A Scalable Turn-Key OpenStack® Solution With An Extensible Virtual Network Infrastructure

Joint Solution Brief

Introduction

PLUMgrid Open Networking Suite (ONS) for OpenStack with Piston CloudOS + Piston OpenStack delivers a scalable turn-key OpenStack based infrastructure solution for web-scale private/public cloud, Communication as a Service (CaaS) and ITaaS solutions. Our joint solution is a simplified OpenStack deployment model that removes physical fabric dependencies and provides best-of-breed networking, storage and compute virtualization through the OpenStack interfaces.

Piston CloudOS + Piston OpenStack with PLUMgrid ONS for OpenStack

In legacy datacenter networking, compute, and storage resources are built as discrete silos, which cause performance bottlenecks, scalability issues, and disruptive downtime. Piston CloudOS + Piston OpenStack with PLUMgrid ONS for OpenStack solves these issues with a software-based cloud architecture that enables scalability, performance monitoring, automation, and zero downtime for your infrastructure.

PLUMgrid ONS with Piston CloudOS + Piston OpenStack provides the distributed architecture that scales across multi-racks and geographically distributed OpenStack deployments. High availability features of joint solution ensures maximum service uptime while minimizing downtime during maintenance or software upgrade windows. The joint solution also addresses the limited virtual networking capabilities in the default OpenStack networking by providing a comprehensive suite of production-grade, fully resilient distributed virtual network functions ranging from L2 to L3 services, NAT, Security Policies and DHCP/DNS services allowing you to offer a broad array of advanced services to your end-users. The joint solution further takes advantage of commodity x86 hardware to lower the total cost of your datacenter.

Increased Control

- Storage profiles
- Virtual Domains
- Simplified and secure isolation

High Availability

- Zero downtime
- Complete network services
- Distributed network functions

Scale-Out

- No VLANs, no agents, no OpenFlow
- Add storage, network, and compute on-demand
- Seamless multi-rack deployment
Piston CloudOS + Piston OpenStack Software

Piston CloudOS is a multi-server operating system that delivers elastic and highly-available resources to support agile applications. Piston OpenStack is the industry’s first curated OpenStack product with enterprise support. Together, they deliver the fastest path for agile development teams to deploy OpenStack in a hands-free fault-tolerant web-scale environment.

PLUMgrid Open Networking Suite for OpenStack

PLUMgrid ONS is a comprehensive software suite that provides terabits of scale out performance, production grade resiliency, and secure multi-tenancy for hybrid data centers. Built on PLUMgrid Platform® and IO Visor® technology, the software suite lets users create private Virtual Domains to provide isolation, security, and policy enforcement across tenants.

Deployment Scenarios

ITaaS or DevOps teams that need to build an enterprise-grade private cloud with a scalable fabric can leverage Piston CloudOS + Piston OpenStack with PLUMgrid to eliminate weeks of manual provisioning, network meltdowns, and expensive equipment. Solution offers “always on” virtual network infrastructure by eliminating scheduled outages. In Service Software Upgrade (ISSU) reduces operational costs, eliminates cloud network downtime, allows faster implementation of new features and mitigates security risks with timely fixes transparent to cloud users.

Communication as a Service (CaaS) host providers can provide unified communication as a service to their internal and external customers with a true multi-tenant hosted Voice-over-IP service built over an openstack cloud.

With PLUMgrid Virtual Domains CaaS providers get a comprehensive set of networking features and advanced description of policies for their cloud. A single PLUMgrid Zone can support thousands of Virtual Domains mapped to each individual customer. Solution provides end-to-end data plane encryption for all network traffic within Virtual Domains.

Service Providers that deliver cloud-based services to their customers can leverage Piston CloudOS + Piston OpenStack with PLUMgrid for seamless storage integration, flexible pre- and post-boot environments, and to take advantage of a simplified management infrastructure. PLUMgrid ONS provides the VXLAN network overlay and Puppet installation modules that let you quickly deploy an OpenStack-based NFV environment. Network functions can be deployed on-demand—without modifying your physical network—so you can quickly and easily deliver rich multi-tenant services to your customers. Highly configurable Virtual Domains divide your OpenStack cloud into encrypted logical partitions with provable isolation.

Conclusion

The PLUMgrid ONS for OpenStack with Piston CloudOS + Piston OpenStack uses a simplified OpenStack deployment model that removes physical fabric dependencies plus provides best-of-breed storage, compute and networking virtualization through the OpenStack interfaces. It helps you deploy, scale and extend their entire cloud infrastructure for simple to complex network topologies in matter of hours instead of days.

About PLUMgrid

PLUMgrid is a leading innovator of secure and scalable virtual network infrastructure for OpenStack clouds. Founded in 2011, PLUMgrid is pioneering software networking solutions that enable hybrid data centers to efficiently connect tenants, applications, and workloads across hypervisors, virtualized, bare metal, and container resources. PLUMgrid is headquartered in Sunnyvale, Calif. and is funded by venture capital and strategic investors. Visit www.plumgrid.com, read the PLUMgrid blog and follow the company on Twitter @PLUMgrid.