OPNsense®

Your Next Open Source Firewall
opnsense.org

High-end Security Made Easy™

User Experience
Modern Easy to use
User Interface

Fully Featured
Everything you need to
Protect your network

Documentation
Free online comprehensive
User & Development Manual

Real Open Source
Licensed under and OSI
Approved License

Our mission is to make OPNsense the most widely used open source security platform.

We give users, developers and businesses a friendly, stable and transparent environment.

About OPNsense

Founded in Middelharnis, The Netherlands by Deciso B.V. in 2015 with a a small team of highly skilled professionals and open source enthusiasts. OPNsense is a fast growing community project with thousands of active installations around the globe. Our goal is to **become the most widely used open source security platform in the world!**

Fighting fraudulent networks using secure connections (SSL) with OPNsense

OPNsense's unique features include an inline Intrusion Prevention System that is capable of blacklisting based on SSL fingerprints.

There are numerous threats that you encounter on a daily basis and some of them you may not even be aware of. Most prominent issues are probably privacy issues, such as stealing of sensitive information and bank/credit card fraud.

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Some Highlights

Businesses

Protect your business network and secure your connections.
From the **stateful inspection firewall** to the **inline intrusion detection & prevention** system everything is included for free.Use the **traffic shaper** to enhance network performance and prioritise you voice over ip above other traffic. Backup your configuration to the cloud automatically, no need for manual backups anymore!

School networks

Limit and s**hare available bandwidth evenly** amongst students and utilise the **category based web filtering** to filter unwanted traffic such as adult content and malicious websites. Its easy to setup as no additional plugins nor packages are required. Teach about security or use our development documentation to show how an Model Viewer Controller works. You and your students are invited to join the effort and OPNsense community!

Hotels & Campings

Hotels and campings usually utilise a captive portal to allow guests (paid) access to internet for a limited duration. Guests need to login using a voucher they can either buy or obtain for free at the reception. OPNsense has a build-in **captive portal** with **voucher support** and can easily create them on the fly.

On the road

Even on the road OPNsense is a great asset to your business as it offers **OpenVPN** and **IPSec** VPN solution with **road warrior support**. The **easy client exporter** make configuring your OpenVPN SSL client setup a breeze.

Remote Offices & SOHO

Utilise the integrated site to site VPN (IPsec or SSL VPN) to create a secure network connection to and from your remote offices. Enjoy the easy configuration and online searchable documentation with simple how-to type of articles to get you started, quickly.

Fully supported

Professional support for Businesses, Integrators & Resellers is available

Our experts are available to support you & your customers

STATEFUL INSPECTION FIREWALL

“A stateful firewall is a firewall that keeps track of the state of network connections (such as TCP streams, UDP communication) traveling across it. The firewall is programmed to distinguish legitimate packets for different types of connections. Only packets matching a known active connection will be allowed by the firewall; others will be rejected.” - source: en.wikipedia.org

Filtering
The firewall can filter traffic on source,
destination and protocol as well as port on number (TCP/UDP).

Operating System Fingerprinting (OSFP)
Advanced passive OS fingerprinting technology can be used to allow or block traffic based by the Operating System initiating the connection.

Log matching firewall traffic on a per rule bases
Each rule can be set to log a match, this also allows for easy add of a block or pass rule through the firewall rule log module.

Policy based routing by per rule gateway option
With policy based routing it is possible to add a gateway to a rule and effectively change the standard routing of matching traffic.

Alias support for grouping and naming IPs, networks and ports
Aliases help to keep your firewall ruleset clean and easy to understand, in environments with multiple public IPs and numerous servers.

Transparent layer 2 firewall capable
Bridge interfaces and filter traffic between them, even allowing for an IP-less firewall.

Granular state table control
Adjustable state table size, ability to limit traffic per rule based on simultaneous connections, states per host & new connections per second as well as define state timeout and state type.

Disable packet filtering
This option can be used to turn the system in to a pure router

TRAFFIC SHAPER

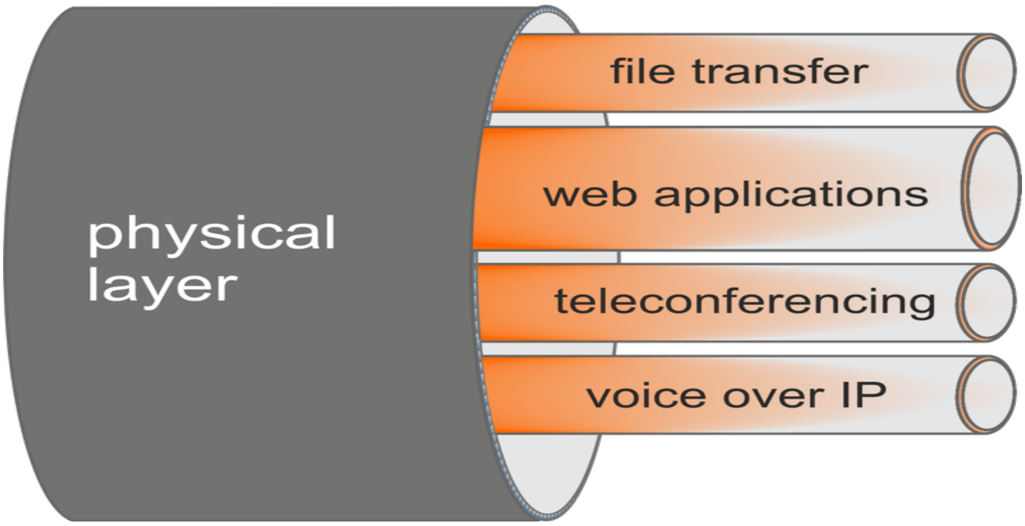
__Traffic shaping__ (also known as "packet shaping") is the control of computer network traffic in order to optimise or guarantee performance, lower latency, and/or increase usable bandwidth by delaying packets that meet certain criteria. More specifically, traffic shaping is any action on a set of packets (often called a stream or a flow), which imposes additional delay on those packets such that they conform to some predetermined constraint (a contract or traffic profile).

Easy and flexible
Traffic shaping within OPNsense is very flexible and is organised around pipes, queues and corresponding rules. The pipes define the allowed bandwidth, the queues can be used to set a weight within the pipe and finally the rules are used to apply the shaping to a certain package flow. The shaping rules are handled independently from the firewall rules and other settings.

Limit bandwidth
Bandwidth limitations can be defined based upon the interface(s), ip source & destination, direction of traffic (in/out) and port numbers (application).

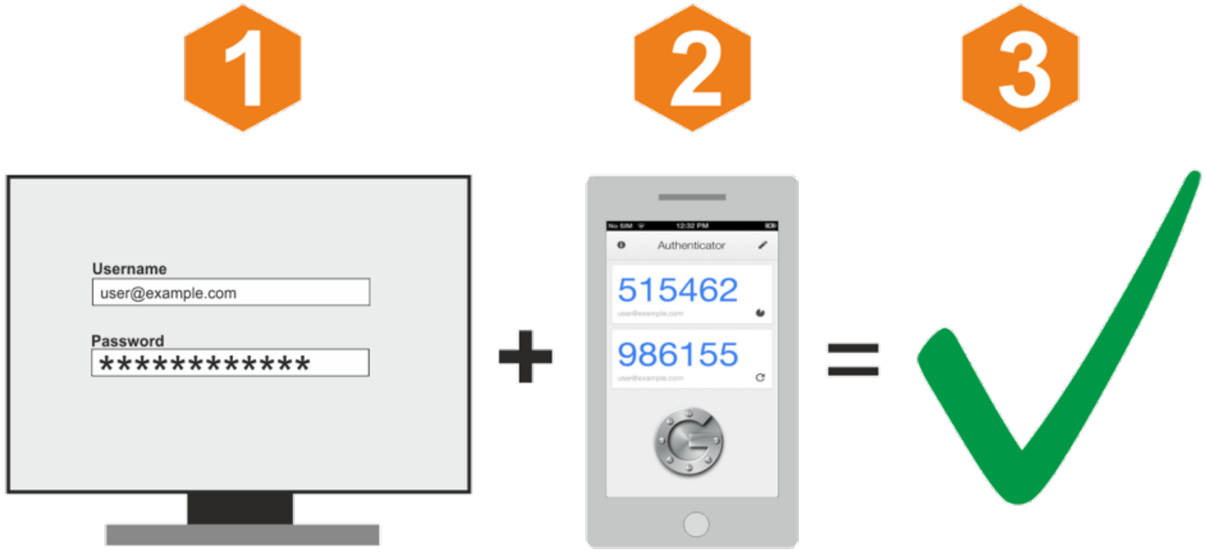
Bandwidth sharing
The available bandwidth can be shared evenly over all users, this allows for optimum performance at all times.

Prioritise
Traffic can be prioritised by adding queues and defining weights. Applications with a higher weight can consume more bandwidth than others when the total available bandwidth is limited.



Two-Factor Authentication

Two-Factor Authentication *also known as 2FA or 2-Step Verification is an authentication method that requires two components, such as a pin/password + a token. OPNsense offers support for Two-factor authentication throughout the entire system, with one exception being console/ssh access.*



Time-based One-time Password

TOTP is an algorithm (RFC 6238) that computes a one-time password from a shared secret key and the current time. OPNsense supports RFC 6238.

Google Authenticator

OPNsense fully supports the use of Google's Authenticator application. This application can generate tokens on Android, iOS and BlackBerry OS. The usage of this application is free and it very simple to setup using OPNsense.

Supported 2FA services

OPNsense supports two-factor authentication throughout the entire system for the following services:

- ✓ OPNsense Graphical User Interface
- ✓ Captive Portal
- ✓ Virtual Private Networking - OpenVPN & IPsec
- ✓ Caching Proxy

Easy setup

Configuring Two-Factor authentication is very simple using Google's Authenticator.

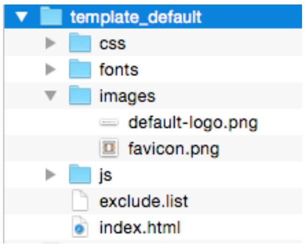
- ✓ Integrated in OPNsense's unified authentication system
- ✓ Automatic Seed Generation
- ✓ Token activation by Barcode Scanning

CAPTIVE PORTAL

***Captive Portal** allows you to force authentication, or redirection to a click through page for network access. This is commonly used on hot spot networks, but is also widely used in corporate networks for an additional layer of security on wireless or Internet access.*

Typical Applications

- ✓ Guest Network
- ✓ Hotel & Camping Wifi Access
- ✓ Bring Your Own Device (BYOD)



```
▼ template_default
    ▶ css
    ▶ fonts
    ▼ images
          default-logo.png
          favicon.png
    ▶ js
      exclude.list
      index.html
```

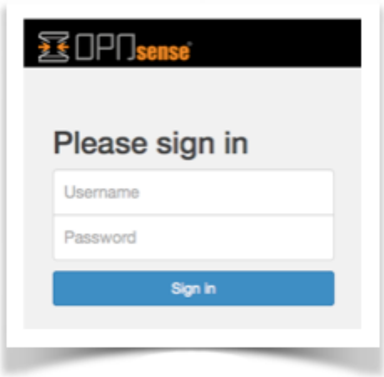
Template Management

OPNsense's unique template manager makes setting up your own login page an easy task. At the same time it offers additional functionalities, such as:

- ✓ URL redirection
- ✓ Option for your own Pop-up
- ✓ Custom Splash page

Zone Management

Different zones can be setup on each interface or multiple interfaces can share one zone setup. Each Zone can use a different Captive Portal Template or share it with another zone.



Authentication

Secure authentication via HTTPS or splash-only portal with URL redirection to a given page Different sources can be used to authenticate a user in a zone:

- ✓ LDAP [Microsoft Active Directory]
- ✓ Radius
- ✓ Local user manager
- ✓ Vouchers / Tickets
- ✓ Two-Factor One Time Password (2FA)
- ✓ No authentication (Splash Screen Only)
- ✓ Multiple (a combination of above)

Voucher Manager

OPNsense's Captive Portal has an easy voucher creation system that exports the vouchers to a csv file for use with you favourite application. The export allows you to print vouchers by merging them with your word or open office template and create a good looking handout with your logo and company style.

Timeouts & Welcome Back

Connection can be terminated after the user has been idle for a certain amount of time (idle timeout) and/or force a disconnect when a number of minutes have passed even if the user is still active (hard timeout). In case a user reconnect within the idle timeout and/or hard timeout no login is required and the user can resume its active session.

Bandwidth Management

The Build-in traffic shaper can be utilised to:

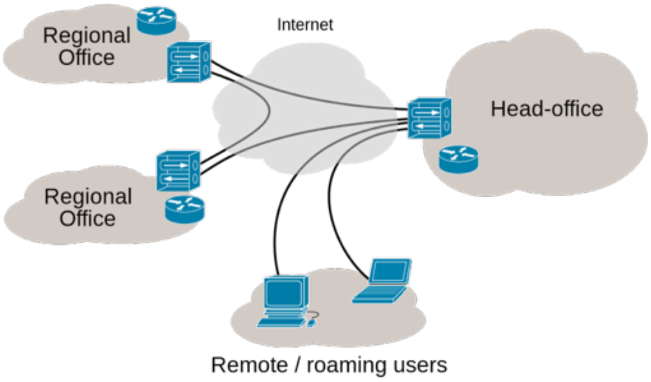
- ✓ Share bandwidth evenly
- ✓ Give priority to protocols port numbers and/or ip addresses

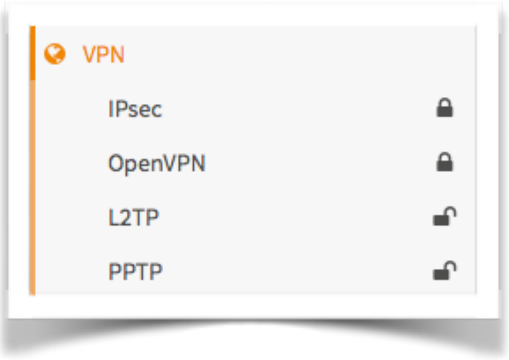
Portal bypass

MAC and IP addresses can be white listed to bypass the portal.

Virtual Private Network

A virtual private network (VPN) extends a private network across a public network, such as the Internet. It enables a computer to send and receive data across shared or public networks as if it is directly connected to the private network, while benefiting from the functionality, security and management policies of the private network.





- VPN
  - IPsec 🔒
  - OpenVPN 🔒
  - L2TP 🔓
  - PPTP 🔓

Supported VPN technologies
OPNsense offers a wide range of VPN technologies ranging from modern SSL VPN's to well known IPsec as well as older (now considered insecure) legacy options such as L2TP and PPTP.

OpenVPN
A powerful SSL VPN solution supporting a wide range of client operating systems including mobile (Android / IOS).

Legacy Support
OPNsense has legacy support for L2TP and PPTP, just in case you need it.

IPsec
IPsec allows connectivity with any device supporting standard IPsec. This is most commonly used for site to site connectivity to other OPNsense installations, other open source firewalls, and most commercial firewall solutions (Cisco, Juniper, etc.). It can also be used for mobile client connectivity (road warrior).

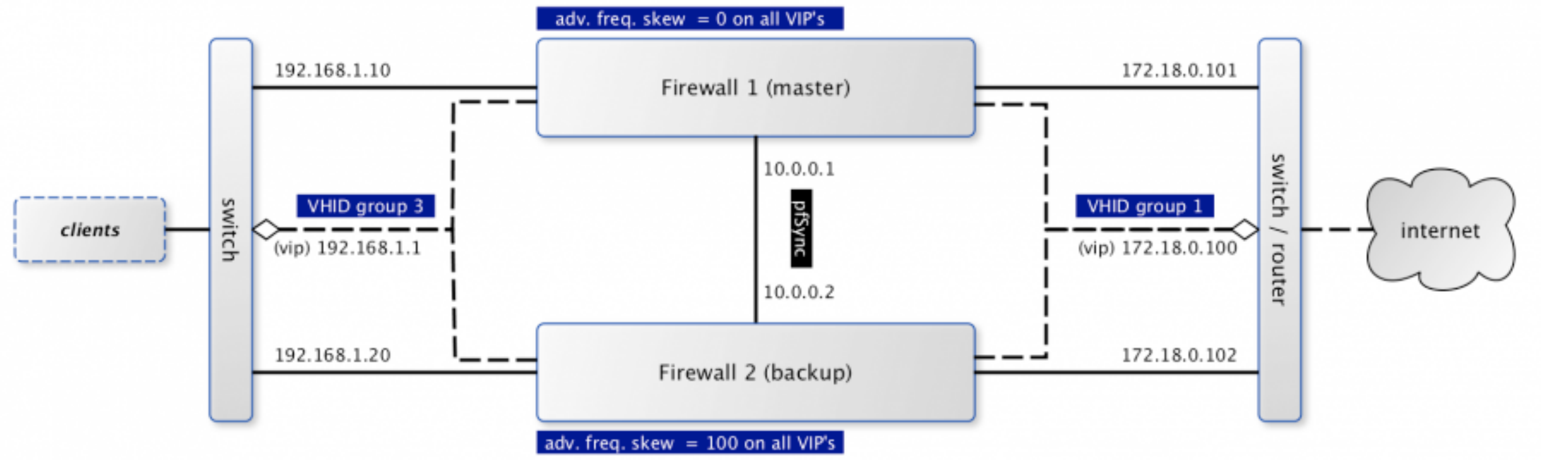
Supported VPN clients
✓ Viscosity (Mac OSx & Windows)
✓ OpenVPN for Android
✓ OpenVPN Connect (IOS)

Two-Factor Authentication
✓ Supports TOTP Tokens
✓ Integrated Support for Google Authenticator
✓ Easy Setup

Google Authenticator
Free Token Generation, supports:
✓ Android
✓ iOS
✓ Blackberry

High Availability / Hardware Failover

The Common Address Redundancy Protocol or CARP allows for hardware failover. Two or more firewalls can be configured as a failover group. If one interface fails on the primary or the primary goes offline entirely, the secondary becomes active.



Overview

OPNsense utilises the Common Address Redundancy Protocol or CARP for hardware failover. Two or more firewalls can be configured as a failover group. If one interface fails on the primary or the primary goes offline entirely, the secondary becomes active.

Utilising this powerful feature of OPNsense creates a fully redundant firewall with automatic and seamless fail-over. While switching to the backup network connections will stay active with minimal interruption for the users.

Automatic failover

If the primary firewall becomes unavailable, the secondary firewall will take over without user intervention.

Synchronised state tables

The firewall's state table is replicated to all failover configured firewalls. This means the existing connections will be maintained in case of a failure, which is important to prevent network disruptions.

Configuration synchronisation

OPNsense includes configuration synchronisation capabilities. Configuration changes made on the primary system are automatically synchronised to the secondary firewall.

Service Status Overview & Restart

An overview of running services on the Backup device can be viewed and restarted per service or all at once right from the Masters User Interface.

Caching Proxy

Squid *is a caching proxy for the Web supporting HTTP, HTTPS, FTP, and more. It reduces bandwidth and improves response times by caching and reusing frequently-requested web pages. Squid has extensive access controls and makes a great server accelerator.*

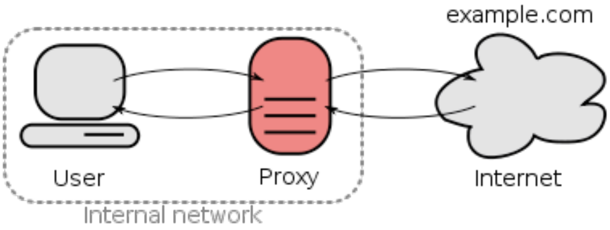
source - www.squid-cache.org

Multi Interface

Proxy can run at multiple interfaces.

Transparent Proxy

The proxy can be configured as transparent proxy.



Authenticators

- ✓ LDAP (incl. Microsoft Active Directory)
- ✓ Radius
- ✓ Local user manager
- ✓ Two-Factor One Time Password (OTP 2FA)
- ✓ No authentication

Access Control

Fine grained access control, includes:

- ✓ Subnets
- ✓ Ports
- ✓ MIME types
- ✓ Banned IP's
- ✓ Whitelists
- ✓ Blacklists
- ✓ Browser/User Agents
- ✓ Support for blacklists

Traffic Management

The proxy can be combined with the traffic shaper and take full advantage of its shaping features.Additionally it includes its own options:

- ✓ Maximum download size
- ✓ Maximum upload size
- ✓ Overall bandwidth throttling
- ✓ Per host bandwidth throttling

Category Based Web Filter

OPNsense has build-in category based web filter support. Main features include:

- ✓ Fetch from a remote URL
- ✓ Supports flat file list and category based compressed lists
- ✓ Automatically convert category based blacklists to squid ACL's
- ✓ Keep up to date with the build-in scheduler
- ✓ Compatible with most popular blacklist

FTP proxy

Integrated FTP proxy that makes use of the same Access Control Lists.

ICAP

Supports external processing including 3rd party virus scanning engine.

Inline Intrusion Prevention System
The inline IPS system of OPNsense is based on Suricata and utilises Netmap to enhance performance and minimize cpu utilisation. This deep packet inspection system is very powerful and can be used to mitigate security threats at wire speed.

Rulesets
All available rule categories can easily be selected and applied with their defaults or custom setting.

Alerts
The alerts are searchable within the user interface. Full details about the alert can be displayed.

Emerging Threats ETOpen Ruleset
OPNsense has integrated support for ET Open rules. The ETOpen Ruleset is an excellent anti-malware IDS/IPS ruleset that enables users with cost constraints to significantly enhance their existing network-based malware detection.

Abuse.ch
Abuse.ch offer several blacklist for protecting against fraudulent networks.
OPNsense has integrated support for SSL Blacklist (SSLBL), a project maintained by abuse.ch. The goal is to provide a list of “bad” SSL certificates identified by abuse.ch to be associated with malware or botnet activities. SSLBL relies on SHA1 fingerprints of malicious SSL certificates and offers various blacklists.

Feodo Tracker
Feodo (also known as Cridex or Bugat) is a Trojan used to commit ebanking fraud and steal sensitive information from the victims computer, such as credit card details or credentials. At the moment, Feodo Tracker is tracking four versions of Feodo.

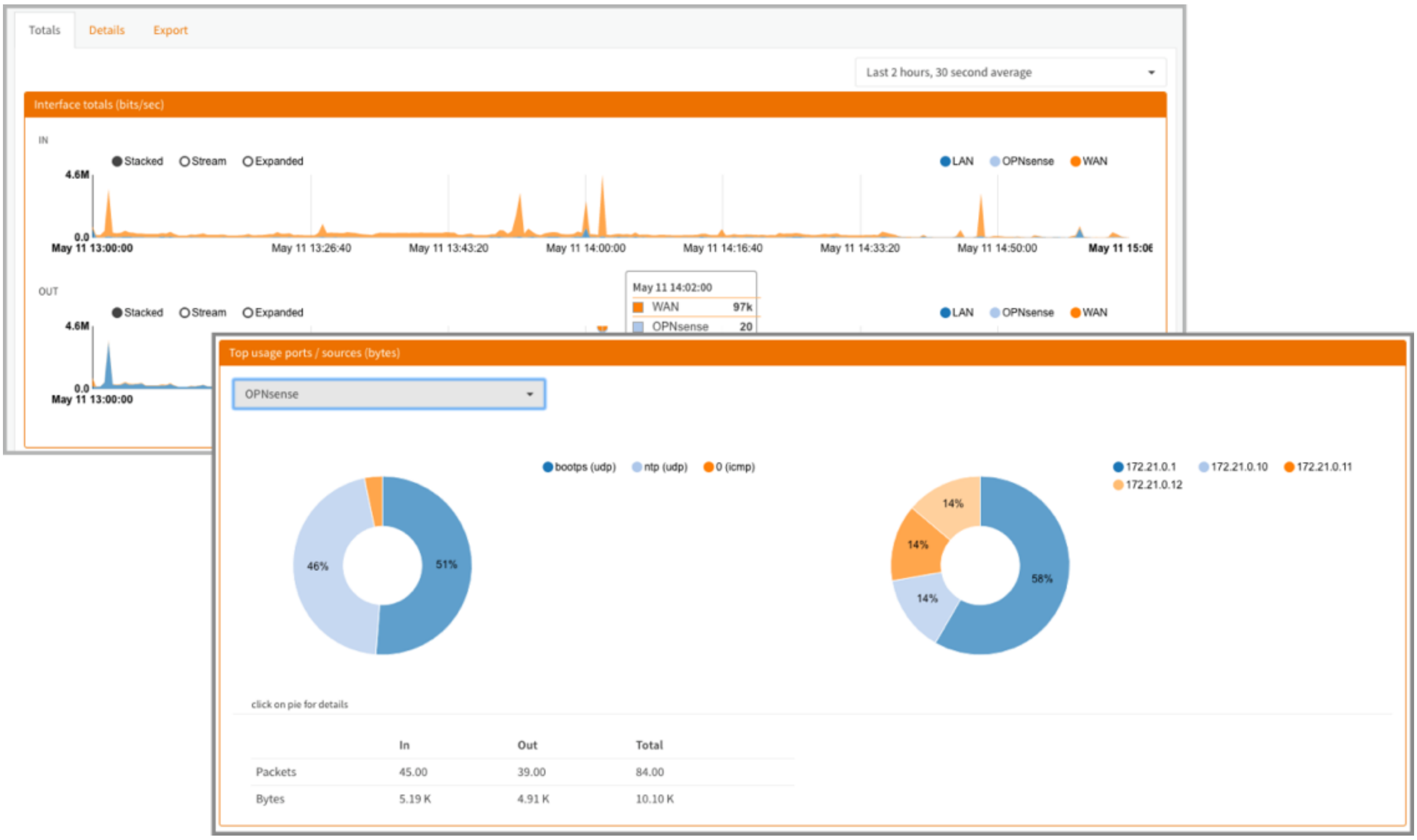
Maxmind GeoLite2 Country
OPNsense has integrated GeoLite2 Country database support. GeoLite2 databases are free IP geolocation databases comparable to, but less accurate than, MaxMind’s GeoIP2 databases. GeoLite2 databases are updated on the first Tuesday of each month.

Finger Printing
OPNsense includes a very polished solution to block protected sites based on their SSL fingerprint.

Netflow Export & Analyses - Insight

Netflow is a **monitoring** feature, invented by Cisco, it is implemented in the FreeBSD kernel with ng_netflow (Netgraph). Since Netgraph is a kernel implementation it is very fast with little overhead compared to softflowd or pfflowd. While many monitoring solutions such as Nagios, Cacti and vnstat only capture traffic statistics, Netflow captures complete packet flows including source, destination ip and port number. OPNsense offers full support for exporting Netflow data to external collectors as well as a comprehensive Analyser called **Insight** for on-the-box analysis and live monitoring.

OPNsense is the only open source solution with a build-in Netflow analyser integrated into it’s Graphical User Interface.



	In	Out	Total
Packets	45.00	39.00	84.00
Bytes	5.19 K	4.91 K	10.10 K

Netflow Exporter
OPNsense Netflow Exporter supports multiple interfaces, filtering of ingress flows and multiple destinations including local capture for analysis by Insight (OPNsense Netflow Analyser).

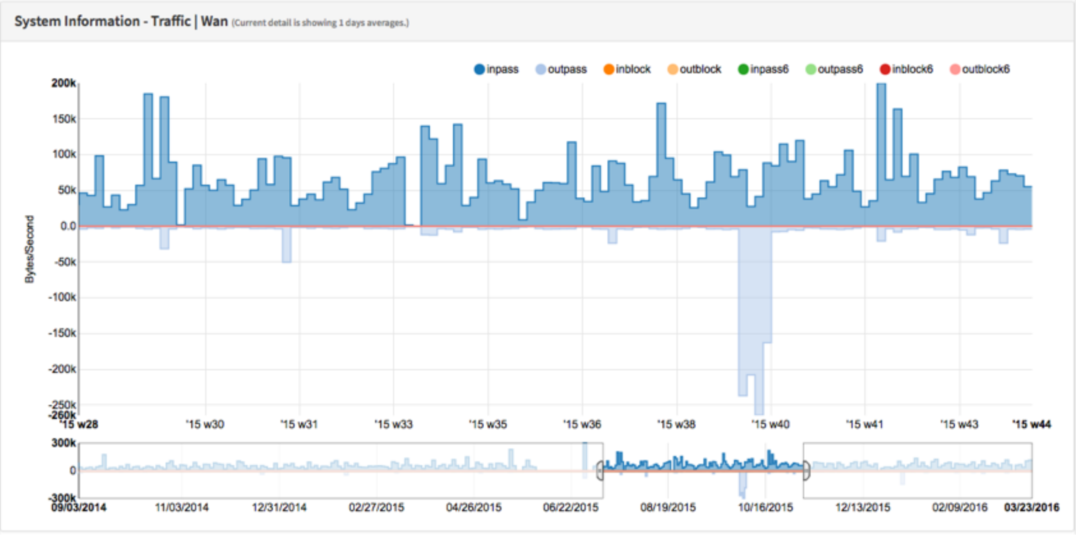
Supported Versions
OPNsense support both Netflow version 5 (IPv4) and version 9 (IPv4 & IPv6).

Netflow Analyser - Insight
OPNsense offers a full Netflow Analyser with the following features:

- ✓ Captures 5 detail levels
- ✓ Graphical representation of flows (stacked, stream and expanded)
- ✓ Top usage per interface, both IP's and ports.
- ✓ Full in/out traffic in packets and bytes
- ✓ Detailed view with date selection and port/ip filter (up to 2 months)
- ✓ Data export to CSV for offline analysis
    - ✓ Selectable Detail Level
    - ✓ Selectable Resolution
    - ✓ Selectable Date range

System Health & Information

The fastest way to analyse your systems health with our dynamic view on Round Robin Data



System Information - Traffic | Wan (Current detail is showing 1 days averages.)

System Health offers a dynamic view on RRD data gathered by the system. It allows you to dive into different statistics that show the overall health and performance of the system over time.

The system health module will enable you to track down issues faster and easier than traditional static RRD graphs and it allows you to zoom in.

Primary Data Collectors

System Health offers data collectors for most parts of the system. depending on the features in use there may be more or less graphs available. The primary collectors are:

Packets
Packets show the number of packets per second traveling to and from a certain interface.

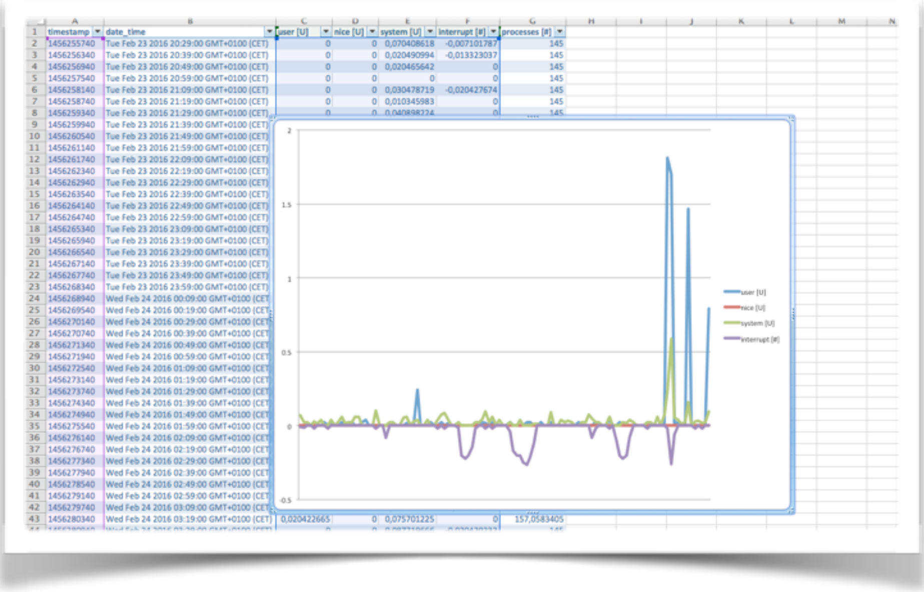
Quality
Quality show latency and packet loss of the monitored gateways (ip).

System
The system section is used for sensor data regarding the system utilisation, such as memory usage, mbufs, states, processes and (when available) cpu temperature.

Traffic
Shows traffic graphs for each interface including vpn (ipsec).

Table View & Exporting

Data can be viewed as a table and exported for further analysis in Excel or any other csv compatible spreadsheet.



	A	B	C	D	E	F	G
1	timestamp	date_time	user [U]	nice [U]	system [U]	interrupt [#]	processes [#]
2	1456255740	Tue Feb 23 2016 20:29:00 GMT+0100 (CET)	0	0	0,070408618	-0,007101787	145
3	1456256340	Tue Feb 23 2016 20:39:00 GMT+0100 (CET)	0	0	0,020490994	-0,013323037	145
4	1456256940	Tue Feb 23 2016 20:49:00 GMT+0100 (CET)	0	0	0,020465642	0	145
5	1456257540	Tue Feb 23 2016 20:59:00 GMT+0100 (CET)	0	0	0	0	145
6	1456258140	Tue Feb 23 2016 21:09:00 GMT+0100 (CET)	0	0	0,030478719	-0,020427674	145
7	1456258740	Tue Feb 23 2016 21:19:00 GMT+0100 (CET)	0	0	0,010345983	0	145
8	1456259340	Tue Feb 23 2016 21:29:00 GMT+0100 (CET)	0	0	0,040898224	0	145
9	1456259940	Tue Feb 23 2016 21:39:00 GMT+0100 (CET)					
10	1456260540	Tue Feb 23 2016 21:49:00 GMT+0100 (CET)					
11	1456261140	Tue Feb 23 2016 21:59:00 GMT+0100 (CET)					
12	1456261740	Tue Feb 23 2016 22:09:00 GMT+0100 (CET)					
13	1456262340	Tue Feb 23 2016 22:19:00 GMT+0100 (CET)					
14	1456262940	Tue Feb 23 2016 22:29:00 GMT+0100 (CET)					
15	1456263540	Tue Feb 23 2016 22:39:00 GMT+0100 (CET)					
16	1456264140	Tue Feb 23 2016 22:49:00 GMT+0100 (CET)					
17	1456264740	Tue Feb 23 2016 22:59:00 GMT+0100 (CET)					
18	1456265340	Tue Feb 23 2016 23:09:00 GMT+0100 (CET)					
19	1456265940	Tue Feb 23 2016 23:19:00 GMT+0100 (CET)					
20	1456266540	Tue Feb 23 2016 23:29:00 GMT+0100 (CET)					
21	1456267140	Tue Feb 23 2016 23:39:00 GMT+0100 (CET)					
22	1456267740	Tue Feb 23 2016 23:49:00 GMT+0100 (CET)					
23	1456268340	Tue Feb 23 2016 23:59:00 GMT+0100 (CET)					
24	1456268940	Wed Feb 24 2016 00:09:00 GMT+0100 (CET					
25	1456269540	Wed Feb 24 2016 00:19:00 GMT+0100 (CET					
26	1456270140	Wed Feb 24 2016 00:29:00 GMT+0100 (CET					
27	1456270740	Wed Feb 24 2016 00:39:00 GMT+0100 (CET					
28	1456271340	Wed Feb 24 2016 00:49:00 GMT+0100 (CET					
29	1456271940	Wed Feb 24 2016 00:59:00 GMT+0100 (CET					
30	1456272540	Wed Feb 24 2016 01:09:00 GMT+0100 (CET					
31	1456273140	Wed Feb 24 2016 01:19:00 GMT+0100 (CET					
32	1456273740	Wed Feb 24 2016 01:29:00 GMT+0100 (CET					
33	1456274340	Wed Feb 24 2016 01:39:00 GMT+0100 (CET					
34	1456274940	Wed Feb 24 2016 01:49:00 GMT+0100 (CET					
35	1456275540	Wed Feb 24 2016 01:59:00 GMT+0100 (CET					
36	1456276140	Wed Feb 24 2016 02:09:00 GMT+0100 (CET					
37	1456276740	Wed Feb 24 2016 02:19:00 GMT+0100 (CET					
38	1456277340	Wed Feb 24 2016 02:29:00 GMT+0100 (CET					
39	1456277940	Wed Feb 24 2016 02:39:00 GMT+0100 (CET					
40	1456278540	Wed Feb 24 2016 02:49:00 GMT+0100 (CET					
41	1456279140	Wed Feb 24 2016 02:59:00 GMT+0100 (CET					
42	1456279740	Wed Feb 24 2016 03:09:00 GMT+0100 (CET					
43	1456280340	Wed Feb 24 2016 03:19:00 GMT+0100 (CET)	0,020422665	0	0,075701225	0	157,0583405

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Your Next Open Source Firewall
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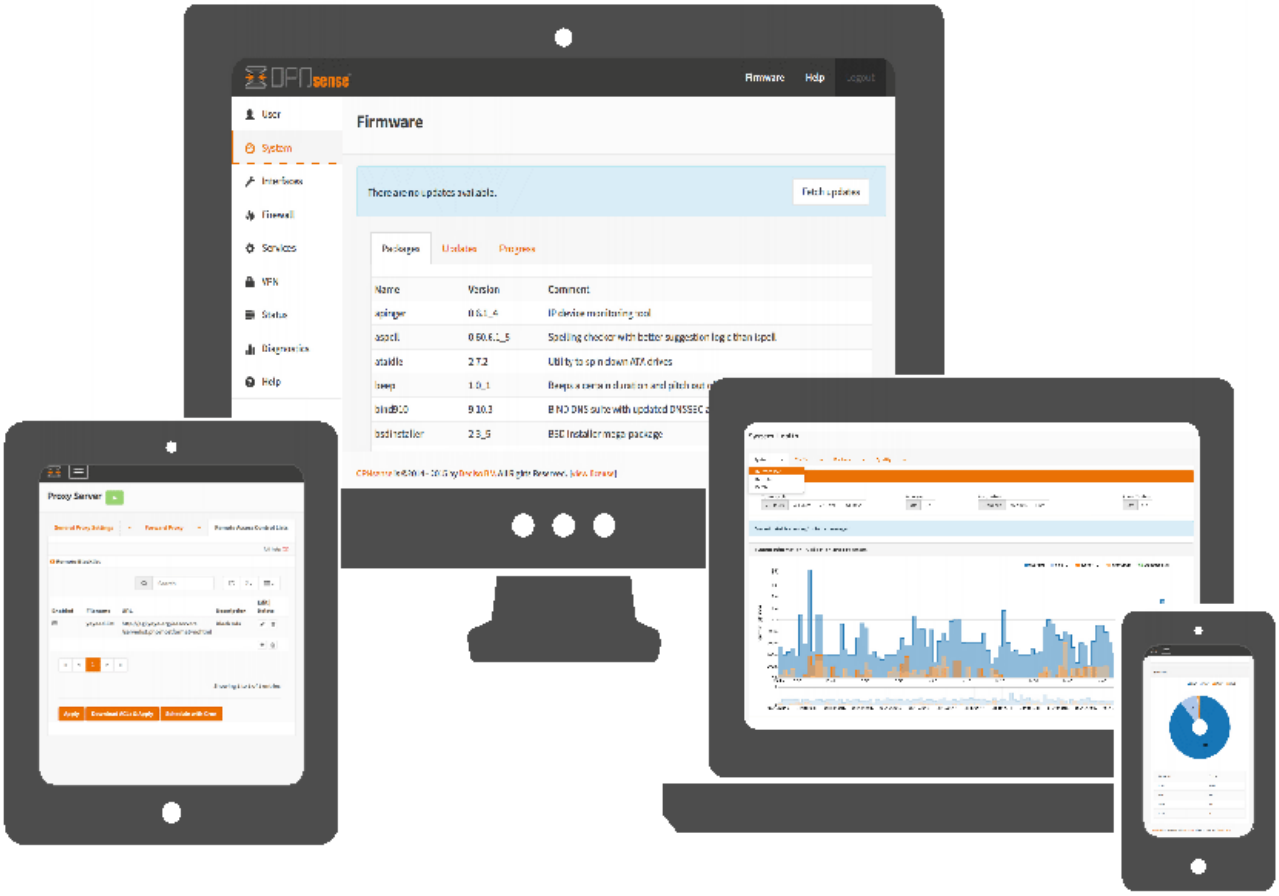
Modern Bootstrap based User Interface

Easy to use responsive design, accessible from a desktop pc, tablet and smart phone.



Firmware

There are no updates available.

Name	Version	Comment
apinger	0.6.1_4	IP device monitoring tool
aspell	0.60.6.1_5	Spelling checker with better suggestion logic than ispell
ataidle	2.7.2	Utility to spin down ATA drives
beep	1.0_1	Beeps a certain duration and pitch out o
bind910	9.10.3	BIND DNS suite with updated DNSSEC a
bsdinstaller	2.3_5	BSD Installer mega package

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Everything included
All features offered by OPNsense are configurable through the responsive user interface.

Multi language
The user interface is built with multi language support in mind. Work is already in progress to support German, French, Japanese, Chinese & Mongolian.

Build-in help
Many options have an info icon with built-in help to get you started quickly.

Advanced mode
More complex features such as proxy, traffic shaping and IDPS have advanced options that can be shown or hidden.

Sane defaults
Many features have usable defaults to allow easy, fast and simple configuration.

Two Factor Authentication
OPNsense’s User Interface support authentication trough two-factor authentication using Googles Authenticator or other TOTP tokens.

Backup & Restore

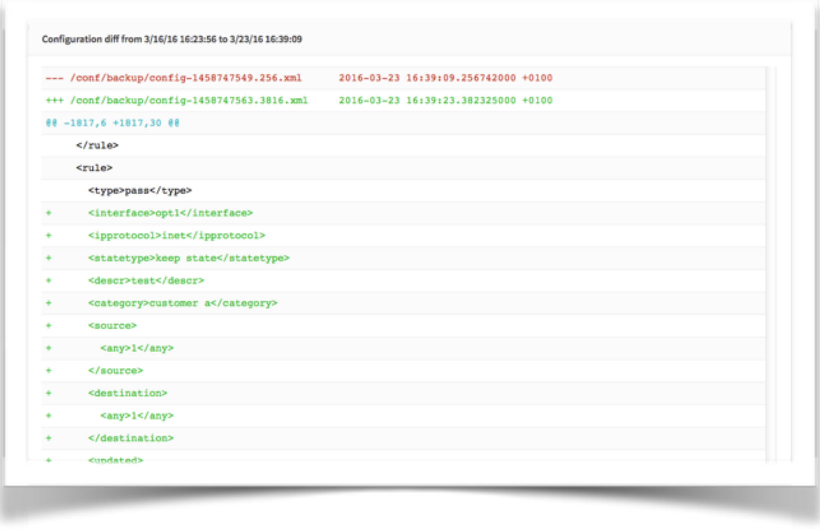
Better safe than sorry, always keep an up to date backup of your configuration. It's easy with OPNsense.

History
Automatic backups of configuration changes make it possible to review history and restore previous settings.

Backup
Easily download a backup from within the GUI and store on a safe place.
Encrypt the backup with a strong password and make plain text unreadable for unauthorised persons.

Restore
Upload your configuration backup file and restore it with ease.

Cloud Backup
OPNsense supports encrypted cloud backup of your configuration with the option to keep backups of older files (history). For this purpose Google drive support has been integrated into the user interface.



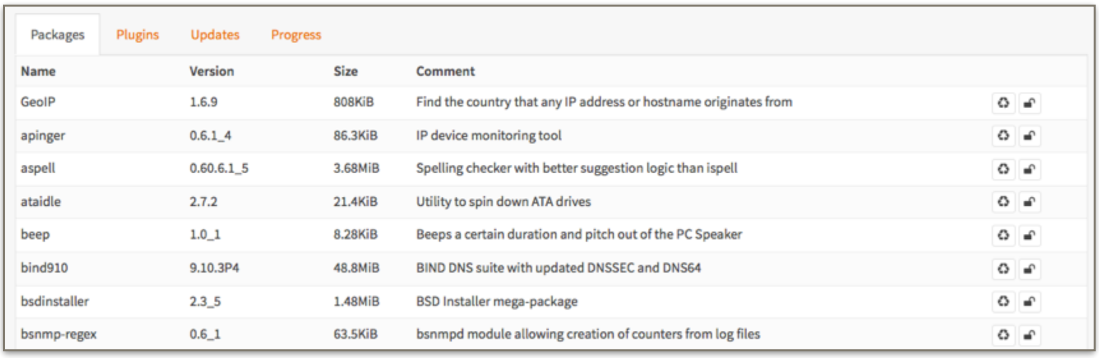
Configuration diff from 3/16/16 16:23:56 to 3/23/16 16:39:09

```
--- /conf/backup/config-1458747549.256.xml     2016-03-23 16:39:09.256742000 +0100
+++ /conf/backup/config-1458747563.3816.xml    2016-03-23 16:39:23.382325000 +0100
@@ -1817,6 +1817,30 @@
      </rule>
      <rule>
        <type>pass</type>
+       <interface>opt1</interface>
+       <ipprotocol>inet</ipprotocol>
+       <statetype>keep state</statetype>
+       <descr>test</descr>
+       <category>customer a</category>
+       <source>
+         <any>1</any>
+       </source>
+       <destination>
+         <any>1</any>
+       </destination>
+       <updated>
```

Google Drive

Firmware & Plugins

Robust firmware upgrade path to react on emerging threats in a fashionable time.



Packages Plugins Updates Progress

Name	Version	Size	Comment
GeoIP	1.6.9	808KiB	Find the country that any IP address or hostname originates from
apinger	0.6.1_4	86.3KiB	IP device monitoring tool
aspell	0.60.6.1_5	3.68MiB	Spelling checker with better suggestion logic than ispell
ataidle	2.7.2	21.4KiB	Utility to spin down ATA drives
beep	1.0_1	8.28KiB	Beeps a certain duration and pitch out of the PC Speaker
bind910	9.10.3P4	48.8MiB	BIND DNS suite with updated DNSSEC and DNS64
bsdinstaller	2.3_5	1.48MiB	BSD Installer mega-package
bsnmp-regex	0.6_1	63.5KiB	bsnmpd module allowing creation of counters from log files

OPNsense is equipped with a reliable and secure update mechanism to provide weekly security updates.

A plugin mechanism can be used to install additional packages and customisations.

Release schedule
OPNsense offers two major releases annually; in January and July. Smaller incremental (security) updates are provided weekly. Minor updates are not required, but provide an extra safety layer by incorporating security fixes fast. Customers can choose to skip versions and upgrade on their own timeframe.

Minimise downtime and keep up to date
The upgrade mechanism is simple and easy to use and proven to be safe. Upgrading can be done from within the User Interface or trough the console (CLI). For most minor upgrades rebooting is not required and services will continue to function uninterrupted. In case a reboot is required the system will notify this before the actual upgrade and the customer can choose to cancel the upgrade procedure.

Plugins
All features you find in this brochure are included in OPNsense and do not require any additional plugins or packages. However the system is highly extensible with plugins to add customisations or additional features. Standard plugins include vmware-tools and Xen-tools for virtual installs.

OPNsense®

Your Next Open Source Firewall
opnsense.org

Fully supported

Professional support for Businesses, Integrators & Resellers

Business support

Keep save and supported

- ✓ *Implementation*
- ✓ *Configuration*
- ✓ *Migration*
- ✓ *Troubleshooting & Hot fixes*

Integrator support services

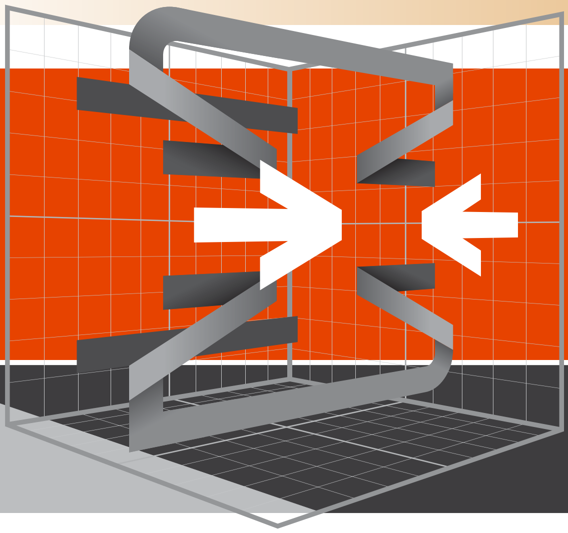
Depend on us to sort things out when needed

- ✓ *Network Design & Implementation*
- ✓ *Mass deployment services*
- ✓ *Platform migration services*
- ✓ *Troubleshooting & Hot fixes*
- ✓ *Rebranding*

Reseller support services

Grow your business with our support services

- ✓ *Pre-sales support*
- ✓ *Rebranding*
- ✓ *Network Design & Implementation*
- ✓ *Mass deployment services*
- ✓ *Platform migration services*
- ✓ *Troubleshooting & Hot fixes*



OPNsense®

Your next open source firewall!

- → Fully featured and easy to use GUI
- → Open and transparent for users and developers
- → BSD style license

OPNsense®

Your Next Open Source Firewall

opnsense.org

Stateful firewall

- Filter by
  - Source
  - Destination
  - Protocol
  - Port
  - OS (OSFP)
- Limit simultaneous connections on a per rule base
- Log matching traffic on a per rule bases
- Policy Based Routing
- Packet Normalisation
- Option to disable filter for pure router mode

Granular control state table

- Adjustable state table size
- On a per rule bases
  - Limit simultaneous client connection
  - Limit states per host
  - Limit new connections per second
  - Define state timeout
  - Define state type
- State types
  - Keep
  - Sloppy
  - Modulate
  - Synproxy
  - None
- Optimisation options
  - Normal
  - High latency
  - Agressive
  - Conservative

2-Factor Authentication

- Supports TOTP
- Google Authenticator
- Support services:
  - Captive Portal
  - Proxy
  - VPN
  - GUI

802.1Q VLAN support

- max 4096 VLAN's

Network Address Translation

- Port forwarding
- 1:1 of ip's & subnets
- Outbound NAT
- NAT Reflection

Traffic Shaping

- Limit bandwidth
- Share bandwidth
- Prioritise traffic
- Rule based matching
  - Protocol
  - Source
  - Destination
  - Port
  - Direction

IGMP Proxy

- For multicast routing

Universal Plug & Play

- Fully supported

Dynamic DNS

- Selectable form a list
- Custom
- RFC 2136 support

DNS Forwarder

- Host Overrides
- Domain Overrides

DNS Server

- Host Overrides
  - A records
  - MX records
- Access Lists

DNS Filter

- Supports OpenDNS

DHCP Server

- IPv4 & IPv6
- Relay Support
- BOOTP options

Multi WAN

- Load balancing
- Failover
- Aliases

Load Balancer

- Balance incoming traffic over multiple servers

Network Time Server

- Hardware devices
  - GPS
  - Pulse Per Second

Intrusion Detection & Prevention

- Inline Prevention
- Integrated rulesets
  - SSL Blacklists
  - Feodo Tracker
  - Geolite2 Country IP
  - Emerging Threats ETOpen
- SSL Fingerprinting
- Auto rule update using configurable cron

Captive Portal

- Typical Applications
  - Guest Network
  - Bring Your Own Device (BYOD)
  - Hotel & Camping Wifi Access
  - Template Management
  - Multiple Zones
- Authenticators
  - LDAP
  - Radius
  - Local User Manager
  - Vouchers / Tickets
  - Multiple
  - None (Splash Screen Only)
- Voucher Manager
  - Multiple Voucher Databases
  - Export vouchers to CSV
- Timeouts & Welcome Back
- Bandwidth Management
  - Share evenly
  - Prioritise
  - Protocols
  - Ports
  - IP
- Portal bypass
  - MAC and IP whitelisting
- Real Time Reporting
  - Live top IP bandwidth usage
  - Active Sessions
  - Time left
  - Rest API

Virtual Private Networks

- IPsec
  - Site to Site
  - Road Warrior
- OpenVPN
  - Site to Site
  - Road Warrior
  - Easy client configuration exporter
- PPTP (Legacy)
- LT2P (Legacy)

High Availability

- Automatic hardware failover
- Synchronised state table
- Configuration synchronisation

Caching Proxy

- Multi interface
- Transparent Mode
- Access Control Lists
- Blacklists
- Category Based Web-filter
- Traffic Management
- Auto sync for remote blacklists
- ICAP (supports virus scan engine)

System Health

- Round Robin Data
- Selection & Zoom
- Exportable

Backup & Restore

- History & Diff support
- File Backup
- Cloud Backup

SNMP

- Monitor & Traps

Diagnostics

- Filter reload status
- Firewall Info (pfInfo)
- Top Users (pfTop)
- Firewall Tables
  - Aliases
  - Bogons
- Current Open Sockets
- Show All States
- State Reset
- State Summary
- Wake on LAN
- ARP Table
- DNS Lookup
- NDP Table
- Ping
- Packet Capture
- Test Port
- Trace route
- Traffic Graph

Network Monitoring

- Netflow Exporter
- Network Flow Analyser
  - Fully Integrated
  - CVS Exporter

Firmware

- Easy Upgrade
  - Reboot warning for base upgrades
- SSL Flavour selectable
  - OpenSSL
  - LibreSSL
- Selectable Package Mirror
- Reinstall Single Package
- Lock Package (prevents upgrade)
- Plugin Support
  - VMware tools
  - Xen tools
  - HAProxy -Load balancer

REST API

- ACL support

Online Documentation

- Free & Searchable