VMWARE INTEGRATED OPENSTACK CARRIER EDITION

The fastest and most reliable path to
Carrier-Grade NFV services on OpenStack

VMware Integrated OpenStack – Carrier Edition Overview

OpenStack is playing an important role in CSP business transformation as carriers look for a reliable, open NFV platform to manage their cloud infrastructure and drive revenue through new business models and communication services. However, as CSPs strive to make speed and scale of deployment their key differentiators, they are often exposed to the complexity, hidden costs, inconsistent tooling, and lack of carrier-grade support characteristic of several OpenStack implementations.
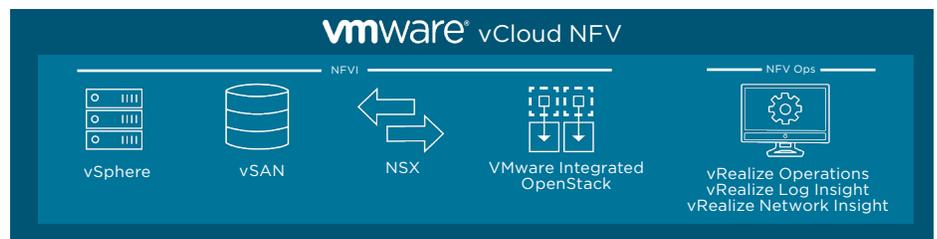

Figure 1. VMware vCloud NFV OpenStack Edition

VMware Integrated OpenStack – Carrier Edition, the latest release of VMware's OpenStack distribution, is based on the OpenStack Queens release and introduces several new features to help CSPs simplify, scale, and secure production OpenStack environments. Through open, vendor-neutral API access to VMware's industry-leading virtualized infrastructure, CSPs have a proven, high-performance platform based on an open architecture to accelerate production network functions virtualization (NFV) workload deployment and service innovation.

Accelerate and Simplify Your Path to OpenStack for NFV

As a significant contributor to OpenStack and many other open source projects, VMware is committed to integrating OpenStack capabilities into its core NFV platform. VMware Integrated OpenStack enables easy deployment, upgrades, and operation of an OpenStack cloud on a robust VMware NFVI platform while utilizing open source software and standard APIs, offering several benefits to CSPs:

Simplified OpenStack installation and deployment – VMware Integrated OpenStack provides the fastest path to a fully operational OpenStack environment. Using templated install and deployment as a downloaded application within the VMware vSphere® web client, a production-grade OpenStack infrastructure can be easily deployed.

Seamless and hitless OpenStack upgrades – The separation of control plane and data plane in VMware Integrated OpenStack offers hitless upgrades and patch updates with VMware vCenter® maintenance mode providing network service continuity during maintenance cycles.

Simplified operations – vCloud NFV delivers unique NFVI operational automation with 360-degree visibility, proactive and predictive analytics, issue isolation, root cause analysis, and fast remediation. VMware vRealize Operations Manager, vRealize Log Insight, and vRealize Network Insight are fully integrated within vCloud NFV and provide real-time operations monitoring, analytics, and remediation from a single pane of glass, further reducing operational costs.

VMware Integrated OpenStack - Carrier Edition: Carrier-Grade Infrastructure for CSPs

VMware Integrated OpenStack – Carrier Edition is a 2018.02 compliant OpenStack distribution that implements a standard OpenStack northbound interface and APIs, along with out-of-the-box integration with VMware Software Defined Data Center infrastructure components.
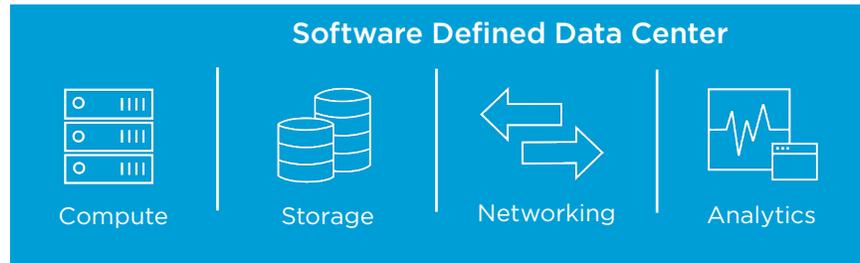
AUTOMATION, PERFORMANCE, SCALE, AND SIMPLICITY FOR NFV OPENSTACK DEPLOYMENTS

Accelerated Data Plane Performance: Achieve significant improvements in application response time, reduce network latency, and breakthrough network performance via support of NSX Managed Virtual Distributed Switch in Enhanced Data Path mode and DPDK as well as optimized data plane techniques in VMware vSphere.

Elastic Multi-Tenant Resource Scaling: Provide resource guarantees and isolation so that other tenants can neither consume from, nor access, a given resource pool. Elastic resource scaling enables CSPs to add resources dynamically across different vSphere clusters to adapt to traffic conditions or transition from pilot to production in place. This enables CSPs to isolate one type of workload/VNF from another, as well as maintain resource availability as load increases.

OpenStack "In a Box" for 5G and Edge Computing: Leverage a small footprint and highly resilient micro data center form factor that enables deployment "in a box" for 5G and edge computing. CSPs have full control over these micro data centers and apps at the edge via API-driven orchestration and lifecycle management. The solution helps CSPs tackle Telco-oriented use cases such Multi-Access Edge Computing (MEC), latency sensitivity VNF deployments, and operational support systems (OSS).

Self-Driving Operations and Service Assurance: Achieve 360-degree visibility with real-time insights, root cause analysis and remediation for OpenStack environments. Leverage advanced workload analytics, predictive resource scheduling and balancing, and high-scale monitoring for VMs and containers across a single virtualized infrastructure manager (VIM). Out-of-the-box VMware vRealize Operations, vRealize Log Insight, and vRealize Business for Cloud integrations provide faster and easier monitoring, troubleshooting, and cost visibility of your OpenStack cloud.

Cloud-Native Application Support: Run contanter-based VNFs on OpenStack through integrated container orchestration and management support, enabling VM and container-based VNFs to run from a single Virtual Infrastructure Manager.
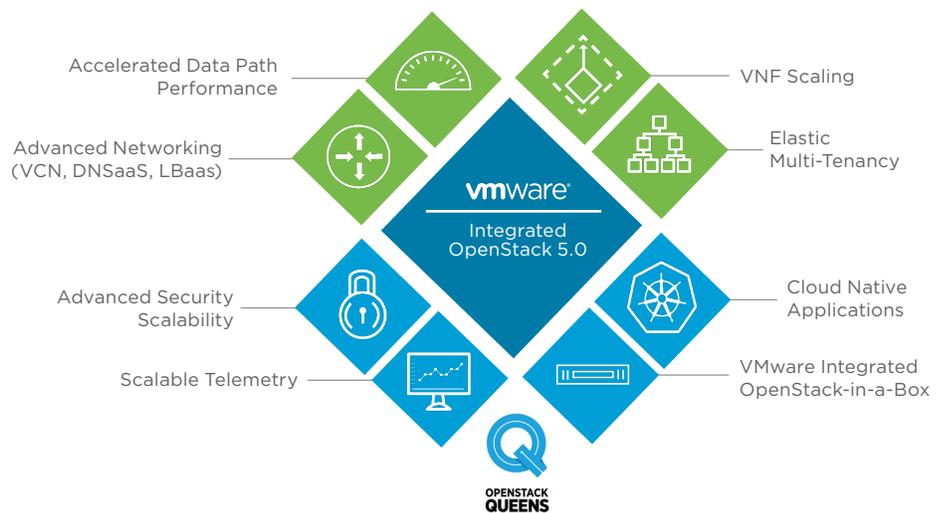
ENHANCED SCALE, AVAILABILITY AND SECURITY

VMware Integrated OpenStack – Carrier Edition enables CSPs to make the most of advancements in Queens to support mission-critical workloads across container and cloud-native application environments. VMware has added significant development to VMware Integrated OpenStack on top of what is delivered via the Queens release:

Massive Scale: VMware Integrated OpenStack has been validated to run on at least 500 hosts and 15,000 VMs in a single region with support for multiple regions at once with monitoring and metrics at scale leveraging Gnocchi, Panko, and Aodh.

High Availability for Mission-Critical Workloads: Create snapshots, clones and backups of attached volumes to dramatically improve VM and application uptime via enhancements to the Cinder volume driver.

Unified Virtualized Environment: Deploy both VM and container workloads on a single virtualized infrastructure manager (VIM) and with a single network fabric based on VMware NSX-T Data Center. The architecture allows CSPs to seamlessly deploy hybrid workloads where some components run in containers and others in VMs.

HOW TO BUY

The VMware vCloud NFV bundle runs on a broad set of x86-based platforms, and includes carrier-grade support services for commercial-scale deployments. With a single purchase, CSPs can deploy an NFV platform that supports applications at all stages of NFV evolution. vCloud NFV is designed for vSphere environments and available as a single bundle.

CARRIER-GRADE SUPPORT

VMware offers a broad spectrum of support options, ranging from self-help and basic support to business and mission critical offerings, including:

- Add-on services to Production Support
- New SLAs for service restoration of NFV platform
- MCS SLAs for enterprise environments
- Dedicated support teams, 24/7
- Dedicated Service Account Manager
- Enhanced proactive and reactive support
- Limited onsite support as required, or option to purchase on-site resident assistance

Advanced Security: Consolidate and simplify user and role management based on enhancements to Keystone, including the use of application credentials and system role assignment. Enhanced security in VMware Integrated OpenStack includes encryption of internal API traffic, Keystone to Keystone federation, and support for major identity management providers including VMware Identity Manager.

Optimized DNS Services: Experience scalable, on-demand DNS as a Service via Designate. Delegated control allows tenants to auto-register VMs or Virtual Network Functions (VNFs) with a corporate DNS server instead of manually registering newly provisioned hosts through Designate.

Improved User Interface: Simplify multi-tier and L3 routed network implementations using the latest Horizon dashboard. Managing NAT on the OpenStack NSX tenant router and associating with Neutron availability zones directly from the Horizon user interface allows developers to tailor the network to fit their apps.

STREAMLINED DEPLOYMENT AND OPERATIONS

Complete Support for Core OpenStack services – Get support for Nova, Neutron, Cinder, Glance, Horizon, Keystone, Heat, Ceilometer, and Designate.

vSphere Web Client-based Deployment – Deploy VMware Integrated OpenStack with an OVA file using the vSphere Web Client. The vSphere Web Client then deploys all the virtual machines (VMs) and components needed to create a highly available, production-ready OpenStack cloud in a few simple steps.

Patching and Upgrade – VMware Integrated OpenStack employs a blue-green upgrade model that allows administrators to easily perform patching and upgrades, as well as rollbacks, with minimal disruption to the OpenStack infrastructure or the applications running on it.

Backup and Restore – Back up and restore OpenStack services and configuration data.

Auto Scaling – Set up metrics to scale up or down application components. Development teams can address unpredictable changes in demand for app services. Ceilometer provides the alarms and triggers, Heat orchestrates the creation (or deletion) of scale-out components, and load balancer as a service (LBaaS) provides load balancing for the scale-out components.

Live VM Resize – Respond quickly to changing business needs by dynamically changing CPU, memory, and disk size of a running VM instance without powering down.

Import Existing VM Templates and Workloads – Quickly leverage existing vSphere templates and workloads, and start managing them via standard OpenStack APIs.

LEARN MORE

For additional information about VMware vCloud NFV, call 1-877-VMWARE (outside North America, dial +1-650-427-5000), visit http://vmware.com/go/nfv.

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