

Open Source Router Software

Software for building your own router/firewall/IDS/IPS appliance.

- [OPNsense](#)

OPNsense



<https://opnsense.org/>

OPNsense is an open source, FreeBSD-based firewall and routing software.

Installed on appropriate hardware, it replaces SOHO routers with a much more robust, effective and powerful appliance to protect your home network. Using built-in and available add-ons, you can build a feature set as simple or complex as you require. Integrations such as intrusion detection/prevention, DHCP and DNS services, VPN services, Firewall with aliasing just to name a few, come standard with OPNsense. Add-ons, both free and subscription-based are available. Using the add-ons, referred to as plug-ins in OPNsense, you can setup proxys, reverse-proxys, web caching, and much more.

As an example, I have my OPNsense appliance setup with extra security measures using Crowdsec, Maltrail, Country Blocking and Zen Armor (Formerly Suricata). I also have a Wireguard VPN setup to permit secure access to my internal devices and servers should I need to access them remotely. I utilize OPNsense's built-in Unbound DNS application to manage and secure my domain name services.

Frankly, I had been using consumer routers (NetGear, ASUS, etc) with custom firmware (DD-WRT, Fresh Tomato, etc) for years. They just couldn't keep up with the demands placed on them and they had very little in the way of firewall and no intrusion detection/prevention ability. Using OPNsense, I have essentially future-proofed my home network from most bad actors and have noticed a SIGNIFICANT improvement in throughput as well. You are really only limited by the hardware you choose to run it, which, even on low end hardware, is substantially more powerful than any high-end consumer (SOHO) router.

While OPNsense's default Lobby dashboard is pretty good, I'd recommend using a combination dashboard that utilizes InfluxDB, Grafana and Telegraph or Ansible. A really good example of this is Brendan Smith's implementation shown in the pic below and instructions for this dashboard can be found on his website ["How to Configure an OPNsense Dashboard"](#)

Hardware

Active Users

1

Uptime

9 days, 23:37

CPU Total

5.59%

CPU

CPU

	max	avg	current
cpu0	100.0%	6.6%	11.2%
cpu1	100.0%	8.8%	12.5%
cpu2	100.0%	8.6%	10.4%
cpu3	100.0%	8.4%	14.4%

Process Information

Running	Idle	Sleeping	Wait	Blocked	Zombies
4	32	10	1	23	0

Load

	max	avg	current
load1	4.00	0.45	0.40
load15	1.00	0.43	0.42
load5	1.74	0.45	0.46

Disk Utilization

	max	avg	current
/	1.59%	1.58%	1.59%

Ram

	min	max	avg	current
Ram Used	14.1%	16.2%	15.0%	15.0%

Temperature Sensors

	min	max	avg	current
cpu0	54.1 °C	60.5 °C	57.1 °C	57.5 °C
cpu1	54.1 °C	60.5 °C	57.1 °C	57.5 °C
cpu2	54.1 °C	60.5 °C	57.1 °C	57.5 °C
cpu3	54.1 °C	60.5 °C	57.1 °C	57.5 °C

Firewall

Firewall Blocked Events on igb0

5690

Firewall Blocked Event Locations on igb0

Top IP Blocked on igb0

89.248.165.86

Firewall Blocked Destination Ports on igb0

Value	Value
23	171
6379	153
8080	87
8443	80
7680	70

Firewall Blocked Protocols on igb0

Value	Value
tcp	5195
udp	495
icmp	32

Network Stats

Gateway RTT - All

	min	max	avg	current
WAN_DHCP	8.40 ms	34.1 ms	11.3 ms	34.1 ms

Interface summary

Interface	Friendly Name	IPv4 Address	Physical Address	Status
igb0	WAN	0.0.0.0	aa:aa:aa:aa:aa:aa	UP
igb1_vlan2	Management	172.16.2.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan3	Voice	172.16.3.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan4	Services	172.16.4.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan5	Home	172.16.5.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan6	Guest	172.16.6.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan7	IoT	172.16.7.1	aa:aa:aa:aa:aa:aa	UP
igb1_vlan8	Other	172.16.8.1	aa:aa:aa:aa:aa:aa	UP

Gateway Summary - All

Gateway Description	Monitor IP	Gateway IP	Status
Interface WAN_DHCP Gateway	0.0.0.0	0.0.0.0	online

WAN Interface - igb0

Interface Summary

Interface	Friendly Name	IPv4 Address	Physical Address	Status
igb0	WAN	0.0.0.0	aa:aa:aa:aa:aa:aa	UP

WAN Traffic - igb0 (Bits/sec)

	max	avg	current
Bits Recv	223.44 Mb/s	5.28 Mb/s	4.66 Mb/s
Bits Sent	24.24 Mb/s	182.71 kb/s	24.24 Mb/s

igb0 - Bits Recv

5.51 Mb/s

igb0 - Bits Sent

28.68 Mb/s

igb0 - Bytes Recv - This Month

53.15 GiB

igb0 - Bytes Sent - This Month

1.83 GiB

WAN Throughput - igb0

	min	max	avg	current
Packets Recv	7.100	18.703 K	456.070	1.287 K
Packets Sent	9.100	6.340 K	246.032	2.239 K

LAN Interface - igb1_vlan5

Interface Summary

Interface	Friendly Name	IPv4 Address	Physical Address	Status
igb1_vlan5	Home	172.16.5.1	aa:aa:aa:aa:aa:aa	UP

LAN Traffic - igb1_vlan5 (Bits/sec)

	max	avg	current
Bits Recv	24.15 Mb/s	99.47 kb/s	24.15 Mb/s
Bits Sent	232.06 Mb/s	2.61 Mb/s	25.15 Mb/s

igb1_vlan5 - Bits Recv

28.85 Mb/s

igb1_vlan5 - Bits Sent

30.04 Mb/s

igb1_vlan5 - Bytes Recv - This Month

1019.51 MiB

igb1_vlan5 - Bytes Sent - This Month

26.22 GiB

LAN Throughput - igb1_vlan5

	min	max	avg	current
Packets Recv	6.70	6.50 K	64.72	2.37 K
Packets Sent	4.90	19.43 K	236.37	2.96 K

- LAN Interface - igb1_vlan2 (5 panels)
- LAN Interface - igb1_vlan3 (5 panels)
- LAN Interface - igb1_vlan4 (5 panels)
- LAN Interface - igb1_vlan6 (5 panels)
- LAN Interface - igb1_vlan7 (5 panels)
- LAN Interface - igb1_vlan8 (5 panels)

