

Praktikum Squid Proxy

Alat dan Bahan

- Squid
- MySql

Langkah Percobaan

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

```
dandiwiwowo@ubuntu: /  
dandiwiwowo@ubuntu:/etc/squid$ cd ../  
dandiwiwowo@ubuntu:/etc$ cd ../  
dandiwiwowo@ubuntu:/$ sudo apt-get update  
[sudo] password for dandiwiwowo:
```

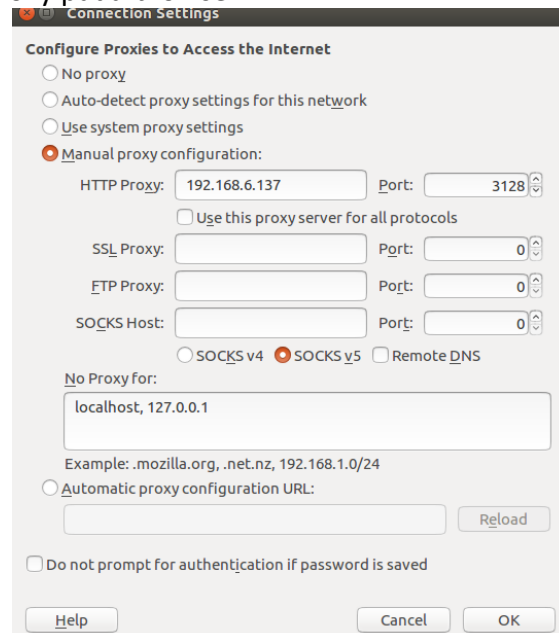
2. Install Squid dengan menginputkan command line `sudo apt-get install squid`

```
dandiwiwowo@ubuntu:~$ 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`

```
# from where browsing should be allowed  
#http_access allow localnet  
http_access allow localhost  
  
# And finally deny all other access to this proxy  
http_access allow  
  
# TAG: adapted http_access  
# Allowing or Denying access based on defined access lists  
#  
# Essentially identical to http_access, but runs after redirectors  
# and ICAP/eCAP adaptation. Allowing access control based on their  
# output.  
#
```

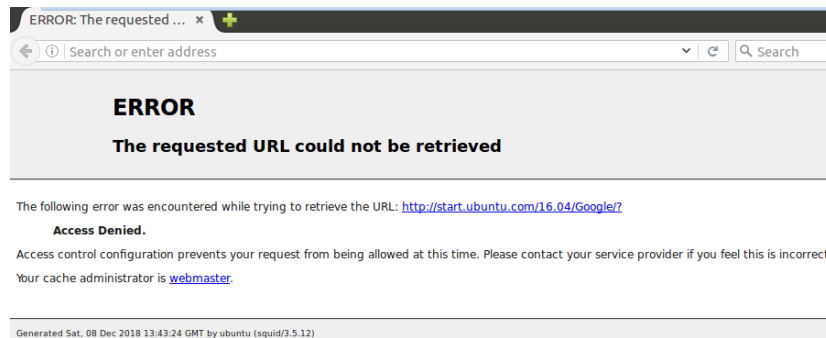
4. lakukan konfigurasi proxy pada browser



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

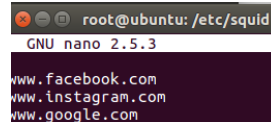
```
dandiwiwowo@ubuntu:~$ sudo service squid restart  
[sudo] password for dandiwiwowo:
```

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

```
# from where browsing should be allowed
#http_access allow localnet
http_access allow localhost

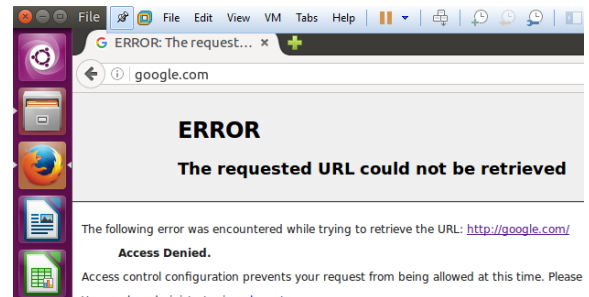
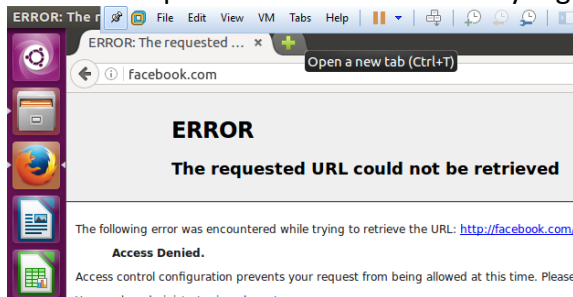
# And finally deny all other access to this proxy
http_access deny All

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

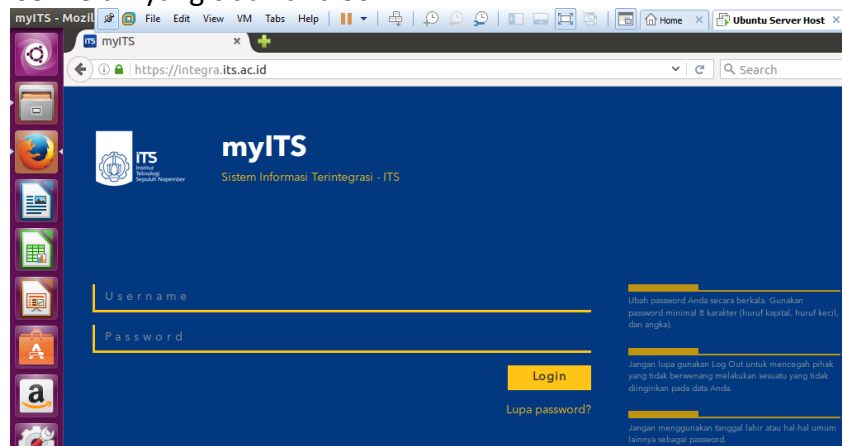
- Restart squid

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

- 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

```
dandiwiowo@ubuntu:~$ sudo service squid restart
dandiwiowo@ubuntu:~$ sudo service squid restart
dandiwiowo@ubuntu:~$ sudo service squid restart
dandiwiowo@ubuntu:~$ sudo service squid restart
dandiwiowo@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 dandiwiowo99 --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 x
# 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 = "dandiwiwobo99";
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 $sisjoomla = 0;
my $debug = 0;
my $shahsalt = undef;

```

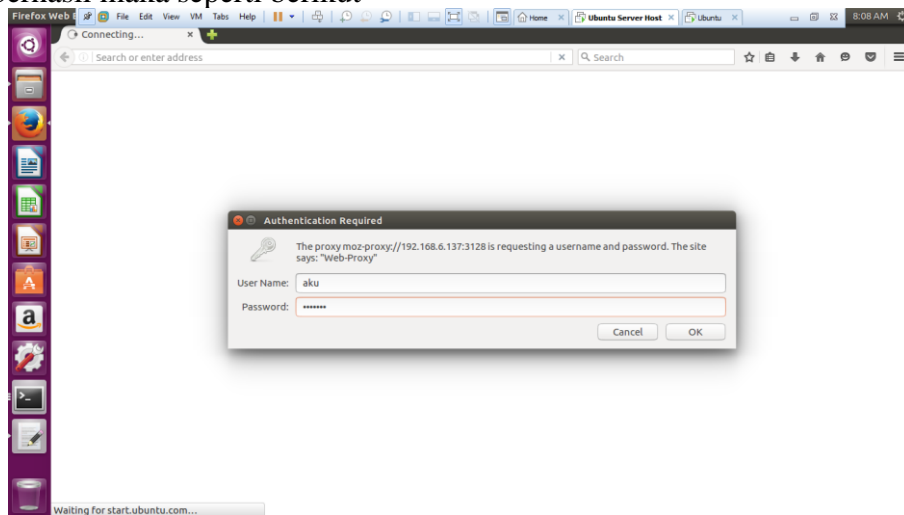
- Restart Proxy dan refresh browser

```

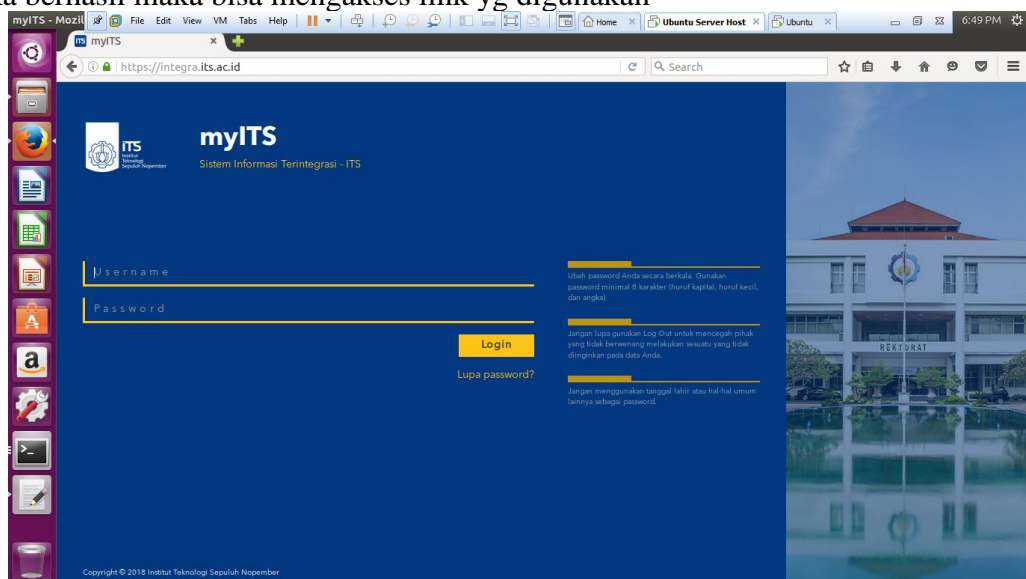
dandiwiwobo@ubuntu:~$ sudo service squid restart
[sudo] password for dandiwiwobo:
dandiwiwobo@ubuntu:~$

```

- 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
```

```
root@ubuntu:/etc/squid# 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
```

```
root@ubuntu:/etc/squid# 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

```
mysql> create table myLink(
-> url Varchar(50) Not NULL,
-> jml int(11) Not NULL
-> );
Query OK, 0 rows affected (1.21 sec)
mysql>
```

- 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 = "dandiwiowo99"; //password kita kosongi
$database = "myproxy";
$connect=mysqli_connect($host,$user,$pass,$database) or die
("gagal");

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

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

// now split into records
$i = 1;
$each_rec = 0;
while($i<$size) {
    $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!=""){

        $query="Select * from myLink where url='$myrealword'";
        $result = mysqli_query($connect, $query);
        $row = mysqli_num_rows($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>

```

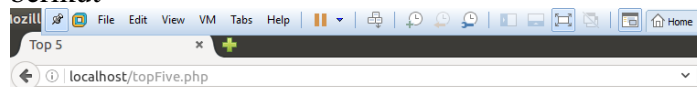
Ubah mode file **access.log** pada directory **/var/log/squid** menjadi **777**

```

root@ubuntu: /usr/lib/squid
sudandiwibowo@ubuntu: /usr/lib/squid$ sudo su
[sudo] password for dandiwibowo:
root@ubuntu: /usr/lib/squid# gedit basic_db_auth
root@ubuntu: /usr/lib/squid# sudo chmod 777 /var/log/squid/access.log
root@ubuntu: /usr/lib/squid#

```

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



These are the top 5 website mostly visited

```

ocsp.digicert.com => 69
start.ubuntu.com => 54
ocsp.pki.goog => 40
google.com => 24
ubuntu => 22

```

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
```

```
Ubuntu 16.04.5 LTS ubuntu tty1

ubuntu login: dandiwirowo
Password:
Last login: Wed Nov  7 06:53:03 PST 2018 from 192.168.6.138 on pts/2
Welcome to Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-131-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

dandiwirowo@ubuntu:~$
dandiwirowo@ubuntu:~$ sudo apt-get update
[sudo] password for dandiwirowo:
```

(pada server 1)

```
71 packages can be updated.
0 updates are security updates.

dandiwirowo@dandiserver1:~$ sudo apt-get update
[sudo] password for dandiwirowo: _
```

(pada server 2)

```
dandiwirowo@ubuntu: ~
dandiwirowo@ubuntu:~$ sudo apt-get update
[sudo] password for dandiwirowo:
```

(pada server utama)

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

```
dandiwirowo@ubuntu: ~
dandiwirowo@ubuntu:~$ sudo apt-get install -y nginx uname -n | sudo tee /usr/sha
re/nginx/html/index.html
[sudo] password for dandiwirowo: █
```

(pada server utama)

```
Get:0 http://archive.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [1,440 B]
Get:9 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [454 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [169 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [592 kB]
Get:12 http://archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [165 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [6,992 B]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [6,372 B]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse Translation-en [3,356 B]
Fetched 2,039 kB in 1min 26s (23.6 kB/s)
Reading package lists... Done
dandiwirowo@dandiserver1:~$ sudo apt-get install -y nginx uname -n | sudo tee /usr/sha
re/nginx/html/index.html
-
```

(pada server 1)

```
Ubuntu 16.04.5 LTS ubuntu tty1

ubuntu login: dandiwirowo
Password:
Last login: Thu Dec  6 22:36:28 PST 2018 on tty1
Welcome to Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-131-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage
dandiwirowo@ubuntu:~$ sudo apt-get install -y nginx uname -n | sudo tee /usr/sha
re/nginx/html/index.html
[sudo] password for dandiwirowo:
```

(pada server 2)

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

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

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

(Pada server utama)

```
dandiwiowo@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.
```

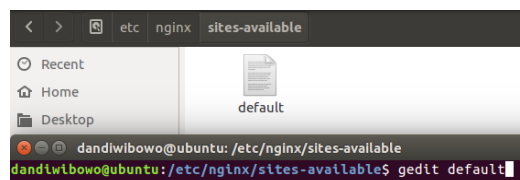
(Pada Server 1)

```
dandiwiowo@dandiserver1:~$ sudo apt-get install -y nginx
[sudo] password for dandiwiowo:
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
  libnginx-mod-mail libnginx-mod-stream nginx nginx-common nginx-core
```

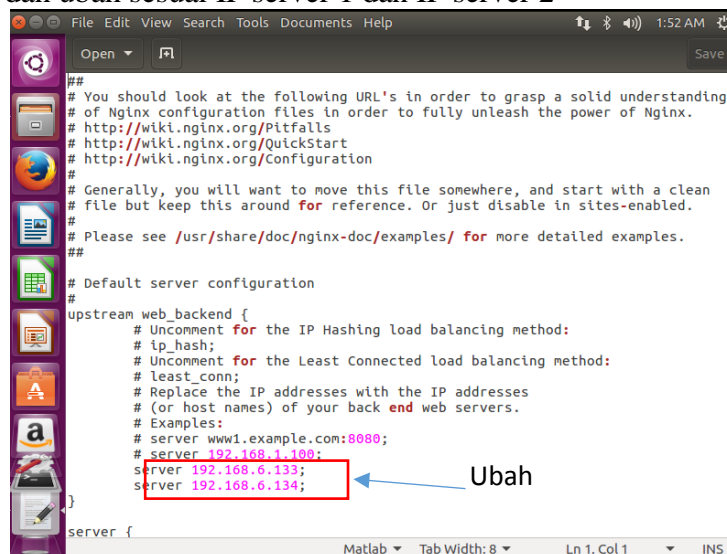
(Pada server 2)

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)

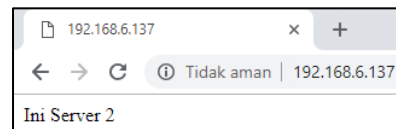
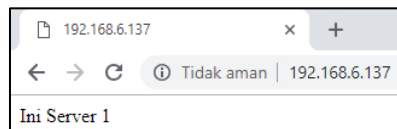
```
GNU nano 2.9.3
Ini Server 1
```

(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.