

# Hands on Virtualization with Ganeti

## Part 2: Ganeti Web Manager

OSCON 2011

Ganeti Web Manager has been pre-installed on the master node. This tutorial assumes you have a working Ganeti cluster with at least a single node. Full install docs and other project information available at <http://code.osuosl.org/projects/ganeti-webmgr>

### **Overview**

1. Starting Ganeti Web Manager
2. Importing a Cluster
3. Cluster Details
  - a. instances
  - b. nodes
  - c. permissions
4. Node Detail
5. Creating an Instance
6. Ganeti Jobs
7. Instance Detail
  - a. permissions
  - b. VNC
8. Overview
9. User Management

## 1) Start Django Development Server

1. `cd ganeti_webmgr`
2. `source bin/activate`
3. `./manage.py runserver 0.0.0.0:8000`


## 2) Open <http://localhost:8000> in your browser

default password for admin user and cluster user are:

**username:** oscon

**password:** oscon

### 3) Add A Cluster: [Menu](#) > [Clusters](#) > [Add Cluster](#)

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

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**Admin**

- Orphan VMs
- Import VMs
- Missing VMs
- Import Nodes
- Missing Nodes
- Users
- Groups

**Search**

### Cluster : Add

Hostname:

Port:

Description:

Username:

Password:


#### Default Quota

Virtual CPUs:

Disk Space:

Memory:

#### 4) Cluster Detail: [Menu](#) > [Clusters](#) > [ganeti.example.org](#)

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**Search**

### Cluster : ganeti.example.org

Overview Virtual Machines Nodes Users Log

<b>Architecture</b>	64bit	 Edit
<b>Ganeti Version</b>	2.4.2	 Delete
<b>Default hypervisor</b>	kvm	 Redistribute Config
<b>Available hypervisors</b>	kvm	
<b>Master node</b>	<a href="#">node1.example.org</a>	
<b>Created</b>	08/07/2011 14:29	
<b>Last modified</b>	08/07/2011 14:29	
<b>Virtual Machines</b>	1	
<b>Nodes</b>	1	

#### Resource Usage

<b>Ram Allocated [GIB]</b>	 0 / 0.485
<b>Ram Used [GIB]</b>	 0.166 / 0.485
<b>Disk Allocated [GIB]</b>	 5.00 / 25.4
<b>Disk Used [GIB]</b>	 5.00 / 25.4

#### Default Quota

<b>Disk Space</b>	unlimited
<b>Memory</b>	unlimited
<b>Virtual CPUs</b>	unlimited

4) Cluster Detail (nodes): [Menu](#) > [Clusters](#) > [ganeti.example.org](#) > [Nodes](#) tab

The screenshot displays the Ganeti Web Manager interface. At the top, the logo 'Ganeti Web Manager' is visible on the left, and a user status bar on the right indicates 'en | You are logged in as oscon, Logout'. The main content area is titled 'Cluster : ganeti.example.org' and features a navigation bar with tabs for 'Overview', 'Virtual Machines', 'Nodes', 'Users', and 'Log'. The 'Nodes' tab is active, showing a table with the following data:

Name	Memory Allocated [GIB]	Disk Allocated [GIB]	Instances (P/S)
node1	0 / 0.485	5.00 / 25.4	1 / 0

The left sidebar contains a navigation menu with sections for 'Admin' (Orphan VMs, Import VMs, Missing VMs, Import Nodes, Missing Nodes, Users, Groups) and 'Search' (a search input field).

5) Grant “Create Virtual Machine” Permissions: [Menu](#) > [Clusters](#) > [ganeti.example.org](#) > [Users](#)

The screenshot displays the Ganeti Web Manager interface. At the top left is the Ganeti logo with the text "Web Manager". On the top right, a user notification bar shows "en" with a dropdown arrow, "You are logged in as oscon.", and a "Logout" link. The main content area is titled "Cluster : ganeti.example.org" and contains a navigation bar with tabs for "Overview", "Virtual Machines", "Nodes", "Users", and "Log". Below the navigation bar is a table with two columns: "Name" and "Permissions". The table is currently empty. A modal dialog box titled "Add User:" is open on the right side of the screen. The dialog has a "close" button in the top right corner. It contains a "User/Group:" field with a dropdown menu showing "oscon". Below this are several permission options, each with a checkbox and a description:

- Tags:** Can set tags on this cluster.
- Admin:** All permissions on this cluster and its virtual machines. Can grant/revoke permissions.
- Replace Disks:** Can replace the disks of a virtual machines.
- Create VM:** Can create a virtual machine on this cluster.
- Migrate:** Can migrate a virtual machine to another node.
- Export:** Can export a virtual machine.

At the bottom of the dialog is a "Save" button, which is being clicked by a mouse cursor.

6) Node Detail: [Menu](#) > [Clusters](#) > [Primary Node](#)

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- Virtual Machines
- Create VM





**Admin**


- Orphan VMs
- Import VMs
- Missing VMs
- Import Nodes
- Missing Nodes
- Users
- Groups


**Search**

**ganeti.example.org : node1.example.org**

- Detail
- Primary
- Secondary
- Log

<b>Status</b>	✓
<b>Primary IP</b>	10.1.0.16
<b>Secondary IP</b>	192.168.16.16
<b>Role</b>	Master
<b>Master Candidate</b>	✓
<b>Drained</b>	✗
<b>Ram Allocated [GIB]</b>	 0.250 / 0.485
<b>Ram Used [GIB]</b>	 0.172 / 0.485
<b>Disk Allocated [GIB]</b>	 7.90 / 25.4
<b>Disk Used [GIB]</b>	 7.52 / 25.4
<b>Virtual Machines</b>	5 / 0

 Change Role

 Migrate

7) Deploy a Virtual Machine: [Menu](#) > [Create VM](#)

**Admin**

**Search**

### Virtual Machine : Create

Owner

Cluster

Hypervisor

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

### Disk Size

Size of the system disk to allocate to this virtual machine. If no units are given, megabytes is assumed.

Acceptable Formats:

- **M** or MB - (megabytes)
- **G** or GB - (gigabytes)
- **T** or TB - (terabytes)

***This will be deducted from the owner's quota.***

8) Deploy a Virtual Machine: [Menu](#) > [Create VM](#) > [Deploying](#) (click create)



Overview  
Clusters  
Virtual Machines  
Create VM

**Admin**

Orphan VMs  
Import VMs  
Missing VMs  
Import Nodes  
Missing Nodes  
Users  
Groups

**Search**

## ganeti : instance2.example.org : deploying

### 🔄 Instance Create

```
* disk 0, vg ganeti, name b9ab42a2-4dc7-473b-96d8-461df01b03bd.disk0
* creating instance disks...
adding instance instance2.example.org to cluster config
- INFO: Waiting for instance instance2.example.org to sync disks.
- INFO: Instance instance2.example.org's disks are in sync.
* running the instance OS create scripts...
```

9) Virtual Machine Detail: [Virtual Machines](#) > [Instance2.example.org](#) (also shown after deployment)

Overview  
Clusters  
Virtual Machines  
Create VM

**Admin**







Orphan VMs  
Import VMs  
Missing VMs  
Import Nodes  
Missing Nodes  
Users  
Groups

**Search**

**ganeti : instance2.example.org**

Overview Users Log Console

<b>Owner</b>	oscon
<b>Created on</b>	
<b>Last modified</b>	08/07/2011 15:11
<b>Status</b>	Stopped
<b>Primary node</b>	<a href="#">node1.example.org</a>
<b>Secondary node</b>	
<b>Operating System</b>	Debian Lenny ( <i>image</i> )
<b>Autostart</b>	✘
<b>VNC</b>	node1.example.org::11001

-  Edit
-  Rename
-  Change Owner
-  Delete
-  Reinstall
-  Start

**Hardware**

<b>VCPUs</b>	1
<b>Memory</b>	128 MiB
<b>NIC type</b>	e1000

**Disks**

Disk	Type	Size
disk/0	scsi	1.50 GiB

10) Grant Permissions to your VM: [Menu](#) > [Virtual Machines](#) > [Your VM](#) > [Users](#)

## ganeti : instance2.example.org

Overview

Users

Log

Console

Name	Permission
 oscon	admin

### Permissions:

close

- Admin:** All permission on this virtual machine. Can grant/revoke permissions.
- Modify:** Can modify the settings for this virtual machine, including reinstallation
- Remove:** Can delete this virtual machine.
- Power:** Can start, stop, reboot and access the console.
- Tags:** Can set tags for this virtual machine.

Save

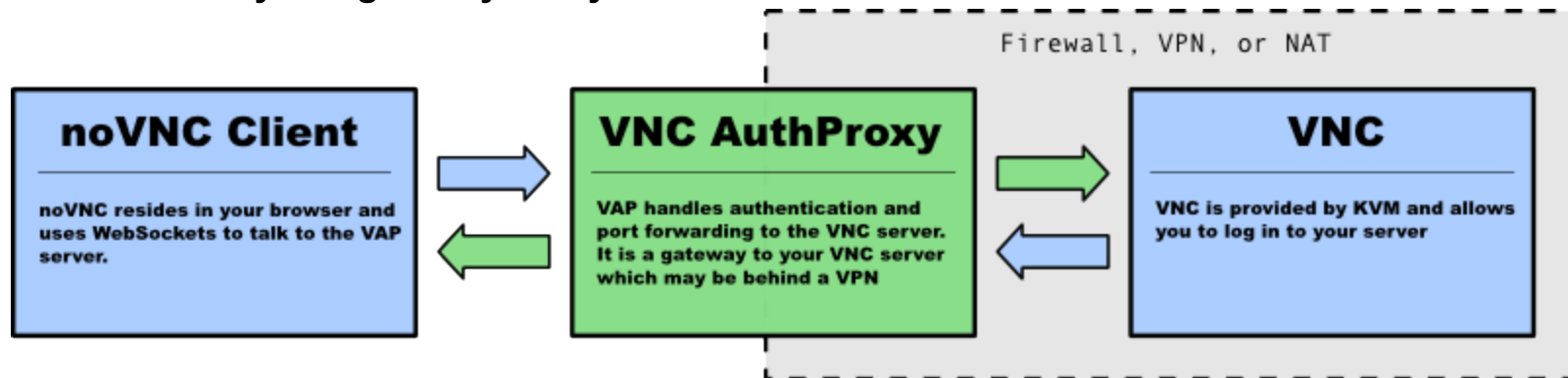
## 11) Enable VNC Proxy

1. /etc/init.d/vncap restart

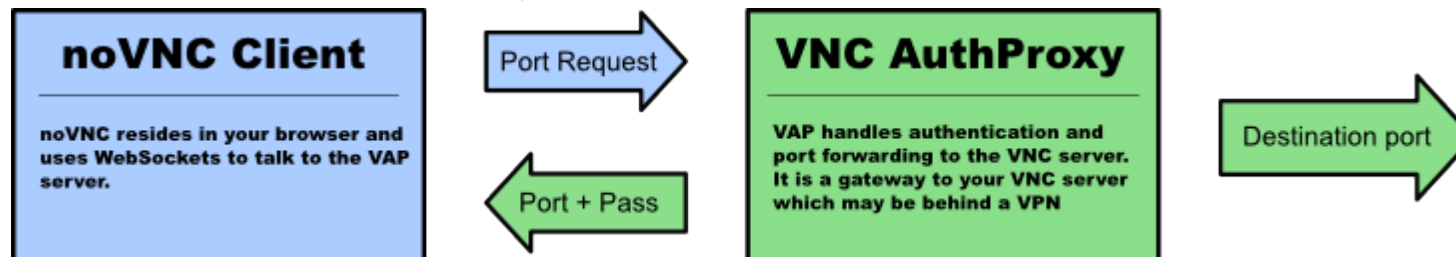
**Note:** There are a few networking issues within virtualbox:

- You must **restart** the proxy after every connection/disconnect for it to accept additional connections.
- VNC only works with **Chrome**, there is a bug preventing the virtualbox network from working with firefox.


The VNC Proxy is a gateway into your backend infrastructure.



It allows secure connections, without user interaction.



## 12) VNC Console: [Menu](#) > [Virtual Machines](#) > [instance2.example.org](#) > [Console](#)

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**Search**

### ganeti : instance2.example.org

[Overview](#) [Users](#) [Log](#) [Console](#)


[Encrypt](#) [Disconnect](#) [Shutdown](#) [Reboot](#) [Ctrl-Alt-Delete](#)

Connected (unencrypted) to: QEMU (instance2.example.org)

```
top - 22:20:36 up 3 min, 1 user, load average: 1.48, 1.84, 0.82
Tasks: 59 total, 1 running, 58 sleeping, 0 stopped, 0 zombie
Cpu(s): 1.0%us, 1.6%sy, 0.0%ni, 97.4%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st
Mem: 122120k total, 52484k used, 69636k free, 5524k buffers
Swap: 136512k total, 0k used, 136512k free, 23132k cached
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1288	root	20	0	19032	1256	976	R	3.2	1.0	0:00.30	top
1	root	20	0	8352	780	648	S	0.0	0.6	0:03.60	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.02	kthreadd
3	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	migration/0
4	root	20	0	0	0	0	S	0.0	0.0	0:00.00	ksoftirqd/0
5	root	RT	0	0	0	0	S	0.0	0.0	0:00.00	watchdog/0
6	root	20	0	0	0	0	S	0.0	0.0	0:00.25	events/0
7	root	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuset
8	root	20	0	0	0	0	S	0.0	0.0	0:00.00	khelper
9	root	20	0	0	0	0	S	0.0	0.0	0:00.00	netns
10	root	20	0	0	0	0	S	0.0	0.0	0:00.00	async/mgr
11	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pm
12	root	20	0	0	0	0	S	0.0	0.0	0:00.00	sync_supers
13	root	20	0	0	0	0	S	0.0	0.0	0:00.02	bdi-default
14	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kintegrityd/0
15	root	20	0	0	0	0	S	0.0	0.0	0:00.38	kblockd/0
16	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kacpid
17	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kacpi_notify

## 12) Overview Dashboard: [Menu](#) > [Overview](#)

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

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**Search**

### Overview




**Cluster Status**

Cluster	Version	Memory Allocated [GIB]	Disk Allocated [GIB]	Nodes	VMs
ganeti	2.4.2	 0.250 / 0.485	 6.50 / 25.4	1/1	2/2





**Virtual Machine Status**

Cluster	Running	Total
ganeti	1	2

**Resource Usage:** oscon ▼

Cluster	Your VMs	Disk	RAM	Virtual CPUs
ganeti	1 / 1	 1536 / 10240	 128 / 5120	 1 / 20


**Errors and Failures**

 instance2	404 Not Found: Nothing matches the given URI	08/07/2011 15:05	
 ganeti	401 Unauthorized: No permission -- see authorization schemes	08/07/2011 14:56	

**Administration**

**Orphaned VMs** [Adopt 1](#)

### 13) User Detail: Menu > Users > oscon

en ▼ | You are logged in as **oscon**, Logout

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#### Admin

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#### Search

## Users : oscon

Detail Permissions Resource Usage User Actions Log

Edit


<b>Email:</b>	oscon@localhost.com
<b>Join Date:</b>	19/07/2011 08:46
<b>Last Login:</b>	20/07/2011 07:35
<b>Active:</b>	True
<b>Admin:</b>	True

### SSH keys

Add SSH key

Key	Comment	
AAAAB3NzaC1yc2EAAAADAQAB ... 9JQab4+8LCMHGXOoE6UaY8DfD	fake key for demo	<span>+</span> <span>-</span> <span>Edit</span>

14) User Permissions: [Menu](#) > [Users](#) > [oscon](#) > [permissions](#)

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

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### Users : oscon

Detail Permissions Resource Usage User Actions Log

+ Add Cluster


Cluster		
<a href="#">ganeti.example.org</a>	admin, create_vm	<span>-</span>

+ Add VirtualMachine

VirtualMachine		
<a href="#">instance1.example.org</a>	power	<span>-</span>
<a href="#">instance6.example.org</a>	admin	<span>-</span>
<a href="#">instance7.example.org</a>	admin	<span>-</span>



15) User Resources: [Menu](#) > [Users](#) > [oscon](#) > [resources](#)

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

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**Search**

### Users : oscon

Detail Permissions Resource Usage User Actions Log

Cluster	Your VMs	Disk	RAM	Virtual CPUs
ganeti	2 / 7	 9316 / 10240	 256 / 3072	 2 / 10

## 16) User Action Log: [Menu](#) > [Users](#) > [oscon](#) > [user actions](#)

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### Admin

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### Search

### Users : oscon

Detail Permissions Resource Usage User Actions Log

<b>07/20/2011</b>	07:37	<a href="#">oscon</a> edited cluster <a href="#">ganeti.example.org</a>
	07:42	<a href="#">oscon</a> added User <a href="#">oscon</a> to cluster <a href="#">ganeti.example.org</a>
	07:42	<a href="#">oscon</a> modified permissions for User <a href="#">oscon</a> on cluster <a href="#">ganeti.example.org</a>
	07:47	<a href="#">oscon</a> created virtual machine <a href="#">instance5.example.org</a>
	07:54	<a href="#">oscon</a> edited cluster <a href="#">ganeti.example.org</a>
	07:55	<a href="#">oscon</a> started virtual machine [deleted]
	07:56	<a href="#">oscon</a> added User <a href="#">oscon</a> to virtual machine <a href="#">instance1.example.org</a>
	07:56	<a href="#">oscon</a> started virtual machine [deleted]
	07:57	<a href="#">oscon</a> started virtual machine [deleted]
	07:57	<a href="#">oscon</a> started virtual machine [deleted]
	07:58	<a href="#">oscon</a> created virtual machine <a href="#">instance6.example.org</a>
	11:28	<a href="#">oscon</a> created virtual machine <a href="#">instance7.example.org</a>
	11:35	<a href="#">oscon</a> started virtual machine [deleted]
	12:08	<a href="#">oscon</a> added User <a href="#">oscon</a> to cluster <a href="#">ganeti.example.org</a>
	12:09	<a href="#">oscon</a> edited cluster <a href="#">ganeti.example.org</a>
	12:11	<a href="#">oscon</a> edited cluster <a href="#">ganeti.example.org</a>