The Advantages of Multi-Core UTM

How to break through the speed barriers to real-time comprehensive threat protection

SONICWALL®

PROTECTION AT THE SPEED OF BUSINESS®

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Network security has gotten more complex

Network communications no longer just rely on store-and-forward applications like e-mail. It has now grown to include real-time collaboration tools, Web 2.0 applications, instant messenger (IM) and peer-to-peer applications, Voice over IP (VoIP), streaming media and telepresence conferencing. Any one of these applications can open your network to potential attack.

The newest trend in firewall protection is Unified Threat Management (UTM). UTM not only guards against intrusion, but performs content filtering, data leakage protection, intrusion detection and anti-malware duties. Unlike multiple point solutions, UTM is easy to deploy, manage and update, thereby reducing complexity and overhead costs.
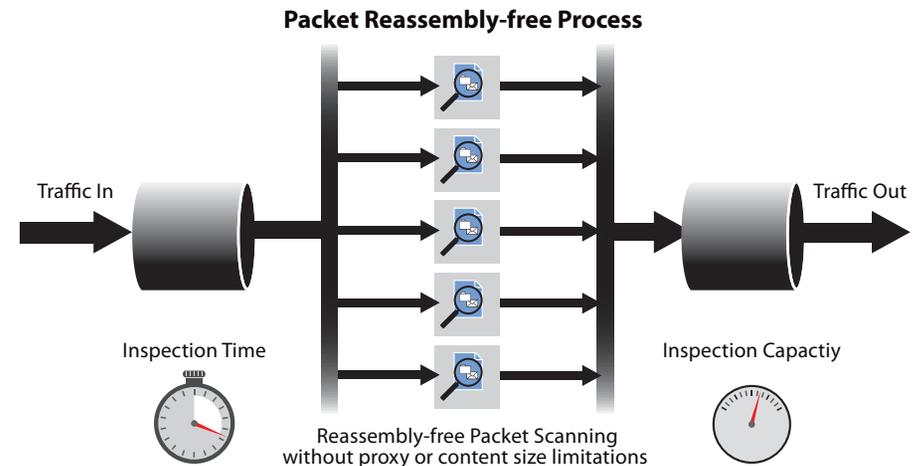
Today's security needs
Unified Threat Management.

UTM works best when it scans entire packets.

Traditional "stateful" packet inspection products can let attacks slip through to your network. Stateful solutions only scan the packet headers. This misses threats hidden in the data portion of packets. To really protect against all internal and external threats, network security needs to scan all traffic over every protocol and port.

In contrast, UTM solutions that use Deep Packet Inspection (DPI) technology are designed to audit the entire packet, every packet. But while DPI offers the best protection, it can also decrease network throughput. To break through the DPI speed barrier, SonicWALL has engineered and patented a real-time, full-packet DPI technology called Reassembly-free Deep Packet Inspection™ (RFDPI™).

Packet Reassembly-free Process

Traffic In

Traffic Out

Inspection Time

Inspection Capactiy

Reassembly-free Packet Scanning
without proxy or content size limitations

RFDPI audits 100% of traffic —

stateful inspection only audits 2%.

Not all DPI solutions are created equal

SonicWALL RFDPI can handle the scanning of unlimited files sizes and an unlimited number of connections on the network—all in real time.

Unlike all other DPI methods, RFDPI isn't required to halt and store traffic in memory. Often, this limitation requires administrators to either pass traffic unchecked when under excessive load, or block all traffic, even legitimate business communication. And RFDPI doesn't limit the size of a file that a user can download, nor the number of users that can be protected at one time.
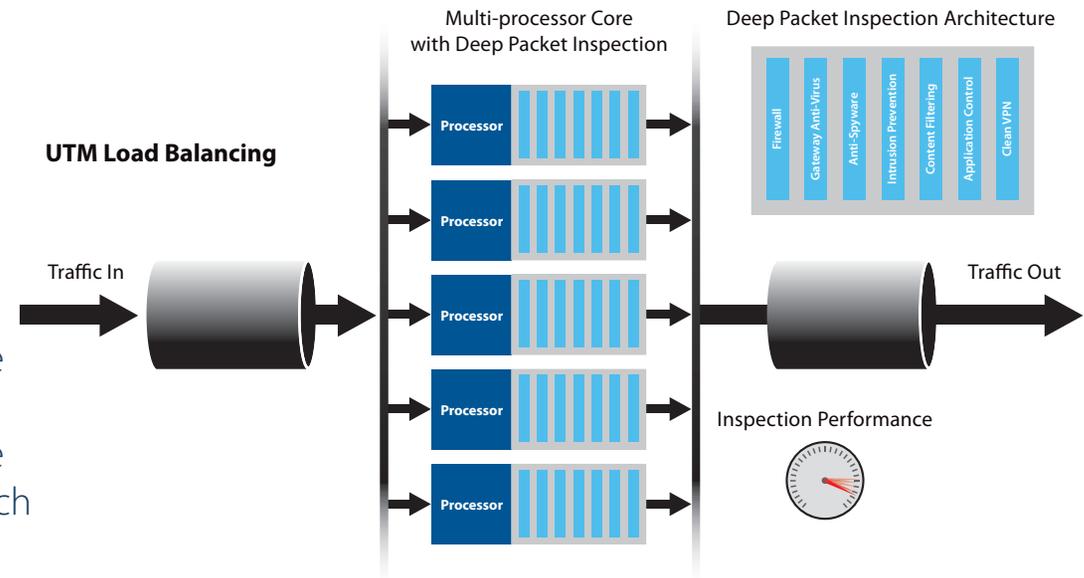
SonicWALL RFDPI is built for
scalable real-time UTM

Adding the power of multi-core

Multi-core architecture is designed to maximize performance and scalability, while minimizing power consumption. It does this by combining application-specific hardware acceleration with high-performance multi-core processor architecture techniques.

This optimal combination offers high-performance and efficient solutions for packet, content and security processing. When compared to alternative architectures, multi-core architectures also offers much greater efficiency in lowering power consumption.

Multi-processor Core with Deep Packet Inspection

Deep Packet Inspection Architecture

Firewall
Gateway Anti-Virus
Anti-Spyware
Intrusion Prevention
Content Filtering
Application Control
Clean VPN

UTM Load Balancing

Traffic In

Processor
Processor
Processor
Processor
Processor

Traffic Out

Inspection Performance

Multi-core processors
cut overhead and complexity

Multi-core is the best platform for RFDPI

SonicWALL® RFDPI has been designed and fine-tuned specifically for multi-core hardware, enabling it to conduct intelligent inspection over all CPU cores with parallel processing at extremely high speed. Multi-core architecture enables each CPU to simultaneously process a portion of network packets in parallel with other CPUs, making optimal use of available processor cycles. This results in significantly greater scalability and performance than other DPI methods.

Because of the increased inspection demands required by RFDPI, single-processor and ASIC solutions can't keep up with evolving complex attacks in real time from both inside and outside the network perimeter. Multi-core technology offers higher performance, scalability, and energy efficiency when compared with available network security platforms based on general purpose or ASIC processors.

Multi-core RFDPI is today's bedrock
for high-performance network security

Conclusions

By conducting Unified Threat Management (UTM) and real-time Deep Packet Inspection over multi-core architecture, SonicWALL Network Security Appliance (NSA) outperforms traditional solutions. Combining innovative technology, high-performance, cost-effectiveness and reliability, SonicWALL has emerged as a worldwide UTM leader. SonicWALL NSA defends against network attacks, improves productivity and efficiency, simplifies administration interface and lowers the total cost of network security ownership.

How Can I Learn More?

- Download the Whitepaper "*The Advantages of a Multi-core Architecture In Network Security Appliances*": **www.sonicwall.com/whitepaper**
- Listen to an archived Webcast: **www.sonicwall.com/us/9778.html**
- Opt-in to receive SonicWALL Newsletters: **http://forms.sonicwall.com/forms/Subscription_NA**

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About SonicWALL

SonicWALL® is a recognized leader in comprehensive information security solutions. SonicWALL solutions integrate dynamically intelligent services, software and hardware that engineer the risk, cost and complexity out of running a high-performance business network. For more information, visit the company Web site at **www.sonicwall.com**.