



Highlights

- World's first ML-Powered NGFW
- Nine-time Leader in the Gartner Magic Quadrant® for Network Firewalls
- Leader in The Forrester Wave™: Enterprise Firewalls, Q3 2020
- Highest Security Effectiveness score in the 2019 NSS Labs NGFW Test Report, with 100% of evasions blocked
- Extends visibility and security to all devices, including unmanaged IoT devices, without the need to deploy additional sensors
- Supports high availability with active/active and active/passive modes
- Delivers predictable performance with security services
- Simplifies deployment of large numbers of firewalls with optional Zero Touch Provisioning (ZTP)
- Supports centralized administration with Panorama™ network security management

PA-800 Series

Palo Alto Networks PA-800 Series ML-Powered NGFWs, comprising the PA-850 and PA-820, are designed to provide secure connectivity for organizations' branch offices as well as midsize businesses.



PA-850

The controlling element of the PA-800 Series is PAN-OS®, the same software that runs all Palo Alto Networks Next-Generation Firewalls (NGFWs). PAN-OS natively classifies all traffic, inclusive of applications, threats, and content, and then ties that traffic to the user regardless of location or device type. The application, content, and user—in other words, the elements that run your business—then serve as the basis of your security policies, resulting in improved security posture and reduced incident response time.

Key Security and Connectivity Features

ML-Powered Next-Generation Firewall

- Embeds machine learning (ML) in the core of the firewall to provide inline signatureless attack prevention for file-based attacks while identifying and immediately stopping never-before-seen phishing attempts.
- Leverages cloud-based ML processes to push zero-delay signatures and instructions back to the NGFW.
- Uses behavioral analysis to detect Internet of Things (IoT) devices and make policy recommendations; cloud-delivered and natively integrated service on the NGFW.
- Automates policy recommendations that save time and reduce the chance of human error.

Identifies and categorizes all applications, on all ports, all the time, with full Layer 7 inspection

- Identifies the applications traversing your network irrespective of port, protocol, evasive techniques, or encryption (TLS/SSL).
- Uses the application, not the port, as the basis for all your safe enablement policy decisions: allow, deny, schedule, inspect, and apply traffic-shaping.
- Offers the ability to create custom App-ID™ tags for proprietary applications or request App-ID development for new applications from Palo Alto Networks.
- Identifies all payload data within the application (e.g., files and data patterns) to block malicious files and thwart data exfiltration attempts.
- Creates standard and customized application usage reports, including software-as-a-service (SaaS) reports that provide insight into all sanctioned and unsanctioned SaaS traffic on your network.
- Enables safe migration of legacy Layer 4 rule sets to App-ID-based rules with built-in Policy Optimizer, giving you a rule set that is more secure and easier to manage.

Enforces security for users at any location, on any device, while adapting policy based on user activity

- Enables visibility, security policies, reporting, and forensics based on users and groups—not just IP addresses.
- Easily integrates with a wide range of repositories to leverage user information: wireless LAN controllers, VPNs, directory servers, SIEMs, proxies, and more.

- Allows you to define Dynamic User Groups (DUGs) on the firewall to take time-bound security actions without waiting for changes to be applied to user directories.
- Applies consistent policies irrespective of users' locations (office, home, travel, etc.) and devices (iOS and Android® mobile devices, macOS®, Windows®, Linux desktops, laptops; Citrix and Microsoft VDI and Terminal Servers).
- Prevents corporate credentials from leaking to third-party websites and prevents reuse of stolen credentials by enabling multi-factor authentication (MFA) at the network layer for any application without any application changes.
- Provides dynamic security actions based on user behavior to restrict suspicious or malicious users.

Prevents malicious activity concealed in encrypted traffic

- Inspects and applies policy to TLS/SSL-encrypted traffic, both inbound and outbound, including for traffic that uses TLS 1.3 and HTTP/2.
- Offers rich visibility into TLS traffic, such as amount of encrypted traffic, TLS/SSL versions, cipher suites, and more, without decrypting.
- Enables control over use of legacy TLS protocols, insecure ciphers, and misconfigured certificates to mitigate risks.
- Facilitates easy deployment of decryption and lets you use built-in logs to troubleshoot issues, such as applications with pinned certificates.
- Lets you enable or disable decryption flexibly based on URL category and source and destination zone, address, user, user group, device, and port, for privacy and regulatory compliance purposes.
- Allows you to create a copy of decrypted traffic from the firewall (i.e., decryption mirroring) and send it to traffic collection tools for forensics, historical purposes, or data loss prevention (DLP).

Offers centralized management and visibility

- Benefits from centralized management, configuration, and visibility for multiple distributed Palo Alto Networks NGFWs (irrespective of location or scale) through Panorama™ network security management, in one unified user interface.
- Streamlines configuration sharing through Panorama with templates and device groups, and scales log collection as logging needs increase.
- Enables users, through the Application Command Center (ACC), to obtain deep visibility and comprehensive insights into network traffic and threats.

Detects and prevents advanced threats with cloud-delivered security services

Today's sophisticated cyberattacks can spawn 45,000 variants in 30 minutes using multiple threat vectors and advanced techniques to deliver malicious payloads. Traditional siloed security causes challenges for organizations by introducing security gaps, increasing overhead for security teams, and hindering business productivity with inconsistent access and visibility.

Seamlessly integrated with our industry-leading NGFWs, our Cloud-Delivered Security Services use the network effect of 80,000 customers to instantly coordinate intelligence and protect against all threats across all vectors. Eliminate coverage gaps across your locations and take advantage of best-in-class security delivered consistently in a platform to stay safe from even the most advanced and evasive threats. Services include:

- **Threat Prevention**—goes beyond a traditional intrusion prevention system (IPS) to prevent all known threats across all traffic in a single pass without sacrificing performance.
- **Advanced URL Filtering**—provides best-in-class web protection while maximizing operational efficiency with the industry’s first real-time web protection engine and industry-leading phishing protection.
- **WildFire®**—ensures files are safe with automatic detection and prevention of unknown malware, powered by industry-leading cloud-based analysis and crowdsourced intelligence from more than 42,000 customers.
- **DNS Security**—harnesses the power of ML to detect as well as prevent threats over DNS in real time and empowers security personnel with the intelligence and context to craft policies and respond to threats quickly and effectively.
- **IoT Security**—provides the industry’s most comprehensive IoT security solution, delivering ML-powered visibility, prevention, and enforcement in a single platform.
- **Enterprise DLP**—offers the industry’s first cloud-delivered enterprise DLP that consistently protects sensitive data across networks, clouds, and users.
- **SaaS Security**—delivers integrated SaaS security that lets you see and secure new SaaS applications, protect data, and prevent zero-day threats at the lowest total cost of ownership (TCO).

Delivers a unique approach to packet processing with Single-Pass Architecture

- Performs networking, policy lookup, application and decoding, and signature matching—for all threats and content—in a single pass. This significantly reduces the amount of processing overhead required to perform multiple functions in one security device.
- Avoids introducing latency by scanning traffic for all signatures in a single pass, using stream-based, uniform signature matching.
- Enables consistent and predictable performance when security subscriptions are enabled. (In table 1, “Threat Prevention throughput” is measured with multiple subscriptions enabled.)

Enables SD-WAN functionality

- Allows you to easily adopt SD-WAN by simply enabling it on your existing firewalls.
- Enables you to safely implement SD-WAN, which is natively integrated with our industry-leading security.
- Delivers an exceptional end user experience by minimizing latency, jitter, and packet loss.

Table 1: PA-800 Series Performance and Capacities*

	PA-850	PA-820
Firewall throughput (HTTP/appmix) [†]	2.2/2.1 Gbps	1.8/1.7 Gbps
Threat Prevention throughput (HTTP/appmix) [‡]	1.0/1.2 Gbps	870/900 Mbps
IPsec VPN throughput [§]	1.7 Gbps	1.4 Gbps
New sessions per second	13,100	8,100
Max sessions	192,000	128,000

* Results were measured on PAN-OS 10.1.

[†] Firewall throughput is measured with App-ID and logging enabled, using 64 KB HTTP/appmix transactions.

[‡] Threat Prevention throughput is measured with App-ID, IPS, antivirus, antispyware, WildFire, DNS Security, file blocking, and logging enabled, utilizing 64 KB HTTP/appmix transactions.

[§] IPsec VPN throughput is measured with 64 KB HTTP transactions and logging enabled.

^{||} New sessions per second is measured with application override utilizing 1 byte HTTP transactions.

PA-800 Series ML-Powered NGFWs support a wide range of networking features that enable you to more easily integrate our security features into your existing network.

Table 2: PA-800 Series Networking Features

Interface Modes
L2, L3, tap, virtual wire (transparent mode)
Routing
OSPFv2/v3 with graceful restart, BGP with graceful restart, RIP, static routing
Policy-based forwarding
Point-to-Point Protocol over Ethernet (PPPoE)
Multicast: PIM-SM, PIM-SSM, IGMP v1, v2, and v3
SD-WAN
Path quality measurement (jitter, packet loss, latency)
Initial path selection (PBF)
Dynamic path change
IPv6
L2, L3, tap, virtual wire (transparent mode)
Features: App-ID, User-ID, Content-ID, WildFire, and SSL Decryption
SLAAC
IPsec VPN
Key exchange: manual key, IKEv1, and IKEv2 (pre-shared key, certificate-based authentication)
Encryption: 3DES, AES (128-bit, 192-bit, 256-bit)
Authentication: MD5, SHA-1, SHA-256, SHA-384, SHA-512
VLANs
802.1Q VLAN tags per device/per interface: 4,094/4,094
Aggregate interfaces (802.3ad), LACP

Table 2: PA-800 Series Networking Features (cont.)

Network Address Translation
NAT modes (IPv4): static IP, dynamic IP, dynamic IP and port (port address translation)
NAT64, NPTv6
Additional NAT features: dynamic IP reservation, tunable dynamic IP and port oversubscription
High Availability
Modes: active/active, active/passive
Failure detection: path monitoring, interface monitoring
Zero Touch Provisioning (ZTP)
Available with -ZTP SKUs (PA-850-ZTP, PA-820-ZTP) Requires Panorama 9.1.3 or higher

Table 3: PA-800 Series Hardware Specifications

I/O
PA-850: 10/100/1000 (4), Gigabit SFP (8) or PA-850: 10/100/1000 (4), Gigabit SFP (4), 10 Gigabit SFP+ (4) PA-820: 10/100/1000 (4), Gigabit SFP (8)
Management I/O
10/100/1000 out-of-band management port (1) 10/100/1000 high availability (2) RJ-45 console port (1) USB port (1) Micro USB console port (1)
Storage Capacity
240 GB SSD
Power Supply
PA-850: AC 450 W power supplies (2); one is redundant PA-820: Fixed AC 200 W power supply (1)
Power Consumption
Maximum: PA-850: 240 W; PA-820: 120 W Average: PA-850: 64 W; PA-820: 41 W
Max BTU/hr
256
Input Voltage (Input Frequency)
100–240 VAC (50–60 Hz)
Max Current Consumption
PA-850: 2.0 A @ 100 VAC, 1.0 A @ 240 VAC PA-820: 1.0 A @ 100 VAC, 0.5 A @ 240 VAC
Max Inrush Current
PA-850: 1.0 A @ 230 VAC, 1.84 A @ 120 VAC PA-820: 0.4 A @ 230 VAC, 0.96 A @ 120 VAC

Table 3: PA-800 Series Hardware Specifications (cont.)

Rack Mount (Dimensions)
PA-850: 1U, 19" standard rack (1.75" H x 14.5" D x 17.125" W) PA-820: 1U, 19" standard rack (1.75" H x 14" D x 17.125" W)
Weight (Standalone Device/As Shipped)
PA-850: 13.5 lbs / 21.5 lbs PA-820: 11 lbs / 18 lbs
Safety
cTUVus, CB
EMI
FCC Class A, CE Class A, VCCI Class A
Certifications
See paloaltonetworks.com/company/certifications.html
Environment
Operating temperature: 32° to 104° F, 0° to 40° C Non-operating temperature: -4° to 158° F, -20° to 70° C
Airflow
Front to back

To learn more about the features and associated capacities of the PA-800 series, please visit paloaltonetworks.com/network-security/next-generation-firewall/pa-800-series.