Is OpenStack the best path forward towards successful Clouds?

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What is the best path forward?

- I was just wondering if you could help me find my path.

  - Well that depends on where you want to get to!

- Oh, it really doesn't matter, as long as...

  - Then it really doesn't matter which path you go…
Traditional On-Premises

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Client Manages

Client Manages

Customization; higher costs; slower time to value

Infrastructure as a Service

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Client Manages

Vendor Manages in Cloud

Standardization; lower costs; faster time to value

Platform as a Service

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Client Manages

Vendor Manages in Cloud

Software as a Service

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Vendor Manages in Cloud

Vendor Manages in Cloud

Open by design™

IBM
Agenda

• OpenStack Overview
• Design Philosophy and Components
• OpenStack Architectures
• OpenStack Considerations
OpenStack

Open software to manage compute, network & storage resources in the cloud

• Software to manage compute, net, and storage for cloud
• The foundation of IBM’s IaaS interoperability
• Over 20k participants, 400 companies: Larger than Linux
OpenStack’s Phenomenal Growth

Activity

30 Day Summary  
Jun 4 2015 — Jul 4 2015
4246 Commits
476 Contributors
including 78 new contributors

12 Month Summary  
Jul 4 2014 — Jul 4 2015
62572 Commits
Down -2670 (4%) from previous 12 months

2120 Contributors
Up +212 (11%) from previous 12 months

Community

Ratings
15 users rate this project:  4.7/5.0
Click to add your rating

Most Recent Contributors
...k Proposal Bot
Jeremy Stanley
Jenkins

Contributors per Month

https://www.openhub.net/p/openstack
<table>
<thead>
<tr>
<th>Release</th>
<th>Core Contributors</th>
<th>Technical Contributors</th>
<th>Commits</th>
<th>Blueprints</th>
<th>Projects</th>
<th>Key Contributions</th>
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<td>Folsom</td>
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<td>961</td>
<td>35</td>
<td>33</td>
<td>API Stability, Storage Enhancements, 21% of Nova design features</td>
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<td>Havana</td>
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<td>85</td>
<td>1595</td>
<td>71</td>
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<td>Enterprise Security, Ceilometer, Quality Assurance</td>
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<td>Icehouse</td>
<td>14</td>
<td>107</td>
<td>1722</td>
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<td>Quality Assurance, Authentication &amp; Security, 15% of Compute features</td>
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<td>Juno</td>
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<td>Kilo</td>
<td>24</td>
<td>124</td>
<td>2084</td>
<td>68</td>
<td>106</td>
<td>Federated Identity, 36% of Magnum commits, RefStack, Storage Enhancements</td>
</tr>
</tbody>
</table>

**IBM YTD Summary:**
- Commits: 8,221
- Blueprints: 316
- Projects: 106

**Total IBMers:**
- Essex: 54
- Folsom: 100
- Grizzly: 270
- Havana: 380
- Icehouse: 380
- Juno: 400
- Kilo: 450+
OpenStack Design Philosophy and Components
OpenStack Design Philosophy

• Simple to implement, massively scalable, elastic, and feature rich
• Architected to provide flexibility as you design your cloud
• No proprietary hardware or software requirements
• Able to integrate with legacy systems and third party technologies
• Share-nothing architecture – composable stand-alone services
• API driven and command line accessible
• Stateless and asynchronous
• Flexible networking models to suit the needs of different applications or user groups
**Internal Messaging**

AMQP (Advanced Message Queuing Protocol) is the messaging technology chosen by the OpenStack cloud. The AMQP broker, either *RabbitMQ* or *Qpid*, sits between OpenStack components and allows them to communicate in a loosely coupled fashion.
OpenStack is Comprised of Multiple Key Components

- **Compute (Nova)**
  Provision and manage virtual machines

- **Dashboard (Horizon)**
  Self-service portal

- **Image (Glance)**
  Catalog and manage server images

- **Identity (Keystone)**
  Unified authentication, integrates with existing systems

- **Object Storage (Swift)**
  Scalable, secure, reliable object storage

- **Network (Neutron)**
  Provides flexible networking-as-a-service

- **Block Storage (Cinder)**
  Allows block devices to be exposed and connected to compute instances
<table>
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<tr>
<th>All of the OpenStack Projects</th>
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<tbody>
<tr>
<td>Barbican</td>
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<td>Ceilometer</td>
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<td>Chefopenstack</td>
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<td>Cinder</td>
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<td>Congress</td>
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<td>Cue</td>
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<td>Keystone</td>
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<td>Murano</td>
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<tr>
<td>Neutron</td>
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<tr>
<td>Nova</td>
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<td>Openstack Ux</td>
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<td>Puppetopenstack</td>
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<td>Rpmpackaging</td>
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<td>Sahara</td>
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<td>Searchlight</td>
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<td>Security</td>
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<td>Solum</td>
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<td>Swift</td>
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<td>Tripleo</td>
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<td>Trove</td>
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<td>Zaqar</td>
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Sample OpenStack Architecture
Simple OpenStack Architecture
Clustered OpenStack Architecture
OpenStack “best path forwards” Considerations
Why Use OpenStack In The Enterprise

**Speed & Agility**
OpenStack accelerates your time-to-market by giving your business units a self-service portal to access necessary resources on-demand, and an API driven platform for developing cloud-aware apps.

**Interoperability & Hybrid Cloud Scenarios**
OpenStack is an open and flexible platform that enables application portability even among private and public clouds, allowing enterprises to choose the best cloud for their applications and workloads at any time, without lock-in. It can also be integrated with a variety of key business systems.

**Vibrant Commercial Ecosystem**
With support from every major IT vendor, including every significant Linux distribution, virtualization hypervisor, and public and hosted private cloud provider, and plug-ins from all major networking and storage vendors, you can build the environment you need with strong commercial and community support.

http://www.openstack.org/enterprise/
OpenStack “best path forward” Questions

- What is the goal, and is that goal realistic?
- Who is the target audience?
- What is your budget in cash and staff?
- What is your current level of expertise and buy-in?

# OpenStack Considerations

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<thead>
<tr>
<th>Public</th>
<th>BlueMix Dedicated</th>
<th>Local</th>
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<td>Cloud Management (IBM Cloud Orchestrator, UrbanCode)</td>
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<th>Public Cloud</th>
<th>Private Cloud</th>
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<td>Public</td>
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<td>Local</td>
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- bluebox cloud
- SOFTLAYER

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*It Depends*…

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