

Firewalls, Pros and Cons

BSDWAY
Aug 29, 2021

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Whoami

BSD Certified

Member of FreeBSD Project

Programmer

Sysadmin

<https://wiki.freebsd.org/AbedHomaei>

<https://in4bsd.com>

<https://meetbsd.ir>

FreeBSD Firewalls

IPF, L3-L4(old)

IPFW, L2-L3-L4(Dummynet)

PF, L3-L4(AltQ)

traffic shaper, bandwidth manager and delay emulator

SMP

pfil

5-tuple (protocol, source and destination addresses and ports)

OpenBSD Firewalls

PF, L3-L4(AltQ)

Not SMP

Pfsync

Relayd

NetBSD Firewalls

NPF, L3-L4

IPF

PF(outdated)

BPF-L7

DragonflyBSD Firewalls

IPFW3, L2-L3-L4

PF

Very fast

SMP

BPF

IPFW3sync

Other Actors

pfSense

OPNsense

monowall

Zero Copy and Offloading

XDP, AF_XDP

DPDK-Netmap

FreeBSD supports zero-copy on IPC/BPF

RDMA

TSO(tcp segmentation offloading)

TRO(large receive offloading)

JUMBO

Netflix RACK TCP Stack

Time-based loss inferences instead packet or sequence counting

OpenConnect Appliance(OCA)

nginx