Pensa Maestro: Virtual Lab-as-a-Service for agile SDN & NFV

## Pensa Networks Maestro Studio, assuring HP VAN SDN Controller-driven networks

Top three benefits of the solution

- Rapid service design, modeling, and deployment
- Build high-performing, resilient, and secure virtual networks
- Increased confidence by running what-if scenarios

"Pensa Networks provides a virtual Lab-as-a-Service to accelerate SDN and NFV adoption. Working with the HP VAN SDN Controller, we are able to deliver joint value to customers by offering an Infrastructure-as-Code experience, reducing risk and boosting confidence at deployment time."

– Ujwal Setlur, CEO, Pensa Networks

Figure 1. Virtual Lab-as-a-Service for design, validation, and deployment for next-generation virtual networks.

- Build high performing, resilient, and secure virtual networks
- Rapid service deployment
- Iterative scenario modeling, optimization and analysis
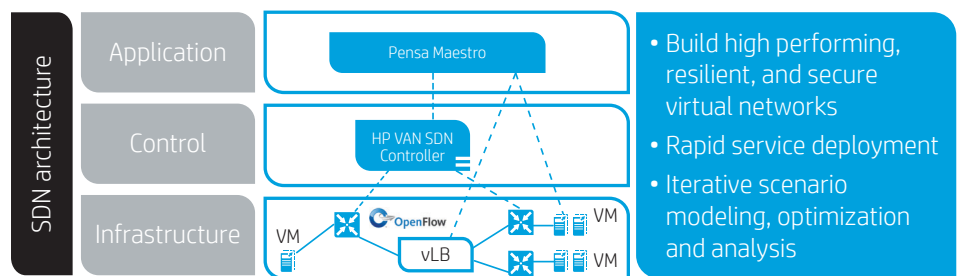
Soar higher with greater network efficiency

Pensa Networks aims to simplify and accelerate the adoption of NFV and SDN technologies.
Enterprises and service providers are rapidly moving their applications to virtualized cloud environments in order to remain agile, cost effective, and nimble. This is applying pressure on the underlying network infrastructure to match the expected agility and flexibility.

However, legacy network engineering tools and processes are fragmented and do not address the needs and opportunities of today's virtual environments. The result is an inability to rapidly operationalize a virtual network with high quality. This is a bottleneck to any agile continuous deployment model that is a necessity in cloud environments. Pensa Networks is focused on addressing this problem.

Pensa Networks delivers a suite of products that enable rapid design, validation, and deployment of virtual networks. This facilitates rapid cloud service deployments. Pensa Networks' Maestro Studio is a Net-DevOps solution that applies "Infrastructure-as-Code" principles to network engineering.

Pensa Networks' Maestro Studio reduces the time to deploy networks by ten to twenty times. This allows faster time-to-market and rapid service rollout. The Maestro Studio can be accessed either as a cloud-based service or deployed on premise.

The Maestro Studio aims to provide a design/validation environment for networks powered by SDN controllers such as the HP VAN SDN Controller. The Maestro Studio orchestrates physical and virtual resources to deploy the HP VAN SDN Controller, bring up virtual infrastructure, and then works in conjunction with the HP VAN SDN Controller to instantiate and validate virtual networks modeled by the user.

Why Pensa Networks and HP

The Pensa Networks virtual Lab-as-a-Service accelerates NFV and SDN adoption.

Enterprise and service provider customers are displaying strong interest in network virtualization. However, they face significant roadblocks, impeding the rapid adoption of SDN and NFV technologies.

One of the most widely recognized gaps relates to being able to stage and validate networks across various phases of adoption. Typical sandbox buildup-and-teardown cycles span months, and require significant investment in OPEX and CAPEX for creating new sandbox environments.

Pensa Networks is partnering with HP to provide a **hosted-sandbox capability** that allows customers to fully benefit from the growing set of Virtual Network Functions (VNFs) available in the HP SDN App Store. Further, Maestro Studio is designed with core network, DevOps principles allowing for "Infrastructure-as-Code" constructs to be designed, validated, and checked out for use in production environments.

HP Open-SDN architecture

The HP SDN architecture spans the infrastructure, control, and application software layers, making the network easier to manage with supreme agility.

The HP Virtual Application Network (VAN) SDN Controller

platform, paired with network infrastructure supporting the industry-standard OpenFlow protocol, provides centralized control of a programmable, end-to-end network. It is designed to dynamically adjust to your evolving business needs. The platform's reliability, consistent APIs, and rich features, empower applications such as Maestro Studio to deliver greater network efficiency, plus more advanced security, Quality of Service management, and rapid application or service delivery.

A closer look at the solution

The Maestro Studio consists of a Network Composer, Network Conductor, and Network Packager. A purpose-built **micro service architecture** enables each component across the suite to seamlessly communicate (via RESTful APIs), and also expose necessary data to be shared up to the GUI.

Pensa Networks is committed to integrating with best-of-breed ecosystem partners and is leveraging the HP VAN Controller for OpenFlow-based network topology, design, and sandbox build out.

Maestro Composer allows the easy graphical definition and topologies across multiple cloud environments and associated KPIs, SLAs, and policies. The Maestro Composer also does initial validation of the topology definition for policy and security violations and incorrect topology definitions.

Maestro Conductor instantiates the topology definition in a dynamic sandbox environment encompassing the specified cloud environments and exercises the network against specified KPIs and policies. The Maestro Conductor will also enable debugging of the sandbox network to visualize functional and performance problems in the network.

Maestro Packager combines the validated network topology, binaries, and metadata files for deployment along with BOM requirements of the desired network. It also integrates with deployment orchestrators by generating appropriate deployment recipes.

SDN: The game changer

Pensa Networks is built on the core premise that virtual networking presents a tectonic shift in the networking industry.

SDN and NFV fundamentally change the way enterprises and service providers are looking towards future proofing their investments in cloud computing and agile infrastructure.

DevOps is widely regarded as a recommended model for application development and deployment with the ability to implement continuous improvement. Internet companies like Google and Facebook are deploying new code into production several times every hour, and Netflix is using concepts like Chaos Monkey to validate their software in cloud environments.

Pensa Networks embodies this DevOps model by providing a virtual Lab-as-a-Service that allows these concepts to be translated to the infrastructure tier, truly embodying the vision of "Infrastructure-as-Code".

Summary

Pensa Networks offers a virtual Lab-as-a-Service that offers HP VAN SDN Controller and HP SDN App Store customers a simplified, on-demand approach to explore SDN architectures, design virtual network topologies, and evaluate the growing portfolio of VNF partners that are continuously being added to the HP SDN App Store.

By collaborating with trusted IT brands like HP, Pensa Networks aims to enable enterprises and service providers to embark on their SDN journey by leveraging a plethora of innovative features offered via a trusted, hosted-sandbox environment that offers a suite of innovative role-based capabilities.

Contact
sdnalliancesteam@hp.com
info@pensanetworks.com

Learn more at
hp.com/sdn
pensanetworks.com

This is an HP Indigo digital print.