OPNsense:
the "open" firewall for your datacenter

@wefinet
Werner Fischer

THOMAS KRENN®

DENOG 10
GERMAN NETWORK OPERATORS GROUP

Have you already tested an Open Source firewall?

If yes, which?

Kevin Karhan @k3vk4 · Nov 17

Poll: What is your favorite #Firewall Distribution?
@pfsense, @opnsense, @ipfire or another [plz coment!]

61% pfSense

27% OPNsense ✓

5% ipFire

7% other [plz comment!]

886 votes • 4 days left

💬 37   ↻ 41   ♡ 23   ✉

Show this thread

OPNsense

- History and architecture
- FreeBSD / HardenedBSD
- Initial configuration and secure system
- Mobile WAN / WAN failover
- High availability
- Plugins
- pfSense or OPNsense?

m0n0wall

Forum

"...and I encourage all current m0n0wall users to check out OPNsense" - Manuel Kasper

click to **to check it out now** **OPNsense**®

End of the m0n0wall project

Dear m0n0wall enthusiasts,

on this day 12 years ago, I have released the first version of m0n0wall to the public. In theory, one could still run that version - pb1 it was called - on a suitably old PC and use it to control the Internet access of a small LAN (not that it would be recommended security-wise). However, the world keeps turning, and while m0n0wall has made an effort to keep up, there are now better solutions available and under active development.

Therefore, today I announce that the m0n0wall project has officially ended. No development will be done anymore, and there will be no further releases.

The forums and the mailing list will be frozen at the end of this month. All the contents of the website, repository, downloads, mailing list and forum will be archived in a permanent location on the web so that they remain accessible indefinitely to anyone who might be interested in them.

m0n0wall has served as the seed for several other well known open source projects, like pfSense, FreeNAS and AskoziaPBX. The newest offspring, OPNsense (https://opnsense.org), aims to continue the open source spirit of m0n0wall while updating the technology to be ready for the future. In my view, it is the perfect way to bring the m0n0wall idea into 2015, and I encourage all current m0n0wall users to check out OPNsense and contribute if they can.

Finally, I would like to take this opportunity to thank everyone who has been involved in the m0n0wall project and helped in some way or another - by contributing code, documentation, answering questions on the mailing list or the forum, donating or just spreading the word. It has been a great journey for me, and I'm convinced that even now that it has come to an end, the m0n0wall spirit will live on in the various projects it has spawned.

Manuel Kasper
15 February 2015

	IPFire 2.21	pfSense® 2.4	OPNsense® 18.7
Based on	Linux® Kernel 4.14	FreeBSD® 11.2	FreeBSD® 11.1
Stateful firewall	✔	✔	✔
Proxy cache	✔	✔	✔
VPN	✔	✔	✔
IDS	✔	✔	✔
HA cluster		✔	✔
Multi-WAN		✔	✔
Layer 2 (transparent)		✔	✔
Two-factor auth.		(✔)	✔

Also for mobile LTE backup with 4G modem

Also for VPN roadwarrior (eg. Google Auth.)

	pfSense® 2.4	OPNsense® 18.7
License	AGPL 2.0	BSD Clause-2
IPS	Snort, no real inline mode	Suricata, multi-threaded
Two-factor auth.	mOTP available via plugin	Native integrated via TOTP
AES-NI CPU feature required	Yes, starting v2.5	No, never

Source: https://techcorner.max-it.de/wiki/OPNsense_vs._pfSense_-_Im_Vergleich

OPNsense Versions

Version	FreeBSD Base	Release message	Important innovations (in extracts)
OPNsense 18.7 (current stable version)	FreeBSD 11.1	18.7 ⧉	• Improved default route handling and gateway switching • OpenVPN default setup improvements for IPv6 and RADIUS attribute support • Monit core integration • Pluggable backup framework with new Nextcloud option • Firmware GUI speedup • ZFS on root boot support • Backports of FreeBSD 11.2 Intel NIC drivers (ixl version 1.9.9-k ⧉) • Language updates
OPNsense 18.1	FreeBSD 11.1	18.1 ⧉	• UTM plugins: antivirus, antispam, mail, web proxy extensions • Portable NAT before IPsec support • UI layout improvements and consolidation
OPNsense 17.7	FreeBSD 11.0	17.7 ⧉	• SafeStack application hardening • Quagga plugin with broad routing protocol support • Unbound resolver as the new default
OPNsense 17.1	FreeBSD 11.0	17.1 ⧉	• PHP7 • SSH Installer • Lets Encrypt plugin • HardenedBSD's SEGVGUARD
OPNsense 16.7	FreeBSD 10.3	16.7 ⧉	• Pluggable service infrastructure • Two factor authentication using RFC 6238 ⧉ • HardenedBSD's ASLR implementation
OPNsense 16.1	FreeBSD 10.2	16.1 ⧉	• Plugin support • Menu/navigation restructuring
OPNsense 15.7	FreeBSD 10.1	15.7 ⧉	• Support both OpenSSL and LibreSSL • Code refactoring
OPNsense 15.1	FreeBSD 10.0	15.1 ⧉	• Feature enhancements • Code cleanup

2018: UTM plugins anti-virus/-spam/…, ZFS

2017: PHP7, Let's Encrypt, application hardening

2016: Plugin support, 2-factor, HardenendBSD

2015: initial release, code cleanup, LibreSSL

OPNsense

FreeBSD

HardenedBSD

Timeline (left and right): 1969, 1971 to 1973, 1974 to 1975, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001 to 2004, 2005, 2006 to 2007, 2008, 2009, 2010, 2011, 2012 to 2015, 2016, 2017

Unnamed PDP-7 operating system

Unix Version 1 to 4

Unix Version 5 to 6

PWB/Unix

BSD 1.0 to 2.0

Unix Version 7

Unix/32V

BSD 3.0 to 4.1

Xenix 1.0 to 2.3

System III

BSD 4.2

SunOS 1 to 1.1

Xenix 3.0

System V R1 to R2

Unix Version 8

SCO Xenix

Unix 9 and 10 (last versions from Bell Labs)

BSD 4.3

SunOS 1.2 to 3.0

AIX 1.0

SCO Xenix V/286

System V R3

HP-UX 1.0 to 1.2

BSD 4.3 Tahoe

SCO Xenix V/386

HP-UX 2.0 to 3.0

BSD 4.3 Reno

BSD Net/1

SCO Xenix V/386

System V R4

Unix-like systems

Minix 1.x

Linux 0.0.1

NeXTSTEP/ OPENSTEP 1.0 to 4.0

BSD Net/2

386BSD

SunOS 4

Linux 0.95 to 1.2.x

FreeBSD 1.0 to 2.2.x

BSD 4.4-Lite & Lite Release 2

NetBSD 0.8 to 1.0

SCO UNIX 3.2.4

UnixWare 1.x to 2.x (System V R4.2)

HP-UX 6 to 11

NetBSD 1.1 to 1.2

OpenBSD 1.0 to 2.2

Minix 2.x

Mac OS X Server

FreeBSD 3.0 to 3.2

NetBSD 1.3

AIX 3.0-7

Linux 2.x

Minix 3.1.0-3.4.0

Mac OS X, OS X, macOS 10.0 to 10.12 (Darwin 1.2.1 to 17)

FreeBSD 3.3-11.x

DragonFly

OpenServer 6.x

OpenServer 10

Solaris 11.0-11.3

OpenSolaris & derivatives (illumos, etc.)

HP-UX 11i+

Linux 3.x

Linux 4.x

OpenServer 10.x

m0n0wall → pfSense → OPNsense
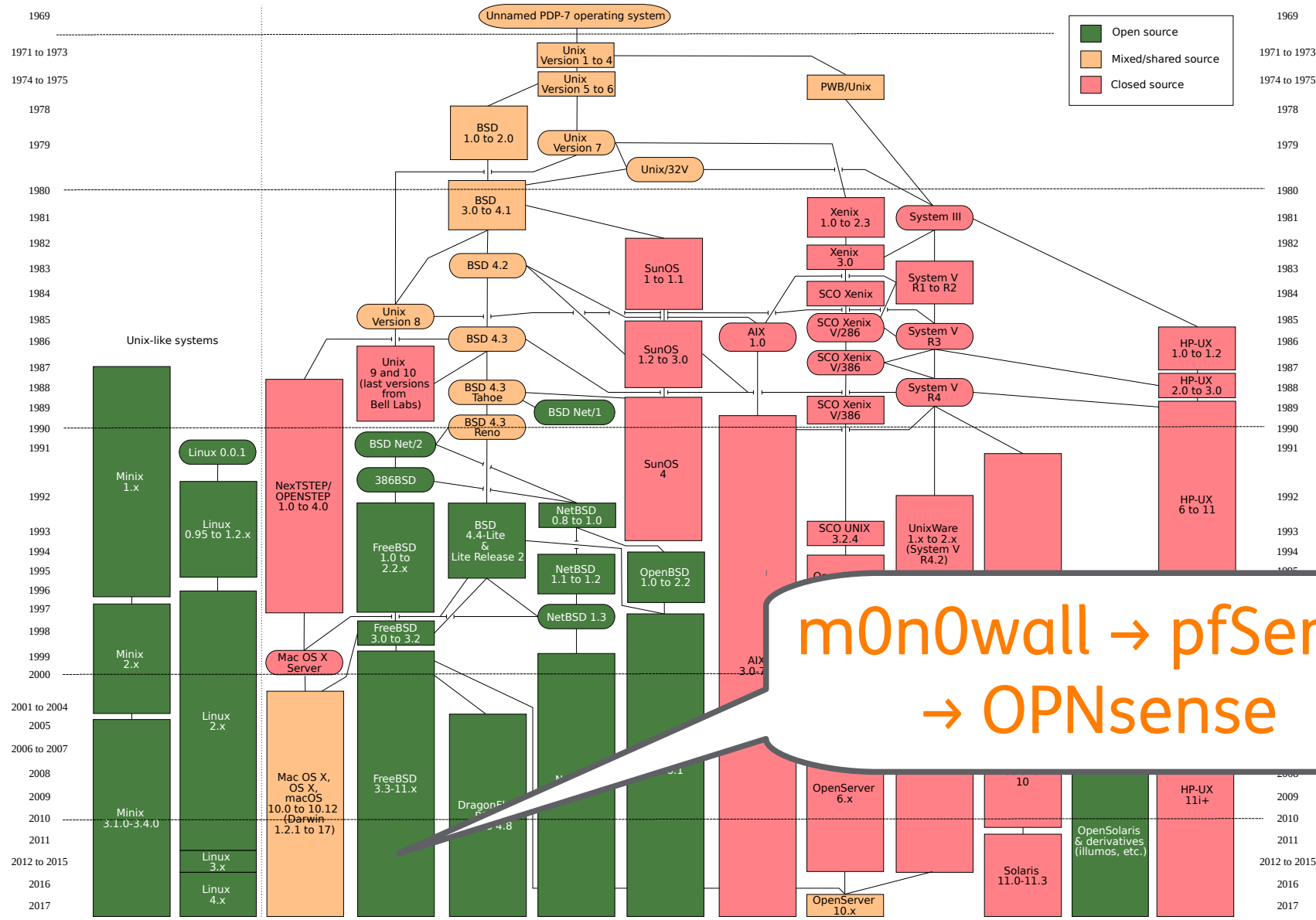
ASLR / SEGVGUARD

_ Fork from FreeBSD / Goal: Mitigation of exploits

_ Address Space Layout Randomization (ASLR)

   _ Address space no longer predictable → Increases protection against buffer overflows

_ Blind Return Oriented Programming (BROP)

   _ ASLR can be leveraged under certain circumstances

   _ BROP can generate ROP malicious code / Needs several attempts

   _ Application crashes if BROP is not successful and then restarts

_ SEGVGUARD

   _ Fixes the above mentioned brute force method of BROP

   _ Prevents the restart of the attacked application

Link: https://hardenedbsd.org/content/projects

OPNsense

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STEP 3

Create LAN → WAN rule,
prevent access to malicious IPs

OPNsense®

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- Lobby
- Reporting
- System
- **Interfaces**
  - [LAN]
  - [WAN]
  - Assignments
  - Overview
  - **Settings**
  - Wireless
  - Point-to-Point
  - Other Types
  - Diagnostics
- Firewall
- VPN
- Services
- Power
- Help

Interfaces: Settings

Network Interfaces

full help

ⓘ Hardware CRC — ☑ **Disable hardware checksum offload**

Checking this option will disable hardware checksum offloading. Checksum offloading is broken in some hardware, particularly some Realtek cards. Rarely, drivers may have problems with checksum offloading and some specific NICs.

ⓘ Hardware TSO — ☑ **Disable hardware TCP segmentation offload**

Checking this option will disable hardware TCP segmentation offloading (TSO, TSO4, TSO6). This offloading is broken in some hardware drivers, and may impact performance with some specific NICs.

ⓘ Hardware LRO — ☑ **Disable hardware large receive offload**

Checking this option will disable hardware large receive offloading (LRO). This offloading is broken in some hardware drivers, and may impact performance with some specific NICs.

ⓘ VLAN Hardware Filtering — Enable VLAN Hardware Filtering

Set usage of VLAN hardware filtering. This hardware acceleration ... broken in a particular device driver, or may impact performance.

ⓘ ARP Handling — ☐ **Suppress ARP messages**

This option will suppress ARP log messages when multiple interfaces reside on the s...

ⓘ DHCP Unique Identifier

This field can be used to enter an explicit DUID for use by IPv6 DHCP clients.
Insert the existing DUID here

Save

This will take effect after you reboot the machine or re-configure each interface.

prepare for IPS

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https://10.1.102.1/system_advanced_network.php

Administration | Intrusi ✕

https://192.168.1.1/ui/ids/

🔍 Search

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STEP 4

- Lobby
- Reporting
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  - Captive Portal
  - DHCPv4
  - DHCPv6
  - Dnsmasq DNS
  - Dynamic DNS
  - Intrusion Detection
    - Administration
    - Log File
  - Network Time
  - OpenDNS
  - Unbound DNS
  - Web Proxy
- Power
- Help

Services: Intrusion Detection: Administration

| Settings | Download | Rules | User defined | Alerts | Schedule |

advanced mode   full help

ℹ **Enabled**	☑
ℹ **IPS mode**	☑
ℹ **Promiscuous mode**	☐
ℹ **Enable syslog**	☑
ℹ **Pattern matcher**	Aho-Corasick ▾
ℹ **Interfaces**	WAN ✕
	⊗ Clear All
ℹ **Rotate log**	Weekly ▾
ℹ **Save logs**	4

Apply

STEP 4

OPNsense

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Services: Intrusion Detection: Administration

| Settings | Download | Rules | User defined | Alerts | Schedule |

Classtype: ALL   Action: All

Search   10

	sid	Action	Source	ClassType	Message	Info / Enabled
☐	903200105	Drop	abuse.ch.sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑
☐	903200106	Drop	abuse.ch.sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑
☐	903200107	Drop	abuse.ch.sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑
☐	907200000	Drop	abuse.ch.dyre_sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑
☐	907200001	Drop	abuse.ch.dyre_sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑
☐	907200002	Drop	abuse.ch.dyre_sslipblacklist.rules	trojan-activity	SSL Blacklist: Traffic to maliciou...	✏ ☑

☐ ☑

« ‹ 1374 1375 1376 1377 **1378** › »

Showing 13771 to 13776 of 13776 entries

Apply

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Administration | Web Pr ×   +

https://10.1.102.1/ui/proxy/#   ⋯ ☑ ☆   🔍 Search

STEP 5

OPNsense

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  - Dynamic DNS
  - Intrusion Detection
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  - Unbound DNS
  - Web Proxy
    - Administration
    - Log File
- Power
- Help

Services: Web Proxy: Administration

| General Proxy Settings ▾ | Forward Proxy ▾ | Remote Access Control Lists |

☐ advanced mode   full help ⬤

ⓘ **Enable proxy**   ☑

Enable or disable the proxy service.

ⓘ **ICP port**

The port number where Squid sends and receives ICP queries to and from neighbor caches. Leave blank to disable (default). The standard UDP port for ICP is 3130.

ⓘ **Enable access logging**   ☑

Enable access logging.

ⓘ **Log target**   File ▾

Send log data to the selected target.

ⓘ **Enable store logging**   ☑

Enable store logging.

ⓘ **Ignore hosts in access.log**   Type subnet addresses (ex. 192.168.2.0/24)

❌ Clear All

Type subnets/addresses you want to ignore for the access.log
TIP: You can also paste a comma separated list into this field.

ⓘ **Use alternate DNS-servers**   Type IP addresses, followed by Enter or comma.

❌ Clear All

Type IPs of alternative DNS servers you like to use.
TIP: You can also paste a comma seperated list into this field.

ⓘ **Enable DNS v4 first**   ☐

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https://10.1.102.1/ui/proxy/#

https://10.1.102.1/ui/proxy/#

Search

STEP 5

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Services: Web Proxy: Administration

| General Proxy Settings ▾ | Forward Proxy ▾ | Remote Access Control Lists |

◯◯ advanced mode   full help ◯

ⓘ Proxy interfaces

| LAN ✕ |

❌ Clear All

Select interface(s) the proxy will bind to.

ⓘ Proxy port

| 3128 |

The port the proxy service will listen to.

ⓘ Enable Transparent HTTP proxy

☑

Enable transparent proxy mode. You will need a firewall rule to
forward traffic from the firewall to the proxy server. You may leave the
proxy interfaces empty, but remember to set a valid ACL in that case.
Add a new firewall rule

ⓘ Enable SSL inspection

☐

Enable SSL inspection mode, which allows to log HTTPS connections
information, such as requested URL and/or make the proxy act as a
man in the middle between the internet and your clients.
Be aware of the security implications before enabling this option.

If you plan to use transparent HTTPS mode, you need nat rules to
reflect your traffic.
Add a new firewall rule

ⓘ Log SNI information only

☐

Do not decode and/or filter SSL content, only log requested domains
and IP addresses.
Some old servers may not provide SNI, so their addresses will not be
indicated.
Get more information about Server Name Indication.

Administration | Web Pr... ×   +

https://10.1.102.1/ui/proxy/#remote_acls

Search

STEP 5

OPNsense

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Services: Web Proxy Administration

full help

Edit blacklist   ×

full help

ⓘ enabled	☑
ⓘ Filename	shalla
ⓘ URL	http://www.shallalist.de/Downloads/shallalist.tar.gz
ⓘ username (optional)	
ⓘ password (optional)	
ⓘ categories (if available)	adv × aggressive × alcohol × anonvpn × automobile/bikes × automobile/boats × automobile/cars × automobile/planes × chat × costtraps × dating × downloads × drugs × dynamic × education/schools × finance/banking × finance/insurance × finance/moneylending × finance/other ×

❌ Clear All

ⓘ ssl ignore cert	☐
ⓘ Description	Shalla

Edit | Delete

✏ ⧉ 🗑

✏ ⧉ 🗑

✏ ⧉ 🗑

➕ 🗑

Showing 1 to 3 of 3 entries

Close   Save changes

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OPNsense

- History and architecture
- FreeBSD / HardenedBSD
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- pfSense or OPNsense?

https://192.168.1.1/system_gateways.php?displaysave=true

Search

OPNsense

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System: Gateways: Single

▶ ↻ ■ **⊕ Add gateway**

The changes have been applied successfully.

		Name	Interface	Gateway	Monitor IP	RTT	Loss	Status	Description		
☐	▶	WAN_DHCP (default)	WAN	10.1.102.1	8.8.8.8	15.4 ms	0.0 %	⊕ Online	Interface WAN_DHCP Gateway	✎ 🗑 ⧉
☐	▶	WAN2_PPP	WAN2	10.64.64.0	9.9.9.9	23.4 ms	0.0 %	⊕ Online	Interface WAN2_PPP Gateway	✎ 🗑 ⧉
										🗑

Group | Gateways | Sy ×

https://192.168.1.1/system_gateway_groups_edit.php

Search

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System: Gateways: Group

full help

Group Name	WANGWGROUP				
Gateway Priority		Gateway	Tier	Virtual IP	Description
		WAN_DHCP	Tier 1	Interface Address	**Interface WAN_DHCP Gateway**
		WAN2_PPP	Tier 2	Interface Address	**Interface WAN2_PPP Gateway**
Trigger Level	Packet Loss				
Description					

Member Down
Packet Loss
High Latency
Packet Loss or High Latency

Configure when backup link should get active

Dashboard | Lobby | O ✕

https://192.168.1.1/index.php

🔍 Search

OPNsense

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🖥 Lobby

   Dashboard

   License

   Password

   Logout

📊 Reporting

▦ System

🔀 Interfaces

🔥 Firewall

🌐 VPN

⚙ Services

🔧 Power

❓ Help

Lobby: Dashboard

⊕ Add widget   2 columns ▾

System Information

Name	OPNsense.test.thomas-krenn.com
Versions	OPNsense 18.1.6-amd64 FreeBSD 11.1-RELEASE-p9 OpenSSL 1.0.2o 27 Mar 2018
Updates	Click to check for updates.
CPU Type	Intel(R) Core(TM) i5-6300U CPU @ 2.40GHz (4 cores)
CPU usage	100 0
Load average	0.17, 0.20, 0.13
Uptime	00:38:25
Current date/time	Wed May 2 14:43:56 CEST 2018
Last config change	Wed May 2 14:36:36 CEST 2018
State table size	0 % (18/396000)
MBUF Usage	3 % (9370/243856)
Memory usage	6 % (269/3961 MB)
SWAP usage	0 % (0/8192 MB)
Disk usage	2% / [ufs] (1.0G/49G)

Services

Service	Description	Status
apinger	Gateway Monitoring Daemon	▶ ⟳ ■
configd	System Configuration Daemon	▶ ⟳ ■
dhcpd	DHCP Server	▶ ⟳ ■
login	Users and Groups	▶ ⟳
ntpd	Network Time Daemon	▶ ⟳ ■
pf	Packet Filter	▶ ⟳
radvd	Router Advertisement Daemon	▶ ⟳ ■
syslog	Syslog	▶ ⟳ ■
unbound	Unbound DNS	▶ ⟳ ■

Gateways

Name	RTT	Loss	Status
WAN_DHCP 10.1.102.1	0.0 ms	100.0 %	Offline
WAN2_PPP 10.64.64.0	26.3 ms	0.0 %	Online

Interfaces

🔀 LAN	⬆	1000baseT <full-duplex>		192.168.1.1
🔀 WAN	⬆	1000baseT <full-duplex>		10.1.102.53
📱 WAN2	⬆			10.75.115.215

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Settings | High Availabil... ✕ +

https://10.1.102.1/system_hasync.php

🔍 Search

OPNsense

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🔍

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System: High Availability: Settings

State Synchronization

full help ◉

ℹ Synchronize States ☑

pfsync transfers state insertion, update, and deletion messages between firewalls.
Each firewall sends these messages out via multicast on a sp...
It also listens on that interface for similar messa...
This setting should be enabled on all mem...

ℹ Disable preempt ☐

When this device is configured as CARP ma...
there already is a master on the network

ℹ Synchronize Interface

HA ▼

If Synchronize States is enabled, it will utilize t...

- We recommend setting this to a interface other than LAN! A dedicated interface works the best.
- You must define an IP on each machine participating in this failover group.
- You must have an IP assigned to the interface on any participating sync nodes.

ℹ Synchronize Peer IP

10.0.0.2

Setting this option will force pfsync to synchronize its state table to this IP address. The default is directed multicast.

Configuration Synchronization Settings (XMLRPC Sync)

ℹ Synchronize Config to IP

10.0.0.2

Common Address Red. Prot.
pfSync (direct cabling)
XMLRPC sync (conf. sync)

https://10.1.102.1/system_hasync.php

🔍 Search

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System: High Availability: Settings

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State Synchronization

full help

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Configuration Synchronization Settings (XMLRPC Sync)

ℹ Synchronize Config to IP   10.0.0.2

Tip: configure HA, configure Firewall afterwards

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Firmware | System | OPN ✕

https://192.168.1.1/ui/core/firmware/#plugins

Search

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- Firewall
- VPN
- Services
- Power
- Help

System: Firmware

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Name	Version	Size	Comment		
os-dyndns (installed)	**1.6_1**	**134KiB**	**Dynamic DNS Support**	ⓘ	🗑
os-acme-client	1.14	222KiB	Let's Encrypt client	ⓘ	+
os-arp-scan	1.1	37.7KiB	Get all peers connected to a local network	ⓘ	+
os-boot-delay	1.0	32.0B	Apply a persistent 10 second boot delay	ⓘ	+
os-c-icap	1.5_1	33.5KiB	c-icap connects the web proxy with a virus scanner	ⓘ	+
os-cache	1.0	228B	Webserver cache	ⓘ	+
os-clamav	1.5	37.0KiB	Antivirus engine for detecting malicious threats	ⓘ	+
os-collectd	1.1	31.9KiB	Collect system and application performance metrics periodically	ⓘ	+
os-debug	1.3	90.0B	Debugging Tools	ⓘ	+
os-freeradius	1.5.3	156KiB	RADIUS Authentication, Authorization and Accounting Server	ⓘ	+
os-frr	1.3	746KiB	The FRRouting Protocol Suite	ⓘ	+
os-ftp-proxy	1.0	38.7KiB	Control ftp-proxy processes	ⓘ	+
os-haproxy	2.6	387KiB	Reliable, high performance TCP/HTTP load balancer	ⓘ	+
os-helloworld	1.3	17.1KiB	A sample framework application	ⓘ	+
os-igmp-proxy	1.3_1	22.6KiB	IGMP-Proxy Service	ⓘ	+
os-intrusion-detection-content-et-pro	1.0	4.64KiB	IDS Proofpoint ET Pro ruleset (needs a valid subscription)	ⓘ	+
os-intrusion-detection-content-pt-open	1.0	425B	IDS PT Research ruleset (only for non-commercial use)	ⓘ	+

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https://192.168.1.1/ui/core/firmware/#plugins

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Firmware | System | OPN ✕

https://192.168.1.1/ui/core/firmware/#plugins

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System: Firmware

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Plugin details   ✕

c-icap connects the web proxy with a virus scanner

c-icap is an implementation of an ICAP server. It can be used with HTTP
proxies that support the ICAP protocol to implement content adaptation
and filtering services.

WWW: http://c-icap.sourceforge.net/

Maintainer: m.muenz@gmail.com

Close

Name			
os-dyndns (instal			ℹ 🗑
os-acme-client			ℹ ➕
os-arp-scan		rk	ℹ ➕
os-boot-delay			ℹ ➕
os-c-icap	1.5_1	33.5KiB	c-icap connects the web proxy with a virus scanner	ℹ ➕
os-cache	1.0	228B	Webserver cache	ℹ ➕
os-clamav	1.5	37.0KiB	Antivirus engine for detecting malicious threats	ℹ ➕
os-collectd	1.1	31.9KiB	Collect system and application performance metrics periodically	ℹ ➕
os-debug	1.3	90.0B	Debugging Tools	ℹ ➕
os-freeradius	1.5.3	156KiB	RADIUS Authentication, Authorization and Accounting Server	ℹ ➕
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os-igmp-proxy	1.3_1	22.6KiB	IGMP-Proxy Service	ℹ ➕
os-intrusion-detection-content-et-pro	1.0	4.64KiB	IDS Proofpoint ET Pro ruleset (needs a valid subscription)	ℹ ➕
os-intrusion-detection-content-pt-open	1.0	425B	IDS PT Research ruleset (only for non-commercial use)	ℹ ➕

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Action done.

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| Updates | **Plugins** | Packages | Settings |

os-dyndns (installed)	1.6_1	134KiB	**Dynamic DNS Support**	ⓘ	🗑
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os-intrusion-detection-content-pt-open	1.0	425B	IDS PT Research ruleset (only for non-commercial use)	ⓘ	+
os-intrusion-detection-content-snort-vrt	1.0	12.4KiB	IDS Snort VRT ruleset (needs registration or subscription)	ⓘ	+

Install os-c-icap

OPNsense

- History and architecture
- FreeBSD / HardenedBSD
- Initial configuration and secure system
- WAN failover
- High availability
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ADMINISTRATIVE PANEL DECISION

Deciso Group B.V. v. Registration Private, Domains By Proxy, LLC / Jamie Thompson, Rubicon Communications dba Netgate

Case No. D2017-1828

1. The Parties

The Complainant is Deciso Group B.V. of Middelharnis, the Netherlands, represented by Hollier-Larousse & Associes, France.

The Respondent is Registration Private, Domains By Proxy, LLC of Scottsdale, Arizona, United States of America ("United States") / Jamie Thompson, Rubicon Communications dba Netgate of Austin, Texas, United States, internally represented.

2. The Domain Name and Registrar

The disputed domain name <opnsense.com> is registered with GoDaddy.com, LLC (the "Registrar").

+ Open source,
no license fee

+ Development in NL + DE
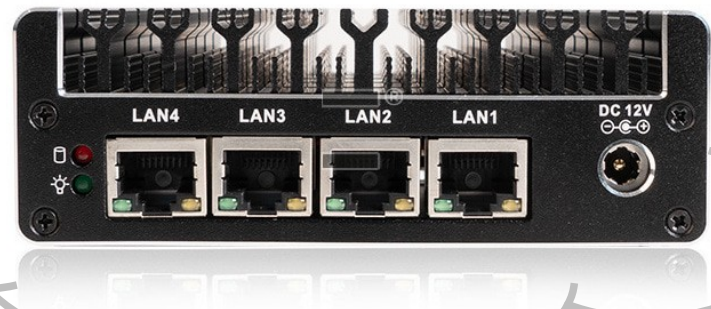
+ Based on FreeBSD &
HardenedBSD

+ Modern design

Tombola

Win a Low Energy
Server / SSD / Laptop bag
Drawing tomorrow
(last coffee break)

THOMAS KRENN®

Have fun with OPNsense!
"Real" Open Source rocks ;-)

THOMAS KRENN®