Red Hat CloudForms: OPENSTACK INFRASTRUCTURE MANAGEMENT

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About Me

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Agenda

- OpenStack Support
- Management Introduction
- What is a CMP
- Demo’s
  - Power, Provision and Console
  - Capacity and Utilization, Under and Over Cloud
  - Smart State and Genealogy
- Manual and Automatic Infrastructure Scaling
- Summary
- Q&A
Version Support

3,4,5,6 → 7
GARTNER: IAAS REFERENCE ARCHITECTURE AND CMPS

Source: Gartner (July 2012)
Infrastructure/Cloud

What is Infrastructure and what is Cloud?

Service Request
Tenanted
On Demand

Consumer

Cloud

Your “PaaS”

Your “Cloud”

Your “Datacenter”

Physical/Virtual Infrastructure

Administrator

Classic Compute
Storage and Networking
Holistic

Disk Failure!

Availability?
Demo 1

Power, Provisioning & Console
OpenStack - Power, Provision & Console
https://youtu.be/ByeCXMM-5z4
Capacity

The big question, what is the capacity of my environment?

<table>
<thead>
<tr>
<th>Aggregate Node CPU Resources</th>
<th>51.2 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Node Memory</td>
<td>352 GB</td>
</tr>
<tr>
<td>Aggregate Node CPUs</td>
<td>6</td>
</tr>
<tr>
<td>Aggregate Node CPU Cores</td>
<td>24</td>
</tr>
</tbody>
</table>

- Allocation
- Reservation
- Manual
- Usage
Utilization

Contention - Deployment Role - Compute

Currently using 12 CPU's of a possible 16, underutilized deployment role, ratio 0.8 to 1

Metrics - Deployment Role - Compute (CPU, RAM, Disk I/O & Network I/O)
Demo 2

Capacity & Utilization
Under & Over Cloud
OpenStack - Capacity and Utilization
https://youtu.be/Qe-sDxENXF8
Inventory

Basic

- Properties
  - Flavor
  - Operating System
  - IP Addresses

Relationships - More Later

Advanced

- SmartState
  - Users & Groups
  - Applications & Patches
  - Files & Registry keys
  - Contents

Reporting

General Reports
Compliance
Ad-Hoc
Custom

Relationships - Breadcrumbs

Benefits

Security - Only authorized accounts
Apps & Vulnerability assessments.
Watermark and Signature recognition
Configuration State Check
Demo 3

Smart State & Genealogy
OpenStack - SmartState and Genealogy
https://youtu.be/ysMDeqSddQ4
Scale Out

**Manual**

1. Select the OpenStack Infrastructure Provider

2. Re-configure the Provider

*Wait for the magic!*

**Automatic**

1. Choose a trigger - Alert, Policy, RESTapi, etc...

2. Assign trigger to something, Node, Instance etc...

*Wait for the magic!*
Demo 4

Manual and Automatic Infrastructure Scaling
OpenStack - Manual Scale
https://youtu.be/vzO90uuRjO8
OpenStack - OverCloud AUTO Scale
https://youtu.be/bcJo7Bj7ho4
Environment - Now

Red Hat OpenStack Deployment

UnderCloud
RHELOSP director

OverCloud
Nova-Controller

OverCloud
Nova-Compute

OverCloud
Tenant Space

CloudForms
Environment - Next

1 NEW Nodes has been added to the OverCloud Nova-Controller Deployment-Role

2 NEW Nodes have been added to the OverCloud Nova-Compute Deployment-Role
Demo 5

HEAT on Steroids
OpenStack - Heat/Cloudformations Templates
https://youtu.be/qiKrrGi51HU
Packaging

redhat
openstack
vmware
Microsoft Hyper-V
amazon web services

550mb
Release Schedule

Note: Red Hat CloudForms may NOT align directly to a ManageIQ release of the same month/quarter.
Note: Red Hat CloudForms version numbering is guidance only.
Manage OpenStack

- Make OpenStack manageable for the enterprise.
- Manage in parallel with other footprints, *migrate* workloads.
- Service catalog, chargeback / showback, *policy based controls*
- Manage tenant level as well as infrastructure (undercloud)
- *Auto-scaling* of infrastructure.

"Most enterprises find they need more than OpenStack for management and governance, as well as for multicloud management, including bursting across private and public cloud environments. As a result, many organizations implementing OpenStack invest in a Cloud Management Platform that rides on top, and provides an API translation and orchestration layer across private and public clouds."
Talks:

- **Wed, 7:00pm, Room 202** - Managing OpenStack clouds with Red Hat CloudForms
- **Thu, 10:40am Room 312** - Container Management at Red Hat
- **Thu, 1:20pm, Room 311** - Red Hat CloudForms, Red Hat Satellite 6, & Puppet for automating JBoss EAP 6
- **Thu, 1:20pm, Ballroom B-4** - CloudForms Automate and Red Hat Enterprise Virtualization
- **Thu, 1:20pm, Room 304** - ShellShock, HeartBleed--What’s the next headache for compliance?
- **Thu, 2:30pm, Room 206** - Red Hat CloudForms roadmap
- **Fri, 11:00am, Room 313** - Cloud automation: Migrating 1000+ servers from vCloud to OpenStack

Other:

- **Tue-Thu, Exhibition Floor** - CloudForms and Hybrid Cloud Management Pods
- **Thu, 4:00pm, Sheraton Boston** - ManageIQ birds of a feather Session
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EXPERIENCE OPEN SOURCE.