Successful IaaS part 2
The underlying Infrastructure DOES matter

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Introduction

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Short Recap of Part 1
Complexity of deploying applications in IaaS

Composite Apps
Applications are becoming complex combinations of interconnected software components
Consistent Policies across deployment platforms

Policies for an application should be valid for any platform
End-to-end Orchestration that understands policies

Self Service Front End

Service Orchestration to any destination platform

Deployment Automation

Destination Platform
Free Workshop to determine current and desired state
Summary of part 1

- Application Dependencies are the cause of complexity in IT Infrastructure
- Using Policies in your datacenter allows IT personnel to focus on exceptions and automating everything else
- Cisco provides technology that supports using IaaS for the Policy Defined Datacenter
- Cisco and her partners provide the comprehensive services to help customers successfully adopt and migrate to IaaS providers
- Cisco provides solutions that help IaaS Providers create services that better match the needs of their customers

The underlying infrastructure does matter!
Part 2 – Technology
Our Direction

Data centers and cloud network infrastructures, both physical and virtual, will no longer be configured, but are software defined, policy driven and application centric.
Different Apps require different type of IaaS

Core Enterprise Workloads
- SCM
- ERP/Financial
- Legacy
- CRM
- Email

Hypervisor

Single Server

Many Applications

Cloud Scale
- Online Content
- Gaming
- Mobile
- IoT
- E-Commerce

Single Application

Many Servers
Data Centre Reference Architecture

- SELF SERVICE
- (ITIL) PROCESS ORCHESTRATION
- INFRASTRUCTURE AUTOMATION
- PHYSICAL + VIRTUAL INFRASTRUCTURE
- Security & Compliance

Your Organization

IT Front Office
Cloud Operations / Management Platform

IT Back Office
Automated Cloud Infrastructure Platform

- Amazon
- Microsoft
- VMware
- Community
- Private Cloud
Data Centre Reference Architecture

SELF SERVICE

VM Templates
Application Templates
Service Aspects

(ITIL) PROCESS ORCHESTRATION

Deployment, Monitoring, Reporting

INFRASTRUCTURE AUTOMATION

INFRAS STRUCTURE

INFRASTRUCTURE

PHYSICAL + VIRTUAL INFRASTRUCTURE

IT Back Office
Automated Cloud Infrastructure Platform

IT Back Office
Automated Cloud Infrastructure Platform

Security & Compliance
Hybrid Cloud Orchestration

- Single Integrated Management Platform
- Full Application Lifecycle
- Scalable and Secure
- Portable and Manageable

...to and between any datacenter or cloud
UCS Compute example
When is a Server really flexible?

X86 Server

x8

vmware

X86 Server

x2

Microsoft SQL Server
UCS Virtual Interface Card

VIC Scenario Day 1:
- ESX Host
  - Management 1 Gbps
  - VMotion 1 Gbps
  - VM Storage 5 Gbps
  - VM Network 3 Gbps

VIC Scenario Day 2:
- Database Server
  - Management 1 Gbps
  - Data Network 9 Gbps
When is a Server really flexible?

X86 Server

Management Tooling

Script

Timer

X86 Server

vmware®

SQL Server

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ACI Networking example
Communication Errors around Applications

Network Engineer

Application Owner
Two Types of Languages

**Infrastructure Language**
- VLAN
- IP Address
- Subnets
- Firewalls
- Quality of Service
- Load Balancer
- Access Lists

**App Language**
- Application Tier Policy and Dependencies
- Security Requirements
- Service Level Agreement
- Application Performance
- Compliance
- Geo Dependencies

Human Translator
Application Centric Profiles

- Application Software
  - Reference Architecture
  - Installation Instructions
  - Application Profile

- Application implementation parameters specific to the organisation
  - Vendor Supplied
  - Supplied by Application Owner

- Service Level
  - HW Sizing
  - Security
  - Compliance
  - Governance

- IT Infrastructure (Private or Public)
  - Application Policy
  - Infrastructure Controller (UCS + ACI)

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ACI Topology

ACI Domain

API &
GUI &
CLI

Application
Profiles live here

Single point of Network Management

APIC
ACI Controller

APIC
ACI Controller

APIC
ACI Controller

ACI Spine
Nexus 9K

ACI Spine
Nexus 9K

ACI Leaf
Nexus 9K

ACI Leaf
Nexus 9K

ACI Leaf
Nexus 9K

ACI Leaf
Nexus 9K

Application
Profiles live here

Single point of Network Management

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UCS Topology

UCS Domain

API & GUI & CLI

UCS Director Converged
UCS Central 10x Manager
UCS Manager 160xCompute
Compute Profiles live here
Single point of Management

Fabric Interconnect

UCS Srv Blade
UCS Srv Composable
UCS Srv Rack
UCS Srv HyperC

You can not Press ‘F1’ to enter BIOS
How it all fits together!

- **SELF SERVICE**
  - VM Templates
  - Application Templates
  - Service Aspects

- **(ITIL) PROCESS ORCHESTRATION**
  - Deployment, Monitoring, Reporting

- **INFRASTRUCTURE AUTOMATION**
  - Amazon
  - Microsoft
  - VMware
  - Application Profiles

- **PHYSICAL + VIRTUAL INFRASTRUCTURE**
  - Community
  - Private Cloud

**IT Back Office**
Automated Cloud Infrastructure Platform

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Q&A