

SOLUTION BRIEF

Communications Service Providers
Network Security



Lanner* and Intel Demonstrate NFV Network Security Performance

Lanner's network security demonstration with Wind River* and Trend Micro* shows deep packet inspection performance on an Intel® architecture-based server.



Lanner

Overview

Network security is such a critical function that communications service providers (CommSPs) want to ensure that virtualized network security services offer the same performance and functionality as their legacy network counterparts. Recognizing this customer requirement, Lanner Electronics,* an Intel® Network Builders ecosystem member, partnered with industry leaders to assemble components of a network security solution to demonstrate to CommSPs how this technology can be integrated to meet their needs.

Challenge

A key part of the communications services network evolution toward network functions virtualization (NFV) is ensuring that new services are as secure as or more secure than today's services. In NFV, virtual network functions (VNFs) software provide the service functionality (routing, firewall, intrusion detection, etc.) running on commercial off-the-shelf servers.

As these NFV solutions replace dedicated security appliances, many with specially designed security processors, CommSPs need assurance that the performance of the NFV solutions will match that of legacy fixed-function appliances. Deep packet inspection (DPI) is a foundational function for security applications, but it also challenges the performance of general-purpose processors.

DPI disassembles incoming packets, conducting an examination of the header, footer, and data payload, and then reassembles the packet for transmission or rejection. DPI engines can search for illegal statements and other predefined criteria that could mean the packet is carrying a virus or otherwise malicious content and then can either block or reroute the packets. This DPI functionality provides the foundation needed for a variety of network security functions, including intrusion prevention, URL filtering, firewalling, application control, and others.

Lanner Electronics wanted to demonstrate the performance of a network security solution for CommSPs based on its Intel® architecture-powered servers, and it partnered with Wind River* and Trend Micro* to build a solution that has been demonstrated worldwide.

Solution

The demonstration system is based on Lanner's carrier-grade HTCA-6000 series platform, specifically the HTCA-6200, a two-blade chassis server that provides a cost-effective solution for network edge deployments, even for customer premises deployments. Lanner's HTCA-6600, a six-blade server, can also be used for this application and provides the performance and features for a core network deployment.

The complete solution is shown in Figure 1.

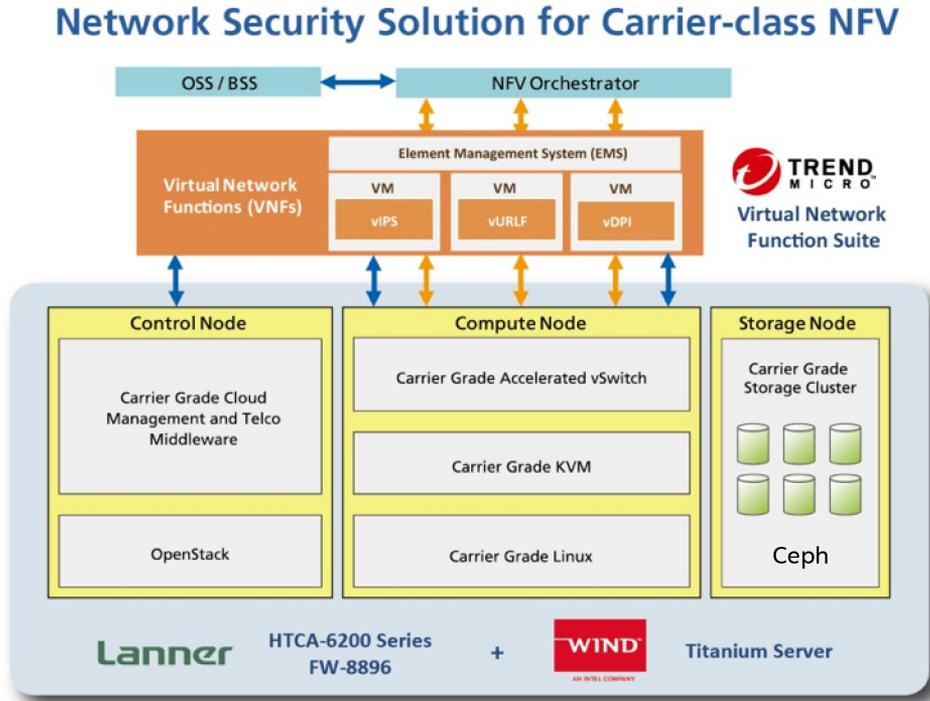


Figure 1. Virtual Network Security Solution Demonstration*

Lanner Intel-Powered Hardware Platform

The hardware foundation for the demonstration is the NEBS-compliant HTCA-6200, which features two CPU blades, each of which features dual Intel® Xeon® processors E5-2690 v4, providing 24 cores per blade or a total of 48 cores for a fully configured system. The HTCA-6200 also features hot-swappable network I/O blades that can be configured for 1/10/40/100 GbE fiber or copper network connections. The system also features a built-in Ethernet switch fabric.



Figure 2. Lanner HTCA-6200

Wind River* Virtualization Software Platform

To provide virtualization of the HTCA-6200 that is interoperable with a wide variety of third-party VNFs, Lanner selected Wind River Titanium Server.* Titanium Server is a fully integrated and feature-complete network virtualization software platform, built for reliability and exceptional performance efficiencies. Lanner offers all its HTCA-6000 servers pre-certified on Titanium Server, which helps accelerate time to market for CommSPs and telecom equipment manufacturers (TEMs). Titanium Server is a carrier-grade network functions virtualization infrastructure (NFVI) software solution that is designed to meet the stringent “always on” requirements of the telecom industry.

Trend Micro* Network Security VNF

For this project, Lanner integrated Trend Micro's Virtual Network Function Suite (VNFS) to provide high-performance carrier-class virtual network security functions. The Trend Micro VNFS includes both security VNFs and an element management system (EMS). The VNFs scan network traffic and perform designated DPI-based functions, such as intrusion detection and prevention, URL filtering, and application and device identification. The EMS manages logs, updates, and policy configurations of multiple VNFs and integrates with the management and orchestration (MANO) systems to manage VNF life cycle.

A critical component to the performance of the Trend Micro software is its integration with the Data Plane Development Kit (DPDK), an open source library of software and drivers originally developed by Intel for fast packet performance. This integration combined with functionality offered through the Titanium Server Accelerated Virtual Switch (AVS) enables fast DPI performance, which benefits all the security VNFs so that the system performance is competitive with fixed-function systems.

Conclusion

The network security demonstration arranged by Lanner with the participation of Intel, Wind River, and Trend Micro has provided a true NFV alternative for CommSPs around the world, leveraging the power of Intel architecture CPUs and Lanner's innovative hardware design.

About Lanner

Lanner Electronics Inc. (TAIEX 6245) provides design, engineering, and manufacturing services for advanced network appliances and rugged applied computing platforms for system integrators, service providers, and application developers. Founded in 1986, Lanner is an ISO 9001 accredited organization with headquarters in Taipei, Taiwan, and offices in USA, Canada, and China. With over 30 years of experience in system and board hardware engineering, Lanner provides high-performance, reliable, and cost-effective computing platforms. Lanner is most renowned for its range of Intel architecture-based and RISC network appliances. More information is at www.lannerinc.com.

About Intel

Intel (NASDAQ: INTC) is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. As a leader in corporate responsibility and sustainability, Intel also manufactures the world's first commercially available "conflict-free" microprocessors.¹ Additional information about Intel is available at newsroom.intel.com and blogs.intel.com and about Intel's conflict-free efforts at conflictfree.intel.com.



¹ Conflict-free" refers to products, suppliers, supply chains, smelters, and refiners that, based on our due diligence, do not contain or source tantalum, tin, tungsten or gold (referred to as "conflict minerals" by the U.S. Securities and Exchange Commission) that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo or adjoining countries.

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