

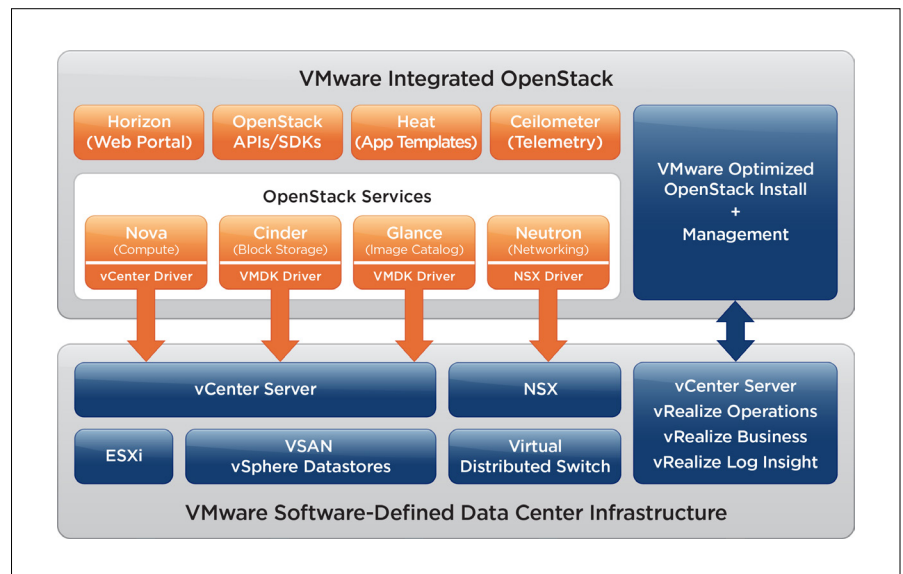
# VMWARE INTEGRATED OpenStack

## AT A GLANCE

VMware Integrated OpenStack is a VMware-supported OpenStack distribution (distro) that makes it easier for IT to run a production-grade OpenStack-based deployment on top of their existing VMware infrastructure. Building on their existing expertise, VMware administrators can foster innovation and agility by providing their developers with simple vendor-neutral OpenStack APIs on top of VMware's best-of-breed Software-Defined Data Center (SDDC) infrastructure. Key administration capabilities, including install, upgrade, troubleshooting, and cost-visibility are provided via deep integration with already familiar VMware management tools, enabling fast time to innovation and lower total cost of ownership.

## KEY BENEFITS

- OpenStack Powered Platform Certified (DefCore 2016.01 and 2015.07)
- Enterprise Grade OpenStack Cloud
- No OpenStack PhD Required!
- Simplified OpenStack Operations
- Single Vendor Support
- Free for all VMware vSphere® Enterprise Plus customers, including vSphere with Operations Management™ Enterprise Plus and vCloud Suite® customers



## Key Features of VMware Integrated OpenStack

### Foster Innovation and agility for application development teams

- **OpenStack APIs:** Whether you are transitioning to a DevOps-centric agile product development methodology or building cloud-native applications, foster innovation and agility by providing developers with OpenStack APIs on top of VMware's best-of-breed SDDC infrastructure.

### Streamlined Deployment and Upgrade

- **Complete support for core OpenStack services:** Nova, Neutron, Cinder, Glance, Horizon, Keystone Heat and Ceilometer.
- **vSphere Web Client Based Deployment:** VMware Integrated OpenStack is a downloaded virtual appliance that is deployed using the vSphere Web Client. The vSphere Web Client then deploys all the VMs and components needed to create a highly available, production grade OpenStack infrastructure in a few simple steps.
- **Patching and Upgrade:** VMware Integrated OpenStack includes a patching mechanism that allows administrators to easily perform patching and upgrades with minimum disruption to the OpenStack infrastructure.
- **Backup and Restore:** Backup and restore your OpenStack services and configuration data.
- **Auto Scaling:** Users can 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 LBaaS provide load balancing for the scale out components.

**LEVERAGE VMWARE'S BEST-OF-BREED SDDC INFRASTRUCTURE**

Reliability, Performance, Security, Scale, OpEx/CapEx Reduction

**vSphere for Nova Compute**

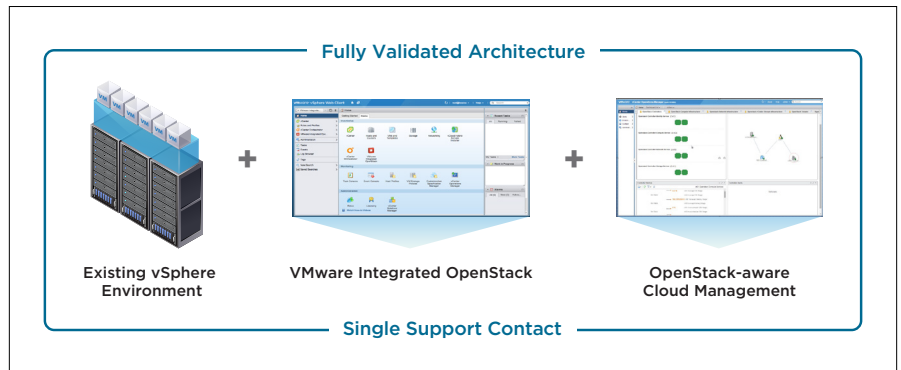
- Industry standard for security, stability and reliability
- Lower CapEx from server savings with higher VM density.
- Lower OpEx from advanced management and operation features (vMotion, DRS, HA, and more)

**NSX for Neutron Networking**

- Advanced Security and Multi-Tenancy (Micro-Segmentation, Overlay)
- Advanced NW services with massive scale & throughput (Switching, Routing, Security, Load Balancing, QoS, HA)
- Integration with third-party network services providers

**vSphere Storage/Virtual SAN for Cinder/Glance**

- Works with any vSphere validated storage (Largest HCL in the industry)
- Advanced Storage Policies with VMware Virtual SAN™
- Leverage Commodity Hypervisor-Converged Storage Nodes with Virtual SAN



- **LBaaS:** Load Balancing as a service supported via Neutron by leveraging VMware NSX®.
- **Leverage the Complete VMware Ecosystem:** VMware Integrated OpenStack can be deployed on any vSphere supported hardware. VMware Integrated OpenStack leverages any storage solutions supported by vSphere through vSphere datastores to implement Cinder and Glance, the OpenStack block and image storage services.
- **Import Existing VM Templates and Workloads:** Quickly leverage existing vSphere templates and workloads and start managing them via standard OpenStack APIs.

**Optimized for the Software Defined Data Center**

- **vSphere:** VMware Integrated OpenStack leverages enterprise grade vSphere features such as Dynamic Resource Scheduling (DRS) and Storage DRS™, through Nova - the OpenStack compute service, to achieve optimal VM density. Features such as HA and vMotion are used to protect tenant workloads against failures.
- **NSX:** VMware NSX provides a highly scalable network virtualization solution with rich features such as private networks, floating IPs, logical routing and security groups that can be consumed through Neutron - the OpenStack networking service.
- **Neutron Layer 2 Gateway Support:** Layer 2 gateway services available via Neutron allow virtual networks to be bridged to any physical network environment. This integration provides a unified user experience and the ability to seamlessly integrate with any cloud management platform.
- **Optimized for NFV:** Support for NFV workloads with features such as per-tenant capacity subscription, fine grained instance performance tuning and SR-IOV, you can pre-assign capacity subscriptions for tenants ensuring that capacity is guaranteed for consumers regardless of defined quotas.
- **Virtual SAN:** Virtual SAN uses server disks and flash to create radically simple, high performance, resilient shared storage for your virtual machines using x86 servers. The scale-out architecture drastically lowers your overall storage TCO while enabling administrators to specify storage attributes such as capacity, performance, and availability in the form of simple policies on a per-VM basis. Virtual SAN features are provided through Cinder and Glance, the OpenStack block and image storage services.

## HOW TO BUY

VMware Integrated OpenStack is available for use, free of charge, with vCloud Suite (all editions), vSphere with Operations Management Enterprise Plus, vSphere Enterprise Plus, and NSX Advanced with vSphere Standard.

**Available on EMC (Federation) Enterprise Hybrid Cloud and EVO Rack:** VMware Integrated OpenStack is now available on Enterprise Hybrid Cloud (V3.5), and VMware EVO:Rack™ (VMware Hyper-Converged Infrastructure solution).

**Available through our VMware vCloud® Air™ Network Partners:** Customers can now use OpenStack on top of VMware through any of the service providers in our vCloud Air Partner Network

Production-level technical support for VMware Integrated OpenStack including the OpenStack open source code is optional and can be purchased separately.

Visit: [vmware.com/go/openstack](http://vmware.com/go/openstack)

## Integrated Operation and Management

- **Built-in CLI tools:** Troubleshooting and monitor your OpenStack deployment and the status of OpenStack services.
- **Simplified Configuration and Operation:** Pre-defined workflows automate common OpenStack operations such as adding/removing capacity, configuration changes, and patching.
- **Integrated Monitoring and Troubleshooting Tools:** Out-of-the-box VMware vRealize® Operations™, vRealize Log Insight™, and vRealize Business™ for Cloud integrations can provide faster and easier monitoring, troubleshooting, and cost visibility of your OpenStack infrastructure.

## Compact Management Control Plane

- **HA Mode:** Optimized architecture requires fewer hardware resources but still provides production-ready resilience, scale and performance as previous releases.
- **Compact Mode:** Looking to evaluate OpenStack or build a small OpenStack cloud for branch locations quickly and cost effectively The compact architecture mode dramatically reduces the infrastructure footprint to two VMs, saving resource costs and overall operational complexity.

## Single Support Contact

- World-Class VMware support is provided for both OpenStack and the underlying VMware infrastructure\*.

*\*Support for VMware Integrated OpenStack is optional and can be purchased separately.*

