PUBLIC OR PRIVATE CLOUD: HOW YOU CAN HAVE YOUR CAKE AND EAT IT TOO WITH RED HAT

Build an Open Hybrid cloud using Red Hat

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Disclaimer

- This session does not pit public cloud against private cloud.
- This session does not compare OpenStack to AWS.
- OpenStack is not a replacement for public cloud.

This session discusses how you can build an open-hybrid-cloud and place workloads in the environment where they are best suited.
A COST APPROACH TO BUILDING A CLOUD
**Costs: Let’s go out to eat**

What criteria do you use?
What does either option cost?
How do you apportion the costs?

<table>
<thead>
<tr>
<th></th>
<th>A la carte menu</th>
<th>Buffet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost</strong></td>
<td>Priced by the item.</td>
<td>All you can eat at a fixed price.</td>
</tr>
<tr>
<td><strong>Use case</strong></td>
<td>Intimate, a meeting.</td>
<td>Family dining, a celebration.</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td>Vendor can prepare/cook by the item.</td>
<td>Vendor prepares a feast, estimates consumption.</td>
</tr>
</tbody>
</table>
Costs: CAPEX and OPEX

Capex - A large financial outlay to acquire the asset, then depreciate over use. Example: trucking.

Capex applied to software - Acquire the software binaries and license to use a software product. Example VMware, Oracle

Opex - A fairly even or predictable expense to operate an asset. Example: gasoline, oil and tires.

Opex applied to software - support and services. Acquiring software by subscription.
Building a private cloud: CAPEX

Traditional IT method of rolling out an application: budget and prearrange internal capacity

- Datacenter space
- Racks
- Servers
- Storage
- Networking
- Software
- Developers/Sys-admins

Linear demand
Long life projects
# Building a private cloud: CAPEX

## Advantages

- Interest on debt-financed capital can be tax deductible.
- Suitable for budgets and planning cycles.
- *Choice* of hardware and software

## Caution

- Excess capacity not easily recovered.
- Employees to manage hardware and software.
- Budget silos: storage, networking, software.
Consuming a public cloud: OPEX

- Dev/test
- Variety of services
- Sizes of storage and virtual servers
- Developer tools

- Startups that don’t want to invest in datacenters and hardware.
- Enterprises that want to become agile or reduce CAPEX costs.
## Consuming a public cloud: OPEX

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Pay-as-you-go.</td>
<td>● On demand costs are not predictable.</td>
</tr>
<tr>
<td>● OPEX budget line.</td>
<td>● Bandwidth (egress costs).</td>
</tr>
<tr>
<td>● Fast time to market.</td>
<td>● Lock-in: easy to get in, hard to get out.</td>
</tr>
</tbody>
</table>

*Caution:* Bandwidth (egress costs) and lock-in can pose challenges.
Cost to download data out of AWS S3

<table>
<thead>
<tr>
<th>Data Transfer OUT From Amazon S3 To Internet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>First 1 GB / month</td>
<td>$0.000 per GB</td>
</tr>
<tr>
<td>Up to 10 TB / month</td>
<td>$0.090 per GB</td>
</tr>
<tr>
<td>Next 40 TB / month</td>
<td>$0.085 per GB</td>
</tr>
<tr>
<td>Next 100 TB / month</td>
<td>$0.070 per GB</td>
</tr>
<tr>
<td>Next 350 TB / month</td>
<td>$0.050 per GB</td>
</tr>
<tr>
<td>Next 524 TB / month</td>
<td>Contact Us</td>
</tr>
<tr>
<td>Next 4 PB / month</td>
<td>Contact Us</td>
</tr>
<tr>
<td>Greater than 5 PB / month</td>
<td>Contact Us</td>
</tr>
</tbody>
</table>
SECURITY
<table>
<thead>
<tr>
<th></th>
<th>PRIVATE</th>
<th>PUBLIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attack surface</td>
<td>Limited to your datacenter</td>
<td>Shared infrastructure</td>
</tr>
<tr>
<td></td>
<td>October 2016</td>
<td>October 2016</td>
</tr>
<tr>
<td>Responsibility &amp; Control</td>
<td>Your staff/vendors.</td>
<td>Shared responsibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cloud vendor owns infrastructure - “IN”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customer owns: app, data, IdM, firewall, encryption - “OF”</td>
</tr>
</tbody>
</table>

Let’s talk about firewalls, TCP/IP ports
YOUR NEEDS
### Decision tree

**Your needs**

Cloud characteristics: Scalability, chargeback etc

- **Yes**
  - Private cloud and virtual infrastructure for sovereignty, isolation, performance

- **No**
  - Physical / virtualize
    - Red Hat Virtualization
    - Red Hat Satellite
    - Red Hat Enterprise Linux

**An option**

### Red Hat solutions

- Ansible by Red Hat
- Red Hat CloudForms
- Red Hat Enterprise Linux
- Red Hat OpenStack Platform
Private Cloud Demo
**Decision tree**

- **Your needs**
  - Cloud characteristics: Scalability, chargeback etc  
  - Yes
  
- **An option**
  - No
    - Physical / virtualize
  
- **Red Hat solutions**
  - Ansible by Red Hat
    - Red Hat Virtualization
    - Red Hat Satellite
    - Red Hat Enterprise Linux

- **Private cloud and virtual infrastructure for sovereignty, isolation, performance**
  
- **Yes**
  
- **An option**
  - No
    - Public cloud
  
- **Red Hat solutions**
  - Ansible by Red Hat
    - OpenShift by Red Hat
    - Red Hat CloudForms
    - Red Hat Enterprise Linux
Public Cloud Demo
Cloud characteristics: Scalability, chargeback etc

Private cloud and virtual infrastructure for sovereignty, isolation, performance

Free your org from vendor lock-in

Your needs

An option

No

Physical / virtualize

Yes

Public cloud

Red Hat solutions

Ansible by Red Hat
Red Hat Virtualization
Red Hat Satellite
Red Hat Enterprise Linux

Yes

VMware, Microsoft

Ansible by Red Hat
OpenShift by Red Hat
Red Hat CloudForms
Red Hat Enterprise Linux

Yes

Red Hat CloudForms
Red Hat Enterprise Linux
Use an open-hybrid-cloud
Hybrid Cloud Demo
A CUSTOMER EXAMPLE
CHALLENGE: SELF-SERVE STATION TO SPEED DELIVERY OF I.T. RESOURCES
Car sales are beyond showrooms and classified ads to digital channels that connect buyers and sellers. More than two-thirds of U.S. car buyers have used a Cox Automotive company. Cox Automotive operates 25+ companies, all creating new products and competing for technology resources.

SOLUTION: INFRASTRUCTURE-AS-A-SERVICE WITH RED HAT CLOUDFORMS
Cox Automotive chose Red Hat Cloud Infrastructure to manage its infrastructure in the cloud and deliver self-service access. Using Red Hat CloudForms, Cox Automotive employees can view the entire technology environment on one dashboard. The easy-access self-service portal allows any employee to provision technology resources and develop new products for customers.
Private, public or hybrid cloud with Red Hat you can have your cake and eat it too!
QUESTIONS

Video Sources
Self Service on Private Cloud - Michael Solberg
https://youtu.be/0Ylaz45FZYU

One click migrate to Azure - Jason Ritenour
https://youtu.be/l0ib1U5h1EY

Hybrid Cloud Management - Jerome Marc
https://youtu.be/d81C9GEBU1E
THANK YOU

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