VMware vCloud NFV

**AT A GLANCE**

VMware vCloud™ NFV™, VMware’s flagship solution for NFV, is an ETSI compliant Network Functions Virtualization (NFV) platform for Communication Service Providers (CSPs) looking to radically reduce cost and increase service agility through a vSphere cloud-based network deployment.

The vCloud NFV platform enables a modular approach to NFV-based service delivery that is proven in production with CSPs globally, delivering the shortest time to value while ensuring investment protection.

**KEY BENEFITS**

- **Efficiency**: vCloud NFV a true multi-vendor cloud platform provides proven operational tools and capabilities that enable CSPs to rapidly provision secure, multi-tenant cloud infrastructures which minimize time-to-market of new service delivery from months to days using NFV principals.

- **Proven in Production**: vCloud NFV is an ETSI compliant NFV platform built on the industry’s leading server virtualization platform providing the broadest set of supported VNFs and orchestration solutions proven in production today.

- **Unified Cloud Platform**: vCloud NFV platform integrates with existing VMware IT cloud platforms, providing CSPs the benefits of IT experiences to build and manage commercial scale Telco clouds. This enables faster and smoother implementation, lowering operational overhead and ongoing management of converged IT and Telco clouds.

- **Carrier Grade**: vCloud NFV platform provides rich operations visibility, analysis, logging and notification capabilities at all layers of the NFVI across physical, virtual and cloud environments with unparalleled intelligent performance, fault, capacity and configuration management capabilities to improve reliability, availability, and serviceability of multi-tenant, telco cloud environments.

**Note**: vCloud NFV cloud management components vCloud Director for Service Providers, and VMware Integrated OpenStack were specifically designed and packaged for use with vSphere Telco NFV cloud environments. vRealize Operations Insight can be extended to include bare-metal and multi-hypervisor environments.

**VMware vCloud NFV Overview**

VMware vCloud NFV is a platform that enables CSPs to build and manage a vSphere-based telco cloud bringing together the core virtualization and management components required to accelerate NFV infrastructure deployment. vCloud NFV brings together the core virtualization and management components required to accelerate NFV infrastructure deployment. It does this by assembling an integrated set of products, engineered to work better together, which provide (1) an out-of-box secure, multi-tenancy Telco cloud, (2) industry-leading high availability and resiliency platform to support Virtual Network Functions at any stage of evolution to cloud, and (3) support for the broadest range of validated and certified Virtual Network Functions, including traditional and cloud-native scale out applications.

vCloud NFV standard bundle features the newest releases of VMware’s production-proven solutions for Network Functions Virtualization Infrastructure (NFVI) and Virtual Infrastructure Management (VIM), as well as advanced capabilities for service assurance to include:

**Infrastructure platform**

- **VMware vSphere**: VMware’s industry-defining virtualization solution is the only solution that supports more than 40 different virtual network functions (VNFs) from more than 30 vendors on a single platform. VMware vSphere 6, drives higher performance, scale and availability of mobility and fixed line services in the cloud.
VMware Virtual SAN™: Virtual SAN delivers better performance than a virtual appliance or external device needed by CSP network functions and services. CSPs can trust Virtual SAN to provide performance, advanced availability and management capabilities all fully integrated into the VMware stack to support the most demanding mobile core and IMS functions and services.

Cloud Management Platform
VMware provides flexible options for customers’ current and future needs through VMware vCloud Director-Service Provider and VMware Integrated OpenStack 2.

- **VMware vCloud Director® for Service Providers:** vCloud Director for Service Providers (VCD-SP) is the only secure, multi-tenant solution in the market today to address CSP commercial-scale deployments. CSPs have been deploying production Telco clouds based on vCloud Director while in parallel developing open source platforms such as OpenStack via OPNFV and ETSI NFV initiatives to speed service time-to-market objectives. VCD-SP’s latest release takes another step forward addressing Telco NFV needs through several key features such as (1) VDC templates enabling self-service provisioning of organization (tenant) VDCs, (2) vApp enhancements to support reconfiguring VNF component virtual machines within a vApp during vApp instantiation, (3) Tenant throttling to ensure fairness of execution and scheduling among tenants in a single instance of vCloud Director.

- **VMware Integrated OpenStack:** VMware Integrated OpenStack 2 is based on OpenStack Kilo, and includes an industry-first seamless upgrade capability. VMware Integrated OpenStack includes load-balancing as a service (LBaaS), Ceilometer and Heat AutoScaling to make VMware-based OpenStack clouds more scalable, performant and resilient. Heat AutoScaling enables VNF vendors (tenants) to automate scaling of VNF components through standard OpenStack REST-based northbound notifications.

This will enable development teams to address unpredictable changes in demand for the Telco network services adhering to service assurance SLAs. Combining Ceilometer to provide alerts and triggers, Heat to orchestrate the creation or deletion of scale out VNF components and LBaaS to provide load balancing of the instantiated VNF components, VMware Integrated OpenStack 2 takes a huge step forward in addressing Telco NFV needs. For CSPs concerned with VNF component placement and QoS in a shared cloud environment, VMware Integrated OpenStack 2 supports vSphere reservations/limits for unparalleled QoS and guided placement of VMs (affinity / anti-affinity). This helps ensure guaranteed performance of critical mobile core functions to meet service-assurance SLAs. Placement ensures that carrier grade availability of network functions and services can meet service assurance SLAs.

Service Assurance with Day 2 Operations Solutions

- **VMware vRealize® Operations Insight™ and vSphere with Operations Management™:** With VMware vRealize Operations Insight and vSphere with Operations Management, VMware empowers CSPs with a portfolio of fully integrated and unified operations tools to deliver ongoing service assurance for multi-tenant network functions. VMware Cloud Management solutions ensure Quality of Experience (QoE) equivalence of today’s service assurance solutions without the cost and complexity of silo solutions, while ensuring end subscriber stickiness and ultimately driving increased revenues.

Enable the complete vCloud NFV solution offer with additional SDDC Solutions

- **VMware NSX®:** VMware NSX, the industry’s leading network virtualization platform, rounds out VMware’s software-defined data center (SDDC), which combines server virtualization and storage virtualization for vSphere-based cloud environments providing critical L2/L3 software services. VMware NSX enables CSPs to realize the benefits of server virtualization for the entire data center / central office construct.

- **VMware Site Recovery Manager™:** VMware Site Recovery Manager is an industry-leading, proven disaster recovery and business continuity product with thousands of customers spanning all industries, geos and segments, including Telco NFV.

How to Buy
vCloud NFV bundle runs on the broadest set of x86-based platforms, and includes carrier-grade managed support services to meet the most demanding commercial-scale deployments. VMware vCloud NFV enables CSPs to deploy a horizontal, secure multi-vendor NFV platform that supports any application at all stages of NFV cloud evolution with a single purchase. vCloud NFV bundle is designed for vSphere environments and available today as a single bundle option.
Find Out More

For information on VMware vCloud NFV™, call 1-877-VMWARE (outside North America, dial +1-650-427-5000), visit http://www.vmware.com/products/industry/telco.

Support

VMware offers global subscription and support (SnS) services to all VMware customers. VMware Mission Critical Support (MCS) is required and sold separately upon vCloud NFV production deployment to provide carrier grade level support and services. VMware also offers professional services engagements on best practices and getting started with your deployment, both directly and through an extensive network of certified professionals.

http://www.vmware.com/services/