Distributed security for Software-Defined Networks
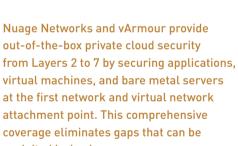
SOLUTION OVERVIEW

Virtualized network and security resources to enable secure, private clouds that deliver enduser flexibility

The Nuage Networks Virtualized Services Platform (VSP) and vArmour® solution delivers policy-driven networking and security with Layers 2 to 7 controls for maximum security with minimal operational overhead.
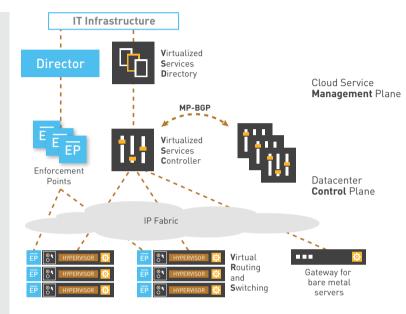
SOLUTION FOR

- Cloud and Application Service Providers with Internet-facing datacenters

- Enterprises having internal datacenters with connectivity to Virtual Private Networks (VPN)

- Telecommunications Service Providers offering clean Internet services

IT Infrastructure

Director

Virtualized **S**ervices **D**irectory

MP-BGP

Cloud Service **Management** Plane

Enforcement Points

Virtualized **S**ervices **C**ontroller

Datacenter **Control** Plane

IP Fabric

EP | HYPERVISOR
EP | HYPERVISOR
EP | HYPERVISOR

EP | HYPERVISOR
EP | HYPERVISOR
EP | HYPERVISOR

Virtual **R**outing and **S**witching

Gateway for bare metal servers

- Reduces risk by eliminating coverage gaps and reducing attack surfaces

- Maximizes asset value with a solution that works on top of your existing investments

- Addresses potential security incidents with the application of fully programmable security policies

< VA > vARMOUR

Nuage Networks and vArmour provide out-of-the-box private cloud security from Layers 2 to 7 by securing applications, virtual machines, and bare metal servers at the first network and virtual network attachment point. This comprehensive coverage eliminates gaps that can be exploited by hackers.

The joint solution offers advanced micro-segmentation and threat analytics. By abstracting networking from hardware, Nuage Networks provides a pool of network resources that can be segmented into logical groups and then protected with vArmour micro-segmentation policies. vArmour also provides application-layer visibility and threat analytics to deliver a comprehensive datacenter security solution.

The vArmour and Nuage Networks API-driven architecture can run across various physical, virtual and cloud environments, providing a single set of controls for hybrid environments, regardless of the underlying infrastructure.

End-users are demanding a self-service experience that is similar to what they experience in the public cloud and businesses want to benefit from cloud cost efficiencies. Nuage Networks enables full network controllability driven from the Cloud Management System, from a custom portal, or from an application. Automated policy provisioning from vArmour eliminates the security gap during resource provisioning and keeps IT in control of self-service approaches.

Solution features and benefits

Policy-driven controls. Nuage Networks and vArmour enable consistent, policy-driven networking with security controls that can easily scale out and operate independently on any infrastructure. These security policies can be tied to business-level logic and automated as part of real-time resource provisioning, even in self-service implementation models.

Micro-segmentation. Nuage Networks and vArmour provide micro-segmentation of datacenter and cloud assets from Layers 2 to 7. This ability to separate infrastructure topology from the security topology, allows workloads at different security levels to share common infrastructure. Each request to communicate (even between virtual machines on the same hypervisor), each packet, and each flow can be inspected.

Rich data context and analytics. Every network event, policy response, security event, workload communication and the resulting status data are stored and accessible in the Nuage Networks Hadoop® data store as well as vArmour Analytics. Leveraging this rich data store, vArmour Analytics or other reporting tools can evaluate network traffic and identify any suspicious activities that could indicate an attack.

Technology powers secure private clouds

Nuage Networks and vArmour are software-defined, vendor-agnostic systems that deliver networking and security resources as an on-demand private cloud. Both Nuage Networks Virtualized Services Platform and vArmour Distributed Security System are built on a three-tier architecture to support scale-out demands of dynamic cloud environments.

The joint Nuage Networks and vArmour solution can flex dynamically in response to orchestration from cloud platforms, such as OpenStack®. For example, when OpenStack requests a virtual machine be instantiated or undergo live migration, Nuage Networks VRS detects the event and automatically applies the relevant network policy as vArmour applies the appropriate security controls.

About Nuage Networks

Nuage Networks (www.nuagenetworks.net) brings a unique combination of groundbreaking technologies and unmatched networking expertise to the enterprise and telecommunications industries. The Silicon Valley-based business has applied radically new thinking to the problem of delivering massively scalable and highly programmable SDN solutions within and across the datacenter and out to the wide area network with the security and availability required by business-critical environments. Nuage Networks, backed by the rapidly growing IP/Optical Networks business of Nokia, has the pedigree to serve the needs of the world's biggest clouds. The cloud has made promises — the mission of Nuage Networks is to help you realize them.

Discover more at www.nuagenetworks.net/partners and follow us @nuagenetworks