PLUMgrid for OpenStack

July 2016
Last Mile to Agility: Virtual Infrastructure

Virtual Infrastructure
- Virtual Compute
- Virtual Networks
- Virtual Storage

Self Service Portal/Catalog

Cloud Management Platform

Physical Infrastructure
- Compute
- Network
- Storage
**Architecture Challenges: Neutron & OVS**

**Single Point of Failure**
Advanced Services run on dedicated nodes. Limited HA.

**Traffic Bottleneck**
Placement of these components is critical; They are in data path and become bottlenecks.

**Scaling/Performance Issues**
Creation of new tenants requires careful sizing of components to maintain performance level.

**Performance Challenges**
VM traffic flow can be handled in kernel, in local user space or in network nodes with different performance level.
Architecture Solution: Neutron & PLUMgrid

- **Neutron**
- **PLUMgrid Plugin**
- **Nova**
- **Glance**
- **Swift**
- **Cinder**

**PLUMgrid Director**
- All VNF control planes are fully redundant
- Director Cluster is deployed in management rack

**Virtual Network Functions Control Plane**
- 3rd party

**Virtual Domains Tenant Networks**
- Virtual Domains automatically scale out as more servers are deployed

**iO Visor Kernel Module -- Distributed Data Plane**
- VM to VM optimized packet flow due to distributed VNFs – Eliminating bottlenecks

- **Neutron**
  - Virtual Domain A
  - Virtual Domain B
  - Virtual Domain C

**3rd party**
PLUMgrid Open Networking Suite Components

- No single point of failure
- Highly resilient & self-healing
- Terabits of distributed scale out performance
Physical & Virtual Network Infrastructure

VIRTUAL INFRASTRUCTURE VIEW

TENANT NETWORKS

VIRTUAL INFRASTRUCTURE VIEW

Overlay Network

PHYSICAL INFRASTRUCTURE VIEW

- On-Demand
- Multi Tenant
- Automated
- Self Service
- Secure
- Distributed

- QoS, Bandwidth
- Latency
- Multicast
- Capacity
- Connectivity
PLUMgrid CloudApex™ Highlights

- Cloud-wide Search
- Self-organizing Health Status
- Affinity-based GUI
- Real-time Heatmap
- Advanced Troubleshooting
Fully Distributed Architecture

- PLUMgrid CloudApex UI
- 3rd Party Services
- PLUMgrid CloudApex Middleware
  - Aggregation & Correlation Engine
  - OpenStack Components
  - PLUMgrid LCM
  - PLUMgrid Director
  - PLUMgrid Gateway
  - PLUMgrid Edges
  - Physical Network Infrastructure
Thank you!

Keep in Touch and Contact Us

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