





Ganeti

Ganeti Core Team - Google
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Web Interfaces

Ganeti Web Manager and others

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Latest version of these slides

Please find the latest version of these slides at:

<https://code.google.com/p/ganeti/wiki/LISA2013>

Web Interfaces

- Ganeti web manager
 - Overview
 - Installation
 - Usage
- Synnefo and okeanos
 - Overview
 - Quick demo
- ganetimgr web manager
 - Overview

Ganeti Web Manager Overview

- Web-based management system
- Easier management: no commands to remember
- Delegate authority: enables "self-service management" for users
- A project of OSU Open Source Lab
 - Written in Python using the Django web framework
 - GPLv2

Users and Groups

- User/Group model (independent, not tied to LDAP, etc.)
- A user can be in any number of groups
- User/Groups have fine-grained settings on what they can/can't do
- Admin Permissions
 - Control what a user/group can do on each cluster and instance
- Quota System
 - Restrict resource usage by user or group

Cluster Permissions

admin	<ul style="list-style-type: none">• Grants full access to the cluster.• Includes ability to set permissions and quotas, and full access to all virtual machines.
create_vm	Grants ability to create virtual machines on the cluster.
tags	Grants ability to set tags on the cluster.
replace_disks	Ability to replace disks of VMs on the cluster.
migrate	Can migrate a VM to another node
export	Can export a virtual machine

Instance Permissions

admin	Full control
modify	Allows user to modify VM's settings, including reinstallation
remove	Permission to delete this VM
power	Permission to shutdown this VM
tags	Can set tags for this VM

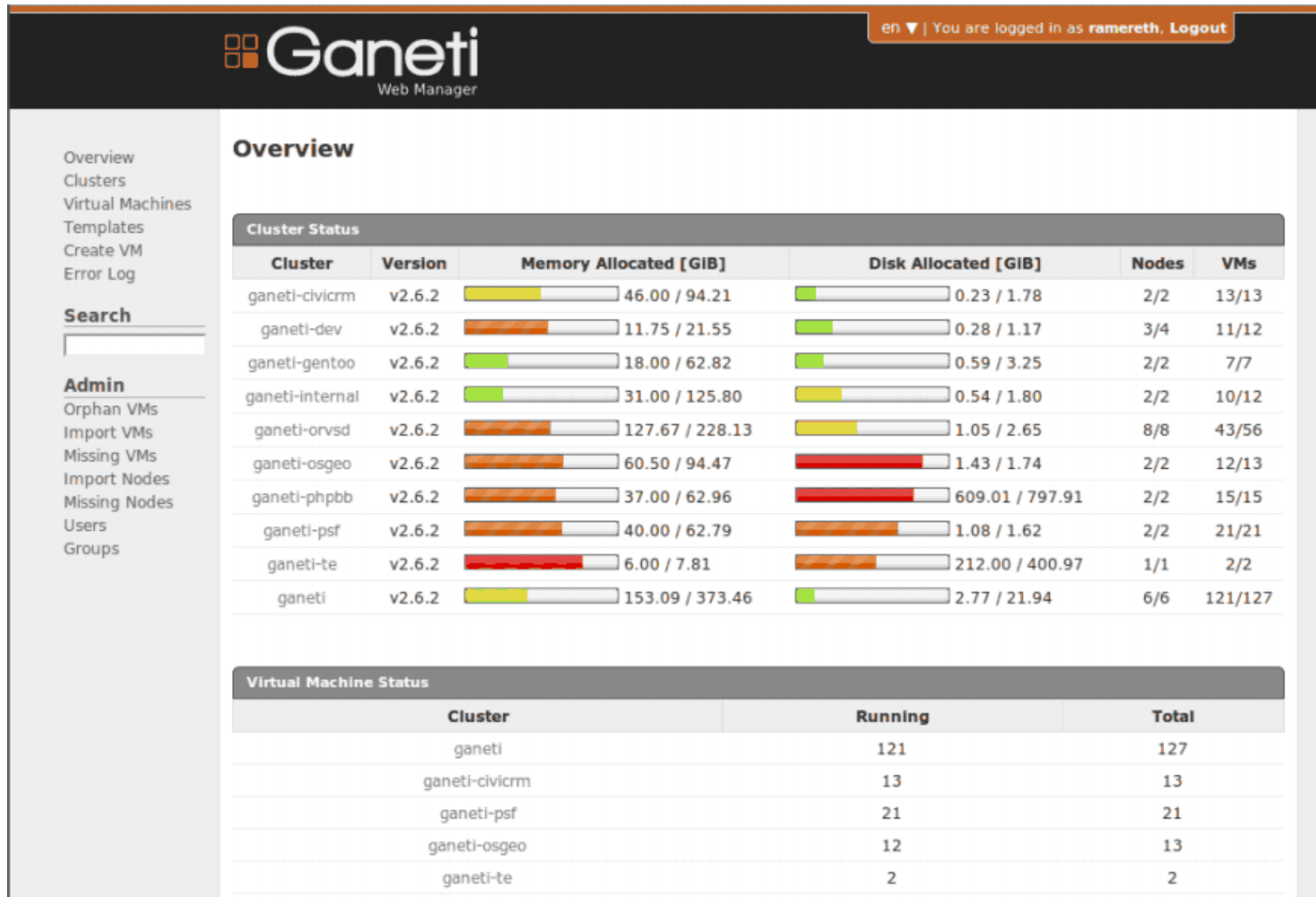
Quotas

- Restricts resources used by users and groups
 - RAM
 - disk space
 - vCPUs
- Default quota for each cluster and user
- No quota == unlimited.


RBAC in a nutshell

- Assigning individuals access is nice, but gets messy fast.
- Use "role-based access control" (RBAC)
- Clusters should be owned by a group.
- Add people to the groups they should be able to administer.
- Instances should be owned by groups or a single user
 - don't create a group if only one person will ever be in it

Ganeti Web Manager Dashboard



Cluster status

 **Ganeti**
Web Manager

en ▼ | You are logged in as **ramereth**, [Logout](#)

Overview

Clusters

Virtual Machines

Templates

Create VM

Error Log

Search

Admin

Orphan VMs

Import VMs

Missing VMs

Import Nodes

Missing Nodes

Users

Groups

Cluster : ganeti-supercell.osuosl.bak

Overview

Virtual Machines

Nodes

Users

Log

Jobs

↕	Name ↕	Owner ↕	Node ↕	OS ↕	RAM ↕	Disk Space ↕	vCPUs ↕
✓	bigtop-centos.osuosl.test	Apache Bigtop	supercell2	Centos (<i>image</i>)	1.00 GiB	5.00 GiB	1
✓	bigtop-jenkins.osuosl.test	Apache Bigtop	supercell2	Ubuntu Lucid (<i>image</i>)	4.00 GiB	50.00 GiB	1
✓	bigtop-lucid.osuosl.test	Apache Bigtop	supercell2	Ubuntu Lucid (<i>image</i>)	1.00 GiB	5.00 GiB	1
✓	chance_sux100	osuadmin	supercell1	Centos (<i>image</i>)	512 MiB	4.00 GiB	2
✓	civident1.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.34 GiB	8.58 GiB	1
✓	civident2.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.34 GiB	8.58 GiB	1
✓	civident3.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.34 GiB	8.58 GiB	1
✓	civident4.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.34 GiB	8.58 GiB	1
✓	civident5.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.34 GiB	8.58 GiB	1
✓	civident6.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid 32bit (<i>image</i>)	1.27 GiB	8.50 GiB	1
✓	civihead.osuosl.test	CiviCRM	supercell2	Ubuntu Lucid (<i>image</i>)	2.00 GiB	12.00 GiB	2

Create an instance

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 **Ganeti**

Web Manager

You are logged in as **peter**. [Logout](#)

New Virtual Machine

Owner

Cluster

Instance Name

Start up after creation ☒

DNS Name Check ☐

Disk Template

Primary Node

Operating System

General Parameters

Virtual CPUs

Memory

Disk Size

Disk Type

NIC Mode

NIC Link

NIC Type

Hypervisor Parameters

Kernel Path

Root Path

Enable Serial Console ☐

Boot Device

CD-ROM Image Path

Disk Template


Disk layout template for the virtual machine on the cluster node.

The available choices are:

- **plain** - Disk devices will be logical volumes (e.g. LVM)
- **drbd** - Disk devices will be DRBD (version 8.x) on top of LVM volumes
- **file** - Disk devices will be regular files (e.g. qcow2)
- **diskless** - This creates a virtual machine with no disks. Its useful for testing only (or other special cases).

If drbd is selected, then a primary and secondary node will need to be chosen unless automatic allocation has been selection. DRBD will allow the virtual machine to use live migration and failover in case one of the nodes goes offline.

Instance being created

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Web Manager

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gwm : peter.gwm.osuosl.org

 **Instance Create**


```
* creating instance disks...
adding instance peter.gwm.osuosl.org to cluster config
- INFO: Waiting for instance peter.gwm.osuosl.org to sync disks.
- INFO: Instance peter.gwm.osuosl.org's disks are in sync.
* running the instance OS create scripts...
```


Overview


Users

Console

Owner	peter
Status	Stopped
Autostart	
UUID	
Primary node	
Failover node	
Created on	
Last modified	
NIC type	
Disk type	

 Delete


 Reinstall

 Start

Connect to console



Ganeti Jobs



Web Manager

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Cluster : ganeti-internal.osuosl.bak

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Jobs

Job Id	Object	Operation	Status	Finished
40	chef	Instance Create	success	04/02/2013 10:40 p.m.
42	chef	Instance Startup	success	04/02/2013 10:46 p.m.
43	chef	Instance Shutdown	success	04/03/2013 12:20 a.m.
45	chef	Instance Reinstall	success	04/03/2013 12:21 a.m.
46	chef	Instance Startup	success	04/03/2013 8:08 a.m.
47	chef	Instance Shutdown	success	04/03/2013 11:17 a.m.
49	chef	Instance Reinstall	success	04/03/2013 11:18 a.m.
50	chef	Instance Startup	success	04/03/2013 11:18 a.m.
57	logs	Instance Create	success	04/04/2013 12:34 p.m.
61	logs	Instance Reboot	success	04/04/2013 3 p.m.
63	logs	Instance Shutdown	success	04/04/2013 3:06 p.m.
65	logs	Instance Startup	success	04/04/2013 3:17 p.m.
68	logs	Instance Reboot	success	04/04/2013 11:47 p.m.
71	mon1	Instance Create	success	04/05/2013 12:06 p.m.
74	mon1	Instance Startup	success	04/05/2013 12:34 p.m.
75	mon1	Instance Shutdown	success	04/05/2013 3:02 p.m.

Behind the scenes

- Permissions are recorded by setting Ganeti tags on clusters and instances.
- Tags are cached in a local database for speed

Format:

```
GANETI_WEB_MANAGER:<permission>:[G|U]:<user_id>
```

Examples:

Admin permission for User with id 2:

```
GANETI_WEB_MANAGER:admin:U:2
```

Start permission for Group with id 4:

```
GANETI_WEB_MANAGER:start:G:4
```

Synnefo

- Open Source project to use Ganeti to build a complete private cloud solution
- Relatively new project with a lot of horsepower behind it.
- Project home:
 - <http://www.synnefo.org/>
 - <https://code.grnet.gr/projects/synnefo>
- Documentation:
 - <http://docs.dev.grnet.gr/synnefo/latest/>
- Public cloud based on it:
 - <https://www.oceanos.io>

Synnefo Components

- Identity Management (codename: astakos)
- Object Storage Service (codename: pithos+)
- Compute Service (codename: cyclades)
- Network Service (part of Cyclades)
- Image Registry (codename: plankton)
- Billing Service (codename: aquarium)
- Volume Storage Service (codename: archipelago)


Machines view



The screenshot shows the OpenStack dashboard interface. At the top, the 'openstack alpha' logo is on the left, and 'options' and 'en' are on the right. Below the header, there's a navigation bar with a monitor icon and a cluster icon. The main title 'machines' is on the right. An orange button 'New Machine +' is on the left. On the right, there are three view toggle buttons: 'icon' (selected), 'list', and 'single'. The main content area displays two machines:

Machine ID	IPv4	IPv6	Status
tix001	83.212.96.45	...a80c:eaff:fe0d:2ef3	Running
tix002	83.212.96.70	...a80c:eaff:fe1d:b2fd	Running


Each machine entry includes a monitor icon, the machine ID, its IP addresses, and a status indicator (four green squares for 'Running'). An 'info' button is available for each machine.


Networks view


 alpha options ▾ | en


  networks

New Network +

Internet
machines (2)

Public network


tixback
machines (2)

Private network


Quick okeanos demo

Time to see it work!

ganetimgr web manager

- Simplified multicluster web manager geared at end users
- Original code of the Ganeti web manager, then evolved independently
- See <http://ganetimgr.readthedocs.org/en/latest/>
- Code at <https://code.grnet.gr/projects/ganetimgr>

Thank You!

Questions?

Survey at <https://www.usenix.org/lisa13/training/survey>



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