SUSE® Cloud: Bridging OpenStack and VMware

SUSE® Cloud is the original enterprise-ready OpenStack distribution for building Infrastructure-as-a-Service private clouds, and VMware vSphere is the industry’s leading and most reliable virtualization and cloud computing platform. Together, VMware and SUSE enable customers to use OpenStack as a cloud management platform on top of a VMware vSphere compute and storage infrastructure.

A Closer Look: SUSE Cloud, OpenStack and VMware vSphere

SUSE Cloud enables enterprises to rapidly deploy and easily manage OpenStack-based Infrastructure-as-a-Service (IaaS) private clouds. OpenStack is the premier open source cloud computing project and has built a broad ecosystem of IT industry participants and contributors. Its mission is to provide an open, scalable cloud management platform (CMP) for building public and private clouds. It is designed to provide IaaS capabilities on top of a diverse collection of hardware and software infrastructure technologies.

VMware vSphere is the industry’s leading and most reliable virtualization and cloud computing platform. VMware vSphere simplifies IT by separating applications and operating systems (OSs) from the underlying hardware. Existing applications receive dedicated resources, but servers can be centrally managed and monitored as a pool of shared resources that can be offered as a service to application infrastructure consumers.

VMware vSphere enhances an OpenStack environment. Many VMware vSphere features facilitate the implementation of OpenStack by simplifying configuration and reducing the number of steps required to provide resources. The capabilities of the VMware vSphere platform are exposed to OpenStack using drivers that map OpenStack requests into equivalents that VMware solutions can interpret. VMware provides these drivers to the OpenStack community free of charge, and these drivers are fully supported as part of SUSE Cloud.

VMware and OpenStack Working Together

Some believe that a choice must be made to use either VMware products or OpenStack, but this is not the case. In fact, VMware compute, networking and storage technologies bring unique capabilities to OpenStack cloud deployments. VMware’s contributions to the OpenStack project include:

- **OpenStack Compute (Nova)** — Improved VMware vSphere support in OpenStack Compute, expanded to include config-drive, boot from volume, additional disk types, VNC console, instance snapshot and more.
- **OpenStack Networking (Neutron)** — OpenStack Networking supports VMware NSX network virtualization, including in-kernel virtual switch in VMware vSphere 5.5, load-balancing (LBaaS) and stateful firewall (FWaaS).
**SUSE Cloud Support for VMware OpenStack Integrations**

OpenStack Block Storage (Cinder)—VMDK driver for OpenStack Block Storage allows OpenStack clouds to take advantage of VMware Virtual SAN—VMware’s new software-defined storage solution that creates a distributed shared datastore from locally attached disks—as well as all VMware vSphere supported storage arrays.

SUSE Cloud offers full support for OpenStack’s integration with VMware environments through VMware vCenter. VMware vCenter continues the management of the VMware virtual environment while SUSE Cloud manages the overall activities of the private cloud. Just as VMware vSphere provides high availability (HA) for the virtual infrastructure, SUSE Cloud can be configured to provide HA for the OpenStack control plane. This operating framework allows IT departments to maximize the investment in their current VMware virtualized environments and skills as they transition to an OpenStack-based private cloud.

SUSE Cloud delivers a rock-solid OpenStack distribution that can be rapidly deployed and easily managed through the SUSE Cloud Administration Server. The SUSE Cloud Administration Server automates the connection between SUSE Cloud and a VMware environment, reducing set-up time and increasing the productivity of IT operations and the users of the private cloud. The seamless integration between SUSE Cloud and VMware ensures enterprises deploying a private cloud using SUSE Cloud can take advantage of the best-in-class capabilities and innovations of VMware and OpenStack while maintaining flexibility in the design and use of their private cloud.