Cisco Service Oriented Infrastructure

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Agenda

- Introduction
- Unified Service Delivery Architecture
- Unified Computing System
- Network Hypervisor
- Service Automation & Assurance
Business Transformation
.. Organization, ROI, Technology

Data Center/Cloud

IT Initiatives
- Virtualization
- Consolidation
- Application Integration
- Compliance
- Cloud Services

Business Value
- New Service Creation and New Business Models
- Cost Reduction and Revenue Generation
- Governance and Risk Management

Data Center Transformation

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Evolving Customer Needs

Business Drivers

Cost/ROI
DR/BC
Overflow/Burst Cap
IT agility
IT competitiveness
IT as a Service
BU charge Back
Scale
Availability
Predictability
Cost
Utilization
Consolidation

Inefficiency Tolerance Zone

Cost & TTM Threshold

Service Complexity/Demand

Manual Delivery Ability

Automation Requirement

Demand Driven

Web Farms
Portals

Infrastructure Services

Critical Apps
By Function
By Department
By Application Type

Automation

Requirement

Third-Party Integration

ITSM Workflow
CMDB

Service Assurance

Service Catalog

DR/BC

Dev/Test
R&D
App Testing

Pre-production
Production

Resource Provisioning
Orchestration

Simple
Application
Sophisticated

Transition Stages

Server Virtualization
PODs e.g. Vblock
Private Cloud
Hybrid Cloud
Services Delivered on Cloud Hosted Architectures represent an opportunity and a challenge for Operations.

Orchestration, Automation and Service Assurance play the key role in unlocking all potential
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The Opportunity is Integrated Services…

**SaaS**
- Business Applications
- Back Office Applications
- Marketing Applications
- Data Processing/BI
- Consumer Applications
- IT Operations/ITSM

**PaaS**
- Application Platforms
- Application Stores
- Middleware on Demand
- Messaging on Demand
- Integration on Demand
- Database on Demand

**IaaS**
- Compute on Demand
- Storage on Demand
- Virtual Data Center
- Capacity on Demand
- Virtual Desktop
- Backup/Restore
- Disaster Recovery
- Upgrade & change mgmt
...and Integrating Services with Existing IT

Cisco is in the unique position to combine several best of breed platform offerings as an integrated cloud solution......

Requires test, implementation, integrated delivery
Unified Service Delivery Architecture
Foundation for Service Provider Cloud/Managed Services

Unified Computing
Unified Computing System

Third Party Virtualization
virtualized by vmware
Nexus 1000V

Unified Fabric
Nexus Family

SP Data Center
Communication IP NGN
Unified Service Delivery

Network Intelligence and Quality
IOS, IOS-XR, Medianet

Security and Application Performance
APM, WAAS, Mgd. Security

Media Aware Distribution
Video Delivery Product Suite

Peering and Interconnect
CRS / ASR Families
End-to-end Services Assurance

- SPs/MSPs can differentiate by providing end-to-end SLAs as opposed to resource-specific SLAs
- Cisco can uniquely support end-to-end monitoring and service delivery assurance for Cloud-based services
- APM (Application Performance Mgmt) provides a foundation that is being extended into the Data Center
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Unified Computing System – WHY?

• Embed management
• Unify fabrics
• Optimize virtualization
• Remove unnecessary
  – switches,
  – adapters,
  – management modules

• Less than 1/2 the support infrastructure for a given workload
Unified Computing Innovations

Unified Fabric

Embedded – Multi Role Management

Dynamic Provisioning Service Profiles

Total Cost of Ownership

IT Agility
Unified Computing Innovations

Extended Memory Technology

Virtualized Adapter

Total Cost of Ownership

IT Agility
Cisco UCS: A Full Compute Portfolio

Virtualization

Network and Storage Access

Compute

New

2-Socket

Cisco Extended Memory Technology

4-Socket

New

New

New

New

New
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OverDrive Network Hypervisor

Server Hypervisor
- The hypervisor creates and managed a compute container with all the CPU, memory, etc resources and establishes the relationships with storage and network
- Server virtualization value proposition is well understood

Network Hypervisor
- Creates a Network Container with all the security, isolation, features and resources necessary to support a desired “tier of service”
- Manages the relationship with the physical resources to ensure the integrity of that container, i.e. if a component fails then OverDrive Network Hypervisor will return the container to a state of integrity by re-orchestrating necessary physical resource
- Manages the relationship with storage and compute
Simple Network Container within DC

- Network policies assigned to each virtual machine instance
- Automatic network configuration based on policies
- Policies travel with VM instances during re-provisioning and vMotion events

Nexus 1000v + vNIC

Cisco VN-Link: Virtual Network Link

Policy-based VM Connectivity

Network and Security Service Portability

Maintains Wire-once Operations Model

Nexus / UCS / ASA / etc.
NC Elements- Examples

1. Remote access MPLS
2. Remote access Internet
3. NC Public Routable
4. NC Unrouted
5. Add tenant unprotected private zone
6. Add tenant protected private zone
7. Add new Zone to existing Firewall
8. Add new Zone with new Firewall
9. Add one-armed load balancer
10. Public Access two tiered with Firewall
11. Public Access with Service VM
12. Public Access two tiered with Firewall
13. Public Access two tiered with Firewall and Load Balancer
14. Public Access two tiered with Firewall and Load Balancer (NAT)
15. Public Access with Service VM and Protected Zone
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Service Automation of Cisco Infrastructure

Simplified Service Management Stack

CA Automation Suite for Cisco UCS

CA Server Automation
CA Virtual Automation
CA Configuration Automation
CA Process Automation

OverDrive Network Hypervisor

Abstracted Business Model
Abstracted Cloud Operational Model
Abstracted Service/Topology Model

Compute
Network
Storage
Service Assurance of Cisco Infrastructure

Service Assurance
understand the real-time health, quality and risk of business services

CA Service Assurance software enables IT to proactively and reliably meet and exceed the service expectations of the business

- Measure and manage IT according to the end user and business transaction and deliver an exceptional end user experience
- Link end-to-end service and transaction visibility with top-to-bottom understanding of the underlying infrastructure through dynamic service models
- Dynamically adjust and scale rapidly changing environments to reliably deliver consistent performance and proactively solve problems before services and end users are impacted

CA Service Assurance Stack

Discover
Understand
Observe
Optimize

CA Service Assurance Suite

CA Spectrum Infrastructure Manager
CA eHealth Performance Manager
CA NetQoS Suite
CA Application Performance Manager
CA Service Operations Insight

Services
Traffic Flows
Compute
Applications
Network
Storage