NETWORK FUNCTIONS VIRTUALIZATION FOR SECURITY (NFV-S)

2014/03/03	Wedge Networks Whitepaper

(*This page intentionally left blank for presentation purposes*)

TABLE OF CONTENTS

TABLE OF FIGURES

INTRODUCTION

> **"Network Functions Virtualization will deliver many benefits for network operators and their partners and customers whilst offering the opportunity to create new types of ecosystems which will encourage and support rapid innovation with reduced cost and reduced risk."**
>
> **-NFV Introductory Whitepaper, "SDN and OpenFlow World Congress", Darmstadt, Germany**

The New Paradigm in Providing Network Security

Information security is mission critical for any organization. The rapid shift to cloud, mobility, and consumerization of IT has exposed many new security vulnerabilities, leading to another generation of even more sophisticated and severe security breaches. At the same time, security solutions have been slow to react to this fundamental change and often become unwieldy in today's networks. Many of which are composed of proprietary hardware appliances. locked into racks and difficult to change driving up both the CAPEX and OPEX and leaving networks exposed. Adding new network functions (security functions or other) typically entails the integration of more of these hardware appliances with space and power constraints becoming an increasing issue, along with time to market concerns for these new functions.

As a result, Network Operators are now endorsing Network Functions Virtualization (NFV) for the agility and adaptability to meet new service delivery requirements. However, current generations of network security functions virtualization are simply repackaged VM systems with third party pieces cobbled together in piecemeal fashion. They cannot satisfy the automation, scalability, and robustness of today's network security operations.

Network Functions Virtualization for Security (NFV-S) virtualizes the network and brings advanced network security capabilities into virtualized functions - all in a complete, standardized and elastic solution. It enables seamless automation and orchestration across multiple cloud platforms and unleashes untapped potential of network security functions that can scale up and down with network resources as required.
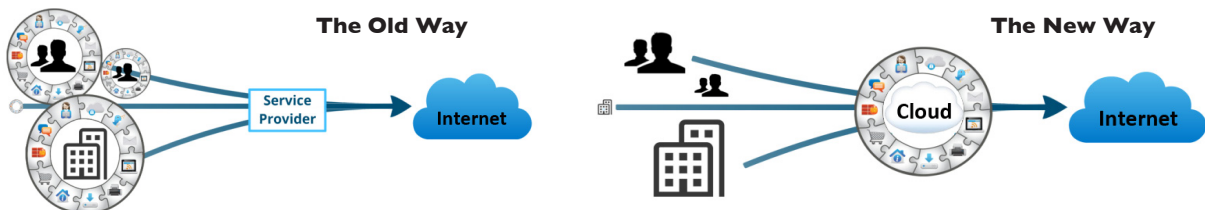

FIGURE 1: THE OLD WAY OF PROVIDING SERVICES VS. THE NEW WAY

The Benefits

NFV-S is a new approach through which Network Operators can quickly build, deploy and scale new network security services. It markedly reduces the typical lengthy timeframe to roll out innovative new services and provides the following benefits:

- **All-Software Platform** - Runs on standard of-the-shelf hardware without reliance on any specialized hardware ASICs or accelerators; doing away with the need for proprietary hardware appliances.

- **Elastic, Auto-Scaling Platform** - Built to utilize multi-threading functions, cloud infrastructure and virtualization. NFV-S can quickly, automatically and dynamically start new instances using the multi-cored or cloud capabilities of the underlying runtime environment. "Elastic" auto-scaling performance provides robustness and can use local resources or federated clouds, ensuring that network peaks are adequately handled.

- **Comprehensive Security Functions** - Powered by both a Patented Deep Content Inspection Engine and Deep Packet Inspection Engine, all current and future network security functions can be implemented with high performance and robustness. It is pre-bundled with a set of award winning security applications such as email security, web security, web application firewall, DLP, APT defense, content filtering, and mobile data security.

Wedge Networks Cloud Security Platform™: Network Security Services
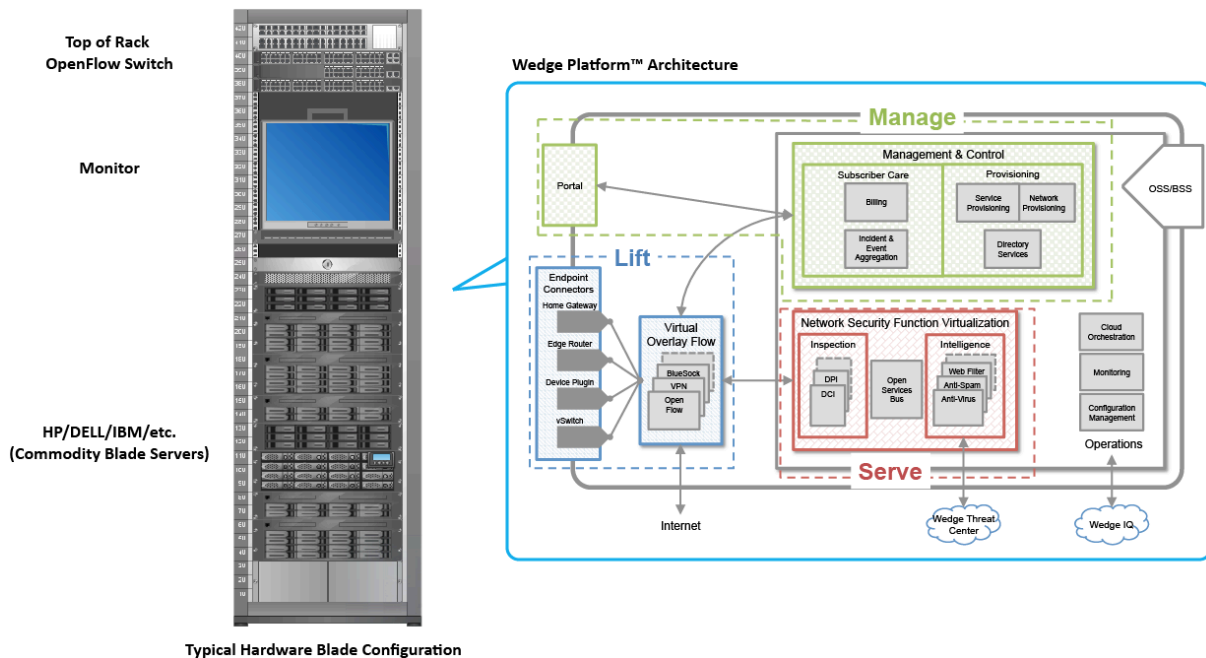

FIGURE 2: WEDGE NETWORKS CLOUD SECURITY PLATFORM™ ARCHITECTURE

The Wedge Networks Cloud Security Platform™ (hereinafter, Wedge Platform™), powered by the WedgeOS™, provides a smooth transition with automatic provisioning and dynamic service chaining in cloud environments that run on x86-based servers. Customers can "mix & match"

servers from different vendors and computation services from different cloud providers, allowing them to unleash the potential of the NFV-S enabled Wedge Platform™.

Expandable Platform – Future Services

Flow

Packet Header
Packet Body

Deep Packet Inspection

Anti Virus
Firewall
Server Protection
Application Control
…

Content

Reassemble MIME Object

Deep Content Inspection

Anti Virus
Anti Spam
Data Loss
Prevention
…

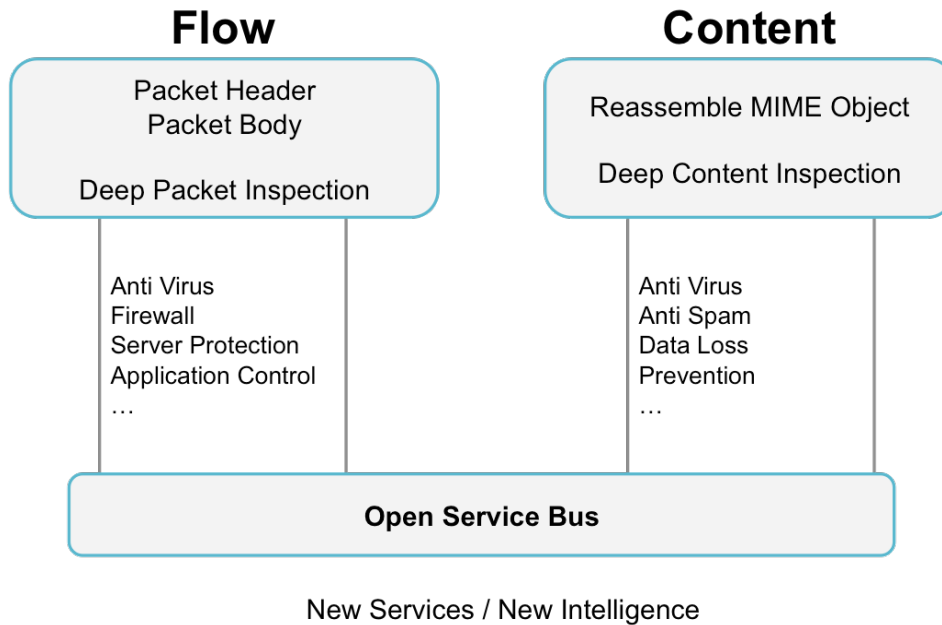**Open Service Bus**

New Services / New Intelligence

FIGURE 3: WEDGEOS™ OPEN SERVICE BUS™

With its Open Service Bus™ feature, WedgeOS™ provides standardized interfaces through which most existing network security functions can be easily plugged into, allowing provision of these services at the network layer. Standardization also enables future technologies and services to be integrated as they develop.

Built-In Market-Ready Security Services

Current security services available on the Wedge Platform™ are already deployed in both operator and enterprise environments. These include:

- Anti-Malware
- Anti-Spam
- Data Loss Prevention
- URL Filtering
- Mobile Devices Security
- Educational Institution Security
- IDS/IPS
- Web Application Firewall
- Next Generation Firewall
- Advanced Persistent Threats

ABOUT WEDGE NETWORKS™

Wedge Networks™ is transforming the way security is delivered. Powered by the innovative WedgeOS™ the Wedge Networks Cloud Security Platform™ is designed to combat the shifting threat landscape associated with the consumerization of IT. Unlike first generation security products, cloud-assisted appliances or even dedicated security clouds, the Wedge Platform™ enables inline inspection of both inbound and outbound traffic embedded within the cloud layer across all platforms and device types without latency. The Wedge Platform™ is deployed globally, delivering security protection for tens of millions of users in Fortune 500 companies, government agencies, Internet service providers, and across all industry verticals. Wedge Networks is headquartered in Calgary, Canada and has international offices in Sunnyvale, USA; Beijing, China; and Manama, Bahrain.

Contact Wedge Networks™

For more information

238, 3553-31 Street NW
Calgary, Alberta
Canada T2L 2K7
Office: (403) 276-5356
Fax: (403) 276-5568

Info@wedgenetworks.com