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Powerful and Innovative Intrusion Prevention Systems
FortiGate IPS

Introduction

Critics of standalone intrusion prevention systems (IPS) claim the market is slowing down or even contracting, thinking this is reason to pursue alternatives to IPS technology. While many standalone IPS products at smaller branch sites and midsized campus sites are being replaced with IPS technology packaged into a firewall solution, the continued evolution of data centers has caused explosive growth for standalone IPS deployments. Whether part of a firewall solution or as a separate standalone appliance, IPS technology is becoming an increasingly ubiquitous part of network security defenses.

No organization that is concerned about sophisticated and targeted attacks can afford to ignore the protection offered by deep IPS inspection. However, that deep IPS inspection becomes computationally expensive with the ever-growing traffic volume of the data center, challenging organizations to balance their aggressive performance requirements against the reality of conservative budgets. Moreover, even with performance challenges managed, the talent shortage of qualified security professionals stretches teams to the point where the workload grows beyond their capacity. Fortunately, there is a flexible IPS solution that helps organizations address these challenges today, and its name is FortiGate IPS.
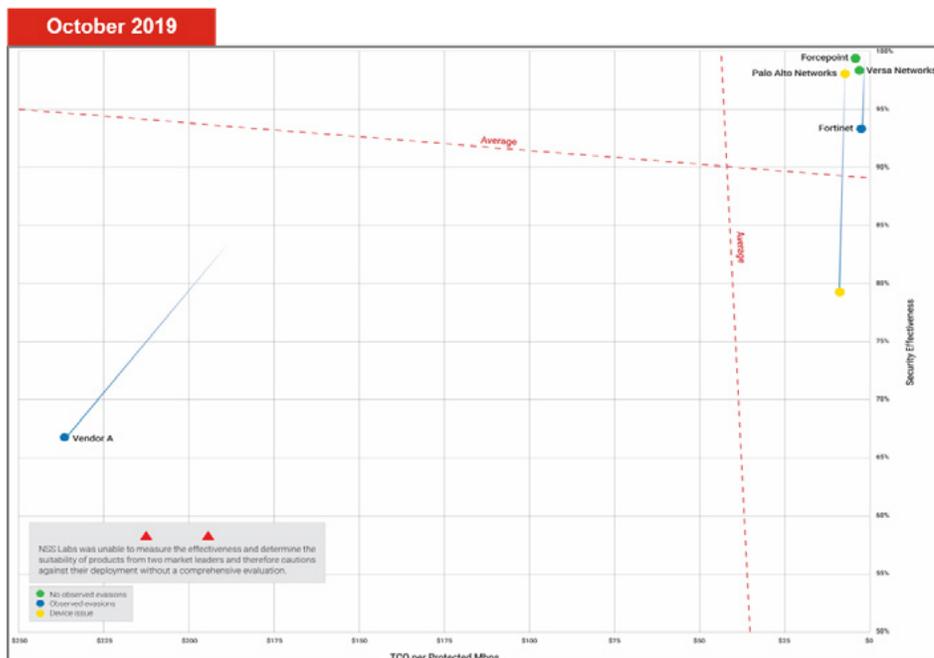

Figure 1: 2019 next-generation intrusion prevention systems (NGIPS) group test.
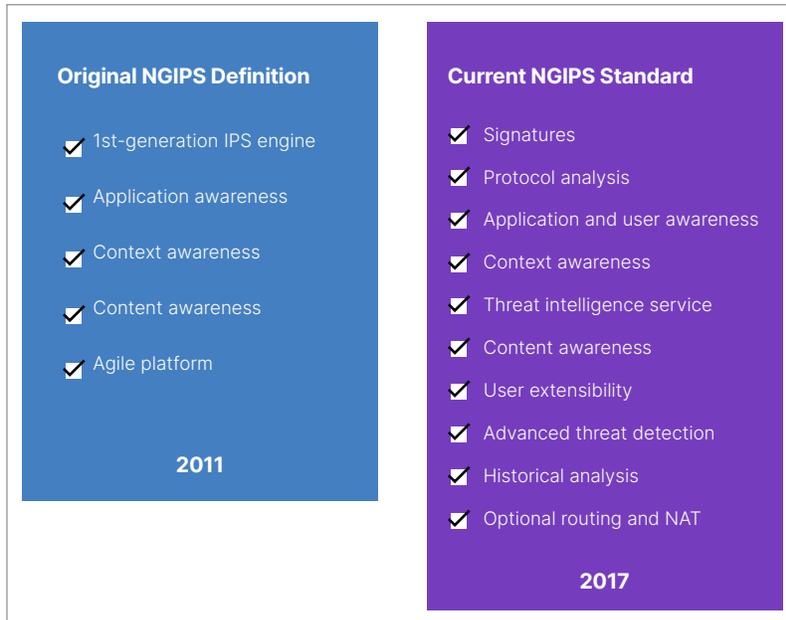
Key Features and Benefits of FortiGate IPS

- Deep inspection for advanced threats, botnets, zero days, and targeted attacks on the network

- Independent third-party validation demonstrates superior detection and best price performance

- Innovative security processor (SPU) technology for high-performance network throughput and deep security inspection

- Seamless integration—appliance or cloud service—with world-class sandboxing for advanced threats

- Special security controls for web servers and applications, including cross-site scripting and SQL injection

- Data protection controls to prevent sensitive data exfiltration

- **New in FortiOS 7.2— Dedicated IPS** – end-to-end updates for dedicated IPS administration, designed for finance and other regulated deployments, enabling migration from separate hardware to NGFW while preserving operations and compliance practices

Proven, World-class

Fortinet, well known for its next-generation firewall (NGFW) solution, has built IPS technology as part of FortiGate firewalls for more than ten years. However, unlike other firewall vendors that only offer minimal IPS functionality, FortiGate IPS is advanced. It even meets the high standard of a full next-generation IPS (NGIPS), both the original definition and the current evolution, that is commonly achieved only by standalone IPS products.

However, checking boxes on a list of features is no guarantee of defending against real-world security challenges. Quantitatively proving capability, Fortinet continues to achieve the highest "recommended" ratings from NSS Labs in both NGIPS and DCIPS testing year after year. FortiGate IPS consistently delivers full-featured IPS that proves itself against the most challenging benchmarks.

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Original NGIPS Definition

☑ 1st-generation IPS engine

☑ Application awareness

☑ Context awareness

☑ Content awareness

☑ Agile platform

2011

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Current NGIPS Standard

☑ Signatures

☑ Protocol analysis

☑ Application and user awareness

☑ Context awareness

☑ Threat intelligence service

☑ Content awareness

☑ User extensibility

☑ Advanced threat detection

☑ Historical analysis

☑ Optional routing and NAT

2017

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Powerful IPS

Fortinet customers depend on and expect high performance from FortiGate firewalls, and FortiGate IPS benefits from this legacy delivering, pound-for-pound, the best IPS performance available in the market today. That power comes from Fortinet's parallel path architecture and purpose-built security processing technology. Serial or single path processing means that packets and network flows are handled one by one, passing sequentially through each network or security process before moving on to the next. While traditional and easier to build, it is an inherently slow architecture that struggles to scale. In contrast, Fortinet's parallel path architecture divides up the work, so the total time required to process network flows, whether via software or hardware, is much shorter.
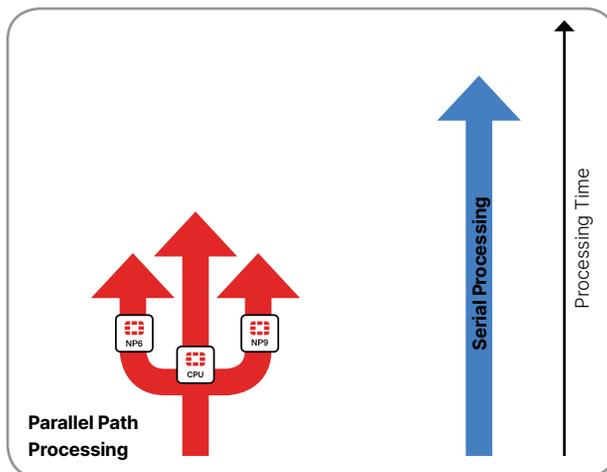
However, that is only part of the FortiGate IPS story. Years of engineering investment, which cannot be replicated with commercial off-the-shelf (COTS) general processors, gave birth to a specialized network processor, currently in its ninth generation, and a sophisticated security content processor, currently in its sixth generation. The network processor boosts throughput and network handling capacity of FortiGate IPS, while the content processor ensures processes such as IPS inspection and cryptography do not dramatically lower overall throughput, as is common with other standalone IPS and firewall appliances. Working simultaneously in parallel, they deliver powerful performance and high value for customer environments.

As part of the Fortinet Security Fabric, FortiGate IPS benefits from and contributes to intelligence sharing with Fortinet products as well as Fabric-Ready Partner products—even those not directly visible to the sensor. This makes investigation and incident response more productive as they can take place in the context of the whole Fabric instead of a myopic view from one IPS or firewall sensor. Additionally, FortiGate IPS is a rich source of forensic details that are equally available to other Security Fabric products, improving customers' overall security posture.

Summary

In both standalone IPS and converged next-generation firewall deployments, the innovative FortiGate IPS delivers proven, world-class protection. Powered by dedicated security processing units and a modern, efficient architecture, performance in even the largest data centers is reliably consistent. Automated security and operational processes give security talent more time to focus on other security needs. As part of the Fortinet Security Fabric, FortiGate IPS shares global and local security intelligence with other Fortinet solutions and trusted third-party products, ensuring it is assessing risk with the most up-to-date information, as well as improving overall security posture.

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