Cloud Management with OpenStack
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Overview

- What is OpenStack
- Networking, storage, compute
- Benchmarking
- Results
- Future work
- Lessons Learned
OpenStack Cloud

Your Applications

APIs

OpenStack Dashboard

Compute

Networking

Storage

OpenStack Shared Services

Standard Hardware

UNCLASSIFIED
### All Instances

#### Instances

<table>
<thead>
<tr>
<th>Project</th>
<th>Host</th>
<th>Name</th>
<th>IP Address</th>
<th>Size</th>
<th>Status</th>
<th>Task</th>
<th>Power State</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>osvmware.localdomain</td>
<td>Biz_Talk</td>
<td>192.168.23.8</td>
<td>m1.tiny</td>
<td>512MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Active</td>
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<tr>
<td>admin</td>
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<td>Oracle_db</td>
<td>192.168.23.7</td>
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<tr>
<td>admin</td>
<td>osvmware.localdomain</td>
<td>Puppet_Master</td>
<td>192.168.23.6</td>
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<td>admin</td>
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<td>web-deploy</td>
<td>192.168.23.5</td>
<td>m1.tiny</td>
<td>512MB RAM</td>
<td>1 VCPU</td>
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<tr>
<td>admin</td>
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<td>RHEL6</td>
<td>192.168.23.4</td>
<td>m1.tiny</td>
<td>512MB RAM</td>
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<tr>
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<td>osvmware.localdomain</td>
<td>f19-web</td>
<td>192.168.23.2</td>
<td>m1.small</td>
<td>2GB RAM</td>
<td>1 VCPU</td>
<td>20GB Disk</td>
<td>Active</td>
</tr>
</tbody>
</table>

Displaying 6 items
Storage and Compute Services
Swift Object Storage

How it works, the structure:
Cinder Block Storage
Life of an instance
Process & Results
Methods

- Preliminary Tests
- Installation
- Configuration
- Post-Install Tests

Benchmark Script

- SMG2000
- LinPack
- iPerf
- Stream
Results

Roadblocks

- Hardware
- RDO PackStack/Manual
- Quantum/Nova-Network
- Configuring Scripts
- Database control
- Warewulf
- Authentication
- Languages
Future Work & Conclusion

• Left to do:
  o Post-installation benchmarks
  o Failure Testing & High Availability Testing
  o Overhead performance

• Overall:
  o Installation 🌟 Configuration ✖
  o Scalable & cost effective
  o Alternative to VMware
  o Not ready for mainstream
Lessons Learned

- Difficult configuration
- Requires expertise
- Consider OpenStack training
- Fragile product
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Questions?