HPE HELION CLOUDSYSTEM 9.0

HPE Helion
CloudSystem Foundation

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CloudSystem Foundation – Key Use Cases

- Automate dev/test CICD on OpenStack technology compatible infrastructure

- Accelerate cloud-native application dev/test with Helion Development Platform (HDP) on CloudSystem Foundation (CSF)

- Build out a managed object storage service for production use

- Easily deploy an enterprise-grade OpenStack technology-based cloud for IT and line-of-business (LOB) uses

- Run multiple hypervisors (e.g. ESX plus KVM) in one OpenStack region

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HELION CLOUDSYSTEM FOUNDATION 9.0

Consumers

- Request and manage virtualized services via self-service portal

Administrator

- Manage resources and access
- Operations Console

New

HPE Helion Development Platform *New*

Built on HPE Helion OpenStack 1.1 *New*

- Keystone *(Identity)*
- Glance *(Images)*
- Nova *(Compute)*
- Neutron *(Network)*
- Cinder *(Block storage)*
- Swift *(Object storage)* *New*
- Heat *(Orchestration)* *New*
- Horizon *(Dashboard)*

- **Delivered as virtual appliances** on VMware or Red Hat – now with 3 node HA cluster

- **Enhanced Networking**: support of DVR and VXLAN

- **Support of Hyper-V** compute nodes (in addition to VMware ESX and Red Hat KVM)

- **Support of availability zones** and host aggregates for easy separation of logical groups

- **Support of 3rd party servers** (in addition to 3rd party storage and networking)

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Helion CloudSystem Foundation 9.0 Compute Hypervisors (ESX, KVM AND HYPER-V)

ESX – New features

No separate vCenter proxy appliance

Auto-import, then activate ESX clusters

Security groups now supported

– Via HPE Helion OpenStack OVSvApp service VM on ESX hosts

Same, converged solution for Helion CloudSystem and Helion OpenStack

Hyper-V – new in Helion CloudSystem 9.0

Support OpenStack technology community solution

– Direct to Hyper-V, no SC VMM

Nova and Glance support based on VHD/VHDx image types

Support for Hyper-V clusters based on Cluster Shared Volumes (CSV)

– Compute nodes are individual Hyper-V hosts, but nova-compute will support Hyper-V VM migration and will detect VM failover performed by Hyper-V

– All hosts in cluster must be activated into CloudSystem – tracked by CloudSystem

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HELION CLOUDSYSTEM 9.0 FOUNDATION STORAGE FEATURES

Block Storage

– 3PAR FC and ISCSI boot and data support

– RH KVM and HyperV

New: HPE VSA support in Helion CloudSystem 9.0

– Customers use Cinder with existing VSA/LHN solutions

– VSA manually installed separately from CloudSystem

Object Storage

– New: scale out physical Swift Object Storage

– Swift installed on physical servers based on Helion OpenStack 2.0 installer

	Boot	Data
3PAR FC		KVM
3PAR ISCSI	KVM and HyperV	KVM and Hyper V
VSA ISCSI	KVM and HyperV	KVM and HyperV

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HELION CLOUDSYSTEM 9 FOUNDATION – Support for SWIFT OBJECT STORAGE

Optionally deployed on separate dedicated management servers after the basic CloudSystem deployment is complete

In CloudSystem Foundation 9.0, Swift can scale up to 500 TB - 1 PB of usable storage capacity
– Deployment can start small and add more capacity as storage requirement grows

Installed using the Swift-deployer CLI from the CloudSystem management appliance
– PXE boot and cobbler deploy Swift proxy and object nodes

Manage the Swift cluster using the Swift-deployer CLI from the CloudSystem management appliance
– Activate Swift cluster
– Expand Swift cluster, edit Swift service configuration
– Install updates, backup operation data

All external Swift requests are https enabled with SSL termination at CAN IP
– Keystone on the CloudSystem Cloud Controller used for all user authentication and authorization

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HPE HELION CLOUDSYSTEM 9.0 FOUNDATION NETWORKING FEATURES

Neutron L2-L3 new features

VLAN on KVM, ESX, New Hyper-V

New: VXLAN on KVM and ESX

- VLAN or VXLAN chosen in First Time Setup install screens for entire region

- New: DVR with VXLAN on KVM. DVR requires external network on compute nodes

Open Vswitch on KVM, Standard Juno virtual switch on Hyper-V, HP OVSvApp on ESX (see next slide)

Quick reference table

	KVM	ESX	Hyper-V
VLAN	Yes	Yes	Yes
VXLAN no DVR	Yes	Yes	No
VXLAN with DVR	Yes	No	No

HELION CLOUDSYSTEM 9.0 FOUNDATION NETWORKING FEATURES

Neutron L2-L3 on ESX

– ESX Change – VMware Distributed Virtual Switch (DVS) only, VMware Enterprise Plus license required

– New ESX default: Helion OpenStack OVSvApp on every ESX host
  - VM on each ESX host
  - Auto-deployed when ESX cluster is activated or expanded
  - Security Groups support with some exceptions

– New OVSvApp features: NIC teaming, automated deployment, integrated patching, improved OVS 2.3.1, and more

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THANK YOU

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