WE MANAGE AUTOMATE DATA CENTER

Cisco ACI and RH integrations

Diego Zucca, Datacenter & Cloud Sales, Cisco Italia

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Cisco Vision

For over 30 years, we’ve focused on helping to change the way the world works, lives, plays, and learns.
Cisco Strategy

We create solutions built on secure, intelligent networks that solve our customers’ challenges.
Digital is transforming business.
And Everything We Do...

- Transform processes and business models
- Empower workforce efficiency and innovation
- Personalize citizen/customer/employee experience
Secure, intelligent platform for digital business

Power a Multicloud world
Reinvent the network
Unlock the power of data
Security is Foundational
Create meaningful experiences

Increased pace of innovation
Data Center Vision

**Re-invent the DC**
Delivering the best in class intent-aware secure platforms to modernize the Data Center

**Unlock the Power of Data**
Harvesting data from the Network and Clouds to ensure a safe and enhanced customer experience

**Embrace Multi-cloud**
Providing the right software tools to embark on a secured and optimized Multi-Cloud journey
Today DC Complexity

Multicloud

- IaaS
- PRIVATE
- PUBLIC
- SaaS

Data Center
Edge
IOT
Mobile
Branch Office
Enterprise Campus
Changing in workloads and consumption models are shaping IT Infrastructure

- AI and ML
- IoT
- Blockchain
- X-as-a-service consumption
- Multicloud and Edge Computing
- Containerization
- Faster data access
- Ubiquitous Security

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DC Morphing (Yesterday and Today)

- Simplification, Modernization & Security
- Automation, Software-Defined, Programmability
- Multicloud
- Applications and Analytics

Performance
- Reliable
- Secure
DC Architecture E2E

- **Application and Business Performance Monitoring**
- **Workload Optimization and Placement**
- **Infrastructure Assurance**

**Efficiency**

- **Multi-Cloud**
- **Cloud Native**
- **Policy Driven Automation**

**Components**

- **Nexus**
- **UCS/Converged**
- **HyperFlex**

**Platforms**

- **Cisco Security Portfolio**
- **Tetration Analytics**
- **Cisco Workload Optimization Manager**
- **Network Assurance**
- **Application and Business Performance Monitoring**
- **Infra Analytics**
- **Business Analytics**
- **Security Analytics**

**Roles**

- **Security Admin**
- **LOB / IT Apps**
- **Cloud Admin**
- **Developer**
- **Infra. Manager**
Automation with ACI Anywhere
Any Workload, Any Location, Any Cloud

Remote Leaf / Virtual PoD
APIC / Multi-Site
Multi-Cloud Extensions

Remote Location
On Premise
Public Cloud

Security Everywhere
Analytics Everywhere
Policy Everywhere

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Hypervisor Integration with ACI

- Relationship is formed between APIC and Virtual Machine Manager (VMM)
- Provides APIC with virtualized inventory
- APIC has visibility of virtualized hosts, Virtual Machines, vNICs and more.
- APIC manages the hypervisor virtual switch (VDS, OVS, AVE, etc …)
- Multiple VMMs supported on a single ACI Fabric simultaneously
ACI Unified Plugin for Open Stack

**Unified Plugin**

- Single Plugin for Group-Based Policy API and standard Neutron API

- No longer need to choose GBP vs Neutron API at setup time. Both can be used simultaneously.
Red Hat Virtualization
VMM Domain with APIC 3.1

- ACI Fabric as a Policy Authority
- Dynamic Physical and Virtual Network Provisioning and Operations
- Integrated Policy domains across Physical and Virtual
ACI and RHV VMM Integration Workflow

1. Cisco APIC connects to RHVM:
   - Finds Datacenter
   - Collects Hypervisor and VM inventory

2. Create Network and/or App Policy

3. Map EPG To VMM Domain

4. Push Policy (pre-provision)

5. Network automatically assigned to labelled hosts

6. Server admin instantiates VMs, Assign to Networks

Application Network Profile:
- FW
- WEB
- lb
- APP
- DB

Clusters in DC:
- WEB Network
- APP Network
- DB Network

Server Admin
Virtualization Manager

Fabric Admin
Native Support for Container Application Platform

Intent based Infrastructure Automation

Fast, Secure and Scalable Networking

Application Container Orchestration

Pervasive Analytics

Pervasive Security

Cisco ACI

Docker
Kubernetes
Openshift
Pivotal Cloud Foundry
Mesosphere

CNI
Opflex

Native Support for Container Application Platform

Physical
Virtual
Private
Any Cloud

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Network policies supported using standard upstream format but enforced through OpFlex / OVS using APIC Host Protection Profiles.

Openshift apps can be moved without modification to/from ACI and non-ACI environments.

Embedded fabric and virtual switch load balancing:
- PBR in fabric for external service load balancing
- OVS used for internal service load balancing

VMM Domain for Openshift:
- Stats per namespace, deployment, service, pod
- Physical to container correlation
The relevance of RHV and OpenStack with ACI for BBVA

**Automate and accelerate provisioning:**
ACI to provision the Logical Networks

**Operations:**
ACI visibility into RHV domains

**Security:**
Leverage ACI for distributed security and segmentation

**Migrate:**
Simplify Migration from other hypervisors

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GRAZIE PER L’ATTENZIONE

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