SGI® SUSE® Data Sheet

SGI® SUSE® OpenStack Cloud Reference Architecture

Overview

SGI + SUSE OpenStack Cloud Reference Architecture helps an organization's IT professionals create and deploy an on-premise private cloud instance that is contained within its own network space, using computing and storage resources under its direct control. The Reference Architecture provides guidance for integrating SGI Rackable scale-out servers or (optional) SGI UV specialized scale-up computing hardware with SUSE OpenStack Cloud software. Following these recommendations and best practices allows organizations to quickly and confidently deploy the required infrastructure that yields a secure, scalable, performant and highly available private cloud instance for High-Performance Computing (HPC) workloads, including testing, development or production usage scenarios.

Key Features and Benefits

The SGI + SUSE OpenStack Cloud Reference Architecture is the only current OpenStack Reference Architecture specifically designed to meet the needs of HPC workloads. The Reference Architecture explains how—through integrated, open source software frameworks like OpenStack—enterprises can establish an infrastructure-as-a-service (IaaS) private cloud that delivers on-demand access to pools of compute, storage and networking resources for use within their organization.

The Reference Architecture includes guidance on preparing the cloud infrastructure, setting up solution components, and operational advice and references. Considerations for preparing infrastructure include networking, computing and storage platform, and software components. Solution component guidance includes setup and configuration of SUSE OpenStack Cloud Administration Server, SUSE OpenStack Cloud Control Nodes and SUSE OpenStack Cloud Compute Nodes. Detailed operational guidance includes references and samples for testing and managing the private cloud.

Planning ahead

To prepare for a private-cloud deployment, organizations have to consider the following:

- Facilities, including heating, ventilation and air conditioning (HVAC) and power requirements.

- Networking, including specific recommendations for the networking topology often used in HPC environments and equipment that meets both scale and performance requirements.

- Computing and storage platform that can specifically fulfill needs for various roles.

- Software components, including an enterprise-grade implementation of cloud components and other tools necessary for a complete private cloud implementation.

The Reference Architecture recommends the use of SGI Rackable servers or, optionally, SGI UV specialized scale-up computing hardware combined with SUSE OpenStack Cloud to meet these needs. The document provides processes and settings along with design considerations.

Successfully deploying solution components

The Reference Architecture guides IT professionals through the deployment along traditional disciplines of networking, systems and software. It provides settings needed to accomplish design goals. To ensure success, processes for setting up and configuring applicable settings are included for the following components:

- SGI Rackable servers or specialized SG UV scale-up computing hardware (optional)

- SUSE OpenStack Cloud Administration Server

- SUSE OpenStack Cloud Control Nodes

- SUSE OpenStack Cloud Compute Nodes

Operational advice and references

After following the advice in the Reference Architecture, IT professionals can immediately begin using the private cloud instance, including uploading images for deployment, launching workloads and manipulating data volumes. They can also perform a basic functionality and API test of the overall installation. The Reference Architecture also includes a list of all products and configurations needed for the private cloud deployment. In addition, it provides a Crowbar batch export of the deployed instance, showing the nodes and the roles deployed.

About SGI

SGI is a global leader in high performance solutions for compute, data analytics and data management that enable customers to accelerate time to discovery, innovation and profitability.

About SUSE

Founded in 1992, SUSE is the world's first provider of an Enterprise Linux distribution. Today, thousands of businesses worldwide rely on SUSE for their mission-critical computing and IT management needs.

For More Information

Please contact an SGI sales representative at 1-800-800-7441 or visit www.sgi.com. Or, contact SUSE sales at 800-796-3700 U.S./Canada and 801-861-4500 Worldwide.