Palo Alto Networks and Arista Networks

Technology Segment: Infrastructure

The Palo Alto Networks Technology Partner Program includes a select group of partners that deliver solutions or products that interoperate with the next-generation firewall.

HIGHLIGHTS

- Complete support for access and rule compliance at the user and application level
- Configuration and reporting of threat signatures for integrated threat management
- Full on-demand policy compliance audits (PCI-DSS, NIST, etc.) for next-generation firewalls
- Automated firewall analysis and audits to optimize firewall rule-sets and maintain compliance
- Network modeling and access path analysis to troubleshoot application and user connectivity issues

SOLUTION OVERVIEW

Palo Alto Networks and Arista Networks have partnered to offer the highest performance next-generation firewall implementation in the industry. The modern data center has ever-increasing demands for throughput and performance, and the security infrastructure required to protect and segment the network must be able to meet those demands. The combination of Arista Networks' Datacenter Switches along with Palo Alto Networks' next-generation firewalls provides unmatched security in high-performance data centers without impacting throughput.

LOW LATENCY

In legacy firewalls, the addition of bolt-on IPS engines and other threat mitigation mechanisms significantly decrease performance. Palo Alto Networks next-generation firewall delivers App-ID, User-ID, and Content-ID in a single engine and its Single-Pass Parallel Processing (SP3) architecture that allows full functionality with minimal impact to latency. The SP3 architecture performs operations once per packet, so networking functions, application identification, policy enforcement and threat mitigation are performed in one pass through the data plane. In addition, the architecture is stream-based and uses a uniform signature set to detect and block threats, so latency through the engine is minimized.
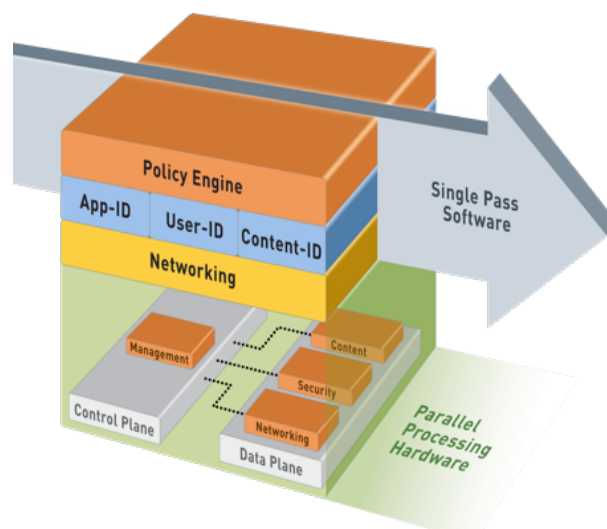

Palo Alto Networks Single-Pass Parallel Processing Architecture

Arista Networks 7124SX switch provides line-rate throughput with latency less than 1 microsecond. In the demonstration of the combined solution, with two Arista switches and multiple Palo Alto Networks firewalls in parallel, the average end-to-end latency was measured at 17 microseconds, even with App-ID, Vulnerability Protection, Anti-Virus, and Anti-Spyware enabled.

SCALABLE THROUGHPUT

In addition to ultra-low latency, the combination of Arista Networks and Palo Alto Networks provides unprecedented firewall scale. Arista Networks MLAG technology allows for link-aggregation of up to 32 10 Gigabit Ethernet connections. This creates a single logical interface of up to 320 Gbps across two chassis in an Active/Active topology, with no blocked paths and no proprietary protocols to simplify scaling bandwidth. Palo Alto Networks' unique Virtual-Wire technology can transparently perform line-rate next-generation firewall protection, without requiring configuration changes to the datacenter switches. Combining these two technologies enables the Palo Alto Networks firewalls to inspect each link in the Arista Networks MLAG with minimal complexity and allows the firewall to scale as the data center bandwidth requirements increase.
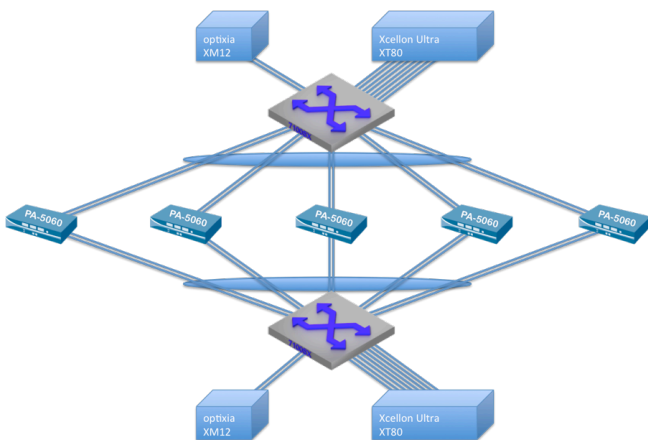
100 Gbps Next-Generation Firewall

This implementation successfully demonstrated the ability to carry real-world traffic at 100 Gbps scale. Using Ixia Xcellon Ultra XT80 and optixia XM12 test equipment, a combination of TCP and UDP traffic, stateful and stateless sessions, were sent through the firewalls. 20 Gbps of stateless UDP traffic was provided by the optixia XM12 chassis, and 80 Gbps of stateful TCP traffic was provided by the XT80 chassis, delivering a traffic profile similar to what might be found in a production environment.

PALO ALTO NETWORKS

Palo Alto Networks™ (NYSE: PANW) is the network security company. Its innovative platform allows enterprises, service providers, and government entities to secure their networks and safely enable the increasingly complex and rapidly growing number of applications running on their networks. The core of Palo Alto Networks' platform is its Next-Generation Firewall, which delivers application, user, and content visibility and control integrated within the firewall through its proprietary hardware and software architecture. Palo Alto Networks' products and services can address a broad range of network security requirements, from the data center to the network perimeter, as well as the distributed enterprise, which includes branch offices and a growing number of mobile devices. Palo Alto Networks' products are used by more than 9,000 customers in over 100 countries.

www.paloaltonetworks.com

ARISTA NETWORKS

Arista Networks was founded to deliver Cloud Networking Solutions for large data center and computing environments. Arista's award-winning best-of-breed 10 Gigabit Ethernet switches redefine scalability, robustness, and price–performance. At the core of Arista's platform is EOS a ground-breaking new software architecture. Arista Networks markets its products worldwide through distribution partners, systems integrators and resellers.

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