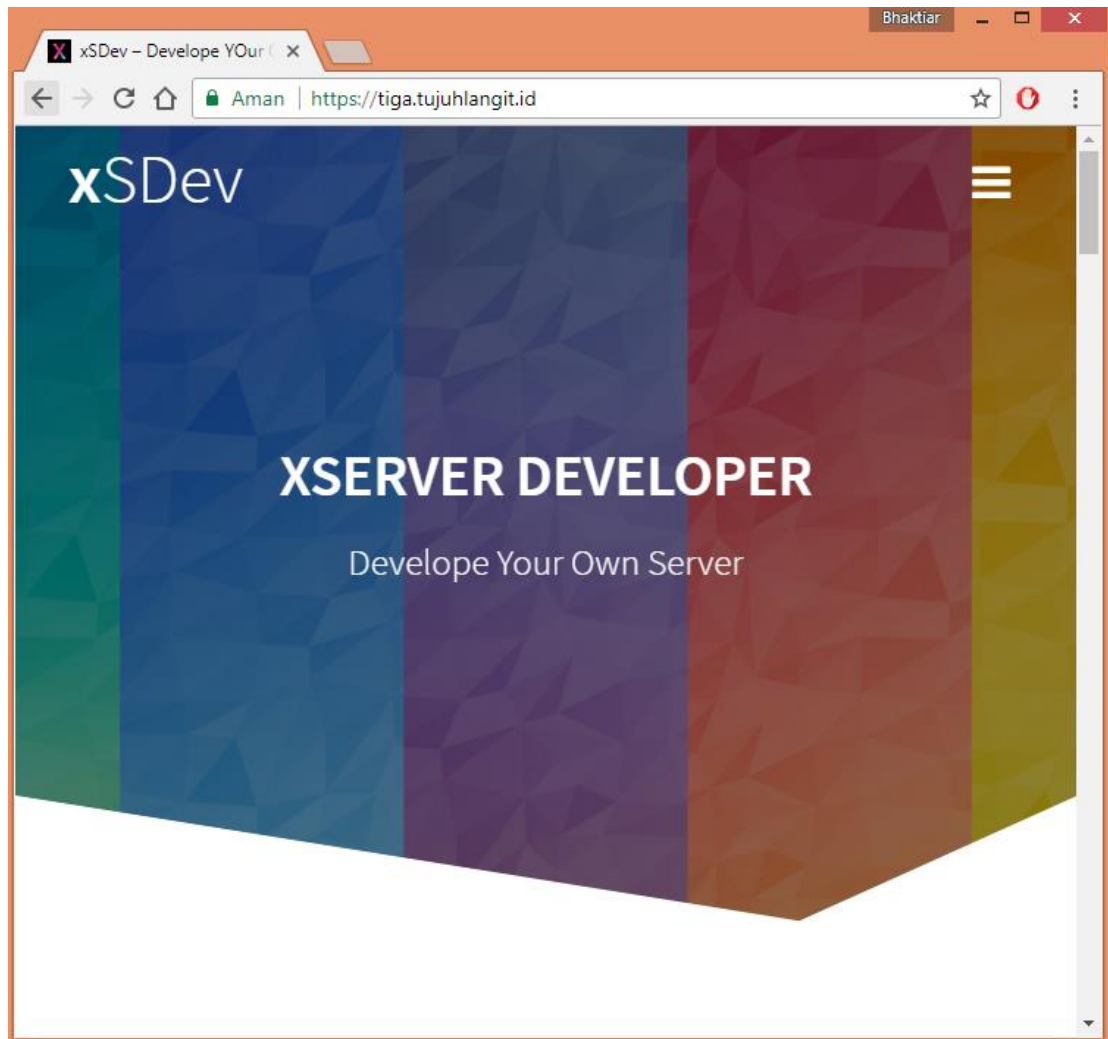
<Directory /var/lib/roundcube/>
    Options +FollowSymLinks
    # This is needed to parse /var/lib/roundcube/.htaccess. See its

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify    ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell   ^_ Go To Line
```

Hasil Akhir Webserver dan Webmail

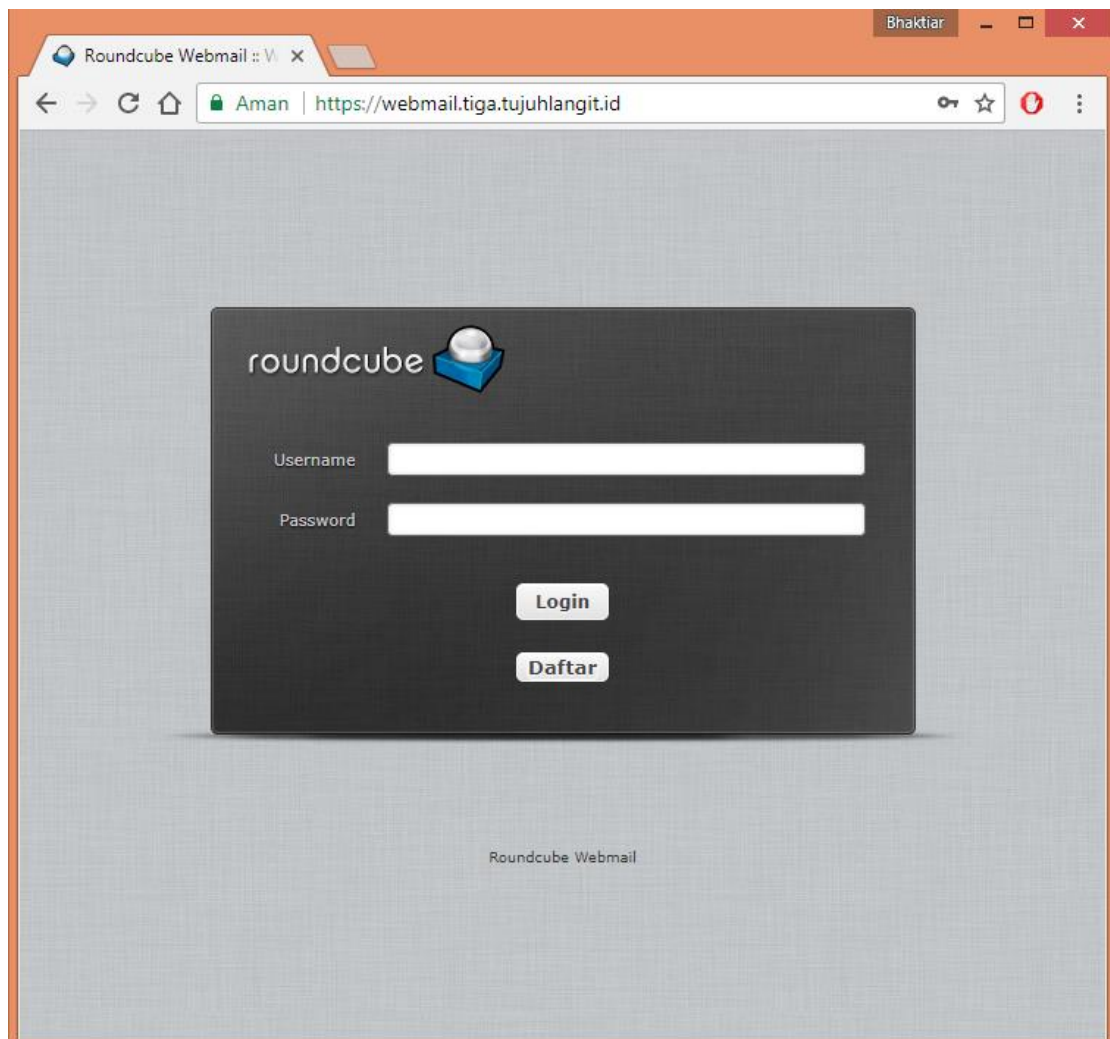
1. Webserver : [www.tiga.tujuhlangit.id](https://tiga.tujuhlangit.id)

Kami melakukan beberapa modifikasi pada konfigurasi default wordpress dan php sehingga bisa menggunakan tema / upload tema selain yang disediakan oleh wordpress. Kemudian kami juga melakukan modifikasi pada tampilan sehingga menjadi sedemikian rupa.

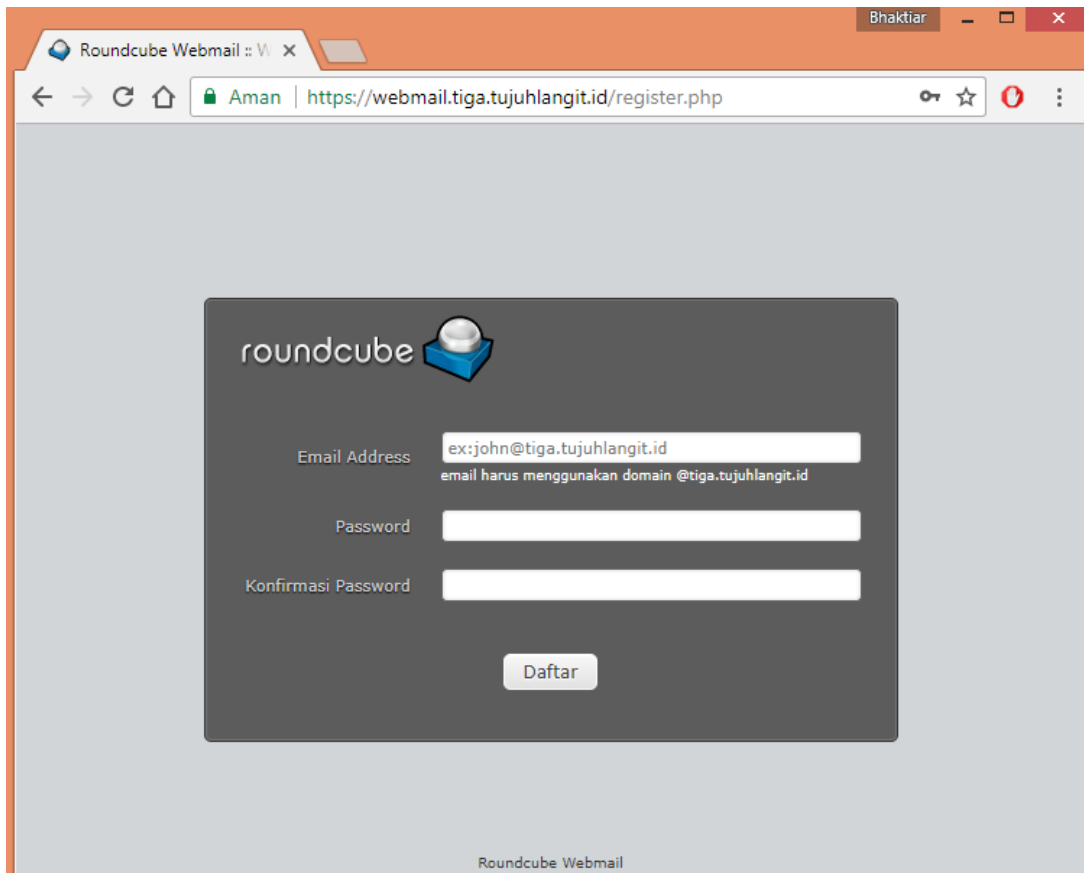


2. Webmail : www.webmail.tiga.tujuhlangit.id

Kami melakukan modifikasi pada interface webmail sehingga menjadi ada fitur daftar untuk membuat akun email.



Testing daftar webmail



Roundcube Webmail :: W X

Aman | <https://webmail.tiga.tujuhlangit.id/register.php>

roundcube

Email Address
email harus menggunakan domain @tiga.tujuhlangit.id

Password

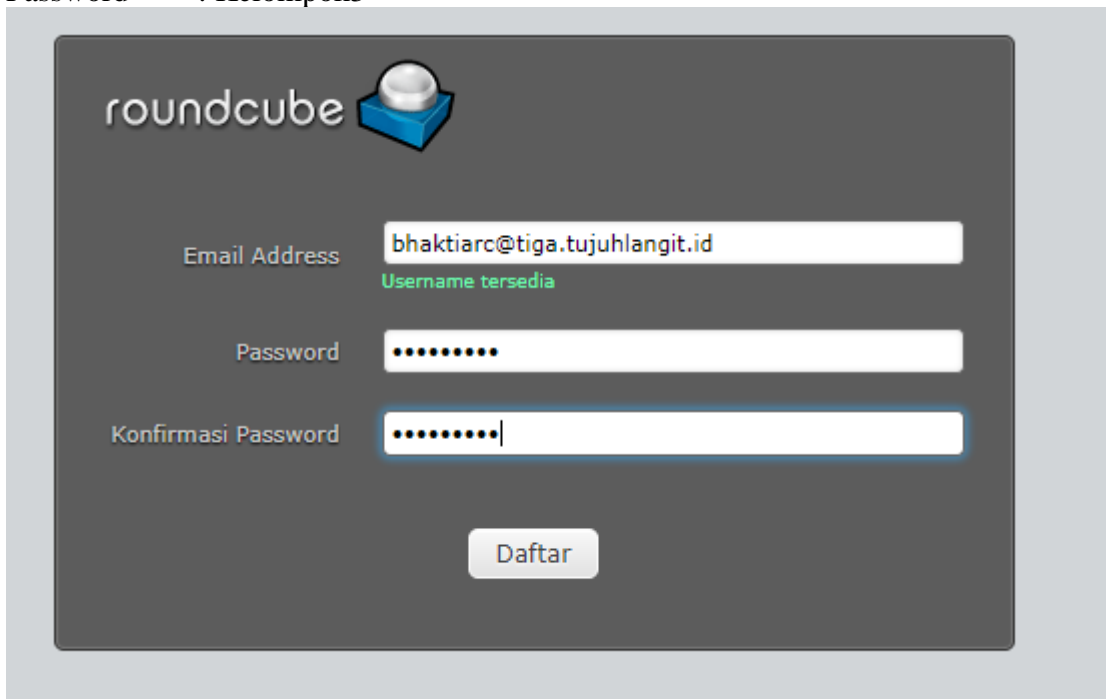
Konfirmasi Password

Daftar

Roundcube Webmail

Email address : bhaktiarc@tiga.tujuhlangit.id

Password : Kelompok3



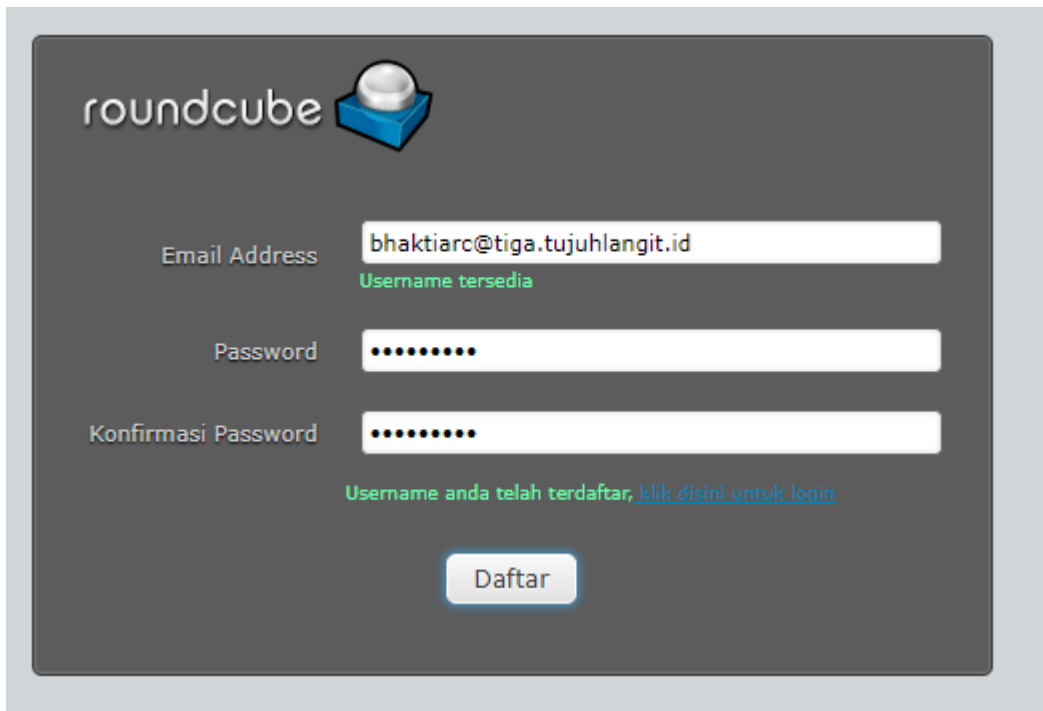
roundcube

Email Address
Username tersedia

Password

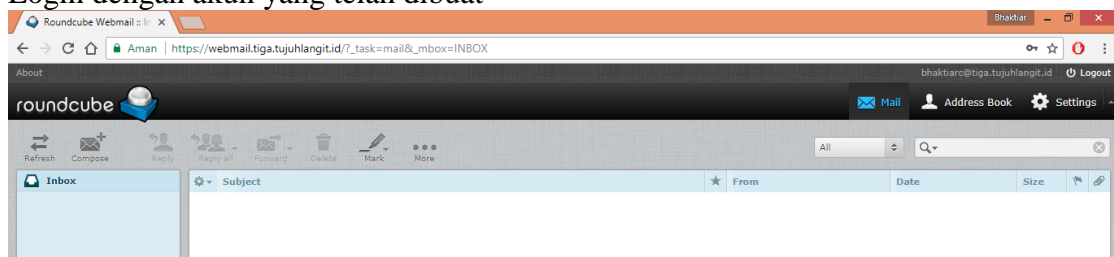
Konfirmasi Password

Daftar

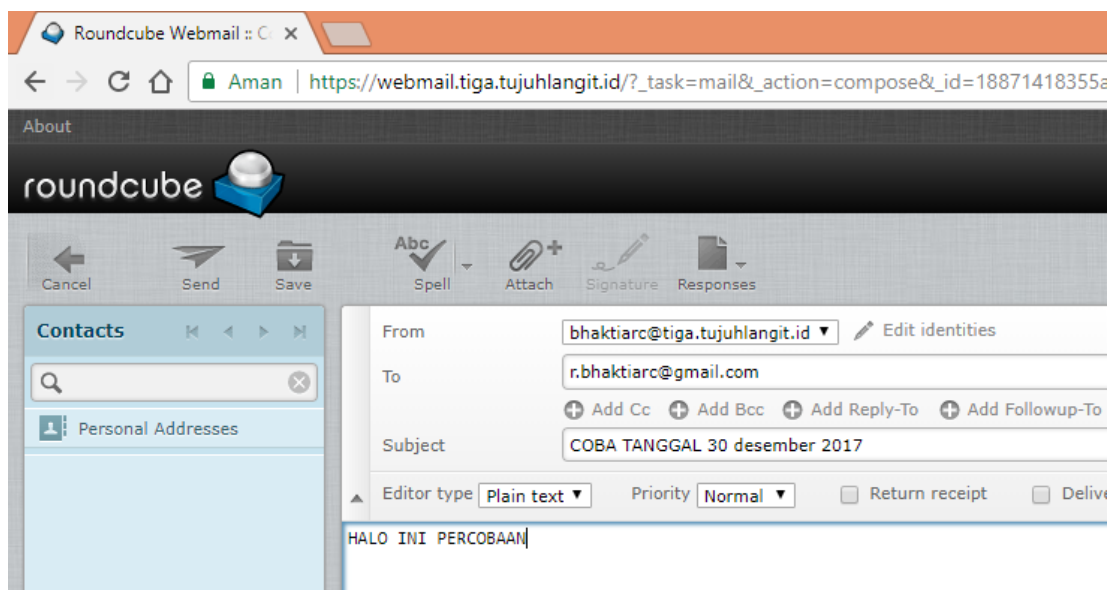


The image shows the Roundcube registration form. At the top is the Roundcube logo. Below it are three input fields: 'Email Address' containing 'bhaktiarc@tiga.tujuhlangit.id' with a green message 'Username tersedia' below it; 'Password' with masked characters; and 'Konfirmasi Password' also with masked characters. A green message 'Username anda telah terdaftar, klik disini untuk login' is displayed below the password fields. At the bottom is a 'Daftar' button.

Login dengan akun yang telah dibuat

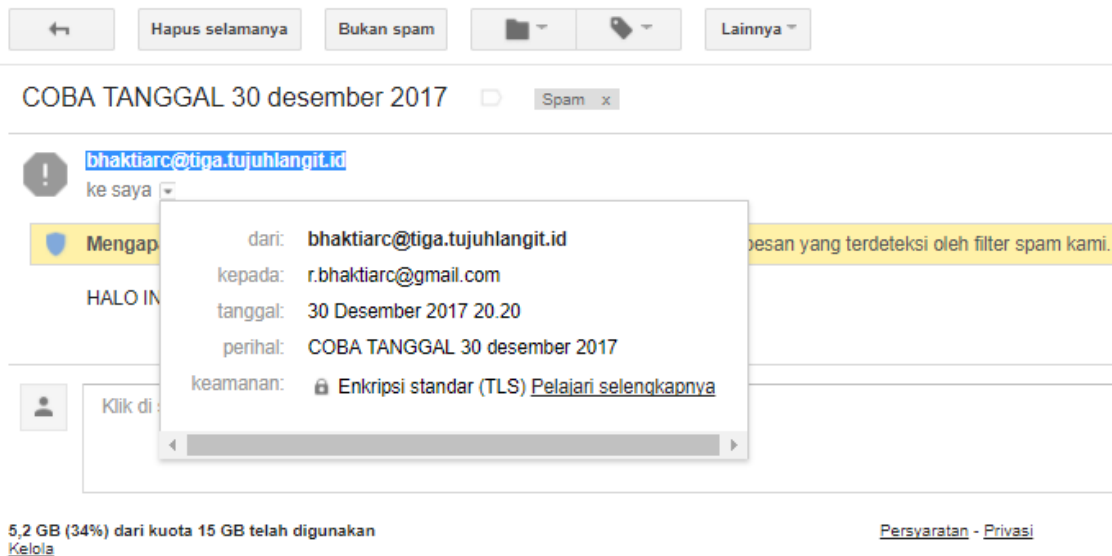


Testing mengirim email dan menerima email





Mengecek pada email tujuan



NOTES :

- Semua password menggunakan : **Kelompok3**
- Login VPS :
Username : root
- Login wordpress :
Username : kelompok3@tiga.tujuhlangit.id
- Database MySQL