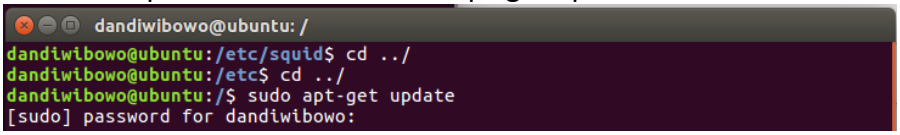
Praktikum Squid Proxy

Alat dan Bahan

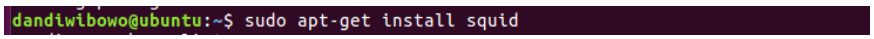
- Squid
- MySql

Langkah Percobaan

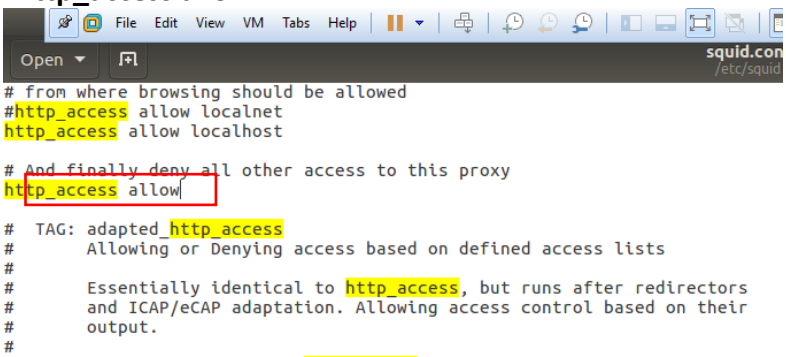
1. Buka terminal lalu inputkan command sudo apt-get update



2. Install Squid dengan menginputkan command line *sudo* `apt-get install squid`

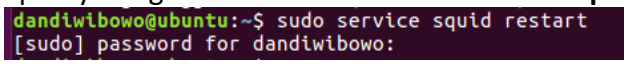


3. Untuk mengkonfigurasi squid, buka file **/etc/squid/squid.conf,** lalu **ubah http_access deny all** menjadi **http_access allow**

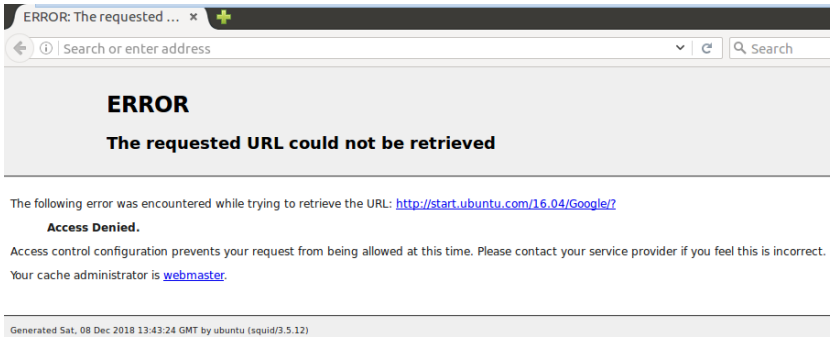


4. lakukan konfigurasi proxy pada browser

5. lakukan restart pada proxy dengan command line **sudo service squid restar**

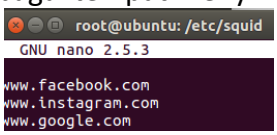


6. Tutup browse lalu buka lagi, jika berhasil maka akan laman page akan dicekal oleh proxy

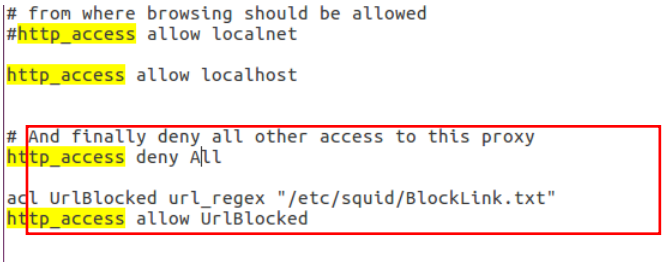


7. cara mencekal beberapa website

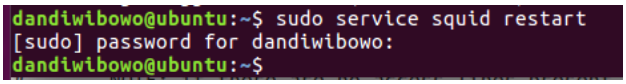
- Membuat file “BlockLink.txt” sebagai tempat menyimpan link yang akan di block



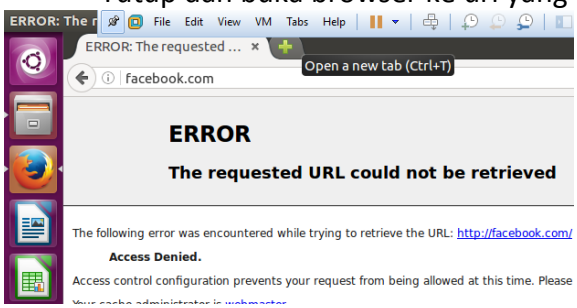
- Edit file squid.conf lalu tambahkan command seperti berikut

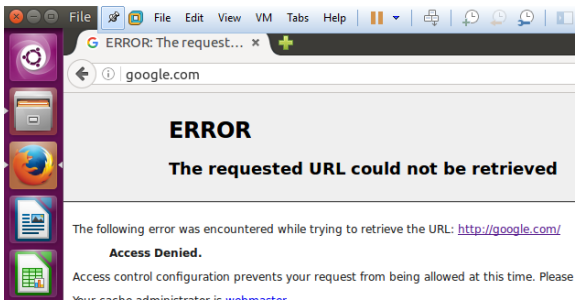


- Restart squid

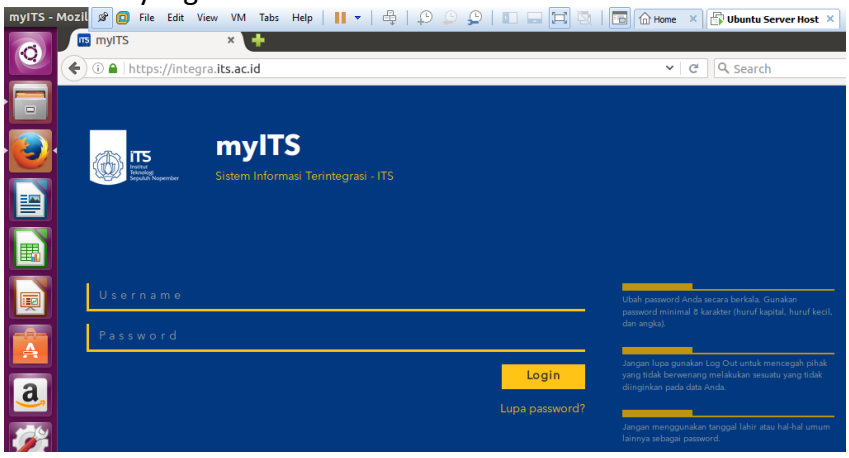


- Tutup dan buka browser ke url yang di block tadi





- Buka browser ke url yang tidak di block



8. Masuk menggunakan username dan password

- Install mysql server

```
sudo apt install mysql-server
```

```
dandiwibowo@ubuntu: ~
dandiwibowo@ubuntu:~$ sudo service squid restart
dandiwibowo@ubuntu:~$ sudo service squid restart
dandiwibowo@ubuntu:~$ sudo service squid restart
dandiwibowo@ubuntu:~$ sudo service squid restart
dandiwibowo@ubuntu:~$ sudo apt install mysql-server
```

- Buat database bernama myproxy

```
mysql> create database myproxy
    -> ;
Query OK, 1 row affected (0.00 sec)

mysql>
```

- Buat tabel passwd dan nama kolom

```
mysql> use myproxy
Database changed
mysql> CREATE TABLE `passwd` (
    ->   `user` varchar(32) NOT NULL default '',
    ->   `password` varchar(35) NOT NULL default '',
    ->   `enabled` tinyint(1) NOT NULL default '1',
    ->   `fullname` varchar(60) default NULL,
    ->   `comment` varchar(60) default NULL,
    ->   PRIMARY KEY  (`user`)
    -> );
Query OK, 0 rows affected (0.20 sec)

mysql>
```

- Insert data pada database

```
mysql> use myproxy
Database changed
mysql> insert into passwd values ('Aku','ganteng','1','Aku Ganteng','Aku Ganteng
 Banget');
Query OK, 1 row affected (0.08 sec)

mysql>
```

- Edit pada squid.conf seperti berikut

```
##auth_param basic program <uncomment and complete this line>
##auth_param basic children 5 startup=5 idle=1
##auth_param basic realm Squid proxy-caching web server
##auth_param basic credentialsttl 2 hours

auth_param basic program /usr/lib/squid/basic_db_auth --user root --password dandiwibowo99 --plaintext --persist

auth_param basic children 5
auth_param basic realm Web-Proxy
auth_param basic credentialsttl 1 minute
auth_param basic casesensitive off

#Default:
# none

#  TAG: authenticate_cache_garbage_interval
#       The time period between garbage collection across the username cache.
#       This is a trade-off between memory utilization (long intervals - say
#       2 days) and CPU (short intervals - say 1 minute). Only change if you
#       have good reason to.
```

```
squid.conf
# Example rule allowing access from your local networks.
# Adapt localnet in the ACL section to list your (internal
# from where browsing should be allowed
#http_access allow localnet

acl db-auth proxy_auth REQUIRED
http_access allow localhost
http_access allow db-auth

# And finally deny all other access to this proxy
http_access deny All

acl UrlBlocked url_regex "/etc/squid/BlockLink.txt"
http_access allow UrlBlocked
```

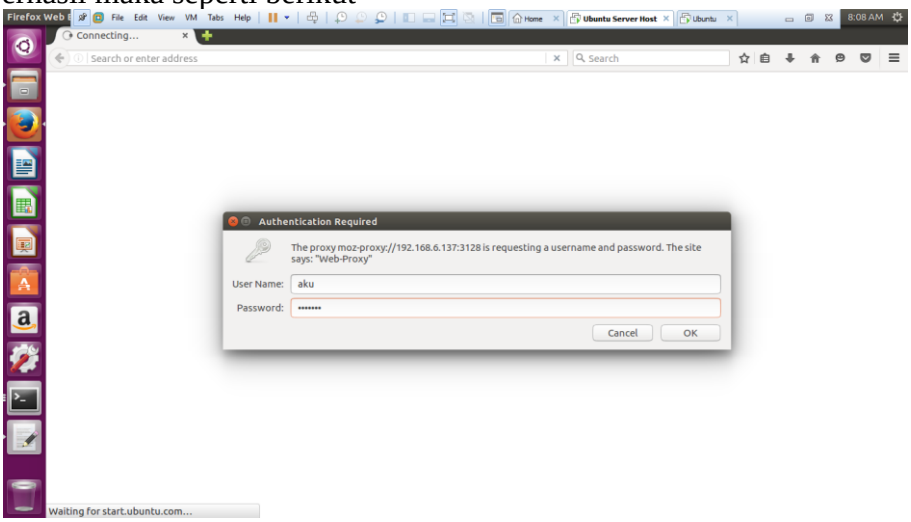
- Edit file **/usr/lib/squid/basic_db_auth** disesuaikan dengan database

```
=cut

use DBI;
use Digest::MD5 qw(md5 md5_hex md5_base64);

my $dsn = "DBI:mysql:database=myproxy";
my $db_user = "root";
my $db_passwd = "dandiwibowo99";
my $db_table = "passwd";
my $db_usercol = "user";
my $db_passwdcol = "password";
my $db_cond = "enable = 1";
my $plaintext = 0;
my $md5 = 0;
my $persist = 0;
my $isjoomla = 0;
my $debug = 0;
my $hashsalt = undef;
```

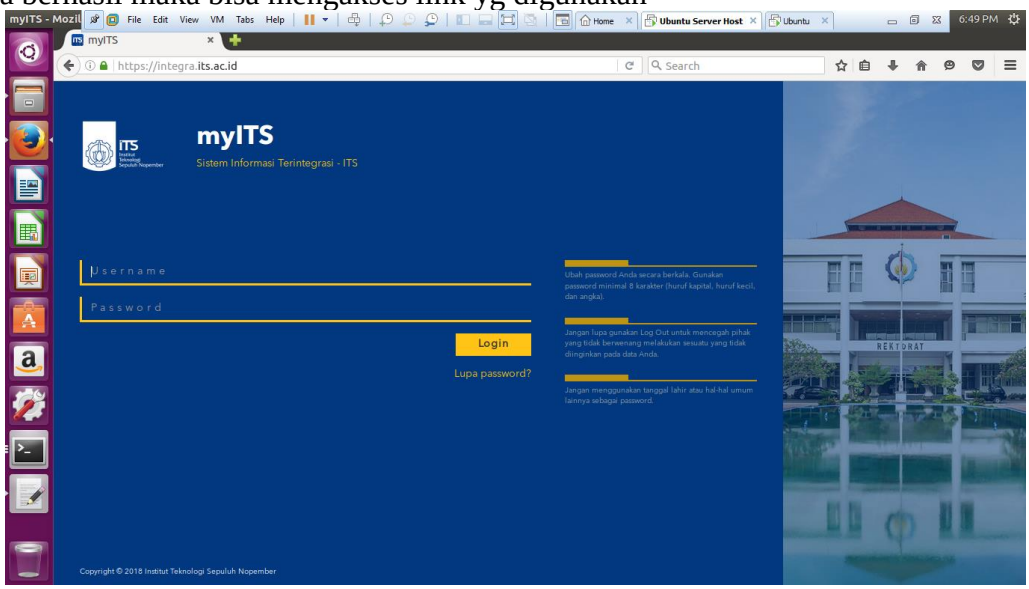
- Restart Proxy dan refresh browser

```
dandiwibowo@ubuntu:~$ sudo service squid restart
[sudo] password for dandiwibowo:
dandiwibowo@ubuntu:~$
```

- Jika berhasil maka seperti berikut



- Jika berhasil maka bisa mengakses link yg digunakan

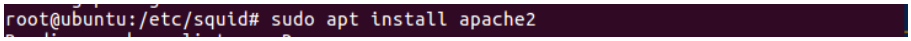


9. Top Five website

- Install Apache dan PHP pada terminal Linux

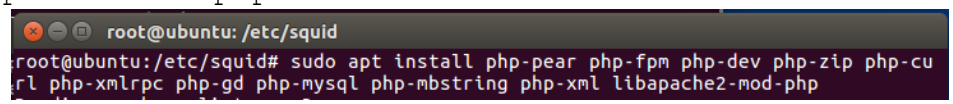
  Install Apache

  ```
  sudo apt install apache2
  ```

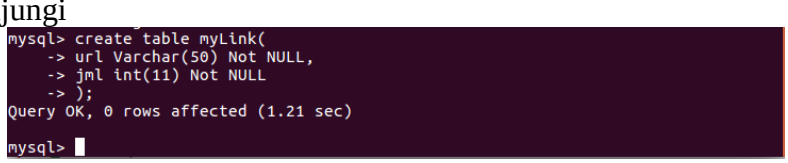
  

  Install PHP

  ```
  sudo apt install php-pear php-fpm php-dev php-zip php-curl php-xmlrpc php-gd php-mysql php-mbstring php-xml libapache2-mod-php
  ```

- Membuat tabel myLink pada database untuk menyimpan data jumlah website yang sering dikunjungi

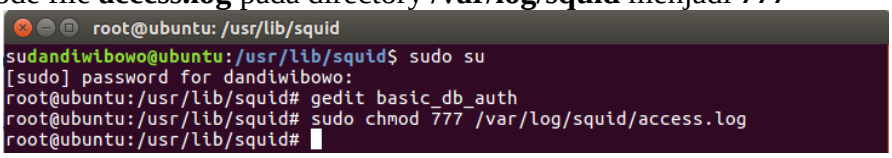
  

- Buatlah file topFive.php pada directory **/var/www/html/**

```
<?php
$host ="localhost"; //atau bisa di isi dengan ip localhost
127.0.0.1
$user ="root"; //id user, karena kita menggunakan localhost,
nama usernya di isi root
$pass ="dandiwibowo99"; //pasword kita kosongi
$database ="myproxy";
$connect=mysqli_connect($host,$user,$pass,$database) or die
("gagal");


$ac_arr = file('/var/log/squid/access.log');
$astring = join("", $ac_arr);
$astring = preg_replace("/(\n|\r|\t)/", "", $astring);

$records = preg_split("/([0-9]+\.[0-9]+\.[0-9]+\.[0-9]+)/",
$astring, -1, PREG_SPLIT_DELIM_CAPTURE);
$sizerecs = sizeof($records);

// now split into records
$i = 1;
$each_rec = 0;
while($i<$sizerecs) {
  $ip = $records[$i];
  $all = $records[$i+1];
  $myword=explode("http",$all);
  $myword2=explode("/",$myword[1]);
  if(preg_match("/:/", $myword2[0])){
   $myword3=explode(":",$myword2[0]);
   $myrealword=$myword3[0];
  }
  else
   $myrealword=$myword2[0];
if($myrealword!=""){

  $queri="Select * from myLink where url='$myrealword'";
  $result = mysqli_query($connect, $queri);
  $row = mysqli_num_rows($result);
  if($row==1){
```

```
        $queri="Select * from myLink where url='$myrealword'";
        $result = mysqli_query($connect, $queri);
        $data = mysqli_fetch_array($result);
        $mycount=$data['jml'];
        $mycount++;

        $queri="Update myLink set jml='$mycount' where
    url='$myrealword'";
        $result = mysqli_query($connect, $queri);
       }
       else{
        $queri="Insert into myLink (url, jml) values
    ('$myrealword','1')";
        $result = mysqli_query($connect, $queri);
       }
    }
       $i = $i + 2;
       $each_rec++;
    }
    ?>

    <html>
    <head>
        <title>Top 5</title>
    </head>
    <body>
        <h1>These are the top 5 website mostly visited</h1>
    <?php
       $queri="Select * from myLink order by jml desc";
       $result = mysqli_query($connect, $queri);
       $a=1;
       while($data = mysqli_fetch_array($result)){
        echo "<p>".$data['url']." => ".$data['jml']."</p>";
        $a++;
        if($a>5) break;
       }

    ?>
    </body>
    </html>
```

Ubah mode file **access.log** pada directory **/var/log/squid** menjadi **777**



- Buka browser dan menuju ke url localhost/topFive.php maka akan muncul seperti berikut

Praktikum Reverse Proxy

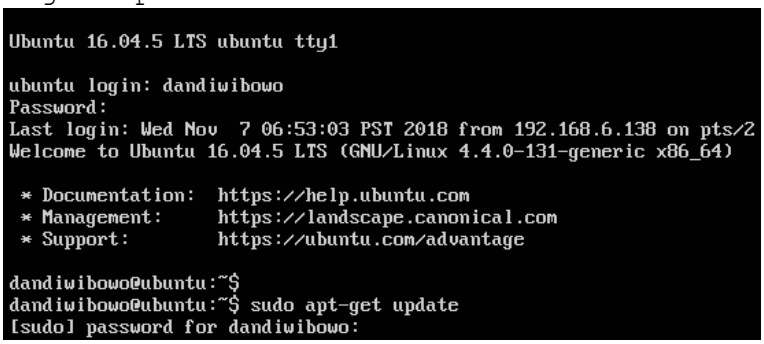
Alat dan Bahan

- 3 buah PC sebagai server
- 1 buah PC client

Langkah-langkah percobaan

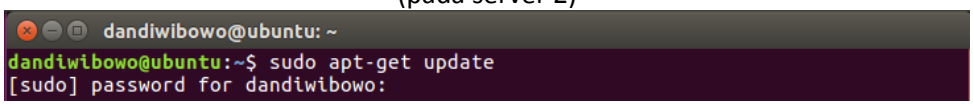
1. Siapkan 3 PC dan install nginx pada setiap PC dengan menginputkan command di bawah ini pada terminal

```
$ sudo apt-get update
```



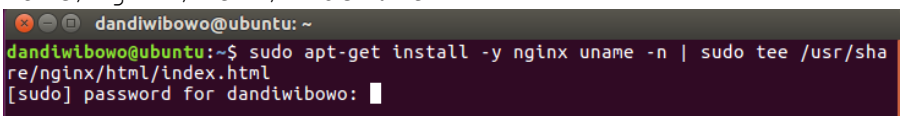
(pada server 1)

(pada server 2)

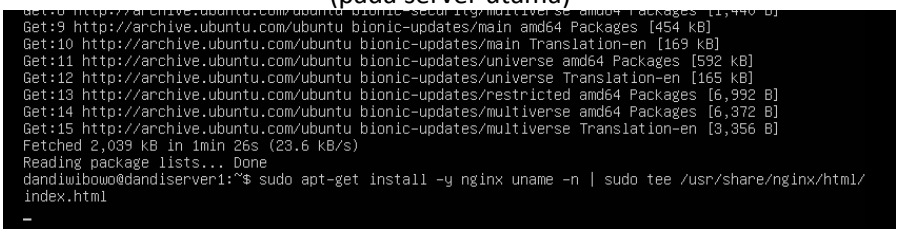


(pada server utama)

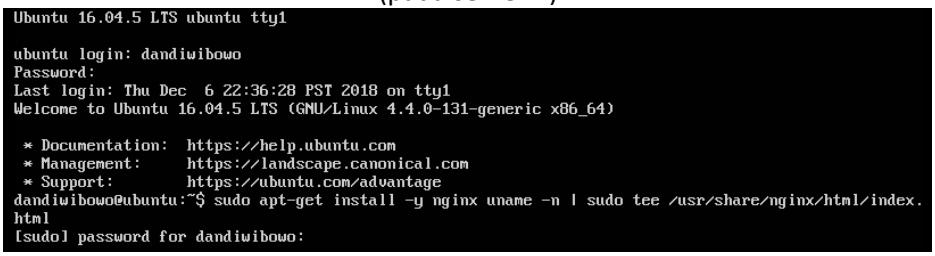
```
$ sudo apt-get install -y nginx uname -n | sudo tee
/usr/share/nginx/html/index.html
```



(pada server utama)



(pada server 1)



(pada server 2)

2. Untuk melakukan *Load balancing* inputkan command dibawah ini

```
$ sudo apt-get install -y nginx
```

```
dandiwibowo@ubuntu:~$ sudo apt-get install -y nginx
Reading package lists... 92%
```

(Pada server utama)

```
dandiwibowo@ubuntu:~$ sudo apt-get install -y nginx
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  nginx-common nginx-core
Suggested packages:
  fcgiwrap nginx-doc ssl-cert
The following packages will be upgraded:
  nginx nginx-common nginx-core
3 upgraded, 0 newly installed, 0 to remove and 72 not upgraded.
```

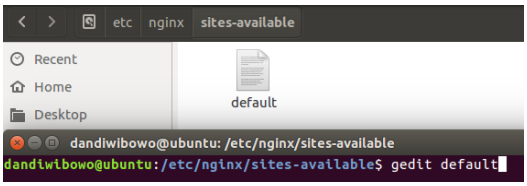
(Pada Server 1)

```
dandiwibowo@dandiserver1:~$ sudo apt-get install -y nginx
[sudo] password for dandiwibowo:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libnginx-mod-http-geoip libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream nginx-common nginx-core
Suggested packages:
  fcgiwrap nginx-doc ssl-cert
The following packages will be upgraded:
  libnginx-mod-http-geoip libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
```

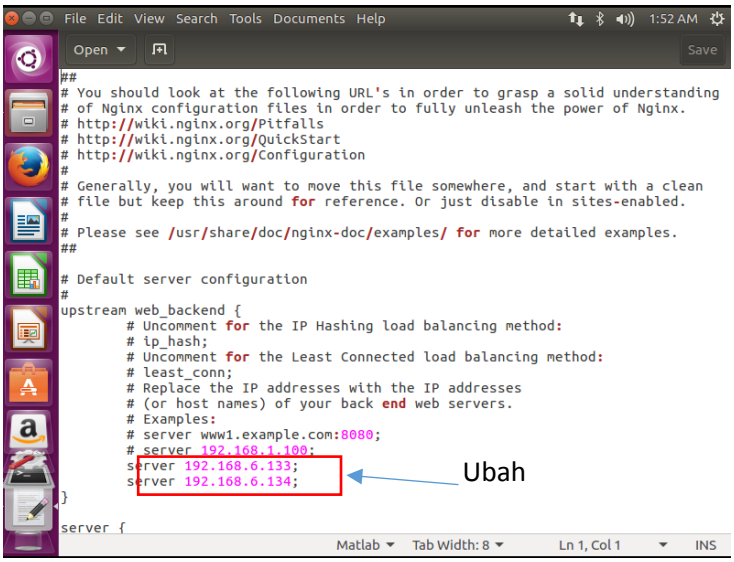
(Pada server 2)

3. Selanjutnya lakukan konfigurasi pada server utama terhadap 2 server lainnya dengan mengubah file */etc/nginx/sites-available/default:*

- Buka file default menggunakan gedit



- Edit IP server dan ubah sesuai IP server 1 dan IP server 2



- Edit file index.html pada server 1 dan server 2 pada directory ***var/www/html***

```
root@dandiserver1:/# cd var
root@dandiserver1:/var# cd www
root@dandiserver1:/var/www# cd html
root@dandiserver1:/var/www/html# ls
index.html  index.nginx-debian.html
root@dandiserver1:/var/www/html#
```

(Pada Server 1)

```
root@ubuntu:/# cd var
root@ubuntu:/var# cd www
root@ubuntu:/var/www# cd html
root@ubuntu:/var/www/html# ls
index.html  index.nginx-debian.html
root@ubuntu:/var/www/html#
```

(Pada Server 2)

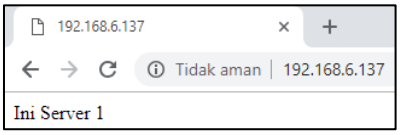
```
  GNU nano 2.9.3

Ini Server 1
```

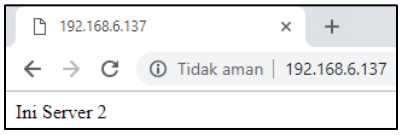
(index.html pada server 1)

```
  GNU nano 2.5.3

Ini Server 2
```

(index.html pada server 2)

- Save kedua file tersebut lalu coba buka IP server utama pada browser





- Jika berhasil maka browser akan menampilkan tulisan “ini server 1” dan “ini server 2” bergantian setiap kali merefersh, Karena fungsi load balancing adalah menyeimbangkan beban dari server tersebut.