*astTECS®
Unified Communication with Open Source
ISO 9001:2015 CERTIFIED

*ast Firewall

Next Generation Firewall for Your Business

*ast Firewall Core Features

- Traffic Shaper
- Two-factor Authentication throughout the system
- Captive portal
- Caching proxing
- Virtual Private Network (VPN)
- Stateful inspection firewall
- Intrusion Detection & Prevention
- Granular control over state table
- High Availability & Hardware Failover
- Build-in reporting & monitoring
- Back up and restore
- System health &Information

Whether you run small business or large enterprise, your network security can get overwhelmed by operational disarrays, unseen cyber threats and regulatory demands. *ast Firewall includes protection of your network against ransomware, malware, intrusions, unwanted applications, spam, spyware, policy abuse & data leakage.

*ast Firewall is an open source, easy-to-use and easy-to-build hardened BSD based firewall and routing platform. *ast Firewall is very feature rich and has much more to offer than its competitors.

*ast Firewall can filter traffic on source, destination and protocol as well as port on number (TCP/UDP), Operating System Finger printing (OSFP). Advanced passive OS finger printing technology can be used to allow or block traffic based by the Operating System initiating the connection.

*ast Firewall's features offered can be configured through responsive user interface. The user interface support multi language with in-built help to get you started quickly.

*ast Firewall Features

TRAFFIC SHAPER

Traffic shaping within *ast Firewall 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.

Bandwidth limitations can be defined based upon the interface(s), IP source & destination, direction of traffic (in/out) and port numbers (application). The available bandwidth can be shared evenly over all users, this allows for optimum performance at all times. Also Traffic can be prioritised by adding queues and defining weights.

TWO - FACTOR AUTHENTICATION

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

- **Time-based One-time Password (TOTP):** *ast Firewall supports RFC 6238 that computes one time password from a shared secret key and the current time.
- **Google Authenticator:** *ast Firewall 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 *ast Firewall.

*ast Firewall supports two-factor authentication for the following services:

- ✓ *ast Firewall Graphical User Interface
- ✓ Captive Portal
- ✓ Virtual Private Networking - OpenVPN & IPsec
- ✓ Caching Proxy

CAPTIVE PORTAL

*ast Firewall's Captive Portal provides additional layer of security on business Wi-Fi network. It is the customized login page that businesses require users to pass through before connecting to the Wi-Fi network. This feature is applicable in wireless environment like guest network.

- **Template Management** *ast Firewall's unique template manager makes setting up your own login page an easy task with 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.
- **Voucher Manager:** *ast Firewall's Captive Portal has an easy voucher creation system that exports the vouchers to a csv file for use with your favourite application.
- **Bandwidth Management:** With a captive portal feature, *ast Firewall allows you to control over your bandwidth, offering customizable time limits for how long each user can stay connected to your network. It can terminate if 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).

VIRTUAL PRIVATE NETWORK (VPN)

*ast Firewall 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. It provide users with secure, seamless remote access to corporate networks and resources when traveling or working remotely from any devices - smartphones, tablets, PCs and laptops with two factor authentication.

Types of VPN:

- **Open VPN:** A powerful SSL VPN solution supporting a wide range of client operating systems including mobile (Android / iOS).
- **IPSec VPN:** It connects site to site in an organization together and allows secure communications between the sites. The connectivity is allowed with any device supporting standard IPsec.

CACHING PROXY

*ast Firewall is equipped with fully featured caching proxy. It reduces bandwidth and improves response times by caching and reusing frequently-requested web pages.

- **Squid** is a caching proxy for the Web supporting HTTP, HTTPS, FTP, and more. Squid has extensive access controls and makes a great server accelerator. Proxy can run at multiple interfaces.
- **Transparent Proxy:** In transparent mode, all the request will be diverted to the proxy without any configuration on your client.
- **FTP Proxy:** Integrated FTP proxy that makes use of the same Access Control Lists.
  ICAP Supports external processing including 3rd party virus scanning engine.

The proxy can be combined with the traffic shaper and take full advantage of its shaping features. Additionally it includes its own options like maximum download & upload size, overall bandwidth throttling and per host bandwidth throttling.

WEB FILTERING

*ast Firewall has in-built 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

INLINE INTRUSION PREVENTION SYSTEM

The inline IPS system of *ast Firewall 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.

- **Rule Set:** 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 ET Open Ruleset:** *ast Firewall has integrated support for ET Open rules. The ET Open Rule set is an excellent anti-malware IDS/IPS ruleset that enables users with cost constraints to significantly enhance their existing network-based malware detection.

MONITORING & REPORTING

*ast Firewall 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. *ast Firewall is the only open source solution with a build-in Netflow analyser integrated into it's Graphical User Interface (GUI).

- **Netflow Exporter:** *ast Firewall Netflow Exporter supports multiple interfaces, filtering of ingress flows and multiple destinations including local capture for analysis by Insight (*astFirewall Netflow Analyser).
- **Supported Versions:** *ast Firewall support both Netflow version 5 (IPv4) and version 9 (IPv6).
- **Netflow Analyser – Insight:** *ast Firewall offers a full Netflow Analyser with the following features:

✓ Captures 5 detail levels

✓ Graphical representation of flows (stacked, stream and expanded)

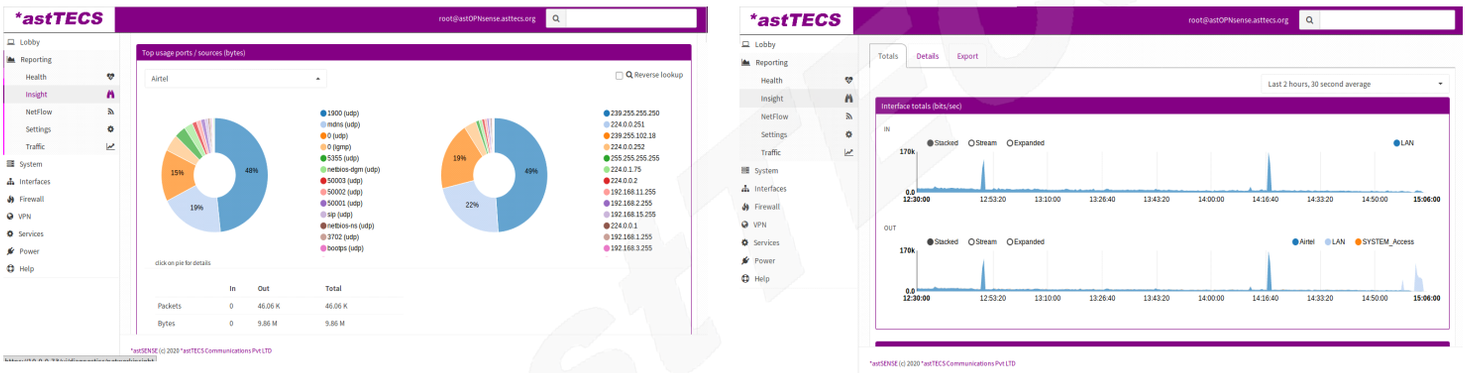
✓ Top usage per interface, both IP'sand ports.

✓ Full in/out traffic in packets and bytes

✓ Detailed view with date selection and port/ip filter (up to 2 months)

✓ Data export to CSVfor offline analysis

✓ Selectable Detail Level, Resolution and Date range



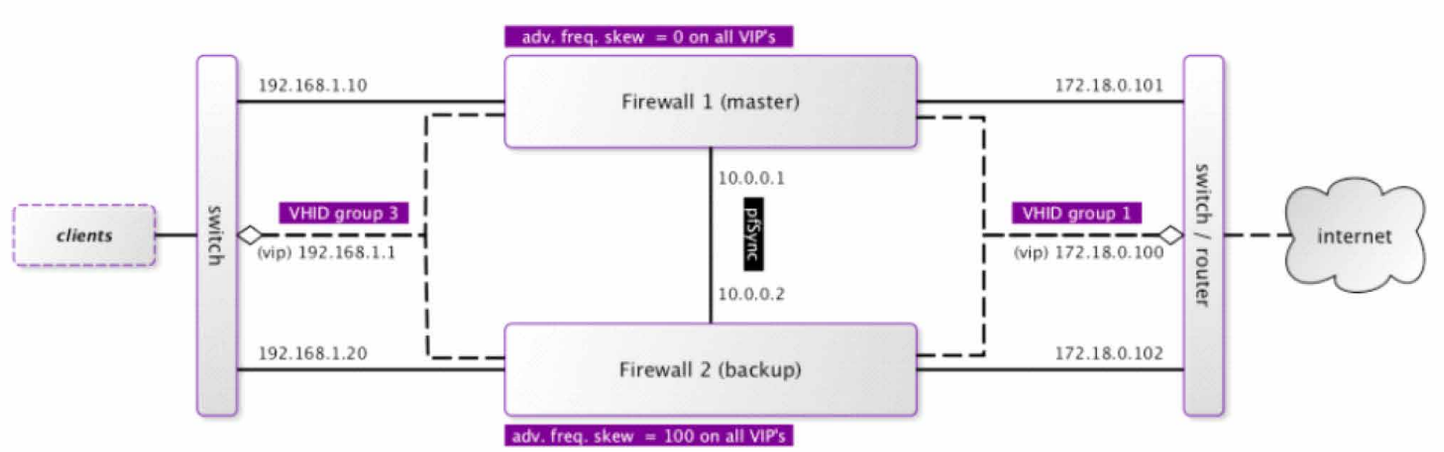
Monitoring and reporting dashboard

HIGH AVAILABILITY / HARDWARE FAILOVER

*ast Firewall utilises the Common Address Redundancy Protocol (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 *ast Firewall 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:** *ast Firewall includes configuration synchronisation capabilities. Configuration changes made on the primary system are automatically synchronised to the secondary firewall.
- **Service Status over view and & 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.



Redundancy Architecture

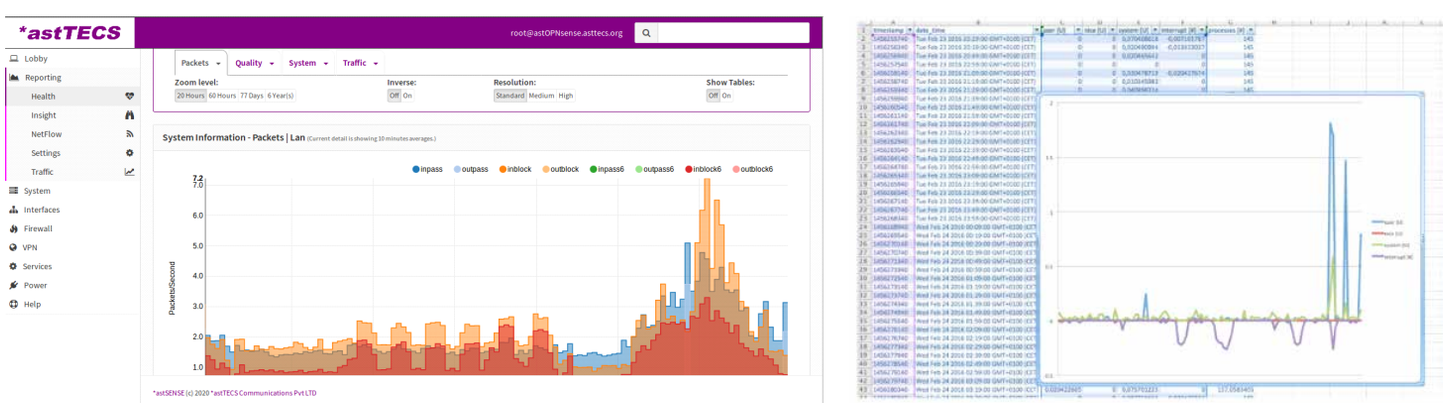
BACKUP & RESTORE

- *ast Firewall allows automatic backups of configuration changes make it possible to review history and restore previous settings.
- 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.
- Upload your configuration backup file and restore it with ease.
- *ast Firewall supports encrypted cloud backup of your configuration with the option to keep backups of older files (history). For this purpose Google drive and Next cloud support has been integrated into the user interface.
- Better safe than sorry, always keep an up to date backup of your configuration. It's easy with *ast Firewall.

SYSTEM HEALTH & INFORMATION

*ast Firewall analyse your system health with a dynamic view on Robin Round Data. It allows you to dive into different statistics that show the overall health and performance of the system over a 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.

System Health offers data collectors for most parts of the system. Data can be viewed as a table and graph. The primary data collectors are packets, quality, system and traffic.



System Health Information Graph

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PRODUCT BUNDLE

*ast Firewall is available as: • 50 users • 100 users • 200 users

FEATURE SUMMARY

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 modeGranular control state table
- Adjustable state table size
- On a per rule bases
  - Limit simultaneous client connection
  - Limit states per host
  - Limit new connections per Sec
  - Define state timeout
  - Define state type
- State types
  - Keep
  - Sloppy
  - Modulate
  - Synproxy
- Optimisation options
  - Normal
  - High latency
  - Agressive
  - Conservative

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

IGMP Proxy
- For multicast routing

Universal Plug & Play
- Fully supported

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

DNS Filter
- Supports OpenDNS

DHCP Server
- IPv4 & IPv6
- Relay Support
- BOOTP options

802.1Q VLAN Support
- max 4096 VLAN's Network Address Translation
- Port forwarding
- 1:1 of ip's & subnets
- Outbound NAT
- NAT ReflectionTraffic Shaping
- Limit bandwidth
- Share bandwidth
- Prioritise traffic
- Rule based matching
  - Protocol
  - Source
  - Destination
  - Port
  - Direction

Dynamic DNS
- Selectable form a list
- Custom
- RFC 2136 support

DNS Forwarder
- Host Overrides
- Domain Overrides

Intrusion Detection & Prevention
- Inline Prevention
- Integrated rulesets
  - SSL Blacklists
  - Feodo Tracker
  - Geolite2 Country IP
  - Emerging Threats

Multi WAN
- Load balancing
- Failover
- Aliases

Databases
- Export vouchers to CSV
- Timeouts & Welcome
- 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

Load Balancer
- Balance incoming traffic over multiple servers

Network Time Server
- Hardware devices
  - GPS
  - Pulse Per Second

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

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)

Virtual Private Networks
- I Psec
  - 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

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

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