

PF

author: [Budi Ang](#)

PF (Packet Filter) adalah firewall yang dikembangkan pertama kali oleh [Daniel Hartmeier](#) untuk OpenBSD dan menggantikan [IPF](#) yang berhubungan dengan masalah lisensi ¹⁾. Mulai dari [OpenBSD 3.0](#), PF sudah tersedia pada base system, sekarang, [FreeBSD](#) dan [DragonFlyBSD](#) telah mengimport PF dalam base system, untuk [NetBSD](#) bisa diinstalasi melalui [pkgsrc](#), sedangkan untuk Linux, dapat diambil di <http://abstractvoid.se/pf4lin.html> (experimental)

Aktivasi PF

```
$ sudo echo "pf=YES" > /etc/rc.conf.local
$ sudo reboot
```

atau

```
$ sudo pfctl -e
$ sudo ifconfig pflog0 up
```

Konsep Filtering di PF

```
dari PF host -> internet = out
```

```
dari internet -> PF host = in
```

Mohon maaf jika tidak ada fitur forward

Macro

Macro di PF digunakan seperti variable program dalam mendefinisi interface, alamat IP, dan port, ataupun reserved word di PF.

Penggunaan Macro dapat mengurangi complexnya ruleset PF

```
server_if = "fxp0"
udp_port = "{ 53 123 }"
pass in on $server_if inet proto udp from any to any port $udp_port keep state
```

Ruleset di atas diexpand menjadi:

```
pass in on fxp0 inet proto udp from any to any port 53 keep state
```

pass in on fxp0 inet proto udp from any to any port 123 keep state

```
iix = " {114.120.0.0/13, 125.166.0.0/15, 125.162.0.0/16, 125.163.0.0/16,
125.160.0.0/16, 125.161.0.0/16, 125.164.0.0/16, 125.165.0.0/16,
222.124.0.0/16, 61.94.0.0/16, 167.205.0.0/16, 202.158.0.0/17, 61.5.0.0/17,
124.195.0.0/17, 121.52.0.0/17, 119.11.128.0/17, 114.57.0.0/18,
117.102.64.0/18, 210.210.128.0/18, 207.209.192.0/18, 61.14.0.0/18,
206.182.192.0/18, 125.208.128.0/18, 203.130.192.0/18, 124.153.0.0/18,
152.118.128.0/18, 221.132.192.0/18, 152.118.192.0/18, 152.118.0.0/18,
152.118.64.0/18, 222.165.192.0/18, 202.152.0.0/18, 209.93.224.0/19,
202.173.64.0/19, 114.199.96.0/19, 202.171.0.0/19, 202.47.192.0/19,
202.169.32.0/19, 202.182.160.0/19, 117.102.224.0/19, 202.51.192.0/19,
202.149.128.0/19, 202.147.224.0/19, 202.146.224.0/19, 114.58.32.0/19,
114.58.0.0/19, 202.159.64.0/19, 202.95.128.0/19, 202.152.224.0/19,
61.247.0.0/19, 61.247.32.0/19, 114.57.64.0/19, 117.104.192.0/19,
118.98.160.0/19, 118.98.192.0/19, 118.136.0.0/19, 118.136.32.0/19,
118.136.64.0/19, 118.136.96.0/19, 118.136.128.0/19, 118.136.160.0/19,
118.136.192.0/19, 118.136.224.0/19, 118.137.0.0/19, 118.137.32.0/19,
118.137.64.0/19, 118.137.96.0/19, 118.137.128.0/19, 118.137.160.0/19,
118.137.192.0/19, 118.137.224.0/19, 124.81.0.0/19, 124.81.32.0/19,
124.81.64.0/19, 124.81.96.0/19, 124.81.128.0/19, 124.81.192.0/19,
124.81.224.0/19, 202.10.32.0/19, 202.53.224.0/19, 202.57.0.0/19,
202.73.96.0/19, 202.77.96.0/19, 202.81.32.0/19, 202.137.0.0/19,
202.138.224.0/19, 202.148.0.0/19, 202.150.64.0/19, 202.153.128.0/19,
202.154.0.0/19, 202.154.32.0/19, 202.155.0.0/19, 202.155.32.0/19,
202.155.128.0/19, 202.159.0.0/19, 202.159.32.0/19, 202.162.192.0/19,
203.128.64.0/19, 219.83.0.0/19, 219.83.32.0/19, 219.83.64.0/19,
60.253.112.0/20, 61.8.64.0/20, 114.57.96.0/20, 114.57.160.0/20,
114.141.48.0/20, 114.199.80.0/20, 116.68.160.0/20, 117.20.48.0/20,
117.103.0.0/20, 118.98.240.0/20, 119.2.64.0/20, 119.110.64.0/20,
119.235.208.0/20, 119.252.160.0/20, 121.50.128.0/20, 122.129.96.0/20,
122.129.192.0/20, 122.200.0.0/20, 124.81.176.0/20, 202.3.208.0/20,
202.6.208.0/20, 202.6.224.0/20, 202.46.64.0/20, 202.46.144.0/20,
202.47.64.0/20, 202.51.224.0/20, 202.58.64.0/20, 202.58.160.0/20,
202.59.160.0/20, 202.59.192.0/20, 202.65.112.0/20, 202.67.32.0/20,
202.69.96.0/20, 202.70.48.0/20, 202.72.208.0/20, 202.73.224.0/20,
202.77.64.0/20, 202.80.112.0/20, 202.80.208.0/20, 202.87.176.0/20,
202.93.16.0/20, 202.93.32.0/20, 202.93.128.0/20, 202.93.224.0/20,
202.123.224.0/20, 202.127.96.0/20, 202.133.80.0/20, 202.143.32.0/20,
202.145.0.0/20, 202.146.48.0/20, 202.147.192.0/20, 202.152.160.0/20,
202.152.192.0/20, 202.153.16.0/20, 202.153.240.0/20, 202.155.64.0/20,
202.155.112.0/20, 202.159.112.0/20, 202.165.32.0/20, 202.182.48.0/20,
203.78.112.0/20, 203.83.32.0/20, 203.89.16.0/20, 203.123.224.0/20,
203.153.96.0/20, 203.161.16.0/20, 203.166.192.0/20, 203.201.160.0/20,
207.83.112.0/20, 210.57.208.0/20, 210.79.208.0/20, 219.83.96.0/20,
220.157.96.0/20, 60.253.96.0/21, 61.45.224.0/21, 114.57.232.0/21,
114.134.72.0/21, 114.141.88.0/21, 116.0.0.0/21, 116.12.40.0/21,
116.50.24.0/21, 116.68.224.0/21, 116.90.208.0/21, 116.197.128.0/21,
116.254.96.0/21, 117.18.16.0/21, 117.74.120.0/21, 117.103.32.0/21,
117.103.48.0/21, 117.103.168.0/21, 119.2.40.0/21, 119.10.176.0/21,
119.82.232.0/21, 119.82.240.0/21, 119.110.80.0/21, 119.160.200.0/21,
```

119.235.248.0/21, 120.29.152.0/21, 121.52.136.0/21, 121.58.184.0/21,
121.100.16.0/21, 121.101.128.0/21, 121.101.184.0/21, 122.49.224.0/21,
122.128.16.0/21, 122.129.112.0/21, 122.144.0.0/21, 122.200.48.0/21,
122.200.144.0/21, 123.108.8.0/21, 124.66.160.0/21, 124.81.168.0/21,
124.158.128.0/21, 202.43.160.0/21, 202.43.176.0/21, 202.43.248.0/21,
202.46.24.0/21, 202.46.80.0/21, 202.51.16.0/21, 202.58.176.0/21,
202.62.16.0/21, 202.67.8.0/21, 202.72.192.0/21, 202.74.72.0/21,
202.87.248.0/21, 202.89.208.0/21, 202.91.8.0/21, 202.91.24.0/21,
202.93.240.0/21, 202.122.8.0/21, 202.129.184.0/21, 202.133.0.0/21,
202.134.0.0/21, 202.149.64.0/21, 202.149.80.0/21, 202.150.128.0/21,
202.153.224.0/21, 202.155.80.0/21, 202.155.104.0/21, 202.158.136.0/21,
202.159.96.0/21, 202.162.32.0/21, 202.164.216.0/21, 202.169.224.0/21,
202.169.240.0/21, 202.179.184.0/21, 202.180.0.0/21, 202.180.48.0/21,
203.77.224.0/21, 203.80.8.0/21, 203.84.136.0/21, 203.84.152.0/21,
203.123.240.0/21, 203.134.232.0/21, 203.135.176.0/21, 203.142.80.0/21,
203.153.24.0/21, 203.153.112.0/21, 203.174.8.0/21, 203.176.176.0/21,
203.190.48.0/21, 203.190.112.0/21, 203.190.184.0/21, 203.190.240.0/21,
203.191.40.0/21, 219.83.112.0/21, 220.247.168.0/21, 222.229.80.0/21,
58.65.244.0/22, 58.145.168.0/22, 60.253.104.0/22, 61.45.232.0/22,
114.30.80.0/22, 114.31.240.0/22, 116.66.200.0/22, 116.68.248.0/22,
116.90.176.0/22, 116.199.204.0/22, 117.102.160.0/22, 117.103.56.0/22,
118.98.228.0/22, 118.98.236.0/22, 119.2.48.0/22, 119.18.156.0/22,
119.82.224.0/22, 119.235.16.0/22, 119.252.132.0/22, 120.136.16.0/22,
122.102.48.0/22, 124.6.32.0/22, 124.81.164.0/22, 146.23.252.0/22,
202.2.92.0/22, 202.43.184.0/22, 202.46.0.0/22, 202.46.88.0/22,
202.51.28.0/22, 202.51.252.0/22, 202.55.164.0/22, 202.55.168.0/22,
202.62.8.0/22, 202.62.24.0/22, 202.72.200.0/22, 202.75.16.0/22,
202.75.24.0/22, 202.78.196.0/22, 202.81.4.0/22, 202.87.240.0/22,
202.93.112.0/22, 202.146.0.0/22, 202.146.128.0/22, 202.146.176.0/22,
202.149.72.0/22, 202.149.88.0/22, 202.153.236.0/22, 202.155.92.0/22,
202.155.96.0/22, 202.158.132.0/22, 202.159.108.0/22, 202.162.40.0/22,
202.173.16.0/22, 202.180.16.0/22, 203.77.208.0/22, 203.77.236.0/22,
203.77.248.0/22, 203.81.184.0/22, 203.99.96.0/22, 203.123.60.0/22,
203.123.248.0/22, 203.128.248.0/22, 203.142.68.0/22, 203.142.76.0/22,
203.160.56.0/22, 203.190.40.0/22, 219.83.120.0/22, 32.234.170.0/23,
32.234.172.0/23, 58.65.240.0/23, 60.253.108.0/23, 61.45.236.0/23,
116.66.204.0/23, 116.90.166.0/23, 116.199.202.0/23, 116.212.100.0/23,
117.102.166.0/23, 117.103.60.0/23, 118.82.0.0/23, 118.82.12.0/23,
119.235.20.0/23, 119.252.128.0/23, 121.52.134.0/23, 123.176.120.0/23,
124.158.136.0/23, 194.146.106.0/23, 202.20.106.0/23, 202.43.168.0/23,
202.43.188.0/23, 202.46.4.0/23, 202.46.14.0/23, 202.46.92.0/23,
202.46.130.0/23, 202.46.240.0/23, 202.46.252.0/23, 202.51.56.0/23,
202.51.98.0/23, 202.51.106.0/23, 202.55.160.0/23, 202.55.172.0/23,
202.58.196.0/23, 202.62.28.0/23, 202.65.236.0/23, 202.75.20.0/23,
202.78.192.0/23, 202.78.200.0/23, 202.78.204.0/23, 202.89.216.0/23,
202.89.222.0/23, 202.90.194.0/23, 202.90.198.0/23, 202.93.116.0/23,
202.129.216.0/23, 202.135.6.0/23, 202.135.134.0/23, 202.146.4.0/23,
202.146.132.0/23, 202.149.78.0/23, 202.149.92.0/23, 202.150.136.0/23,
202.153.232.0/23, 202.154.176.0/23, 202.154.184.0/23, 202.155.100.0/23,
202.158.130.0/23, 202.159.106.0/23, 202.162.46.0/23, 202.169.232.0/23,
202.169.236.0/23, 202.173.20.0/23, 202.180.8.0/23, 202.191.2.0/23,

```
203.31.164.0/23, 203.34.118.0/23, 203.77.214.0/23, 203.77.220.0/23,  
203.77.232.0/23, 203.77.246.0/23, 203.81.190.0/23, 203.99.102.0/23,  
203.123.252.0/23, 203.142.64.0/23, 203.153.120.0/23, 203.160.60.0/23,  
203.189.88.0/23, 203.190.36.0/23, 203.190.46.0/23, 203.194.70.0/23,  
203.223.90.0/23, 204.61.216.0/23, 206.73.208.0/23, 206.73.234.0/23,  
206.73.238.0/23, 219.83.124.0/23, 32.234.169.0/24, 32.234.175.0/24,  
58.65.243.0/24, 58.145.173.0/24, 58.145.175.0/24, 58.147.189.0/24,  
60.253.110.0/24, 61.45.238.0/24, 114.4.0.0/24, 114.4.5.0/24, 114.4.6.0/24,  
114.30.84.0/24, 116.58.197.0/24, 116.66.207.0/24, 116.68.252.0/24,  
116.68.255.0/24, 116.90.163.0/24, 116.90.164.0/24, 116.212.96.0/24,  
117.102.164.0/24, 118.82.14.0/24, 118.82.18.0/24, 118.82.31.0/24,  
119.2.55.0/24, 119.47.88.0/24, 119.82.231.0/24, 119.252.130.0/24,  
120.136.23.0/24, 121.52.129.0/24, 121.52.130.0/24, 122.102.52.0/24,  
122.201.39.0/24, 123.176.122.0/24, 123.176.127.0/24, 124.81.160.0/24,  
124.81.162.0/24, 124.158.138.0/24, 144.5.46.0/24, 152.158.247.0/24,  
192.5.5.0/24, 192.23.186.0/24, 192.36.148.0/24, 192.92.81.0/24,  
194.0.1.0/24, 194.0.2.0/24, 194.146.108.0/24, 202.14.255.0/24,  
202.20.109.0/24, 202.22.31.0/24, 202.43.170.0/24, 202.43.173.0/24,  
202.43.175.0/24, 202.43.190.0/24, 202.46.9.0/24, 202.46.11.0/24,  
202.46.94.0/24, 202.46.129.0/24, 202.51.96.0/24, 202.51.100.0/24,  
202.51.104.0/24, 202.51.109.0/24, 202.51.110.0/24, 202.51.122.0/24,  
202.58.203.0/24, 202.58.204.0/24, 202.62.31.0/24, 202.65.227.0/24,  
202.65.228.0/24, 202.65.238.0/24, 202.75.22.0/24, 202.75.29.0/24,  
202.75.30.0/24, 202.78.195.0/24, 202.78.203.0/24, 202.78.207.0/24,  
202.87.245.0/24, 202.87.247.0/24, 202.92.192.0/24, 202.92.207.0/24,  
202.122.162.0/24, 202.122.165.0/24, 202.122.166.0/24, 202.135.5.0/24,  
202.135.16.0/24, 202.135.23.0/24, 202.135.28.0/24, 202.135.42.0/24,  
202.135.54.0/24, 202.135.129.0/24, 202.135.133.0/24, 202.135.145.0/24,  
202.135.155.0/24, 202.135.161.0/24, 202.135.248.0/24, 202.146.32.0/24,  
202.146.34.0/24, 202.146.47.0/24, 202.146.135.0/24, 202.146.180.0/24,  
202.149.77.0/24, 202.151.9.0/24, 202.154.183.0/24, 202.154.187.0/24,  
202.154.190.0/24, 202.155.88.0/24, 202.155.91.0/24, 202.155.102.0/24,  
202.158.129.0/24, 202.160.254.0/24, 202.162.44.0/24, 202.167.97.0/24,  
202.169.234.0/24, 202.180.10.0/24, 202.180.20.0/24, 203.14.176.0/24,  
203.77.212.0/24, 203.77.216.0/24, 203.77.223.0/24, 203.77.252.0/24,  
203.77.255.0/24, 203.99.100.0/24, 203.99.119.0/24, 203.99.120.0/24,  
203.99.127.0/24, 203.119.13.0/24, 203.119.17.0/24, 203.123.254.0/24,  
203.142.66.0/24, 203.153.122.0/24, 203.160.62.0/24, 203.163.66.0/24,  
203.163.76.0/24, 203.163.81.0/24, 203.163.88.0/24, 203.163.95.0/24,  
203.163.113.0/24, 203.173.89.0/24, 203.173.90.0/24, 203.174.5.0/24,  
203.194.90.0/24, 203.196.90.0/24, 205.248.57.0/24, 205.248.151.0/24,  
205.248.158.0/24, 206.73.79.0/24, 206.73.80.0/24, 206.73.194.0/24,  
206.73.203.0/24, 206.73.205.0/24, 206.73.222.0/24, 206.73.227.0/24,  
206.73.228.0/24, 206.73.240.0/24, 206.73.244.0/24, 206.73.248.0/24,  
206.182.36.0/24, 207.117.234.0/24, 218.100.32.0/24}"
```

Tables

Tables dapat digunakan untuk menyimpan alamat IP dan network. Penggunaan yang lain seperti block [network bogon](#)

will be continued

Packet Filtering

Filtering untuk block atau pass packet sesuai yang didefinisikan. Ruleset di file `/etc/pf.conf` (default), dibaca dari atas ke bawah.

block PF host dari satu host

```
block in from ip.add.re.ss
```

block satu subnet atau lebih

```
block in from sub.net.ho.st/mask
```

block satu host, dan pass host yang lain

```
block in from bad.ip  
pass in from good.ip
```

Default deny adalah kebijakan yang direkomendasi sewaktu menyiapkan firewall apapun, hal ini berlaku untuk PF juga.

```
block in all  
block out all
```

Tambahkan keyword `log`, sehingga dapat melihat packet mana yang diblock oleh PF, dengan menggunakan `tcpdump(8)`

```
block in log all  
block out log all
```

Dapat disederhanakan menjadi

```
block log all
```

Catatan: jika host mempunyai ≥ 4 NIC, semua traffic in/out di block by default.

Contoh kasus

```
<server> --- [switch] --- {router}
```

Server menyediakan service SMTP Relay dan POP3

Policy:

- default deny
- incoming ke port 25 dan 110
- outgoing bebas

```
# macro
server_if = "fxp0"
lo_if = "lo0"
tcp_port = "{ 25 110 }"
ks = "keep state"

# default deny
block log all

# untuk loopback
pass quick on $lo_if all

# incoming
pass in on $server_if inet proto tcp from any to $server_if port
$tcp_port $ks
pass in on $server_if inet proto tcp from $admin to $server_if port
$adm_port $ks

# outgoing
pass out on $server_if all $ks
```

Referensi

- <http://openbsd.cbn.net.id/faq/>
- <http://www.benzedrine.cx/pf.html>
- <http://openbsd.cbn.net.id/faq/pf/>
- <http://www.openbsd.org/cgi-bin/man.cgi?query=pf.conf&sektion=5&manpath=OpenBSD+3.7>
- <http://www.openbsd.org/cgi-bin/man.cgi?query=pfctl&sektion=8&manpath=OpenBSD+3.7>
- <https://solarflux.org/pf/>
- http://www.thedeepsky.com/howto/newbie_pf_guide.php

1)

<http://slashdot.org/article.pl?sid=01/05/30/124255>

From:

<http://wiki.corebsd.or.id/> - **CoreBSD Wiki**

Permanent link:

<http://wiki.corebsd.or.id/doku.php/coreprojects:pf?rev=1219472987>

Last update: **2025/10/25 17:09**

