

Commercial VAS Domain Deployment Over RHOSP Governed by OSM

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Company Overview





Our Product Portfolio





Our Customer Base





Our NFV Experience / History



HTK 5G NFV Commercial / CA Funded Research Teydep NFV • Commercial / MEA Funded Research Commercial / MEA 2019 - 2020 - 2021 OSM 4.x, 5.x OSM 9.x • OSM 6.x, 7.x, 8.x OSP (Queens, Rocky) • RHOSP 16 OpenBaton, Tacker RHOSP 13 • CBAM 19.x, 21.x

vCloud 8.x

• vCloud 9.x

VCP Features & Functionalities





Initial VCP Deployment





VCP Operating Environment



• NFVI / VIM

- RedHat RHOSP 13.x
- 1K x vCPU, 3.5T RAM
- Local & Shared Storage
- RHEL 7.x

• VNFM / NFVO [MANO]

- ETSI OSM 8.x
- 8 x vCPU, 16G RAM
- Local Storage Only
- Ubuntu 18.x



VCP NFVI/VIM

VCPUs (used)

48

58

52

44

52

44

46

52

58

54

24

22

28

32

21

34

21

28

туре

QEMU

VCPUs (total)

56

56

56

56

56

56

56

56

56

56

56

56

56

56

56

56

Compute Host

Hypervisor

Displaying 18 items

Hostname



Local Disk Usage USBCI 3.6TB OF 4.9TB

		Local Storage (used)				
RAM (used) 74.5GB	PAM (total)					
	BALL I	270GB				
	191.7GB	270GB				
	191.7GB	E. C.B.				
80.5GB	101 7GB	240GB				
00.5GB	191.70	240GB				
82.50	191.7GB					
Project / Netwo	rk / Network Topology					

Network Topology



Launch Instance + Create Network + Create Router

Admin Volume v

Network ~

System _

RED HAT OPE Admin 🗸

Compute

Instance

9

Local Storage (total)

279GB 279GB

279GB

279GB

279GB

279GB

All Hypervisors

Hypervisor Summary

Host Aggregates

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Displaying 18 items

Project _ Help 1 a







Availability Zones

Displaying 5 items

Constraints / Challenges Faced



- Handling Live Traffic
- Docker Images*
- Proxy Charms [Hooks]*
- Pre-Defined Networks & IP Addresses
- Pre-Defined Compute Flavors
- Placement Policies [COLOCATED | ISOLATED]
- Modeling / Packaging / APIs (Standards Alignment)

* Due to Environmental Restrictions on Prod Setups

VNF Design & Implementation





Migration Strategy



Initial Deployment

- 10 x Messaging/VAS Apps
- VM based [80 x VM per Site]
- Highly-Available [N + 1; no SPoF]
- Geo-Redundant Operations [2 x A/A Sites]

Migration Strategy

- 16 x VNF/NS Packages
- VNF based [no PNF/CNF/KNF]
- Gradual [Incremental] vs Forklift Approach
- Fine-Grained [One App and/or One VM at a time]

Migration vs Rollback Procedure



MIGRATION:

- Stop VMs to be replaced on RHOSP
- Take snapshot backup of VMs to be replaced
- Delete VMs to be replaced by VNFCs
- Make sure RHOSP resources used by these VMs are released
- Instantiate NS/VNF on OSM side
- Apply Day-0/1/2 config procedures to newly created VMs





ROLLBACK:

- Delete NS/VNF instances on OSM side
- Wait until all NS/VNF instances and related VMs are deleted
- Make sure RHOSP resources used by VMs are released
- Create new VMs from snapshot backup images

Day-0/1/2 Procedure Highlights





Final VCP Deployment





VCP VNF/NS Packages



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17

VCP VNF/NS Instances





Areas of Potential Improvement



- More Flexible [Static | Dynamic] IP Address Assignment
- More Granular [VDU Instance Level] IP Address Assignment
- Dependency Handling
- Placement [Affinity | Anti-Affinity] Policy Support
- Out-of-the-Box API Collections
- Faster Standards Convergence / Alignment
- Config-Driven [Grantful | Grantless] Operation (?)



Thank You Q&A



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