OpenStack in Debian GNU/Linux

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Executive summary

- Goal: apt-get install openstack
- Reality: Follow a HOWTO
- Goal: unified effort with Ubuntu
- Reality: too much redundancy and not enough communication
- Goal: stable releases
- Reality: six months vs over 18 month release cycle
OpenStack 101

- IaaS / PaaS / SaaS
- compute
- storage
- network
- APIs
• Collect creatures
• Make a circle around the target
• Go to the next level

A WebGL game
• Collect creatures
• Make a circle around the target
• Go to the next level
The garage with a small scale architecture

The success and automated elastic scaling
Architecture

need 5 instances
Create a keypair

Keypair Name
ioic

Description:
Keypairs are ssh credentials which are injected into images when they are launched. Creating a new key pair registers the public key and downloads the private key (a .pem file).

Protect and use the key as you would any normal ssh private key.

Cancel  Create Keypair
Launch two MySQL Instances

Rename primary and secondary
Login in the console
Ping the secondary
Using the private IP
Create a PHP instance
Create a snapshot
Create a second PHP instance
Create a HAProxy from a snapshot

Open the port TCP 80 to the public
Allocate a public IP

Associate the public IP to the HAProxy instance
Worldwide Architecture

Duplicate the Infrastructure.

Multiply the php instances
Get API credentials

Download OpenStack RC File

**Select a Project**
admin_project

**Description:**
Download the RC file for the selected project, then type "source openrc" in the terminal to configure your environment to communicate with OpenStack.

Download RC File
while ; do
    requests=$(curl --silent http://$SERVER/\server-status | perl -ne 'print $1 if(m:(\d+)\s+requests currently:)')
    servers=$(nova list --name php | grep php | wc -l)
    desired_servers=$((requests / 10 + 1))
    echo $requests requests for $servers instead of desired $desired_servers
    if (( desired_servers > servers )); then
        nova boot --poll --flavor 6 --image 76da9897-c9c1-4f84-b45d-108e698a8637 \
          --key_name loic php
    elif (( desired_servers < servers )); then
        nova delete php
    fi
    sleep 5
done
Add a server

Instances & Volumes

<table>
<thead>
<tr>
<th>Instance 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>php</td>
<td>10.1.0.9</td>
<td>64MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Build</td>
<td>Spawning</td>
</tr>
<tr>
<td>php</td>
<td>10.1.0.8</td>
<td>64MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Active</td>
<td>None</td>
</tr>
<tr>
<td>php</td>
<td>10.1.0.7</td>
<td>64MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Active</td>
<td>None</td>
</tr>
<tr>
<td>mysql-primary</td>
<td>10.1.0.5</td>
<td>64MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Active</td>
<td>None</td>
</tr>
</tbody>
</table>
Remove a server

<table>
<thead>
<tr>
<th>Instance 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>php</td>
<td>10.1.0.8</td>
<td>64MB RAM</td>
<td>1 VCPU</td>
<td>0 Disk</td>
<td>Running</td>
<td><img src="edit.png" alt="Edit Instance" /></td>
</tr>
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OpenStack packaging team

- https://alioth.debian.org/projects/openstack/
- 7 members
- currently three active
- it needs a lot more manpower
Organisation

- irc.freenode.net#debian-openstack
- alioth mailing list
- ~20 repo
  http://anonscm.debian.org/git/git/openstack/
- git-buildpackage way of doing things
Useable Defaults

• HOWTO
  http://wiki.debian.org/OpenStackHowto

• Improve each package to reduce the Howto

• apt-get install openstack and no Howto
Puppet, chef, cfengine

- Puppet HOWTO
  http://wiki.debian.org/OpenStackPuppetHowto

- ensure the packages are friendly

- Improve the puppet modules to remove the Howto
Future

- Package 2012.2 in experimental
- Presence at FOSDEM 2013
- Presence at OpenStack summit April 2013
- How to deal with the release cycle?
http://the.re/

• Sharing hardware between friends
• OpenStack Essex and Wheezy based
• Hardware at three different locations
• Actually using OpenStack
http://april.org/

- http://agir.april.org/projects/admins/
- Migrate from vserver to OpenStack
- Agile applied to devops
- Continuous integration of puppet manifests
Thank you

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http://the.re/