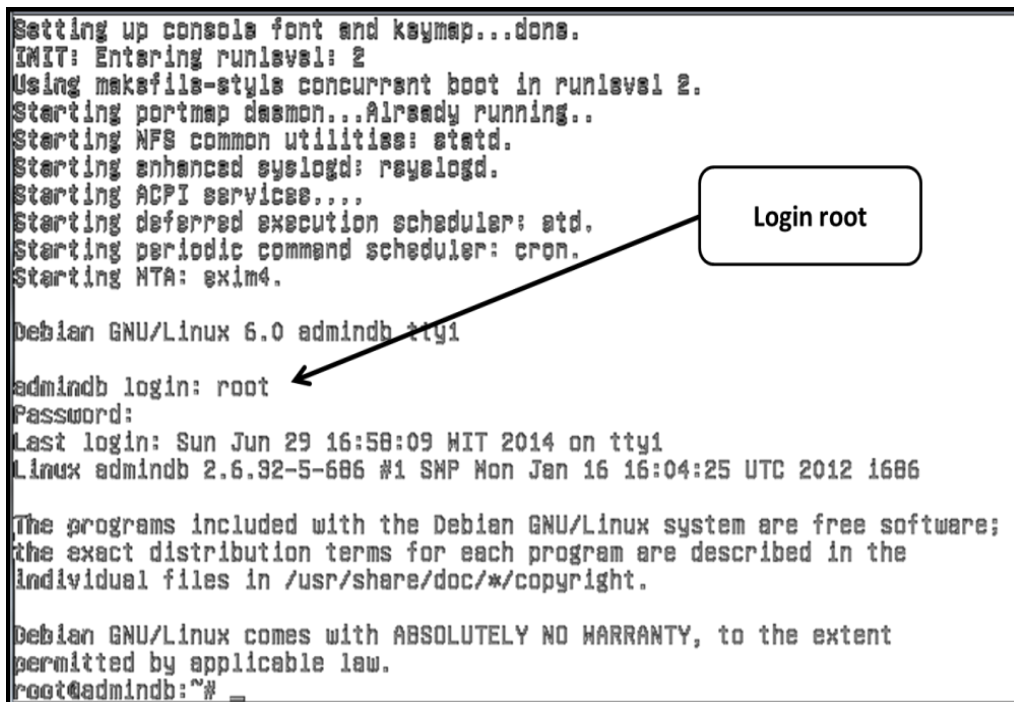


BAB V IMPLEMENTASI DAN PEMBAHASAN

5.1 Konfigurasi Debian Router

Debian digunakan sebagai Router. NAT (Network Address Translation) digunakan untuk menghubungkan antara jaringan local (LAN) dengan jaringan luar (WAN). Pada Konfigurasi Router Debian ini penulis menggunakan metode NAT dan juga menggunakan metode IP Forwarding. Berikut langkah-langkah konfigurasi debian router :

Gunakan login **root** untuk memulai konfigurasi.



```
Setting up console font and keymap...done.
INIT: Entering runlevel: 2
Using makefile-style concurrent boot in runlevel 2.
Starting portmap daemon...Already running..
Starting NFS common utilities: statd.
Starting enhanced syslogd: rsyslogd.
Starting ACPI services....
Starting deferred execution scheduler: atd.
Starting periodic command scheduler: cron.
Starting MTA: exim4.

Debian GNU/Linux 6.0 admin@tty1

admin@tty1 login: root
Password:
Last login: Sun Jun 29 16:58:09 WIT 2014 on tty1
Linux admin@tty1 2.6.32-5-686 #1 SMP Mon Jan 16 16:04:25 UTC 2012 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@admin@tty1:~#
```

Gambar 5.1 Login Root

Memeriksa konfigurasi ethernet, gunakan perintah : **ifconfig | less**

```
Setting up console font and keymap...done.
INIT: Entering runlevel: 2
Using makefile-style concurrent boot in runlevel 2.
Starting portmap daemon...Already running..
Starting NFS common utilities: statd.
Starting enhanced syslogd: rsyslogd.
Starting ACPI services....
Starting deferred execution scheduler: atd.
Starting periodic command scheduler: cron.
Starting MTA: exim4.

Debian GNU/Linux 6.0 admindb tty1

admindb login: root
Password:
Last login: Sun Jun 29 16:58:09 WIT 2014 on tty1
Linux admindb 2.6.32-5-686 #1 SMP Mon Jan 16 16:04:25 UTC 2012 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@admindb:~# ifconfig | less_ ←
```

Gambar 5.2 Memeriksa Konfigurasi Ethernet

Tampilan file network Interfaces, hanya ada **IP eth0** dan **IP local** saja.

```
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@admindb:~# ifconfig | less
eth0      Link encap:Ethernet HWaddr 08:00:27:a4:cc:8f
          inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fea4:cc8f/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:54 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B) TX bytes:2484 (2.4 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING MTU:16436 Metric:1
          RX packets:24 errors:0 dropped:0 overruns:0 frame:0
          TX packets:24 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:1952 (1.9 KiB) TX bytes:1952 (1.9 KiB)
```

Gambar 5.3 File Network Interfaces

Mengaktifkan IP Eth1 = IP LAN , dengan cara mengedit file interfaces.

Gunakan perintah : `pico /etc/network/interfaces`

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@admindb:~# ifconfig | less
eth0      Link encap:Ethernet  HWaddr 08:00:27:a4:cc:8f
          inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::a00:27ff:fea4:cc8f/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:54 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:2484 (2.4 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:16496  Metric:1
          RX packets:24 errors:0 dropped:0 overruns:0 frame:0
          TX packets:24 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:1952 (1.9 KiB)  TX bytes:1952 (1.9 KiB)

[1]+  Stopped                  ifconfig | less
root@admindb:~# pico /etc/network/interfaces
```

Perintah edit file interfaces

Gambar 5.4 Mengedit File Interfaces

```
GNU nano 2.2.4      File: /etc/network/interfaces      Modified

# dns-* options are implemented by the resolvconf package, if installed
dns-nameservers 192.168.1.254
dns-search smk2pkip.com

# The secondary network interface
auto eth1
iface eth1 inet static
    address 192.168.2.1
    netmask 255.255.255.0
    network 192.168.2.0_
    broadcast 192.168.2.255

^G Get Help      ^O WriteOut     ^R Read File    ^Y Prev Page    ^K Cut Text     ^C Cur Pos
^X Exit          ^J Justify      ^H Where Is    ^V Next Page    ^U UnCut Text  ^T To Spell
```

Tambahkan IP Eth1 sesuai dengan rancangan IP LAN

Gambar 5.5 Mengaktifkan IP Eth1

Simpan konfigurasi interfaces dan restart server.

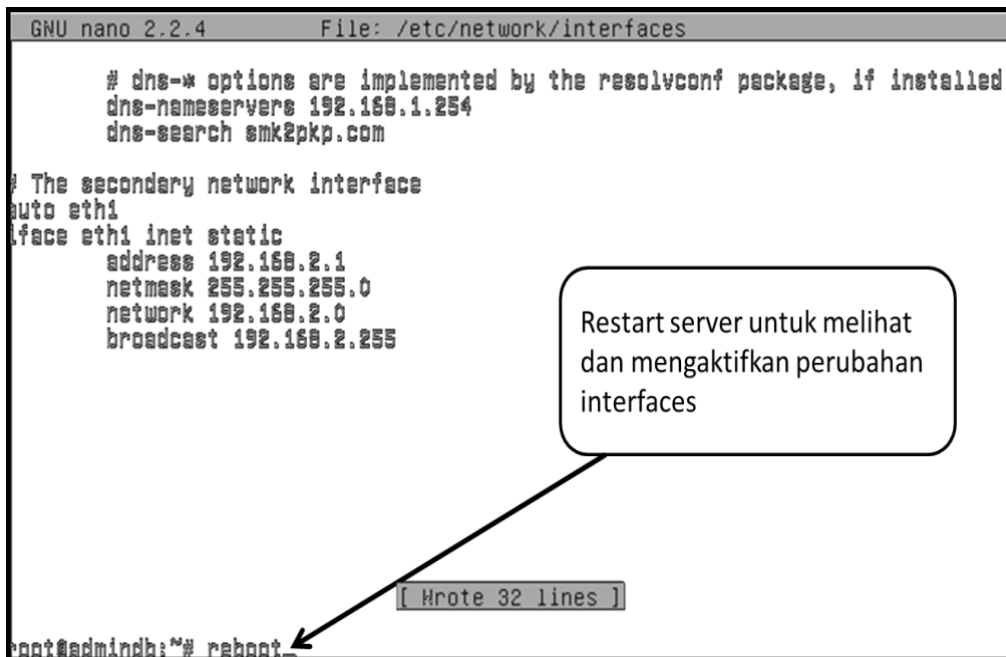
```
GNU nano 2.2.4 File: /etc/network/interfaces

# dns-* options are implemented by the resolvconf package, if installed
dns-nameservers 192.168.1.254
dns-search smk2pkp.com

# The secondary network interface
auto eth1
iface eth1 inet static
    address 192.168.2.1
    netmask 255.255.255.0
    network 192.168.2.0
    broadcast 192.168.2.255

[ Wrote 32 lines ]

root@adminidb:~# reboot
```



Gambar 5.6 Merestart Server

Setelah login, cek interface yang sudah diaktifkan.

```
root@adminidb:~# ifconfig | less
```

Konfigurasi sudah berhasil, maka akan terdapat eth1 (Ethernet LAN yang sudah ditambahkan sebelumnya).

```
eth0    Link encap:Ethernet HWaddr 08:00:27:a4:cc:8f
        inet addr:192.168.1.2 Bcast:192.168.1.255 Mask:255.255.255.0
        inet6 addr: fe80::a00:27ff:fea4:cc8f/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
        RX packets:0 errors:0 dropped:0 overruns:0 frame:0
        TX packets:54 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:0 (0.0 B) TX bytes:2484 (2.4 KiB)
        ↖
        WAN

eth1    Link encap:Ethernet HWaddr 08:00:27:9d:f6:ab
        inet addr:192.168.2.1 Bcast:192.168.2.255 Mask:255.255.255.0
        inet6 addr: fe80::a00:27ff:fe9d:f6ab/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
        RX packets:120 errors:0 dropped:0 overruns:0 frame:0
        TX packets:6 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:7200 (7.0 KiB) TX bytes:468 (468.0 B)
        ↖
        LAN

lo     Link encap:Local Loopback
        inet addr:127.0.0.1 Mask:255.0.0.0
        inet6 addr: ::1/128 Scope:Host
        UP LOOPBACK RUNNING MTU:16436 Metric:1
        RX packets:24 errors:0 dropped:0 overruns:0 frame:0
        TX packets:24 errors:0 dropped:0 overruns:0 carrier:0
```

Gambar 5.7 IP Ethernet yang telah Aktif

Mengaktifkan **IP forward**, gunakan perintah : **pico /etc/sysctl.conf**

Hapus tanda “#” untuk mengaktifkan ip forwarding.

```
GNU nano 2.2.4 File: /etc/sysctl.conf Modified
#####
# Functions previously found in netbase
#
# Uncomment the next two lines to enable Spoof protection (reverse-path filter)
# Turn on Source Address Verification in all interfaces to
# prevent some spoofing attacks
#net.ipv4.conf.default.rp_filter=1
#net.ipv4.conf.all.rp_filter=1
#
# Uncomment the next line to enable TCP/IP SYN cookies
# See http://lwn.net/Articles/277146/
# Note: This may impact IPv6 TCP sessions too
#net.ipv4.tcp_syncookies=1
#
# Uncomment the next line to enable packet forwarding for IPv4
net.ipv4.ip_forward=1 ←
#
# Uncomment the next line to enable packet forwarding for IPv6
# Enabling this option disables Stateless Address Autoconfiguration
#
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.8 Mengaktifkan IP Forward

Mengaktifkan NAT Routing Iptables , gunakan perintah : **pico /etc/rc.local**

Mambahkan nat routing iptables, kemudian simpan konfigurasi.

```
GNU nano 2.2.4 File: /etc/rc.local
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
iptables -t nat -A POSTROUTING -o eth0 -j MASQUERADE ←
exit 0
[ Read 15 lines ]
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.9 Mengaktifkan Iptables NAT

Kemudian restart debian server , gunakan perintah : **reboot**

Mengecek koneksi IP Eth0, gunakan perintah : **ping 192.168.1.2**

Mengecek koneksi IP Eth1, gunakan perintah : **ping 192.168.2.1**

```
root@adminidb:~# ping 192.168.1.2 ←
PING 192.168.1.2 (192.168.1.2) 56(84) bytes of data.
64 bytes from 192.168.1.2: icmp_req=1 ttl=64 time=0.112 ms
64 bytes from 192.168.1.2: icmp_req=2 ttl=64 time=0.070 ms
64 bytes from 192.168.1.2: icmp_req=3 ttl=64 time=0.000 ms
^Z
[2]+  Stopped                  ping 192.168.1.2
root@adminidb:~# ping 192.168.2.1 ←
PING 192.168.2.1 (192.168.2.1) 56(84) bytes of data.
64 bytes from 192.168.2.1: icmp_req=1 ttl=64 time=0.079 ms
64 bytes from 192.168.2.1: icmp_req=2 ttl=64 time=0.075 ms
64 bytes from 192.168.2.1: icmp_req=3 ttl=64 time=0.074 ms
264 bytes from 192.168.2.1: icmp_req=4 ttl=64 time=0.075 ms
^Z
[3]+  Stopped                  ping 192.168.2.1
root@adminidb:~# _
```

Gambar 5.10 Mengecek Koneksi IP eth0 dan eth1

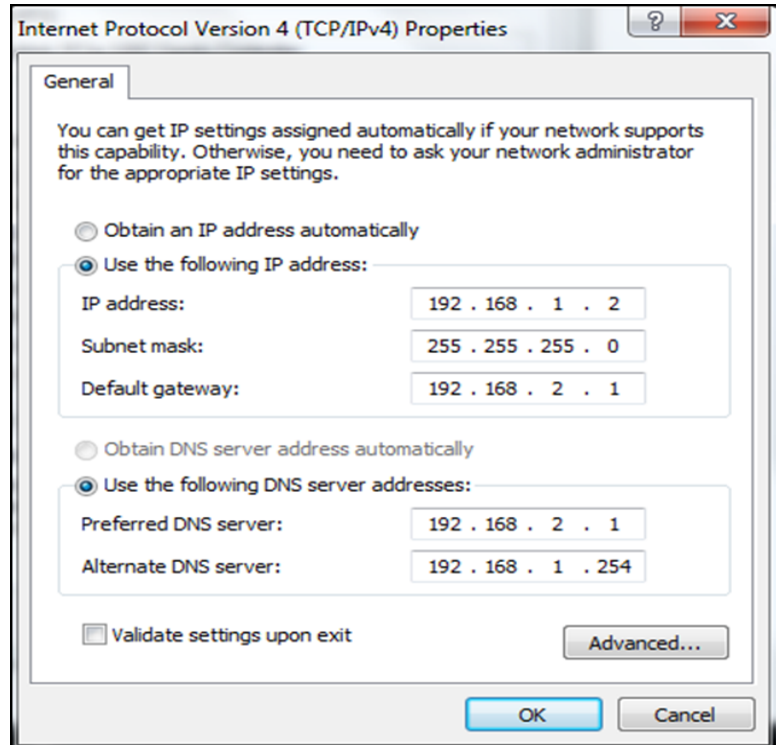
Mengecek nat Iptables telah berhasil, gunakan perintah : **iptables -t nat -n -L**

```
root@adminidb:~# iptables -t nat -n -L
Chain PREROUTING (policy ACCEPT)
target     prot opt source                destination

Chain POSTROUTING (policy ACCEPT)
target     prot opt source                destination
MASQUERADE all  --  0.0.0.0/0             0.0.0.0/0
Chain OUTPUT (policy ACCEPT)
target     prot opt source                destination
root@adminidb:~# _
```

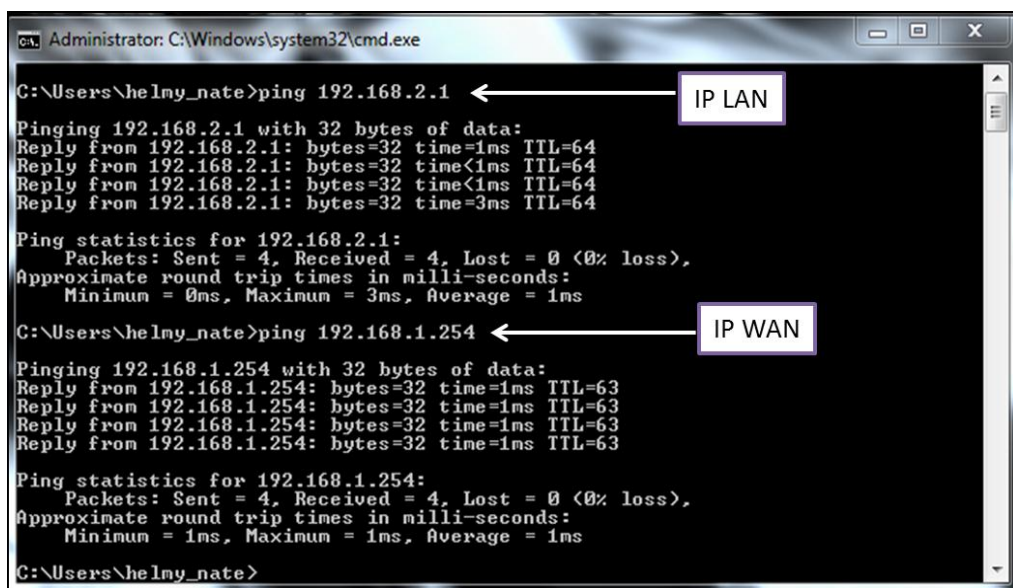
Gambar 5.11 Cek Nat Iptables

Menguji koneksi di client (Windows) ke Server Debian. Sesuaikan dengan konfigurasi tcp/ip client.



Gambar 5.12 Konfigurasi IP Client

Mengecek koneksi ke server, test ping ke server debian (IP LAN dan IP WAN).



Gambar 5.13 Tesh Koneksi Ip Server

5.2 Konfigurasi DHCP Server

DHCP (Dynamic Host Configuration Protocol) digunakan untuk melayani request Ip Address dari client. Gunanya adalah untuk mengkonfigurasi Ip pada computer, sebut saja Zero Configuration. Client akan meminta Ip Address pada server, kemudian server akan memberikan alokasi ip yang tersedia. Berikut langkah-langkah konfigurasi DHCP Server Debian :

Menginstal aplikasi dhcp server, gunakan perintah : **apt-get install dhcp3-server**

```
root@admindb:~# apt-get install dhcp3-server_
```

Isi dengan perintah : **Y** untuk menyetujui proses instalasi aplikasi dhcp server.

```
admindb login: root
Password:
Last login: Mon Jun 30 21:53:23 MIT 2014 on tty1
Linux admindb 2.6.32-5-686 #1 SMP Mon Jan 16 16:04:25 UTC 2012 i686

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
root@admindb:~# apt-get install dhcp3-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  isc-dhcp-server
Suggested packages:
  isc-dhcp-server-ldap
The following NEW packages will be installed:
  dhcp3-server isc-dhcp-server
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/403 KB of archives.
After this operation, 926 kB of additional disk space will be used.
Do you want to continue [Y/n]? y
```

Gambar 5.14 Instalasi Aplikasi DHCP Server

Setelah proses instalasi selesai, maka langkah selanjutnya ialah masuk ke folder dhcp dengan menggunakan perintah : **cd /etc/dhcp**

```
root@admindb:~# cd /etc/dhcp_
```


Menampilkan file dari direktori Dhcp, gunakan perintah : **ls**

Kemudian backup file dhcpd.conf dengan menggunakan perintah : **cp dhcpd.conf dhcpd.conf.ori**

```
root@adminidb:~# cd /etc/dhcp
root@adminidb:/etc/dhcp# ls
dhclient.conf dhclient-enter-hooks.d dhclient-exit-hooks.d dhcpd.conf
root@adminidb:/etc/dhcp# cp dhcpd.conf dhcpd.conf.ori
```

Gambar 5.15 Membbackup File Dhcp.conf

Periksa kembali file dhcp, untuk menyakinkan bahwa file dhcpd.conf telah di backup.

```
root@adminidb:~# cd /etc/dhcp
root@adminidb:/etc/dhcp# ls
dhclient.conf dhclient-enter-hooks.d dhclient-exit-hooks.d dhcpd.conf
root@adminidb:/etc/dhcp# cp dhcpd.conf dhcpd.conf.ori
root@adminidb:/etc/dhcp# ls
dhclient.conf dhclient-exit-hooks.d dhcpd.conf.ori
dhclient-enter-hooks.d dhcpd.conf
root@adminidb:/etc/dhcp# _
```

Gambar 5.16 Memeriksa File Dhcp

Mengedit file dhcpd.conf dengan menggunakan perintah : **pico dhcpd.conf**

```
root@adminidb:/etc/dhcp# pico dhcpd.conf
```

Kemudian edit domain name : **example.org** dengan nama domain dan : **ns1.example.org** dengan IP Address eth1.

```
GNU nano 2.2.4 File: dhcpd.conf

# Sample configuration file for ISC dhcpd for Debian
#
#
# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# option definitions common to all supported networks...
option domain-name "example.org";
option domain-name-servers ns1.example.org, ns2.example.org;

default-lease-time 600;
max-lease-time 7200;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.17 Mengedit Domain Name

```
GNU nano 2.2.4 File: dhcpd.conf Modified

# Sample configuration file for ISC dhcpd for Debian
#
#
# The ddns-updates-style parameter controls whether or not the server will
# attempt to do a DNS update when a lease is confirmed. We default to the
# behavior of the version 2 packages ('none', since DHCP v2 didn't
# have support for DDNS.)
ddns-update-style none;

# option definitions common to all supported networks...
option domain-name "smk2pkp.com";
option domain-name-servers 192.168.2.1;

default-lease-time 600;
max-lease-time 7200;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
```

Gambar 5.18 Tampilan domain name setelah diedit

Kemudian hapus tanda : # untuk mengaktifkan perintah authoritative.

```
GNU nano 2.2.4 File: dhcpd.conf Modifie
# option definitions common to all supported networks...
option domain-name "smk2pkp.com";
option domain-name-servers 192.168.2.1;

default-lease-time 600;
max-lease-time 7200;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

#subnet 10.152.167.0 netmask 255.255.255.0 {
#}

^G Get Help ^O WriteOut ^R Read File ^V Prev Page ^K Cut Text ^C Cur Pos
```

Gambar 5.19 Mengaktifkan Authoritative

Kemudian hapus tanda “#” untuk mengaktifkan konfigurasi Dhcp

```
# A slightly different configuration for an internal subnet.
#subnet 10.5.5.0 netmask 255.255.255.224 {
# range 10.5.5.26 10.5.5.30;
# option domain-name-servers ns1.internal.example.org;
# option domain-name "internal.example.org";
# option routers 10.5.5.1;
# option broadcast-address 10.5.5.31;
# default-lease-time 600;
# max-lease-time 7200;
#}

# Hosts which require special configuration options can be listed in
# host statements. If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

#host passacaglia {
# hardware ethernet 0:0:c0:5d:bd:95;
# filename "vmunix.passacaglia";

^G Get Help ^O WriteOut ^R Read File ^V Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.20 Konfigurasi DHCP

Kemudian edit file yang digaris bawah (**IP eth1**).

```
# option broadcast-address 10.254.239.31;
# option routers rtr-239-32-1.example.org;
#
# A slightly different configuration for an internal subnet.
# subnet 10.5.5.0 netmask 255.255.255.224 {
# range 10.5.5.24 10.5.5.30;
# option domain-name-servers ns1.internal.example.org;
# option domain-name "internal.example.org";
# option routers 10.5.5.1;
# option broadcast-address 10.5.5.31;
# default-lease-time 600;
# max-lease-time 7200;
#
# Hosts which require special configuration options can be listed in
# host statements.  If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.21 Konfigurasi DHCP 1

```
GNU nano 2.2.4 File: dhcpd.conf Modified
# option broadcast-address 10.254.239.31;
# option routers rtr-239-32-1.example.org;
#
# A slightly different configuration for an internal subnet.
# subnet 192.168.2.0 netmask 255.255.255.224 {
# range 192.168.2.0 192.168.2.100;
# option domain-name-servers 192.168.2.1;
# option domain-name "sak2pkp.com";
# option routers 192.168.2.1;
# option broadcast-address 192.168.2.255;
# default-lease-time 600;
# max-lease-time 7200;
#
# Hosts which require special configuration options can be listed in
# host statements.  If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
```

Gambar 5.22 Tampilan DHCP setelah konfigurasi

kemudian restart dhcp server, gunakan perintah : `/etc/init.d/isc-dhcp-server restart`

```
[ Wrote 107 lines ]
root@adminindb:/etc/dhcp# /etc/init.d/isc-dhcp-server restart_
```

Gambar 5.23 Restart Dhcp Server

Saat proses restart pertama, pasti akan muncul pemberitahuan : **failed**

```
[ Wrote 107 lines ]
root@adminindb:/etc/dhcp# /etc/init.d/isc-dhcp-server restart
Stopping ISC DHCP server: dhcpd failed! ←
Starting ISC DHCP server: dhcpd.
root@adminindb:/etc/dhcp# _
```

Gambar 5.24 Failed DHCP Server

Restart kembali dhcp server. Jika tidak ada pemberitahuan failed. Maka konfigurasi telah berhasil.

```
[ Wrote 107 lines ]
root@adminindb:/etc/dhcp# /etc/init.d/isc-dhcp-server restart
Stopping ISC DHCP server: dhcpd failed!
Starting ISC DHCP server: dhcpd.
root@adminindb:/etc/dhcp# /etc/init.d/isc-dhcp-server restart ←
Stopping ISC DHCP server: dhcpd.
Starting ISC DHCP server: dhcpd.
root@adminindb:/etc/dhcp# _
```

Gambar 5.25 Restart Dhcp Server 1

5.3 Konfigurasi DNS Server

Domain Name System adalah suatu metode untuk meng-konversikan Ip Address (numerik) suatu komputer ke dalam suatu nama domain (alphabetic), ataupun sebaliknya. Yang memudahkan kita dalam mengingat computer tersebut. berikut langkah-langkah konfigurasi DNS Server Debian :

Menginstal aplikasi bind9 untuk memulai konfigurasi DNS, gunakan perintah :

apt-get install bind9

```
root@adminidb:~# apt-get install bind9_
```

Isi dengan perintah : **Y** untuk menyetujui proses instalasi DNS Server.

```
root@adminidb:~# apt-get install bind9
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  bind9utils
Suggested packages:
  bind9-doc resolvconf ufw
The following NEW packages will be installed:
  bind9 bind9utils
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 451 KB of archives.
After this operation, 1,212 KB of additional disk space will be used.
Do you want to continue [Y/n]? Y_
```

Gambar 5.26 Instalasi Aplikasi bind9

Setelah proses instalasi selesai, maka langkah selanjutnya ialah masuk ke folder bind dengan menggunakan perintah : **cd /etc/bind**

```

bind9-doc resolvconf ufw
The following NEW packages will be installed:
  bind9 bind9utils
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/454 kB of archives.
After this operation, 1,389 kB of additional disk space will be used.
Do you want to continue [Y/n]? Y
Preconfiguring packages ...
Selecting previously deselected package bind9utils.
(Reading database ... 22488 files and directories currently installed.)
Unpacking bind9utils (from .../bind9utils_9.7.3.dfsg-1~squeeze4_1386.deb) ...
Selecting previously deselected package bind9.
Unpacking bind9 (from .../bind9_9.7.3.dfsg-1~squeeze4_1386.deb) ...
Processing triggers for man-db ...
Setting up bind9utils (1:9.7.3.dfsg-1~squeeze4) ...
Setting up bind9 (1:9.7.3.dfsg-1~squeeze4) ...
Adding group `bind' (GID 106) ...
Done.
Adding system user `bind' (UID 103) ...
Adding new user `bind' (UID 103) with group `bind' ...
Not creating home directory `/var/cache/bind'.
wrote key file "/etc/bind/rndc.key"
#
Starting domain name service...: bind9.
root@admindb:~# cd /etc/bind_

```

Gambar 5.27 Masuk ke Direktori Bind

Mengecek isi direktori Bind, gunakan perintah : ls

```

The following NEW packages will be installed:
  bind9 bind9utils
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/454 kB of archives.
After this operation, 1,389 kB of additional disk space will be used.
Do you want to continue [Y/n]? Y
Preconfiguring packages ...
Selecting previously deselected package bind9utils.
(Reading database ... 22488 files and directories currently installed.)
Unpacking bind9utils (from .../bind9utils_9.7.3.dfsg-1~squeeze4_1386.deb) ...
Selecting previously deselected package bind9.
Unpacking bind9 (from .../bind9_9.7.3.dfsg-1~squeeze4_1386.deb) ...
Processing triggers for man-db ...
Setting up bind9utils (1:9.7.3.dfsg-1~squeeze4) ...
Setting up bind9 (1:9.7.3.dfsg-1~squeeze4) ...
Adding group `bind' (GID 106) ...
Done.
Adding system user `bind' (UID 103) ...
Adding new user `bind' (UID 103) with group `bind' ...
Not creating home directory `/var/cache/bind'.
wrote key file "/etc/bind/rndc.key"
#
Starting domain name service...: bind9.
root@admindb:~# cd /etc/bind
root@admindb:/etc/bind# ls_

```

Gambar 5.28 Cek isi Directory Bind

Ditahap ini, kita akan membuat (mengcopy) 3 file dan 2 file backup.

- cp db.local → db.smk2pkp (nama domain)
- cp db.local → db.sub
- cp db.127 → db.192 (IP eth1)
- cp named.conf.default-zones → named.conf.default-zones.ori (backup)
- cp named.conf.options → named.conf.options.ori (backup)

```
Selecting previously deselected package bind9.
Unpacking bind9 (from .../bind9_9.7.3.dfsg-1~squeeze4_1386.deb) ...
Processing triggers for man-db ...
Setting up bind9utils (1:9.7.3.dfsg-1~squeeze4) ...
Setting up bind9 (1:9.7.3.dfsg-1~squeeze4) ...
Adding group `bind' (GID 106) ...
Done.
Adding system user `bind' (UID 103) ...
Adding new user `bind' (UID 103) with group `bind' ...
Not creating home directory `/var/cache/bind'.
wrote key file "/etc/bind/rndc.key"
#
Starting domain name service...: bind9.
root@adminidb:~# cd /etc/bind
root@adminidb:/etc/bind# ls
bind.keys  db.empty  named.conf.default-zones  zones.rfc1918
db.0       db.local  named.conf.local
db.127     db.root   named.conf.options
db.255     named.conf rndc.key
root@adminidb:/etc/bind# cp db.local db.smk2pkp
root@adminidb:/etc/bind# cp db.local db.sub
root@adminidb:/etc/bind# cp db.127 db.192
root@adminidb:/etc/bind# cp named.conf.default-zones named.conf.default-zones.ori
root@adminidb:/etc/bind# cp named.conf.options named.conf.options.ori
root@adminidb:/etc/bind# _
```

Gambar 5.29 Mengedit File Bind

Memastikan isi file Bind telah tercopy, gunakan perintah : **ls**

```
root@adminidb:/etc/bind# ls
bind.keys  db.empty  named.conf                named.conf.options.ori
db.0       db.local  named.conf.default-zones  rndc.key
db.127     db.root   named.conf.default-zones.ori  zones.rfc1918
db.192     db.smk2pkp named.conf.local
db.255     db.sub    named.conf.options
root@adminidb:/etc/bind# _
```

Gambar 5.30 Mengecek File Bind yang tercopy

Mengedit file **named.conf.default-zones** , gunakan perintah : **pico**

named.conf.default-zones

```
bind.keys  db.empty  named.conf                named.conf.options.ori
db.0       db.local  named.conf.default-zones  rndc.key
db.127     db.root   named.conf.default-zones.ori  zones.rfc1918
db.192     db.smk2pkp named.conf.local
db.255     db.sub    named.conf.options
root@adminidb:/etc/bind# pico named.conf.default-zones_
```

Gambar 5.31 Mengedit file named.conf.default-zones

Menambahkan admin domain pada default zones, gunakan trik “cut-uncut” untuk mempercepat pengeditan interfaces. Catatan : cut dimulai dari (zone “localhost”)

```

GNU nano 2.2.4      File: named.conf.default-zones

// prime the server with knowledge of the root servers
zone "." {
    type hint;
    file "/etc/bind/db.root";
};

// be authoritative for the localhost forward and reverse zones, and for
// broadcast zones as per RFC 1912

zone "localhost" { ←
    type master;
    file "/etc/bind/db.local";
};

zone "127.in-addr.arpa" {
    type master;
    file "/etc/bind/db.127";
};

zone "0.in-addr.arpa" {
    type master;
    file "/etc/bind/db.0";
};

```

[Read 30 lines]

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
 ^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

Gambar 5.32 Menambahkan Admin Domain

Awali tambahan default zone dengan tanda (//).

```

GNU nano 2.2.4      File: named.conf.default-zones      Modified

    file "/etc/bind/db.0";
};

zone "255.in-addr.arpa" {
    type master;
    file "/etc/bind/db.255";
};

//Tambahan Admin Domain (smk2pkp.com)_ ←
zone "localhost" {
    type master;
    file "/etc/bind/db.local";
};

zone "127.in-addr.arpa" {
    type master;
    file "/etc/bind/db.127";
};

```

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
 ^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

Gambar 5.33 Mengedit Default Zones

```

GNU nano 2.2.4      File: named.conf.default-zones      Modified
//Tambahan Admin Domain (smk2pkp.com)
zone "smk2pkp.com" {
    type master;
    file "/etc/bind/db.smk2pkp";
};

zone "sub.smk2pkp.com" {
    type master;
    file "/etc/bind/db.sub";
};

zone "2.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};

^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit      ^J Justify   ^H Where Is  ^V Next Page  ^U UnCut Text ^T To Spell

```

Gambar 5.34 Tampilan Default Zones setelah diedit

Mengedit file named.conf.options, gunakan perintah : **pico named.conf.options**

Tampilan awal file named.conf.options

```

GNU nano 2.2.4      File: named.conf.options
options {
    directory "/var/cache/bind";

    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk.  See http://www.kb.cert.org/vuls/id/800119

    // 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 {
    //     0.0.0.0;
    // };

    auth-nxdomain no;    # conform to RFC1035
    listen-on-v6 { any; };
};

[ Read 20 lines ]
^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit      ^J Justify   ^H Where Is  ^V Next Page  ^U UnCut Text ^T To Spell

```

Gambar 5.35 Tampilan Awal File named.conf.options

Hapus tanda (//) , tambahkan allow-query { any; };

Dan ganti 0.0.0.0; menjadi IP ISP.

```
GNU nano 2.2.4 File: named.conf.options Modified
options {
    directory "/var/cache/bind";

    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk. See http://www.kb.cert.org/vuls/id/800118

    // 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 {
        192.168.1.254;
    };
    allow-query { any; };

    auth-nxdomain no;    # conform to RFC1035
    listen-on-v6 { any; };
};

^G Get Help  ^O WriteOut  ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit      ^J Justify   ^H Where Is  ^V Next Page  ^U UnCut Text ^T To Spell
```

Gambar 5.36 Mengedit File named.conf.options

Mengedit file resolv.conf , gunakan perintah : **pico /etc/resolv.conf**

ctt: perintah menggunakan perintah /etc/ karena file tersebut terdapat difolder etc.

```
[ New File ]
root@admindb:/etc/bind# pico /etc/resolv.conf_
```

Gambar 5.37 Mengedit file resolv.conf

```
GNU nano 2.2.4 File: /etc/resolv.conf
search smk2pkp.com
nameserver 192.168.1.254
```

Gambar 5.38 Tampilan Awal File resolv.conf

Mambahkan nameserver IP Local dan IP eth1.

```
GNU nano 2.2.4 File: /etc/resolv.conf Modified
search smk2pkp.com
nameserver 127.0.0.1
nameserver 192.168.2.1
nameserver 192.168.1.254
```

Gambar 5.39 Menambahkan name server

Mengedit file db.smk2pkp, gunakan perintah : **pico db.smk2pkp**

```
[ Wrote 4 lines ]
root@edmindb:/etc/bind# pico db.smk2pkp_
```

Gambar 5.40 Edit file db.smk2pkp

Tampilan awal file db.smk2pkp

```
GNU nano 2.2.4 File: db.smk2pkp
#
# BIND data file for local loopback interface
#
$TTL 604800
@ IN SOA localhost. root.localhost. (
    2 ; Serial
    604800 ; Refresh
    86400 ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
#
@ IN NS localhost.
@ IN A 127.0.0.1
@ IN AAAA ::1

[ Read 14 lines ]
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^T Justify ^W Where Is ^V Next Page ^U UnCut Text ^_ To Spell
```

Gambar 5.41 Tampilan file db.smk2pkp

Tampilan file db.smk2pkp setelah diedit.

Perhatikan hostname, domain, dan tanda (.) secara teliti.

```
GNU nano 2.2.4 File: db.smk2pkp Modified
;
; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA admindb.smk2pkp.com. admindb.smk2pkp.com. (
    2 ; Serial
    604800 ; Refresh
    86400 ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS admindb.smk2pkp.com.
@ IN MX 10 mail.smk2pkp.com.
@ IN A 192.168.2.1

admindb IN A 192.168.2.1
www IN CNAME admindb
mail IN CNAME admindb_

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.42 File db.smk2pkp setelah diedit

Mengedit file db.sub, gunakan perintah : **pico db.sub**

```
[ Wrote 19 lines ]
root@admindb:/etc/bind# pico db.sub_
```

Gambar 5.43 Mengedit file db.sub

Tampilan file db.sub setelah diedit.

Ctt : Perhatikan hostname, domain, dan tanda (.) secara teliti.

```
GNU nano 2.2.4 File: db.sub Modified
;
; BIND data file for local loopback interface
;
$TTL 604800
@ IN SOA sub.smk2pkp.com. sub.smk2pkp.com. (
    2 ; Serial
    604800 ; Refresh
    86400 ; Retry
    2419200 ; Expire
    604800 ) ; Negative Cache TTL
;
@ IN NS sub.smk2pkp.com
@ IN A 192.168.2.1

sub IN A 192.168.2.1_

^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.44 File db.sub setelah diedit

Mengedit file db.192, gunakan perintah : **pico db.192**

```
[ Wrote 15 lines ]
root@admindb:/etc/bind# pico db.192_
```

Gambar 5.45 Mengedit file db.192

Tampilan file db.192 setelah diedit.

Perhatikan hostname, domain, dan tanda (.) secara teliti.

```
GNU nano 2.2.4      File: db.192      Modified
;
; BIND reverse data file for local loopback interface
;
$TTL      604800
@         IN      SOA      admindb.smk2pkp.com. admindb.smk2pkp.com. (
; Serial
          1          ; Refresh
          604800     ; Retry
          86400     ; Expire
          2419200   ; Negative Cache TTL
          604800 )
;
@         IN      NS       admindb.smk2pkp.com.
d_       IN      PTR      admindb.smk2pkp.com.

^G Get Help   ^O WriteOut  ^R Read File  ^V Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit       ^J Justify   ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```

Gambar 5.46 File db.192 setelah diedit

Rerestart server DNS (bind9), gunakan perintah : **/etc/init.d/bind9 restart**

```
[ Wrote 13 lines ]
root@admindb:/etc/bind# /etc/init.d/bind9 restart_
```

Gambar 5.47 Restart DNS Server (bind9)

Memeriksa konfigurasi DNS di Server Debian, gunakan perintah : **nslookup**

```
root@admindb:/etc/bind# nslookup
> www.smk2pkp.com
Server:          127.0.0.1
Address:         127.0.0.1#53

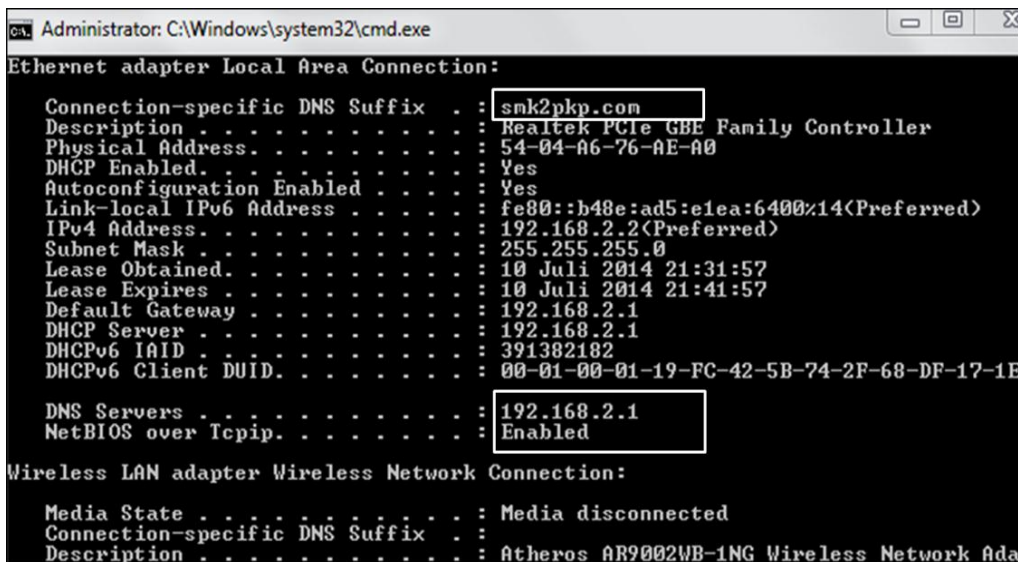
www.smk2pkp.com canonical name = admindb.smk2pkp.com.
Name:   admindb.smk2pkp.com
Address: 192.168.2.1
> mail.smk2pkp.com
Server:          127.0.0.1
Address:         127.0.0.1#53

mail.smk2pkp.com canonical name = admindb.smk2pkp.com.
Name:   admindb.smk2pkp.com
Address: 192.168.2.1
> sub.smk2pkp.com
Server:          127.0.0.1
Address:         127.0.0.1#53

Name:   sub.smk2pkp.com
Address: 192.168.2.1
> -
```

Gambar 5.48 Memeriksa Konfigurasi DNS

Setelah konfigurasi di server debian selesai, kita harus menguji berfungsi tidaknya DNS di client. Pada Client (Windows) Gunakan perintah : **ipconfig /all** untuk memeriksa semua konfigurasi ip.



```
Administrator: C:\Windows\system32\cmd.exe
Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : smk2pkp.com
    Description . . . . .           : Realtek PCIe GBE Family Controller
    Physical Address. . . . .       : 54-04-A6-76-AE-A0
    DHCP Enabled. . . . .           : Yes
    Autoconfiguration Enabled . . . : Yes
    Link-local IPv6 Address . . . . .: fe80::b48e:ad5:e1ea:6400%14(Preferred)
    IPv4 Address. . . . .            : 192.168.2.2(Preferred)
    Subnet Mask . . . . .           : 255.255.255.0
    Lease Obtained. . . . .         : 10 Juli 2014 21:31:57
    Lease Expires . . . . .         : 10 Juli 2014 21:41:57
    Default Gateway . . . . .       : 192.168.2.1
    DHCP Server . . . . .           : 192.168.2.1
    DHCPv6 IAID . . . . .          : 391382182
    DHCPv6 Client DUID. . . . .     : 00-01-00-01-19-FC-42-5B-74-2F-68-DF-17-1E

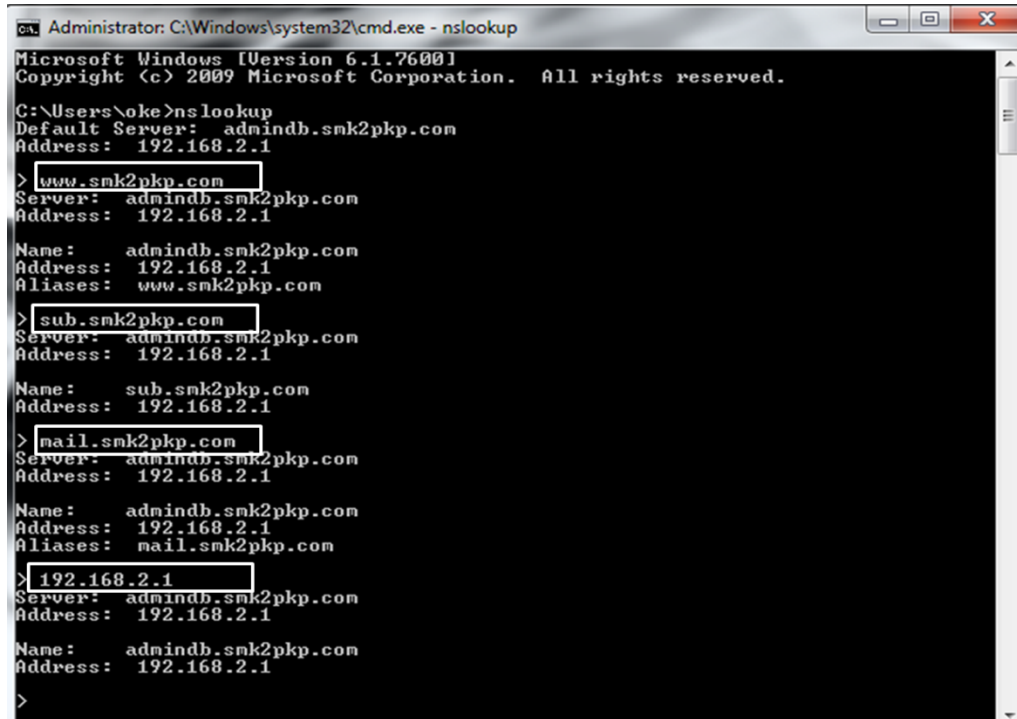
    DNS Servers . . . . .          : 192.168.2.1
    NetBIOS over Tcpi. . . . .     : Enabled

Wireless LAN adapter Wireless Network Connection:

    Media State . . . . .           : Media disconnected
    Connection-specific DNS Suffix  . :
    Description . . . . .           : Atheros AR9002WB-1NG Wireless Network Ada
```

Gambar 5.49 Cek Ipconfig pada client

Gunakan perintah : **nslookup** untuk memeriksa apakah client sudah berhasil mendapat DNS Server.



```
Administrator: C:\Windows\system32\cmd.exe - nslookup
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\oke>nslookup
Default Server: admindb.smk2pkp.com
Address: 192.168.2.1

> www.smk2pkp.com
Server: admindb.smk2pkp.com
Address: 192.168.2.1

Name: admindb.smk2pkp.com
Address: 192.168.2.1
Aliases: www.smk2pkp.com

> sub.smk2pkp.com
Server: admindb.smk2pkp.com
Address: 192.168.2.1

Name: sub.smk2pkp.com
Address: 192.168.2.1

> mail.smk2pkp.com
Server: admindb.smk2pkp.com
Address: 192.168.2.1

Name: admindb.smk2pkp.com
Address: 192.168.2.1
Aliases: mail.smk2pkp.com

> 192.168.2.1
Server: admindb.smk2pkp.com
Address: 192.168.2.1

Name: admindb.smk2pkp.com
Address: 192.168.2.1

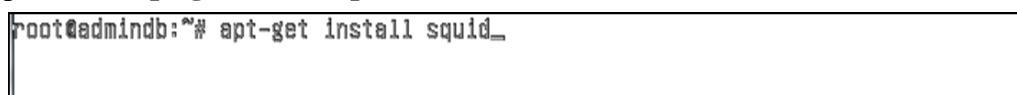
>
```

Gambar 5.50 Cek nslookup pada client

5.4 Konfigurasi Proxy Server

PROXY Server berfungsi untuk menyimpan halaman-halaman website yang pernah kita kunjungi. Fungsinya adalah sebagai CACHE, yang sewaktu-waktu jika kita ingin mengunjungi halaman yang sama, akan diambilkan dari Proxy tersebut terlebih dahulu, dan jika belum ada maka akan diteruskan ke server sebenarnya. Selain itu proxy juga dapat digunakan untuk Security, misalnya dengan memblokir akses ke suatu website ataupun sebagainya. Berikut langkah-langkah konfigurasi Proxy Server :

Instalasi aplikasi Squid untuk memulai konfigurasi Proxy Server, gunakan perintah : **apt-get install squid**



```
root@admindb:~# apt-get install squid_
```

Gambar 5.51 Instalasi Squid

Isi dengan perintah “Y” untuk menyetujui proses instalasi.

```
root@tkjserver01:~# apt-get install squid
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  squid-common squid-langpack
Suggested packages:
  squidclient squid-cgi logcheck-database resolvconf smbclient winbind
The following NEW packages will be installed:
  squid squid-common squid-langpack
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/1,345 kB of archives.
After this operation, 8,356 kB of additional disk space will be used.
Do you want to continue [Y/n]? Y_
```

Gambar 5.52 Memulai Instalasi Squid

- Gunakan perintah “mkdir /cache” untuk membuat directory untuk penyimpanan cache.
- Gunakan perintah “chown proxy:proxy /cache” untuk mengubah kepemilikan folder cache.
- Gunakan perintah “chown proxy:proxy /etc/squid/squid.conf” untuk mengubah kepemilikan folder squid.conf
- Gunakan perintah “cd /etc/squid” untuk masuk ke folder squid.
- Gunakan perintah “cp squid.conf squid.conf.ori” untuk mengcopy/bakup folder squid.conf.
- Gunakan perintah “pico squid.conf” untuk mengedit folder squid.conf.

```
Reading state information... Done
Suggested packages:
  squidclient squid-cgi logcheck-database resolvconf smbclient winbind
The following NEW packages will be installed:
  squid
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/765 kB of archives.
After this operation, 1,999 kB of additional disk space will be used.
Preconfiguring packages ...
Selecting previously deselected package squid.
(Reading database ... 24095 files and directories currently installed.)
Unpacking squid (from .../squid_2.7.STABLE9-2.1_1986.deb) ...
Processing triggers for man-db ...
Setting up squid (2.7.STABLE9-2.1) ...
Restarting Squid HTTP proxy: squid.
root@admindb:~# mkdir /cache
root@admindb:~# chown proxy:proxy /cache
root@admindb:~# chown proxy:proxy /etc/squid/squid.conf
root@admindb:~# cd /etc/squid
root@admindb:/etc/squid# ls
squid.conf
root@admindb:/etc/squid# cp squid.conf squid.conf.ori
root@admindb:/etc/squid# ls
squid.conf squid.conf.ori
root@admindb:/etc/squid# pico squid.conf_
```

Gambar 5.53 Mengedit File Direktori Squid

Tampilan awal Folder squid.conf

Gunakan fitur pencarian (untuk mengaktifkan fitur pencarian gunakan kombinasi CTRL+W)

```
GNU nano 2.2.4 File: squid.conf
#
# WELCOME TO SQUID 2.7.STABLE9
#-----
#
# This is the default Squid configuration file. You may wish
# to look at the Squid home page (http://www.squid-cache.org/)
# for the FAQ and other documentation.
#
# The default Squid config file shows what the defaults for
# various options happen to be. If you don't need to change the
# default, you shouldn't uncomment the line. Doing so may cause
# run-time problems. In some cases "none" refers to no default
# setting at all, while in other cases it refers to a valid
# option - the comments for that keyword indicate if this is the
# case.
#
# Configuration options can be included using the "include" directive.
# Include takes a list of files to include. Quoting and wildcards is
# [ Read 4948 lines ]
#
# G Get Help      ^O WriteOut     ^R Read File     ^V Prev Page    ^K Cut Text      ^C Cur Pos
# X Exit          ^J Justify      ^H Where Is     ^V Next Page   ^U UnCut Text  ^T To Spell
```

Gambar 5.54 Tampilan awal file Squid.conf

Mengkonfigurasi File squid.conf

```
GNU nano 2.2.4 File: squid.conf
# Parameter port dan type proxy yang digunakan
http_port 3128 transparent
# Parameter Kendali Akses
acl all src all
acl manager proto cache object
acl localhost src 127.0.0.1/32
acl to_localhost dst 127.0.0.0/8 0.0.0.0/32
acl lanku src 192.168.2.1
# Parameter blok situs
acl bloksitus dstdomain “/etc/squid/bloksitus.txt”
acl key url_regex -i “/etc/squid/key.txt”
# Penerapan rules
http_access allow lanku
http_access allow all
http_access deny bloksitus
http_access deny key
http_access deny manager
http_access deny !Safe_ports
http_access allow localhost
# Parameter penyimpanan cache
cache_effective_user proxy
cache_effective_group proxy
cache_mem 64 MB
cache_dir ufs /cache 10000 16 254
cache_store_log none
store_dir_select_algorithm round-robin
cache_replacement_policy heap GDSF
cache_replacement_policy heap LFUDA
# Adminstratif
cache_mgr admindb@smk2pkp.com
visible_hostname www.smk2pkp.com
```

Gambar 5.55 Konfigurasi File squid.conf

Cari tulisan **http_access deny all**, ada dua pada file squid.conf. Dan tambahkan tanda **"#"** pada kedua baris tersebut. Simpan konfigurasi squid.

Gunakan perintah "pico bloksitus.txt" untuk membuat daftar situs yang diblokir.

```
root@adminidb:/etc/squid# pico bloksitus.txt_
GNU nano 2.2.4 File: bloksitus.txt Modified
www.youjizz.ws
www.likeyoujizz.com
www.adultpapa.com_
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.56 Membuat Daftar Bloksitus

Gunakan perintah "pico key.txt" untuk membuat daftar keyword yang diblokir.

```
[ Wrote 11 lines ]
root@adminidb:/etc/squid# pico key.txt_
GNU nano 2.2.4 File: key.txt Modified
porno
mesum
porn
telanjang
bugil
sex
seks
bokep
adult
hentai
xxx_
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^H Where Is ^V Next Page ^U UnCut Text ^T To Spell
```

Gambar 5.57 Membuat Daftar Keyword

- Gunakan perintah “/etc/init.d/squid stop” untuk menghentikan squid.
- Gunakan perintah “squid -z” untuk membuat swap directories
- Gunakan perintah “/etc/init.d/squid start” untuk memulai squid.
- Gunakan perintah “reboot” untuk merestart server.

```

root@admindb:/etc/squid# /etc/init.d/squid stop
Stopping Squid HTTP proxy: squid.
root@admindb:/etc/squid# squid -z
2014/07/13 11:04:18| Creating Swap Directories
root@admindb:/etc/squid# /etc/init.d/squid start
Starting Squid HTTP proxy: squid.
root@admindb:/etc/squid# reboot_

```

Gambar 5.58 Merestart Squid

5.5 Konfigurasi Firewall Debian

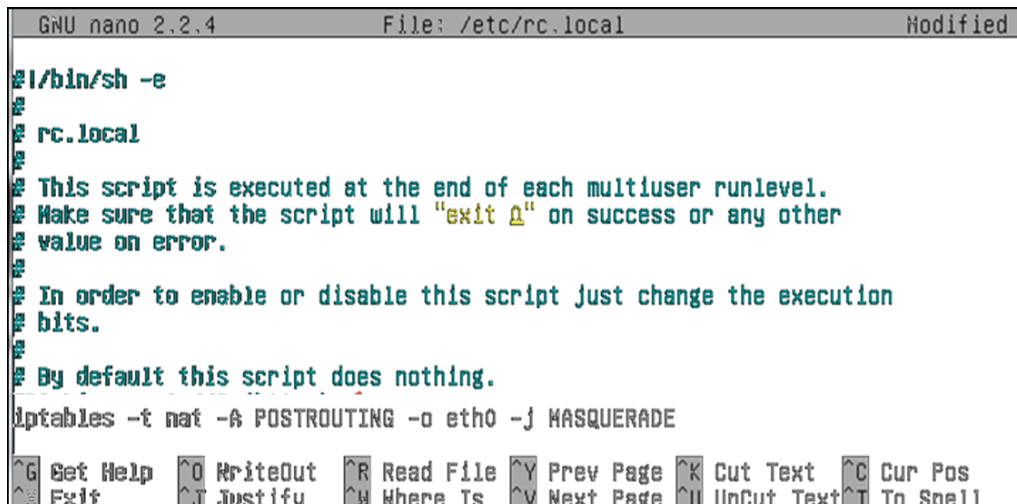
Firewall atau Tembok Api, berfungsi untuk memfilter semua paket yang lewat pada dirinya, baik dari jaringan Lokal ataupun Internet. Berikut konfigurasi firewall pada debian :

Edit file “rc.local” untuk menambahkan settingan firewall pada server proxy debian : **pico /etc/rc.local**

```

root@admindb:~# pico /etc/rc.local_

```



```

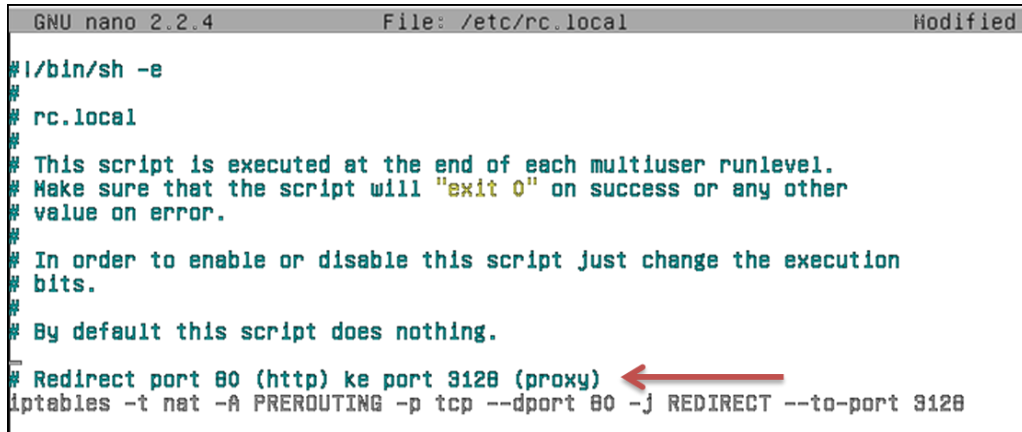
GNU nano 2.2.4 File: /etc/rc.local Modified
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
iptables -t nat -A POSTROUTING -o eth0 -j MASQUERADE

```

Gambar 5.59 Tampilan awal rc.local

a. Redirect port 80 (http) ke port 3128 (proxy server)

Konfigurasi firewall : **iptables -t nat -A PREROUTING -p tcp -dport 80 -j REDIRECT --to-port 3128**



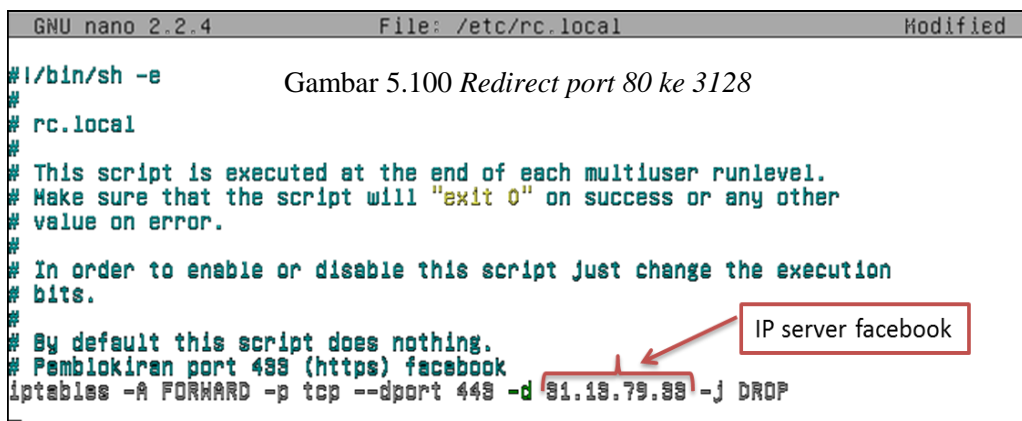
```
GNU nano 2.2.4 File: /etc/rc.local Modified
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
#
# Redirect port 80 (http) ke port 3128 (proxy)
iptables -t nat -A PREROUTING -p tcp --dport 80 -j REDIRECT --to-port 3128
```

Gambar 5.60 Redirect port 80 ke 3128

b. Bloking port 443 (https)

Pada pemblokiran port https yang akan diblok adalah ip address server **www.facebook.com** dan **www.youtube.com**

Konfigurasi firewall pemblokiran facebook : **iptables -A FORWARD -p tcp -dport 443 -d 31.13.79.33 -j DROP**



```
GNU nano 2.2.4 File: /etc/rc.local Modified
#!/bin/sh -e
#
# rc.local
#
# This script is executed at the end of each multiuser runlevel.
# Make sure that the script will "exit 0" on success or any other
# value on error.
#
# In order to enable or disable this script just change the execution
# bits.
#
# By default this script does nothing.
#
# Pemblokiran port 443 (https) facebook
iptables -A FORWARD -p tcp --dport 443 -d 31.13.79.33 -j DROP
```

Gambar 5.61 Blocking https facebook

Konfigurasi firewall pemblokiran youtube :

```
# Pemblokiran port 443 (https) youtube
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.73 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.96 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.97 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.98 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.99 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.100 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.101 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.102 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.103 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.105 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.117.110 -j DROP

iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.162 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.130 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.131 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.132 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.133 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.134 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.135 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.136 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.137 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.142 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.128 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 173.194.38.129 -j DROP

iptables -A FORWARD -p tcp -dport 443 -d 74.125.68.91 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.68.93 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.68.136 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.68.190 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.130.91 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.130.93 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.130.136 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.130.190 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.200.91 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.200.93 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.200.136 -j DROP
iptables -A FORWARD -p tcp -dport 443 -d 74.125.200.190 -j DROP
```

Gambar 5.62 Blocking https youtube

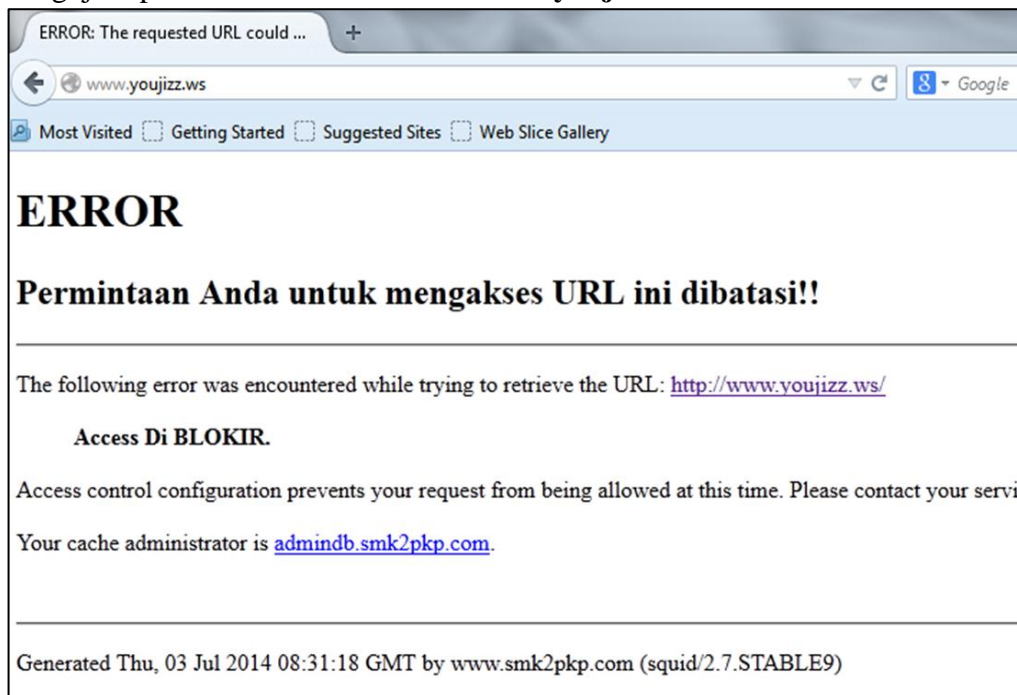
5.7 Pengujian Jaringan

5.7.1 Sistem Filtering dan Blocking Website

Ketika semua sudah berjalan dengan baik dan dapat berdiri masing-masing secara independen sesuai dengan tanggung jawabnya, saatnya melakukan *Pengujian sistem jaringan yang menjadi satu kesatuan mekanisme kerja filtering dan blocking*. Sistem *filtering* dan *blocking website* untuk menguji kemampuan perangkat lunak dalam melakukan pengenalan halaman web yang tidak boleh diakses.

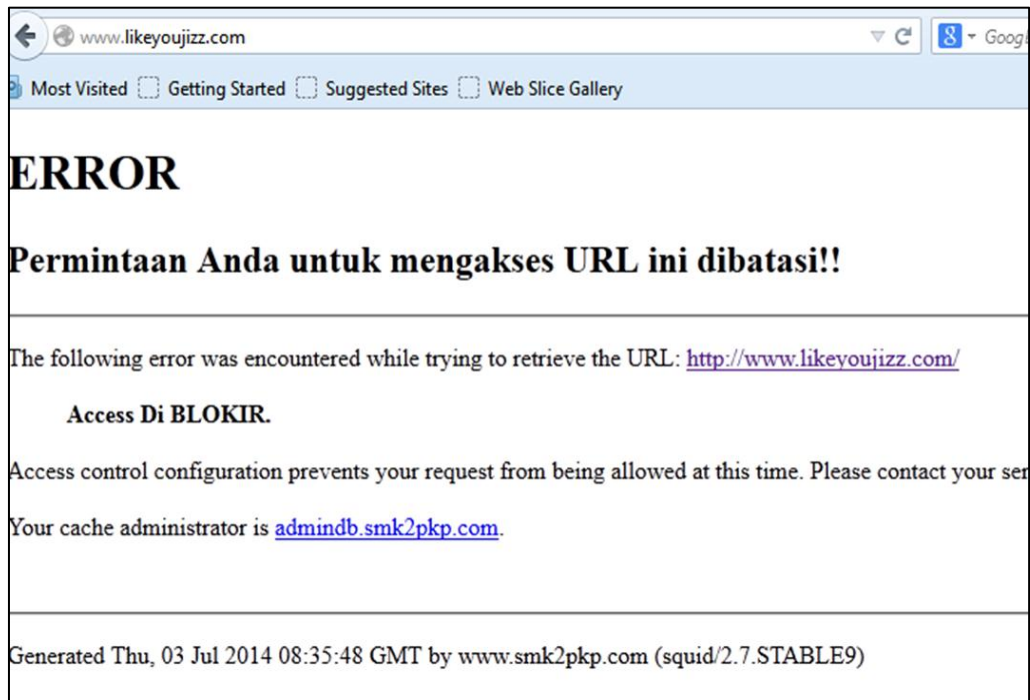
a. Blocking Situs Porno

Pengujian pemblokiran akses URL : **www.youjizz.ws**



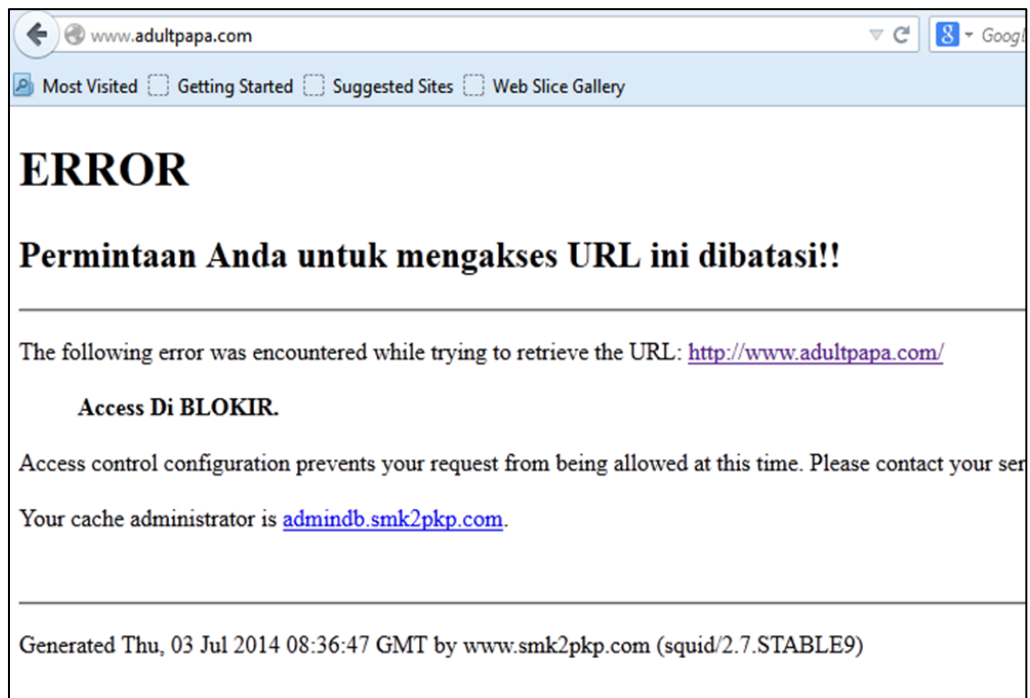
Gambar 5.63 Pemblokiran Akses youjizz.ws

Pengujian pemblokiran akses URL : www.likeyoujizz.com



Gambar 5.64 Pemblokiran akses likeyoujizz.com

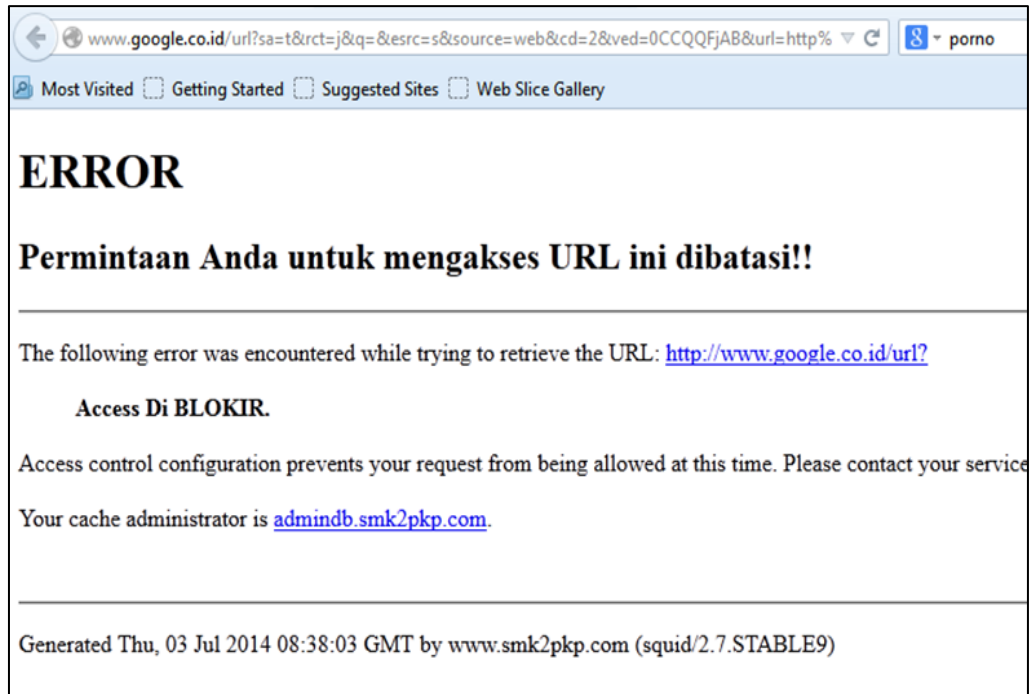
Pengujian pemblokiran akses URL : www.adultpapa.com



Gambar 5.65 Pemblokiran akses www.adultpapa.com

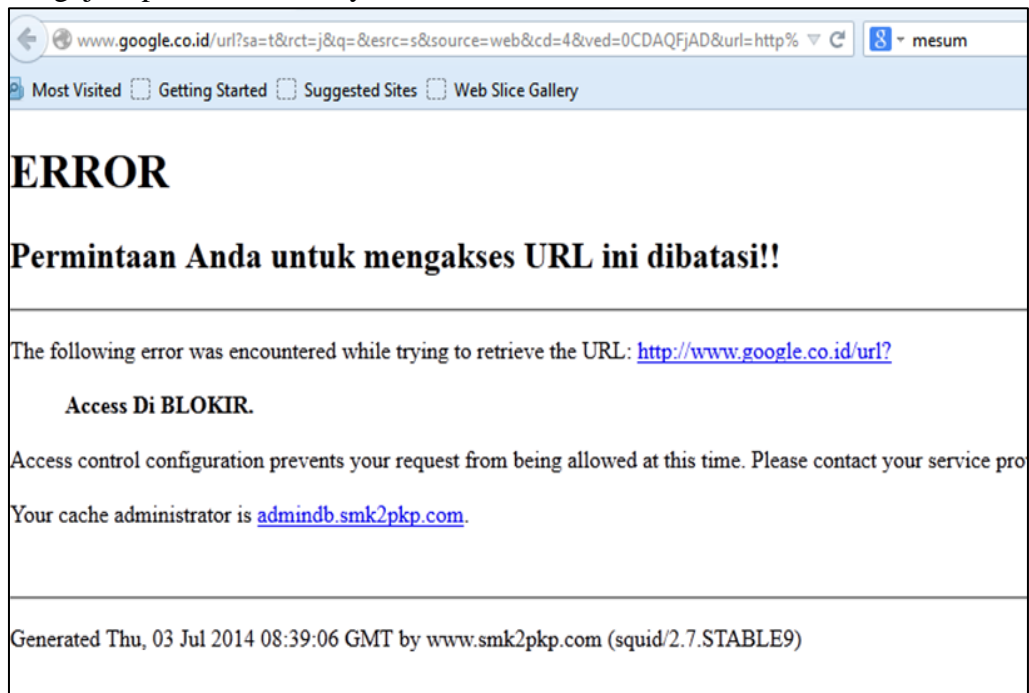
b. Blocking Keyword porno

Pengujian pemblokiran Keyword : **porno**



Gambar 5.66 Pemblokiran keyword porno

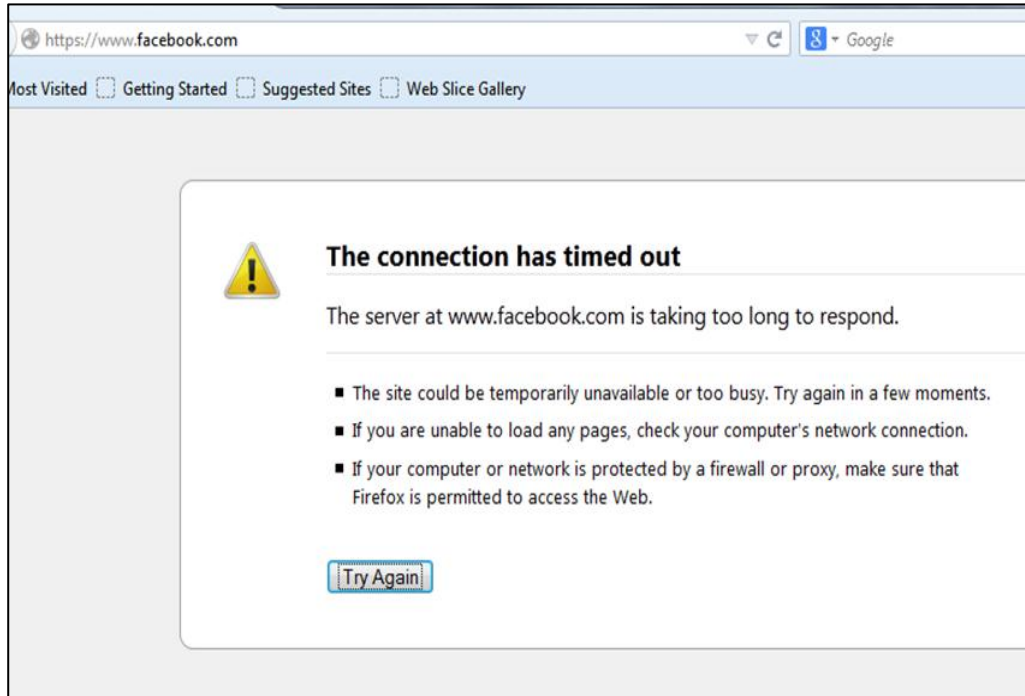
Pengujian pemblokiran Keyword : **mesum**



Gambar 5.67 Pemblokiran keyword mesum

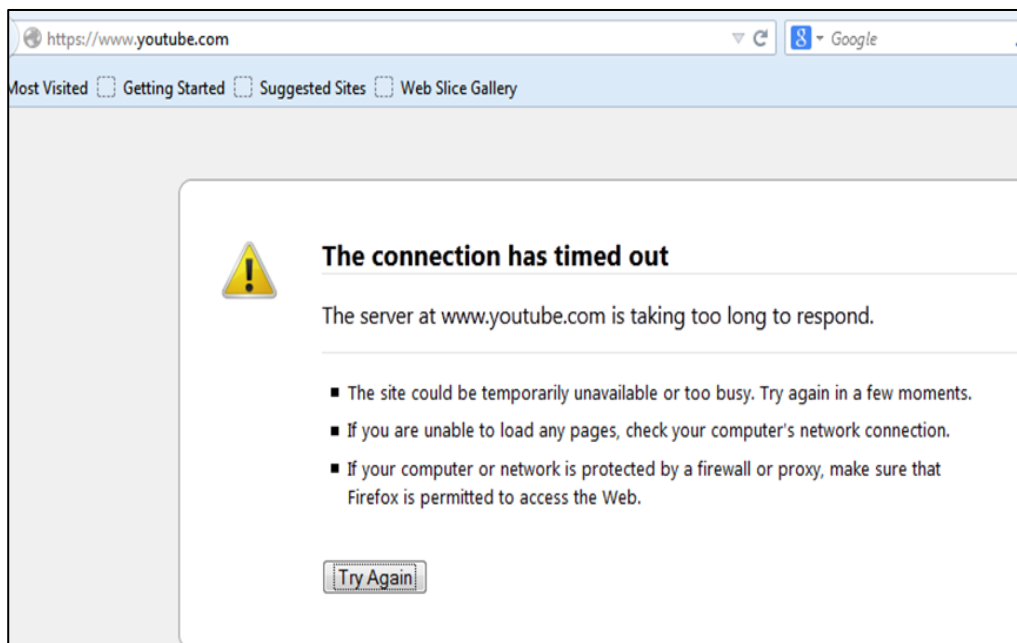
c. Blocking port 443 (https)

Pengujian pemblokiran port 443 (https) : <https://www.facebook.com>



Gambar 5.68 Pemblokiran Port https facebook.com

Pengujian pemblokiran port 443 (https) : <https://www.youtube.com>



Gambar 5.69 Pemblokiran port https youtube.com

Tabel 5.1 Hasil Pengujian filtering dan blocking

No.	Kategori	Status Filtering	
1	Situs Porno	www.youjizz.ws	Success
		www.likeyoujizz.com	Success
		www.adultpapa.com	Success
2	Keyword Porno	Porno	Success
		Porn	Success
		Mesum	Success
		Telanjang	Success
		Bugil	Success
		Sex	Success
		Seks	Success
		Bokep	Success
		Adult	Success
		Hentai	Success
xxx	Success		
3	Port 443 (https)	https://www.facebook.com	Success
		https://www.youtube.com	Success

5.7.2 Sistem Caching

Sistem *Caching* untuk menguji kemampuan cache pada *Proxy Server* dalam penghematan bandwidth. Skenario pengujian cache pada *Proxy Server* sebagai berikut :

- a. Client mengakses tiga website yaitu *google.com*, *yahoo.com* dan *kaskus.co.id*
- b. Pengaksesan ketiga website tersebut dilakukan sebanyak 2 kali yaitu sebelum cache menyimpan halaman website yang telah dikunjungi dan setelah cache menyimpan halaman website yang telah dikunjungi oleh satu client.

- c. Untuk mengetahui performance cache dapat dilakukan dengan menganalisa perbandingan waktu yang dibutuhkan dalam mengakses website tersebut yaitu sebelum caching dan setelah caching.

Tabel 5.2 Pengujian cache

No.	Url	Perbandingan kecepatan akses	
		Waktu Sebelum Caching (detik)	Waktu Setelah Caching (detik)
1	www.google.com	16	6
2	www.yahoo.com	20	10
3	www.kaskus.co.id	23	13

5.8 Report Konfigurasi dan Pengujian Sistem

Tabel 5.3 Report Instalasi dan Konfigurasi

No.	Konfigurasi	Tujuan	Skenario	Hasil yang di dapatkan	Ket
1	Install Debian Server	Menginstal Debian Server di PC	Instalasi Menggunakan booting DVD-ROM	Debian Server terinstal di PC	Success
2	Konfigurasi Server	Login ke Server	Masukkan Username dan password	Berhasil login ke Server	Success
3	Konfigurasi Debian Router (Gateway)	Pengalamatan IP Address	Setting IP Add Ethernet, IP Tables, IP Forward	Server Debian mampu menjadi gateway bagi client	Success
4	Konfigurasi DHCP Server	Pengalamatan IP Address	Setting DHCP3-Server	Server mampu memberikan	Success

		Secara Dynamic		request IP Address client secara otomatis	
5	Konfigurasi DNS Server	Memberikan domain name pada server debian	Setting Bind9	Domain name server dapat terbaca oleh client	Success
6	Konfigurasi Proxy Server	Pembuatan Access Control List	Melakukan pemblokiran situs	Situs dapat diblokir	Success
7	Konfigurasi Proxy Server	Pembuatan cache	Melakukan caching	Mampu melakukan caching pada situs yang telah ditentukan	Success
8	Konfigurasi Firewall	Mengalihkan akses port http ke proxy	Setting IP tables	Server mampu mengalihkan akses port http ke proxy	Success
9	Konfigurasi Firewall	Blocking port https	Setting IP tables	Port Https dapat diblokir	Success

Tabel 5.4 Report Pengujian Sistem Jaringan

No.	Pengujian	Tujuan	Skenario	Hasil yang di dapatkan	Ket
1	Pengujian blocking/situs yang tidak diijinkan	Mengetahui apakah situs tidak diijinkan	Memasukkan atau mengetik situs yang tidak diijinkan	Tidak diijinkan terakses maka situs didirec ke situs peringatan/pemberitahuan	Success

2	Pengujian blocking/ keyword yang tidak diijinkan	Mengetahui apakah keyword tidak diijinkan	Memasukkan atau mengetik keyword yang tidak diijinkan	Tidak diijinkan terakses maka situs didirec ke situs peringatan/ pemberitahuan	Success
3	Pengujian Pemblokiran Https	Mengetahui apakah pemblokiran https berjalan dengan baik	Mengakses https seperti facebook.com dan youtube.com	Https tidak diijinkan diakses	Success
4	Pengujian cache	Mengetahui apakah proses caching berjalan dengan baik	Mengakses situs dan membandingkan kecepatan akses	Proses Caching berjalan dengan baik	Success

5.9 Kesimpulan

Setelah melakukan penelitian dalam membangun server proxy menggunakan linux debian squeeze dan pengujian pada jaringan SMK Negeri 2 Pangkalpinang maka dapat diambil kesimpulan sebagai berikut :

- a. Penggunaan linux sebagai sistem operasi server merupakan sistem operasi yang cukup handal untuk memenuhi kebutuhan dalam menyediakan layanan server proxy.
- b. Server proxy sebagai filtering konten merupakan server proxy yang dapat melakukan pemblokiran alamat website ataupun *content* kata domain.
- c. Dari hasil pengujian yang dilakukan server proxy adalah sistem sangat efektif dalam melakukan filtering /pembatasan akses.

- d. Website https atau website yang menggunakan port 443 dapat dilakukan pemblokiran menggunakan firewall yaitu dengan cara menolak request akses client yang masuk ke firewall.
- e. Proxy server dapat mempersingkat waktu pengaksesan data karena request yang sama dari client tidak perlu diteruskan ke server internet penyedia data, sebab proxy server sudah mengcopy histori dari halaman website yang telah diakses sebelumnya.
- f. Biaya membangun server proxy dengan menggunakan sistem operasi linux mempunyai harga yang relatif murah.

5.10 Saran

Berdasarkan kesimpulan hasil dari penelitian tersebut diatas, maka dapat disarankan kepada SMK Negeri 2 Pangkalpinang sebagai berikut :

- a. Sistem jaringan ini agar segera di implementasikan pada jaringan SMK Negeri 2 Pangkalpinang.
- b. Memperbanyak daftar situs yang diblokir mengingat baru beberapa situs saja yang diblokir pada penelitian ini serta membatasi siswa pada akses yang berkonten negatif.
- c. Pembangunan server proxy ini dapat dikembangkan lebih lanjut dengan menerapkan beberapa metode-metode lain dan baru sehingga penulis mengharapkan adanya pihak lain yang akan tetap melakukan dan melanjutkan penelitian ini untuk mendapatkan hasil yang lebih baik lagi.