Greek Research and Technology Network S.A.
GRNET

~okeanos:
One Click Away from your Own
Virtual Machines, Network, Storage, ...

GÉANT Cloud Service Showcase

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Create new machine

1. Predefined
   - Small
   - Medium
   - Large

2. Flavor
   - CPUs (52 left)
     - 1x
     - 2x
     - 4x
     - 8x
   - Memory size (52.00 GB left)
     - 512 MB
     - 1 GB
     - 2 GB
     - 4 GB
     - 8 GB
     - 8 GB
   - Disk size (520.00 GB left)
     - 5 GB
     - 10 GB
     - 20 GB
     - 40 GB
     - 60 GB
     - 80 GB
     - 100 GB

3. System project

4. Storage
   - Archipelago
   - Standard
   - Local

5. Archipelago cached

previous next
Create new machine

**Networking**

**Available networks**

Select the networks you want your machine to get connected to.

<table>
<thead>
<tr>
<th>Network Type</th>
<th></th>
<th>Address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet (public IPv6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet (public IPv4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>192.168.4.31</td>
<td></td>
<td></td>
<td>System project</td>
</tr>
<tr>
<td>192.168.12.2</td>
<td></td>
<td></td>
<td>System project</td>
</tr>
<tr>
<td>netone</td>
<td></td>
<td>192.168.0.0/24</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td></td>
<td>192.168.3.0/24</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td></td>
<td>192.168.4.0/24</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td></td>
<td>192.168.5.0/24</td>
<td></td>
</tr>
</tbody>
</table>
Create new machine

1 2 3 4 Personalize

Virtual machine custom options
Virtual machine custom options

5

Machine name

My CoreOS stable server

Public SSH keys

Your account contains the following SSH public keys. Select one or more to activate in your new machine. You will then be able to ssh with the corresponding private key without a password.

grnet

Suggested tags

You may change machine tags later from the machines view.

Role

Database server  File server
Mail server  Web server  Proxy

previous  next
### My CoreOS stable server

<table>
<thead>
<tr>
<th><strong>Image</strong></th>
<th><strong>Flavor</strong></th>
<th><strong>SSH Keys</strong></th>
<th><strong>IP Addresses</strong></th>
<th><strong>Private networks</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CoreOS stable</td>
<td>CPUs</td>
<td>grnet</td>
<td>192.168.12.2</td>
<td>No private networks</td>
</tr>
<tr>
<td>CoreOS 522.6.0</td>
<td>Memory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS</td>
<td>1024 MB</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Size</td>
<td>10.00 GB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI</td>
<td>Coreos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage type</td>
<td>No GUI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kernel</td>
<td>3.17.8+</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Project</td>
<td>Machine Tags</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>No tags selected</td>
<td></td>
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</tr>
</tbody>
</table>

**Create new machine**
File Storage

• pithos+: Online object storage
• Web interface
• OpenStack API
• Multiple containers
• Versioning
• File sharing
File Storage

PITHOS API
openstack swift compatible object store API

STORE ADAPTERS
convert object store response to store models

UI STORE
filesystem models (e.g. file, dir)

routes
files, groups, shared, containers

controllers

views

third party javascript
node

storage backends

/kamaki
swift clients

PITHOS UI

ember

rendered html

Adimame/my-files
File Syncing

- agkyra: Syncs file between local computer and Pithos+
- agkyra = anchor (in Greek), because it sinks.
Image Creation as a Service (ICaaS)

1. Browse

2. Create Image

3. Deploy

ICaaS

bitnami

@keanos

pithos+

computers
Backup as a Service (BaaS)
Platform as a Service (PaaS)
Synnefo and ~okeanos Releases

An open source cloud software written in Python and C

- Oct. 2010: implementation starts
- July 2011: v0.5.2.1 (powers ~okeanos alpha)
- 28.3.2012: v0.9
- 26.6.2013: v0.14.1
- 3.10.2013: v0.14.7
- 22.12.2013: v0.15rc1 (powers ~okeanos beta)
- 10.02.2014: v0.15rc5
- 14.02.2014: v0.15
- 11/2014: v0.16
- 12/2015: v0.17
Some Numbers

• VMs: > 4000 currently active
• ~500K VMs spawned so far (started/destroyed)
• ~120K vLANs spawned so far (user owned VLANs)
• Typical VM flavor (more than 340 flavors available!): 4 cores (vCPUs), 80GB Hard Disk, 4 or 8GB RAM
• 13 Ganeti Clusters, spanning a whole DC
• 1PB of raw storage capacity
• Capacity will triple in the next few months, as we are adding resources to three DCs!
### Design

<table>
<thead>
<tr>
<th>Client</th>
<th>OpenStack</th>
<th>Synnefo</th>
<th>UI</th>
</tr>
</thead>
<tbody>
<tr>
<td>vCloud</td>
<td>OpenStack</td>
<td>OpenStack</td>
<td>API</td>
</tr>
<tr>
<td>vCloud</td>
<td>OpenStack</td>
<td>Synnefo</td>
<td>CLOUD</td>
</tr>
<tr>
<td>vCenter</td>
<td>OpenStack</td>
<td>Synnefo</td>
<td>CLUSTER</td>
</tr>
<tr>
<td>vSphere</td>
<td>libvirt</td>
<td>Ganeti</td>
<td>NODE</td>
</tr>
<tr>
<td>ESXi</td>
<td>KVM / XEN</td>
<td>KVM / XEN</td>
<td>HYPervisor</td>
</tr>
</tbody>
</table>
Thanks

• Try it live at: http://okeanos-global.grnet.gr
• Homepage: http://okeanos.grnet.gr
• Software lives at: http://www.synnefo.org
• Repository: https://github.com/grnet/synnefo

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