Migrating Applications with CloudCenter

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DEVNET-1179
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Agenda

- Hybrid Cloud / Hybrid IT
- CloudCenter Differentiation
- Application Migration
  - DEMO (video)
- VM Migration
  - DEMO (video)
- Conclusion
Brief Introduction

- CliQr – Strategic Integrations
- Trace3 – Cloud Architect
- Trace3 – FlexPod SME PSA
- Red8 – NetApp & Virtualization

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Hybrid Cloud / Hybrid IT
Hybrid Cloud / Hybrid IT Growth

60% Adoption among CIO/IT Admins *
45% Growth per year in services *
20% Workloads deployed to public cloud **

* Source: CloudView Survey, IDC, January, 2016
** Source: Internal Private Cloud Is Not for Most Mainstream Enterprises, Gartner, 2015
Inherent Benefits

Geo & platform-diverse execution venues
  Price, Performance, Sovereignty

Preempt fail-over strategy (Disaster Recovery)
  Reduce recovery times

Innovative services
  Micro-Services, Serverless, Data Analytics

Macro Business Shifts
  DC Consolidation, Mergers/Acquisitions
# Differentiated services

<table>
<thead>
<tr>
<th></th>
<th>Public Cloud</th>
<th>Private Cloud</th>
<th>Virtualization</th>
<th>Traditional IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elastic Resources</td>
<td>Yes</td>
<td>Yes</td>
<td>Partial</td>
<td>No</td>
</tr>
<tr>
<td>Hosted</td>
<td>External</td>
<td>Primarily internal – possible hosted externally</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-service</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Billed</td>
<td>Opex only</td>
<td></td>
<td>Typically Capex &amp; Opex</td>
<td>No</td>
</tr>
<tr>
<td>Shared infrastructure</td>
<td>Yes</td>
<td>Only when externally hosted</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Proximity to firewall</td>
<td>Outside</td>
<td></td>
<td>Inside</td>
<td></td>
</tr>
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</table>
Migration methodologies

- Lift & shift
  I/O intensive, cost intensive

- Refactor
  Monolithic to service-oriented

- CDP
  BC/DR > workload optimization
Intractable Challenges

• In-guest tools (VMware / Hyper-V/XenServer Tools, cloud-init, open-vm-tools)

• Downtime

• Reliable Bandwidth

• Image transformation (VMDK, VHD, QCOW, VDI etc)

• Differentiated services (RDS, ELB, etc.)

• Governance enforcement
Reinvent the Solution

Need:
- One platform
- Application-centric
- Portable Workloads

...Existing solutions are not adequate
CloudCenter
Differentiation
CloudCenter Unique Value

One Integrated Platform
Lifecycle Management
New and Existing Applications
Single-pane Management

Cloud Agnostic

Manager

Application Profile

Cloud API-Specific

Orchestrator

Orchestrator

Orchestrator

Secure

Scalable

API

Extendable

Multi-tenant
Application Profiles

Containers
Recipes
Scripts
Jar
War
Binaries

CPU
4GB
Memory
20GB
Storage
Binaries

Cisco live!
Efficiency advantage

Infrastructure-Centric
Cloud-Specific workflows and Scripts
Labor /Services Intensive

Script-Based

Application Profile-Based

Application-Centric
Cloud-Agnostic
Low TCO
Application Migration
Deployment Paradigm

Cisco CloudCenter

1. UI
2. API
3. CLI

MANAGED APPLICATION VM
AGENT

MANAGED APPLICATION VM
AGENT

UI
CLI
API

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Extensible

Platform Integration
ITSM | Build Automation (Jenkins)

Content Integration
Docker
Puppet, Chef
Components
User Content
Vendor Content

Tool Integration
Hooks
Scripts
Events

Security
SSO
HSM

Infrastructure
IPAM
DNS

Cloud APIs
Datacenter Private and Public Cloud

API

DEPLOY
MODEL
MANAGE
Lifecycle Management

Node / Service Relevant
- External Initialization
- Node Initialization
- Custom Parameters
- Env Variables
- Service Management

Platform Provided
- Termination Protection
- Triggered actions
- Scaling
- Promote
- Upgrade
- Migrate
Application Profile – Lifecycle Events
Critical Data Movement

Original Deployment

Migration Deployment

AGENT

AGENT

AGENT

AGENT

ARTIFACTS
Pre-Recorded DEMO
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<th>Name</th>
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<th>Start Time</th>
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<td>Deployment</td>
<td>Production</td>
<td>Status</td>
<td>VMWare Flexpod-DC</td>
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<td>Environment</td>
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<td>Status Message</td>
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<td>Date</td>
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<td>Associate Tags</td>
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</table>

Download logs

Access WordPress

Auto refresh every 30 seconds

Updating the tags will re-evaluate and associate new policies at runtime
VM Migration
Brownfield Import

Singular pane
Operational consistency
Track cloud costs
Platform provided actions
Custom actions
RiverMeadow
Image-Level Migration
Pre-Recorded DEMO
What is a Virtual Machine?

A virtual machine is a software computer that, like a physical computer, runs an operating system and applications. An operating system installed on a virtual machine is called a guest operating system.

Because every virtual machine is an isolated computing environment, you can use virtual machines as desktop or workstation environments, as testing environments, or to consolidate server applications.

In vCenter Server, virtual machines run on hosts or clusters. The same host can run many virtual machines.

Basic Tasks

- Power Off the virtual machine
- Suspend the virtual machine
- Edit virtual machine settings

Explore Further

- Learn more about virtual machines
- Learn how to install an operating system
Benefits of CloudCenter

• **Application Migration**
  • Workflow and lifecycle applies to collection of workloads, not singular
  • Retain portability
  • Eliminate infrastructure dependencies
  • Avoid cloud lock-in
  • Achieve business agility

• **Virtual Machine Migration**
  • Overcome image conversion / transformation
  • Agent not required
  • Retain OS configurations with configuration management
  • Workloads not derived from CloudCenter
CloudCenter Sessions at CL

- DEVNET-1179: Migrating Cloud Applications with CliQr
- DEVNET-1769: DevNet Workshop-Hands-on with CloudCenter and Jenkins
- BRKCLD-1011: Future-proofing your enterprise cloud strategy
- BRKCLD-1009: Micro-Service Applications for Infrastructure People
- BRKCLD-2008: Multi-Cloud and Application Centric Modeling, Deployment and Management with Cisco CloudCenter (CliQr)
- BRKPCS-2020: Automate your Data Center with UCS Director
- BRKCLD-2215: How to be a Hybrid Cloud ready IT Department
- LTRCLD-1050: CCC/ACI/UCSD - A Multicloud Story - An Infrastructure View
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