
Google ganeti

Ganeti

Ganeti Core Team - Google
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Web Interfaces

Ganeti Web Manager and others

- Guido Trotter <ultrotter@google.com>
- Helga Velroyen <helgav@google.com>

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	• 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

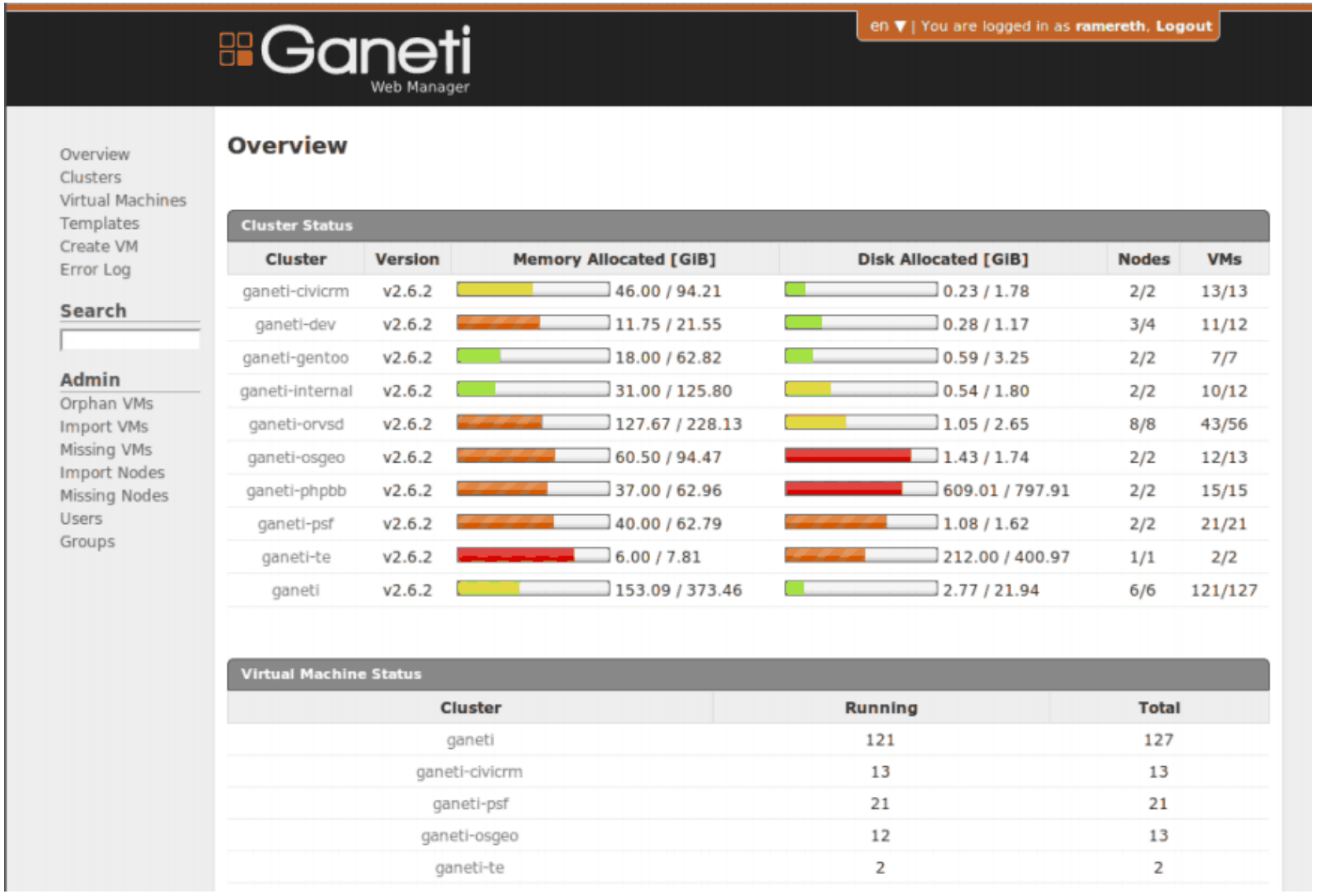
Quotas

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

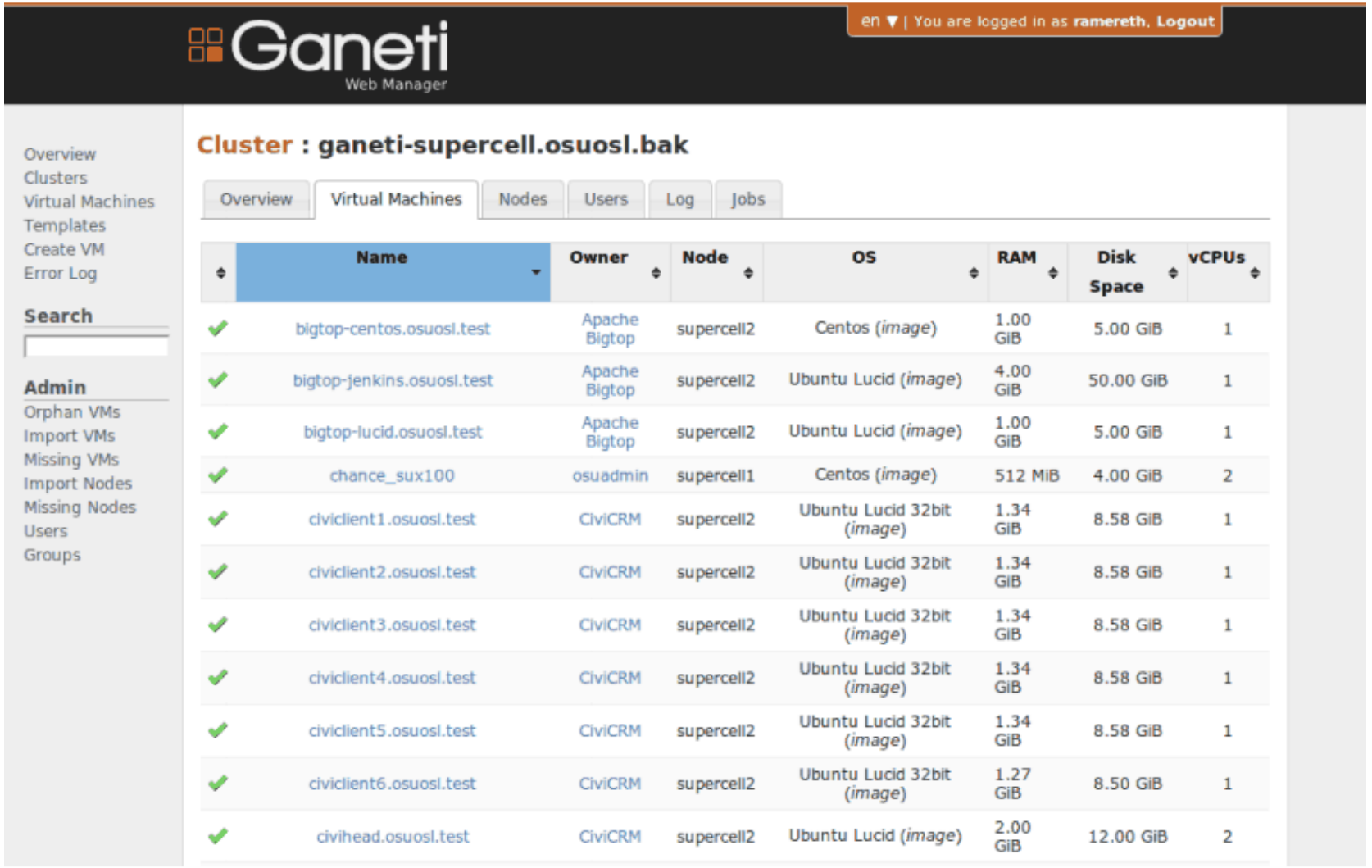
RBAC in a nutshell

- 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

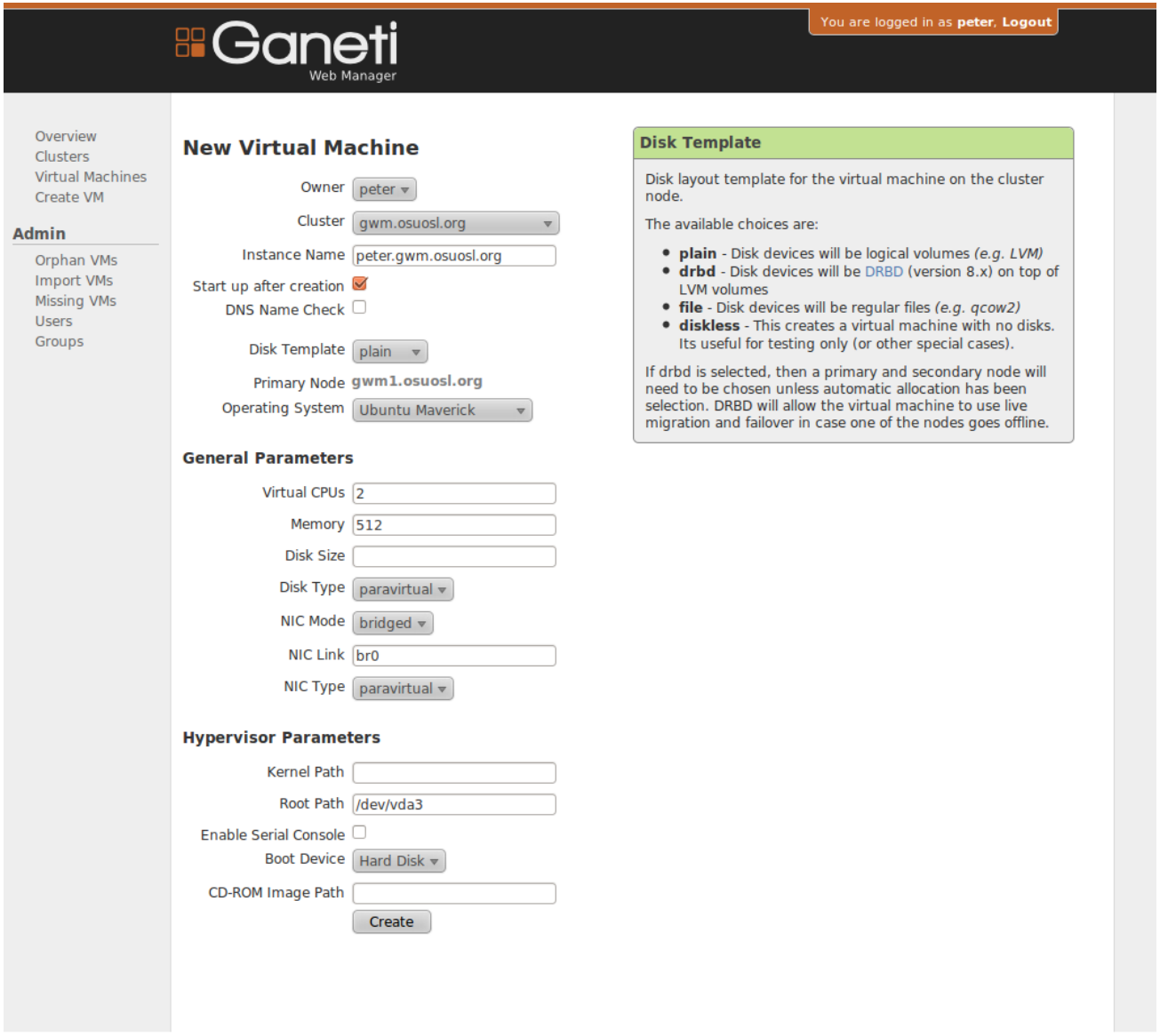
Ganeti Web Manager Dashboard



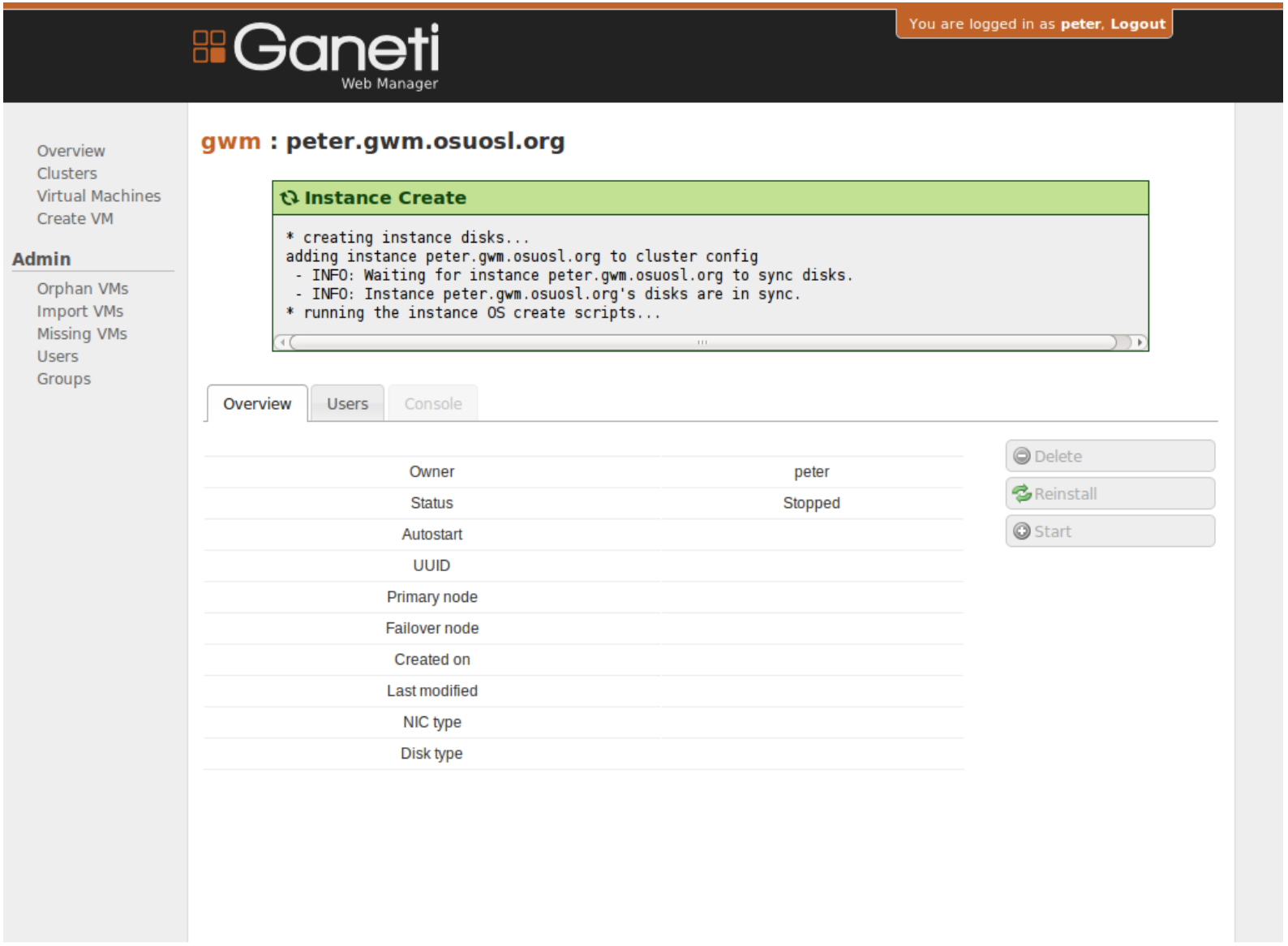
Cluster status



Create an instance

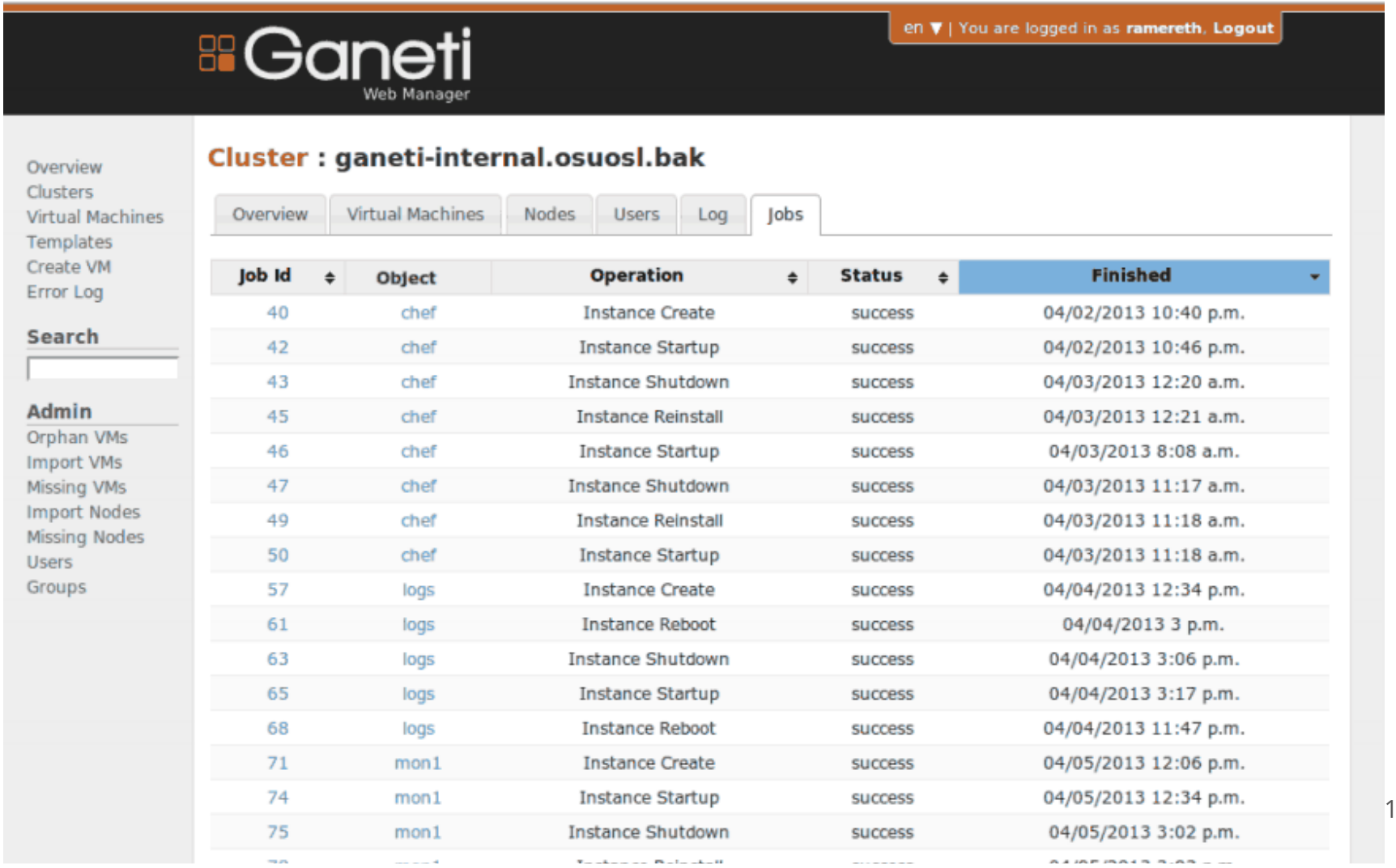


Instance being created



Connect to console

Ganeti Jobs


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-internal.osuosl.bak
Overview
Virtual Machines
Nodes
Users
Log
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.okeanos.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

Networks view

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 indepentently
- 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