ROUTER + FIREWALL IPF

1. build krnel baru "cd /usr/src/sys/i386/conf" & "copy GENERIC IPF" & "vi IPF" tambahkan

baris

```
padli@raisa: ~
root@raisa:/ # cd /usr/src/sys/i386/conf/
root@raisa:/usr/src/sys/i386/conf # cp GENERIC IPF
root@raisa:/usr/src/sys/i386/conf # vi IPF
```
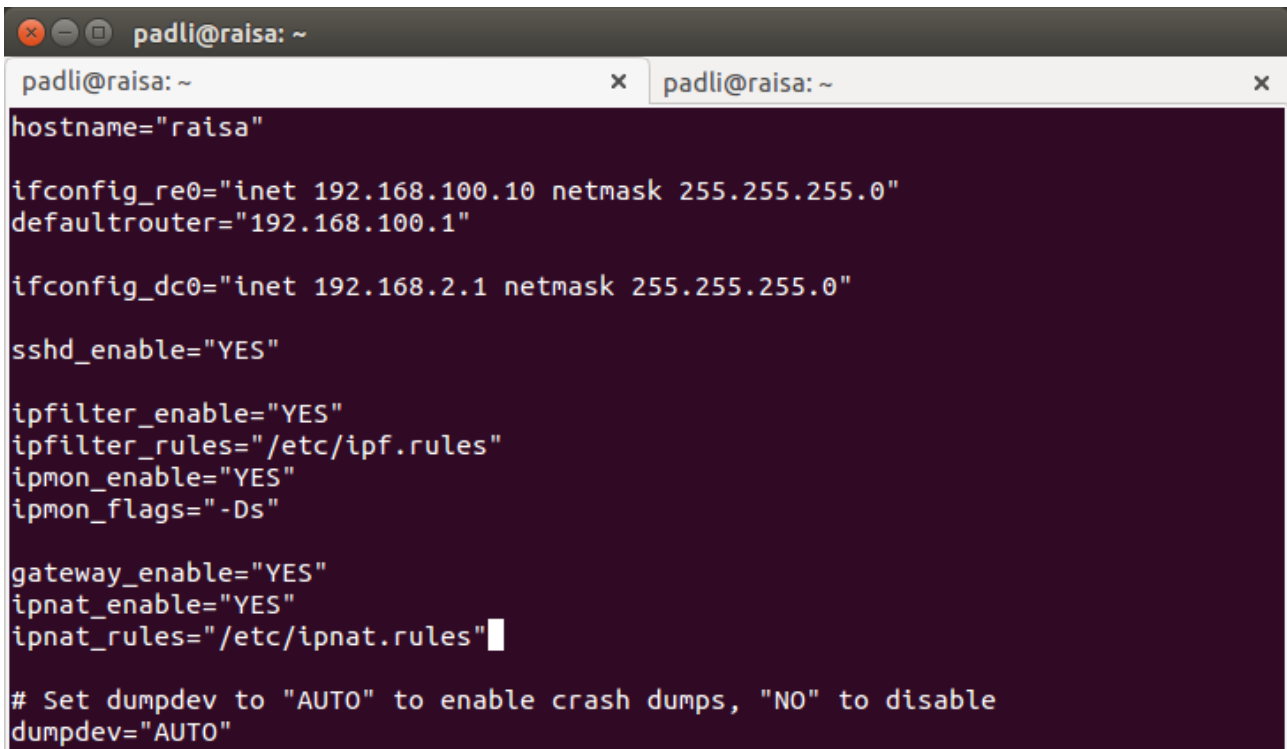
```
options          IPFILTER_LOG
```

2. "cd /usr/src" & build kernel & install kernel IPF & restart komputer

```
padli@raisa: ~
root@raisa:/usr/src # make buildkernel KERNCONF=IPF
```

```
------------------------------------------------------------
>>> Kernel build for IPF completed on Thu May  7 09:22:36 WIB 2015
------------------------------------------------------------
root@raisa:/usr/src # make installkernel KERNCONF=IPF
```

```
===> zlib (install)
install -o root -g wheel -m 555   zlib.ko /boot/kernel
install -o root -g wheel -m 555   zlib.ko.symbols /boot/kernel
kldxref /boot/kernel
root@raisa:/usr/src # reboot
```

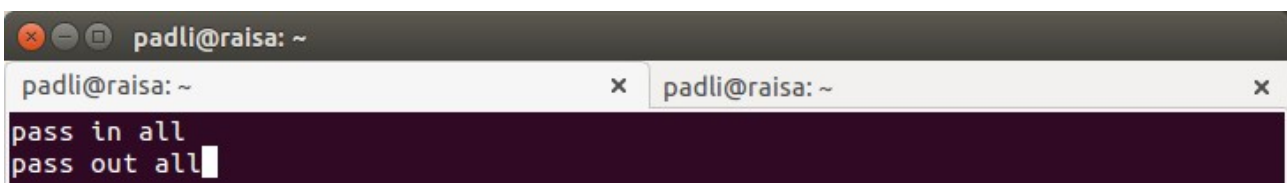## 3. edit "vi /etc/rc.conf" tambahkan baris

```
hostname="raisa"

ifconfig_re0="inet 192.168.100.10 netmask 255.255.255.0"
defaultrouter="192.168.100.1"

ifconfig_dc0="inet 192.168.2.1 netmask 255.255.255.0"

sshd_enable="YES"

ipfilter_enable="YES"
ipfilter_rules="/etc/ipf.rules"
ipmon_enable="YES"
ipmon_flags="-Ds"

gateway_enable="YES"
ipnat_enable="YES"
ipnat_rules="/etc/ipnat.rules"

# Set dumpdev to "AUTO" to enable crash dumps, "NO" to disable
dumpdev="AUTO"
```
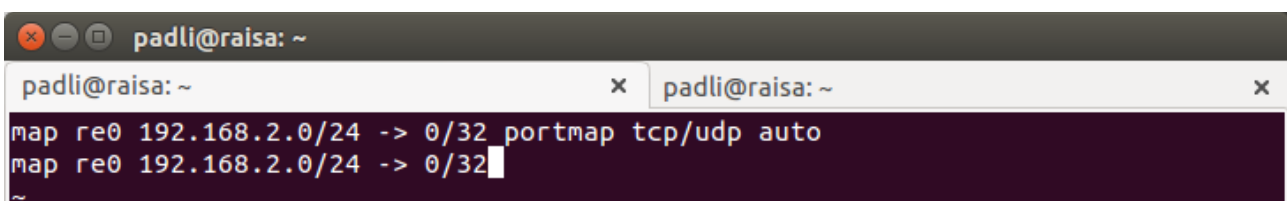
4. edit "vi /etc/sysctl.conf" enable ip forward

```
net.inet.ip.forwarding=1
~
```

5. buat file ipf "vi /etc/ipf.rules" tambahkan baris

```
pass in all
pass out all
```

6. buat file ipnat "vi /etc/ipnat.rules" tambahkan baris

```
map re0 192.168.2.0/24 -> 0/32 portmap tcp/udp auto
map re0 192.168.2.0/24 -> 0/32
~
```

7. start service ipf & ipnat & sysctl

```
root@raisa:/ # /etc/rc.d/sysctl restart
root@raisa:/ # /etc/rc.d/ipnat start
Installing NAT rules.
6 entries flushed from NAT table
2 entries flushed from NAT list
root@raisa:/ # ipf
ipf       ipfs      ipfstat  ipftest  ipfw      ipfwpcap
root@raisa:/ # ipf -Fa -f /etc/ipf.rules
root@raisa:/ #
```

8. tes koneksi dari client

```
64 bytes from 8.8.8.8: icmp_seq=2130 ttl=54 time=31.9 ms
64 bytes from 8.8.8.8: icmp_seq=2131 ttl=54 time=39.7 ms
64 bytes from 8.8.8.8: icmp_seq=2132 ttl=54 time=32.2 ms
64 bytes from 8.8.8.8: icmp_seq=2133 ttl=54 time=32.2 ms
64 bytes from 8.8.8.8: icmp_seq=2134 ttl=54 time=32.4 ms
```

9. view statistic ipf "ipfstat" & "ipfstat -on" & "ipfstat -in"

```
0       output block reason auth feedback
0       output block reason bad fragment
0       output block reason IPv4 NAT failure
0       output block reason IPv6 NAT failure
0       packets logged
0       log failures
0       red-black no memory
0       red-black node maximum
0       ICMP replies sent
0       TCP RSTs sent
0       fastroute successes
0       fastroute failures
850     IPF Ticks
0       Packet log flags set:
        none
root@raisa:/ # ipfstat -in
@1 pass in all
root@raisa:/ # ipfstat -on
@1 pass out all
root@raisa:/ # ipfstat -oh
1172 pass out all
root@raisa:/ # ipfstat -ih
1320 pass in all
root@raisa:/ #
```

10. ipf log "touch /var/log/ipf.log" && "vi /etc/syslog.conf" tambahkan baris & restart

service syslog

```
lo0.*                                    /var/log/ipf.log
```

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