Network Function Virtualization Management And Orchestration

An Orchestration Zoo or Your Big Business Opportunity?

Cisco Knowledge Network

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Speakers / Panelists: Volker Tegtmeyer, Mina Paik

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Today’s Session

- In this session you will learn more about our point of view regarding SDN and NFV management and orchestration. Your primary takeaways will include:
  - Recommendations and things you can do now with management and orchestration in an SDN and NFV environment
  - What you can do to manage a multivendor, hybrid (physical and virtual) environment
  - What business results you can expect to achieve and have been achieved to date by others
Agenda

Market Motivation

Operationalize SDN / NFV

Real Deployments

Q&A
Standards & Open Source Efforts around NFV & SDN
Close alignment needed

SDN, Controllers

APIs, Service Chaining

Data Models, Config. Management

Cloud Orchestration

Data Plane

Infrastructure

End-to-End Reference Architecture for NFV

The Zoo just got more animals and becomes more interesting!
Service Provider Industry Technology Trends
Each Addressing a different Aspect of Service Provider Opportunities

Open Source, Open APIs
Enabling Faster Innovation and Wide Participation

Network Functions Virtualization (NFV, VNFs)
Transforming Network Architectures and Operations

Software Defined Networking (SDN)
Abstracting to Better Application and Network Interaction

Pace of Change is Accelerating
Simplification is Imperative
Poll Questions

What is your current level of NFV deployment?

1. Planning to deploy within 6 month
2. Already deployed
3. No plans, still evaluating
It’s Not Just Technology That Gets Everyone Excited
Business Opportunity?
Deliver The Experience Customers Want!

- 70% Turn Services on/off on demand
- 67% Scale capacity as needed
- 65% Easy ordering and self provisioning
- 60% Consumption/Usage Based Billing
- 56% Automated service/network provisioning, configuration and account management

Source: AMI – Cisco ITaaS Research
Customers Globally Say: “We Switch to Cloud Services to get These Benefits”
ITaaS opportunity a $47 billion market by 2019

More specific info for your business at www.cisco.com/go/moi
Here is how we can help you to get your share of that market.
MANO Inside the Evolved Services Platform
MANO Inside the Evolved Services Platform
MANO Inside the Evolved Services Platform and more

Real-time OSS: Service Catalog, Fulfillment, Assurance
NFV - Orchestator
Virtual Network
VNF – Manager
Virtual Infrastructure Manager (VIM)

Policy
Analytics
Security
NMS / EMS
Domain Controllers
Micro services
...

WAN
Edge
Mobile
CPE

EPN

ESP

Physical & Virtual Infrastructure
Compute
Storage
Network
Customer Experience!
Amazing Customer Experience With NFV, SDN and a New Approach to OSS
Customer-Facing Services: Fulfillment, Assurance, and Activation

**Traditional OSS**
- **Static** infrastructure and services
- **Manual** tasks
- **Many** management silos

**Real-Time OSS (RTOSS)**
- **Dynamic** infrastructure and services
- **Intelligent** automation
- **Unified** management

**Limited** service awareness
- **Reactive** operations

**Deep** service awareness
- **Proactive** operations
From Complexity to Simplicity – Automation – Instant Service

From Months to Minutes

Plan It
Design It
Where Can We Put It?
Procure It
Install It
Configure It
Secure It
It Is ready

Manual

On Demand Service Oriented
Self-Service Automated Provisioning
Elasticity & Assurance
Operator Experience
Poll Questions

What is your preferred Deployment Model?

1. Deploy and integrate individual components
2. Deploy packaged solution
3. Leverage a cloud based hosted solution
Flexible Deployment Models

Individual Products
- Individual architecture
- Individual migration
- Your flexibility
- Select from Cisco's broad product portfolio

Packaged Solutions
- Business ready service
- Easy deployment
- Faster time to revenue
- Select from Cisco's broad solution portfolio

Hosted Solutions
- Business ready Service
- No deployment
- Even Faster time to market
- Select from Cisco's broad hosted solution portfolio

Flexibility
Quick Deployment
Fast Time To Market
It is real !
Walking the Talk…
EANTC validating Cisco’s NFVI Solution

Phase 1: NFV Solution Agility
Phase 2: NFV Infrastructure
...  
Phase 3: “Stay Tuned for More”

✓ Carrier Grade High Availability, HW and SW
✓ NFV Ready High Performance
✓ Simple Operation with Single Pane of Glass
Virtual Managed Services in Numbers

ACG Research – Business Case Study

- Focused on medium-sized businesses with an average of 10 sites and 500 employees
- Two types of Virtual Managed Services
  - Cloud VPN Services
  - Cloud Security Services

Service Provider Business Outcomes

- ~76% OpEx Savings
- ~220% ROI

Cloud VPN Services
- IPSEC, SSL VPN
- Routing and firewall

Cloud Security Services
- Firewall, IPS
- Email, web security

Sources: ACG Research, Cisco® BTA, Cisco SPTG 2015
### YTD Virtualization Announcements (2015)

<table>
<thead>
<tr>
<th>EQUINIX</th>
<th>On-Demand Unified Services</th>
<th>Cloud Managed Services</th>
<th>Cloud VPN</th>
<th>User-Defined Network Cloud</th>
<th>Virtual Video Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDN Service Mapping</td>
<td>Network-Aware Applications</td>
<td>Business Agility</td>
<td>Automated, Multi-Vendor Support</td>
<td>Dynamic Capacity Management</td>
<td>Virtual Video Processing Demo (NAB 2015)</td>
</tr>
<tr>
<td>Virtual Digital Content Manager</td>
<td>Virtual Evolved Packet Core</td>
<td>Virtual Evolved Packet Core</td>
<td>LTE in a Box</td>
<td>Virtual Evolved Packet Core</td>
<td>Virtual Evolved Packet Core</td>
</tr>
<tr>
<td>Software Defined WAN</td>
<td>Virtual Video Processing</td>
<td>Cloud-Based Voice over LTE</td>
<td>Network on Demand</td>
<td>Cloud VPN</td>
<td>and more</td>
</tr>
</tbody>
</table>

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Accelerating Growth in Cloud and Business Services

Addressable Market
- Global managed network services
- $70 billion USD (2019) 13% CAGR

Service Offer
- Telco cloud managed VPN services
- Remote VPN, basic, full, and premium
- Self-service telco cloud VPN portal
- Improved customer experience
- Services operational in under 48 hours
- All network elements virtualized
- Converged IP and optical - Native IPv6

Sources: Markets and Markets, AMI, Cisco BTA 2015
Accelerating Cloud Services Delivery

Addressable Market
- EMEAR Cloud Managed Services
- $24 billion USD (2018) -- 13% CAGR

Service Offer
- Telco virtualized managed services
- Self-service telco cloud VPN portal
- Improved customer experience

Sources: Markets and Markets, HIS, Cisco BTA 2015
Building a Cloud Services Platform

Addressable Market
- AJPC cloud managed services
- $13 billion USD (2018) – 17% CAGR

Service Offer
- Self-service cloud services marketplace
- Unified cloud and managed network services
- SaaS delivery through Cisco Intercloud Services
- On-demand custom service requirements
- Improved customer experience

Sources: IHS, MarketsandMarkets, 2015
Equinix Expands as a Provider of Multi-Access Enterprise Cloud Services

OBJECTIVE
• Cultivate new revenue sources
• Offer Cloud capabilities to new Enterprise customers

SOLUTION
• Cisco Evolved Services Platform
• Cisco Network Services Orchestrator (Tail-F)
• Cisco Cloud and Intercloud solutions
• Cisco Nexus 9000 Series Switch
• Cisco Application Policy Infrastructure Controller (APIC)

RESULTS
“What Cisco and Equinix are doing together is all about visibility and control. By connecting Cisco Intercloud and Cloud Exchange, we are adding policy, performance, security and visibility all the way to the application level, removing performance concerns sometimes associated with hybrid cloud services.”

Ihab Terazi, Equinix CTO

Cisco and Equinix Partner to Accelerate Connections Between Private and Public Clouds
TV Globo Transforms Media Processing

OBJECTIVE

• Create more agility in video processing with its new media content partners

SOLUTION

• Cisco Virtualized Video Processing (V2P)
• Cisco UCS and Nexus switches
• Cisco Services

RESULTS

“With the amount of content we produce and manage, we are consistently working to improve the efficiency of our operations, and transform the way we deliver a variety of content to millions of viewers, on traditional and new media. Our collaboration with Cisco will enable Globo to operate with the required agility to streamline video workflows and deliver quality multiscreen video to consumers.”

Raymundo Barros, CTO, TV Globo
Summary: Zoo or Business?

- Consumers want better service experience, self service, on demand
- Operationalization of NFV requires a more holistic approach
- NFV deployments are real and broad and large in scope from VPN to Mobility to Video from single service to Market Place
- The Management and Orchestration of network functions and services opens huge business opportunities
Thank You

More information at:
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