

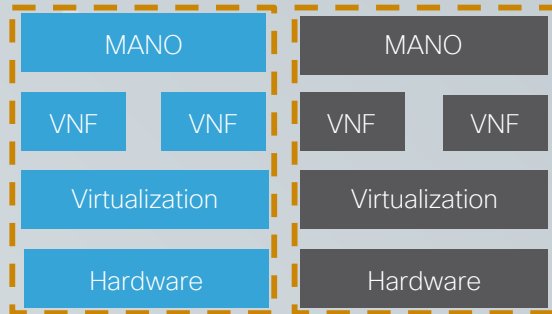
RED HAT FORUMS

Cisco and Red Hat collaboration on Network Function Virtualization (NFV) for Telcos

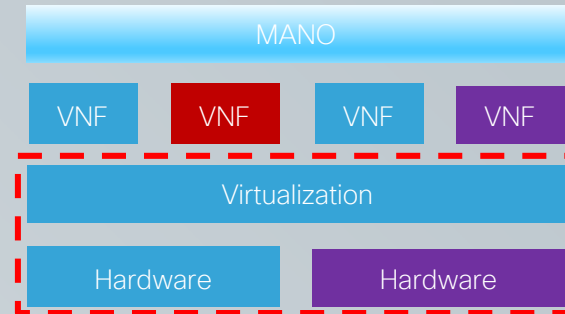
Alessandro Breccia
Senior Customer Solution Architect
3 Dicembre 2019

Service Providers virtualization landscape

Vertical Stack(s)



Common Platform



Challenges



People, Process, Culture and Organization Evolution



Complexity & Maturity of the solution components (incl. standards)



Multi-vendor Orchestration, OAM & Visibility, Service Assurance



Multi-vendor Inter-Operability getting better, but still work TBD



Technology Evolution, uncertainty and fragmentation

- Last 12-18 months witnessed strong momentum
- Multiple deployments, focused mostly in Central & Regional Telco DC's, have gone into production
- Except a few, no more SP's are pursuing a DIY route
- Vertical stack(s) mostly remain a vendor driven agenda
- Majority of the SPs want a Common Virtualization Platform
- Next 12 months we expect
 - Higher scale – performance, users, deployment footprint
 - Extension to the Edge, MEC, 5G driven
 - Cloud Native Phase 1 for non-data plane applications

Cisco NFV solution based on Red Hat OpenStack

MANO
Stack

NFVO, Resource Orchestration & VNF Service Orchestration

Cisco NSO

Virtual Network Functions (Cisco and 3rd Party)

CSR

ASAv

Ultra

VMS

Video

XRv

vWSA

3rd Party

VNF manager

Cisco ESC

NFVi
scope

API

GUI



Unified Management

Monitoring and assurance

Cisco VIM platform



Red Hat
OpenStack Platform

Cisco VIM Lifecycle Manager

Physical infrastructure (Cisco and 3rd party)

Compute
Cisco UCS or 3rd party



Network
Cisco Nexus or 3rd party

Storage
UCS or 3rd party

SDN
Controller

Cisco ACI



Red Hat



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Market is taking off – Cisco and Red Hat



- Common Platform with Cisco VIM / RH OSP
- ACI based network underlay
- Cisco Ultra vEPC, PCRF, 3rd Party Gi VNFs, IT apps next
- ~35 sites in production, close to 2.5Tbps BW
- 72 hours from site delivery to first data call
- <https://newsroom.cisco.com/press-release-content?type=webcontent&articleId=1977162>



- Vertical stack for Cisco SP Mobility VNFs
- Cisco UCS, Nexus, RH OSP
- VNFs – Ultra S/PGW, PCRF
- 46 numbers of location, 79Mn subs in production
- CUPS targeted in 2019, eventually up to 2000 locations
- <https://newsroom.cisco.com/press-release-content?type=webcontent&articleId=1943598>



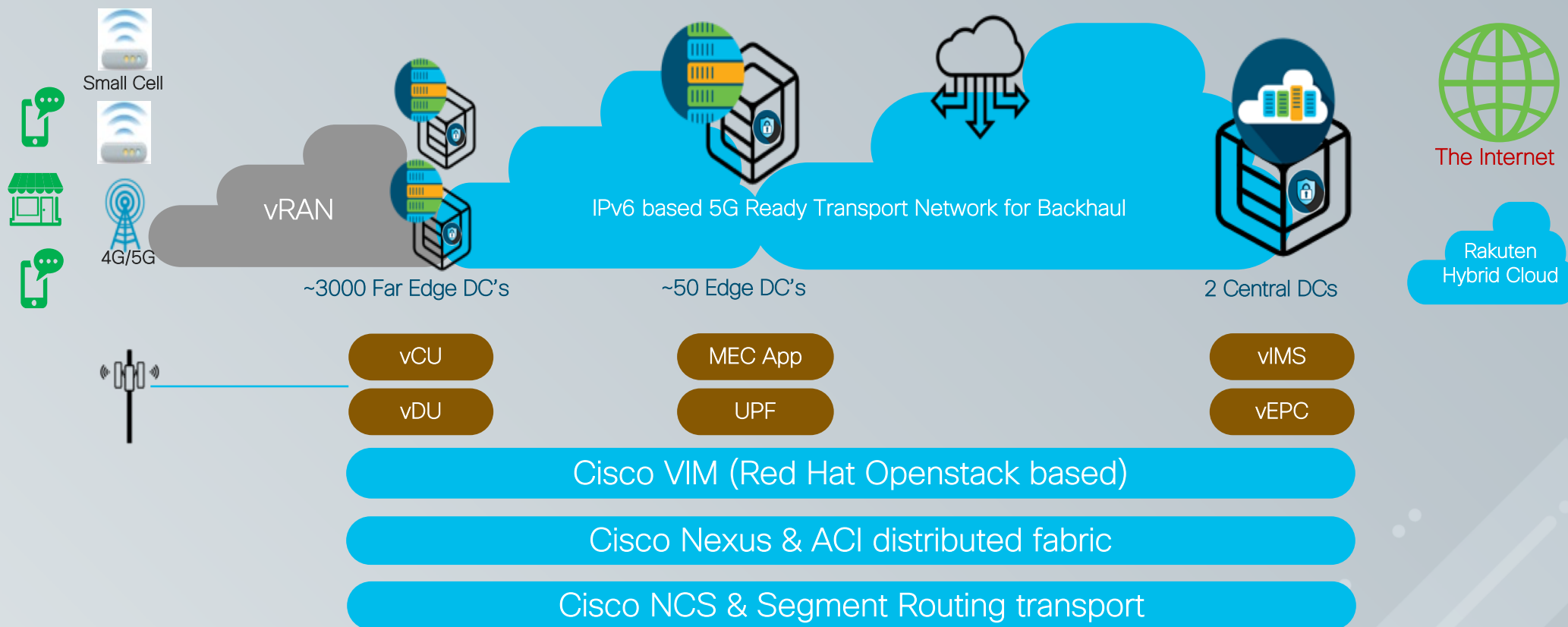
- Low latency Edge Compute Cloud
- NFVI with Cisco VIM / RH OSP at 12 DT Core POPs
- MobileEdgeX – (Aggregator) is the first customer
- Plan to Extend to 100s of more sites for Service Edge
- https://www.cisco.com/c/dam/m/en_us/network-intelligence/service-provider/digital-transformation/knowledge-network-webinars/pdfs/0417-DC-CKN-PDF.pdf



- First true realization of distributed telco cloud
- Common Platform with Cisco VIM / RH OSP and Cisco MANO (ESC & NSO) Software, ACI & Nexus switches
- Fully virtualized – Cisco vEPC, Altiostar vRAN, Nokia & Mavenir vIMS, ASAv, NEC OSS/BSS and others.
- ~300 sites targeted in CY2019, Eventually ~3000
- <https://blogs.cisco.com/sp/enabling-rakuten-cloud-platform-with-cisco-nfvi-and-orchestration-solutions>

Rakuten use case

Zero Touch, End-to-End Automation with NSO, ESC

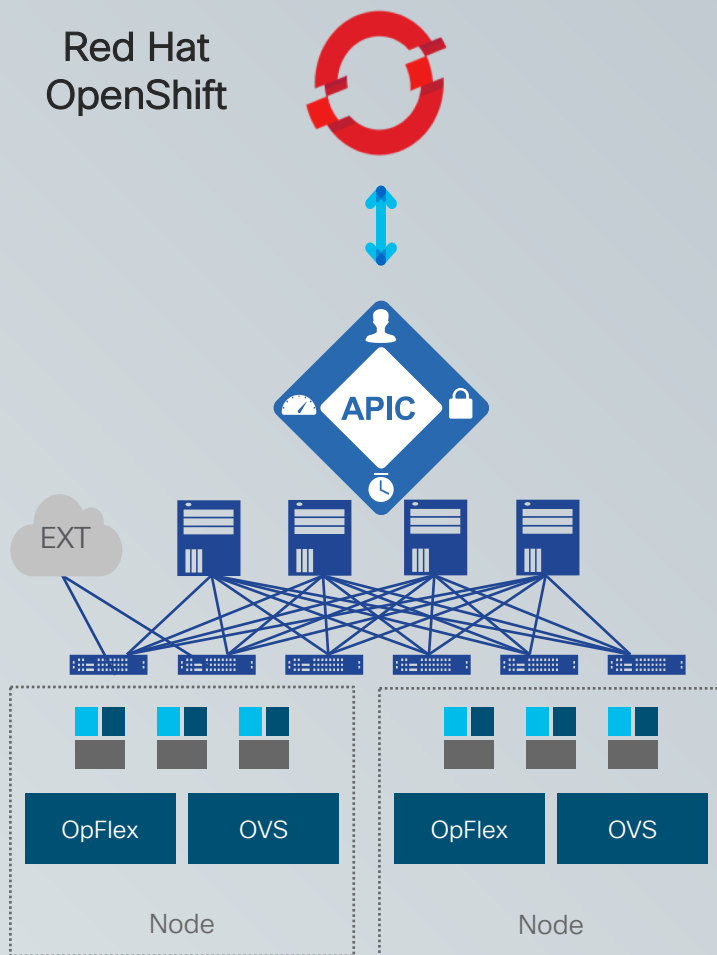


Red Hat



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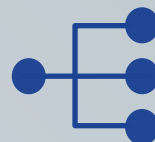
Cisco ACI and Red Hat OpenShift, better together



Key Benefits



Unified networking: Containers, VMs, and bare-metal



Micro-services load balancing integrated in fabric for HA / performance



Secure multi-tenancy and seamless integration of Kubernetes network policies and ACI policies



Visibility: Live statistics in APIC per container and health metrics



Red Hat



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THANK YOU



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