AGENDA

- Introduction to Cloud Computing
- Public vs. Private Clouds
- Openstack as example of open source software for private clouds
- How-To set up and run a private cloud using Openstack
Introduction to Cloud Computing

Cloud computing = services that are being delivered to the user by use of a network.

Main cloud services

compute:
- Software as a Serv. (SaaS)
- Platform as a Serv. (PaaS)
- Desktop as a Serv. (DaaS)

storage:
- holds user’s data
- centralized system
Public vs. Private Clouds

Public
- Dropbox
- Google Drive
- Amazon Web Services
- SkyDrive

Private
- OpenStack
- OpenNebula
- Eucalyptus
- Ganeti

Logos belong to their respective owners
Openstack as example of open source software for private clouds

Openstack - Cloud Operating System

http://www.openstack.org/software/
How-To set up and run a private cloud using Openstack
Stack.sh
All finished!

Horizon is now available at http://130.212.
Keystone is serving at http://130.212 5000/v2.0/
Examples on using novacient command line is in exercise.sh
The default users are: admin and demo
The password: 
This is your host ip: 130.212
stack.sh completed in 150 seconds.
~/devstack$
Log In
Horizon
Overview
Cinder
## Flavors

![Flavors](image)

<table>
<thead>
<tr>
<th>Flavor Name</th>
<th>VCPUs</th>
<th>RAM</th>
<th>Root Disk</th>
<th>Ephemeral Disk</th>
<th>ID</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1.tiny</td>
<td>1</td>
<td>512MB</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>Edit Flavor</td>
</tr>
<tr>
<td>m1.small</td>
<td>1</td>
<td>2048MB</td>
<td>20</td>
<td>0</td>
<td>2</td>
<td>Edit Flavor</td>
</tr>
<tr>
<td>m1.medium</td>
<td>2</td>
<td>4096MB</td>
<td>40</td>
<td>0</td>
<td>3</td>
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</tr>
<tr>
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<td>8192MB</td>
<td>80</td>
<td>0</td>
<td>4</td>
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<tr>
<td>m1.xlarge</td>
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<td>16384MB</td>
<td>160</td>
<td>0</td>
<td>5</td>
<td>Edit Flavor</td>
</tr>
</tbody>
</table>

OpenStack Semester Project
Glance
Keystone
Keystone

![OpenStack Dashboard](image)

<table>
<thead>
<tr>
<th>User Name</th>
<th>Email</th>
<th>User ID</th>
<th>Enabled</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>nova</td>
<td><a href="mailto:nova@example.com">nova@example.com</a></td>
<td>3ae2e76bdc:18460c8b53b466d211713</td>
<td>True</td>
<td>Edit</td>
</tr>
<tr>
<td>cinder</td>
<td><a href="mailto:cinder@example.com">cinder@example.com</a></td>
<td>5a495c841b1d14278b69d4cc53eddef2c</td>
<td>True</td>
<td>Edit</td>
</tr>
<tr>
<td>demo</td>
<td><a href="mailto:demo@example.com">demo@example.com</a></td>
<td>c9e5df2cf7044d56c5f679b6a02xaa1</td>
<td>True</td>
<td>Edit</td>
</tr>
<tr>
<td>admin</td>
<td><a href="mailto:admin@example.com">admin@example.com</a></td>
<td>ea059e3d959a44ba2a56c946e067551</td>
<td>True</td>
<td>Edit</td>
</tr>
<tr>
<td>glance</td>
<td><a href="mailto:glance@example.com">glance@example.com</a></td>
<td>8bbcb08692244c309f9ae3253bdc2ac3</td>
<td>True</td>
<td>Edit</td>
</tr>
</tbody>
</table>
System Info

```
<table>
<thead>
<tr>
<th>Service</th>
<th>Host</th>
<th>Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>nova</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
<tr>
<td>s3</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
<tr>
<td>glance</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
<tr>
<td>cinder</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
<tr>
<td>ec2</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
<tr>
<td>keystone</td>
<td>130.212.14.66</td>
<td>Enabled</td>
</tr>
</tbody>
</table>
```
How to add an image
Stackrc Editing
Check it out
VNC connection into Instance

Instance Detail: lucid

Instance VNC Console

If VNC console is not responding to keyboard input: click the grey status bar below. Click here to show only VNC

lucid

Ubuntu

Password:

Cancel Log In
Conclusion

- Openstack is pretty easy to use
- Very customizable
- Does it do what we need it to?
- Try it yourself!
Questions?