

# FUEL

## introduzione e test

Giovanni Zizzi  
INFN-CNAF  
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# Outline

- Introduzione
- Descrizione
- Utilizzo
- Test effettuati
- Considerazioni/problemi riscontrati
- «Demo»

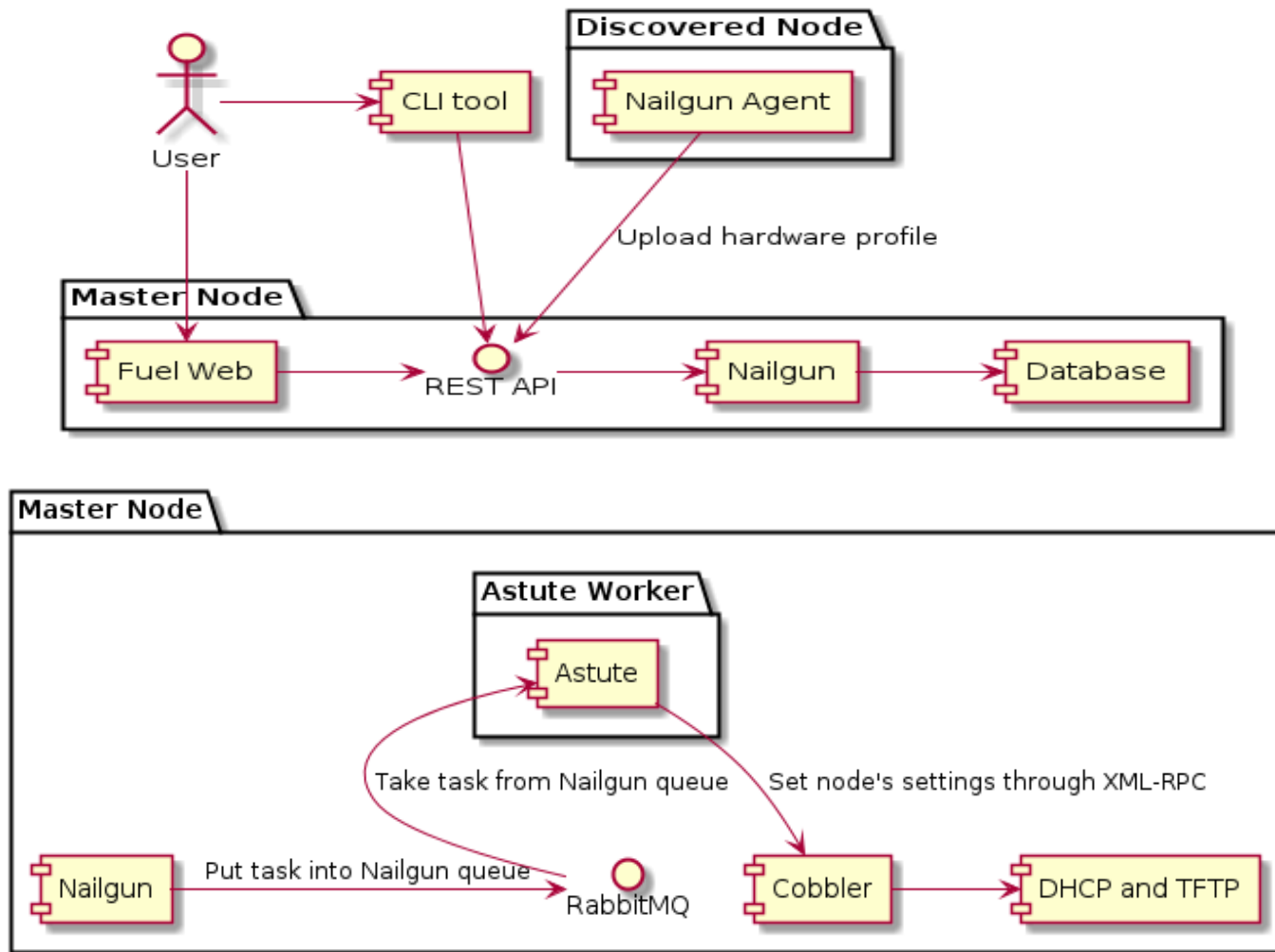
# Introduzione

- Fuel è un tool per l'installazione e la gestione di OpenStack
- Si tratta di un progetto open-source, prodotto da Mirantis (OpenStack gold member)
- Viene installata la Mirantis OpenStack (la distribuzione OpenStack di Mirantis)
- Permette di lavorare tramite web-GUI (anche se dà la possibilità di usare dei client cli)
- È possibile creare uno o più OpenStack environment
- Versione: l'ultima release è la 6.0
- Disponibile fino a Juno per CentOS e Ubuntu
- Usa un suo repository dei pacchetti di Openstack

# Utilizzo

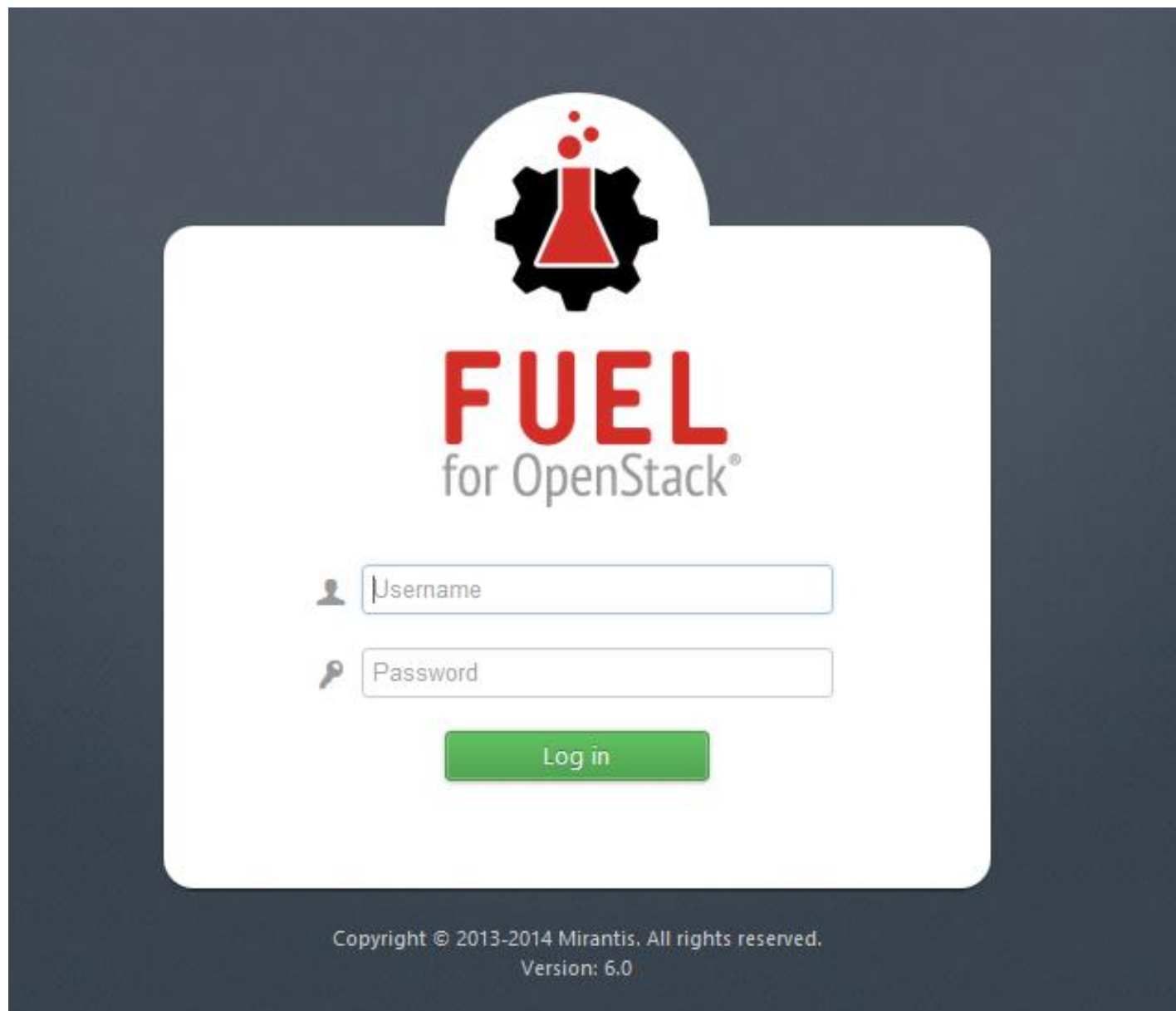
- Fuel va installato su un nodo (Fuel master) tramite cd
- Trova automaticamente ogni host (fisico o virtuale) configurato per effettuare il boot da rete e presente nella VLAN (Admin)
- Si sceglie il sistema operativo che viene installato via Cobbler
- Installazione di Openstack via Puppet
- Assegnazione dei (controller, storage et similia) e configurazione

# Schema del funzionamento



<http://docs.mirantis.com/fuel-dev/develop/architecture.html>





The image shows a login interface for 'Fuel for OpenStack'. At the top center is a logo consisting of a red flask with three red bubbles above it, all contained within a black gear shape. Below the logo, the word 'FUEL' is written in large, bold, red capital letters, and 'for OpenStack®' is written in smaller, grey lowercase letters. Underneath the text are two input fields: the first is labeled 'Username' with a person icon to its left, and the second is labeled 'Password' with a key icon to its left. Below these fields is a green button with the text 'Log in'. At the bottom of the interface, there is a copyright notice: 'Copyright © 2013-2014 Mirantis. All rights reserved. Version: 6.0'.

Environments Releases Support admin Change password Logout

10 TOTAL NODES 1 UNALLOCATED NODE

Home / Environments

Master node installation completed successfully.  
If you want to register your installation and sign up for trial support, please click [here](#). Otherwise you can close this panel.

## My OpenStack Environments

<b>OCP</b>	
Nodes:	9
CPU (cores):	132
HDD:	2.3 TB
RAM:	212.0 GB
Operational	

New OpenStack Environment

Copyright © 2013-2014 Mirantis. All rights reserved. EN Version: 5.7



Le release di OpenStack presenti sono Icehouse e Juno

## Releases

OpenStack Release	Version	Status
Juno on Ubuntu 12.04.4	2014.2-6.0	Active
Juno on CentOS 6.5	2014.2-6.0	Active
Icehouse on Ubuntu 12.04.4	2014.1.3-5.1.1	Active
Icehouse on CentOS 6.5	2014.1.3-5.1.1	Active
Icehouse on Ubuntu 12.04.4	2014.1.1-5.1	Active
Icehouse on CentOS 6.5	2014.1.1-5.1	Active



## Register Product

Registering will ensure that you receive important notifications about issues and new versions of Mirantis products. In addition, you will receive complementary access to our basic support services for the next 30 days!

[Register Product](#)



## Contact Support

If you need to report a problem or just suggest an improvement, click the button below. We will get back to you as soon as possible.

If you have any questions, you can also reach out to developers on the IRC channel [#fuel](#) on [freenode.net](#).

[Contact Support](#)



## Download Diagnostic Snapshot

If you have encountered some bugs or errors, you may need to provide the support team with deployment and operational logs. You can download them all at once by clicking the button below.

[Generate Diagnostic Snapshot](#) `exit code: 1 stderr:`



## Capacity Audit

To better manage your resources, you can run this report to find out what OpenStack roles have been deployed across all of your environments.

[View Capacity Audit](#)



## Send Statistics About Usage

Help us to improve your experience by sending Mirantis information about the settings, features, and deployment actions when you use Mirantis OpenStack.

Usage statistics include information such as settings, button/menu clicks, hardware configuration, and version information. The usage statistics do not include information such as passwords, IP addresses, or node names. For a complete list of statistics that we gather [click here](#).

Mirantis' privacy policy ("Privacy Policy") describes our practices regarding the information we collect on the Mirantis web sites and through the use of our products and services, and how it is used and shared with third parties. You can read the policy [here](#).

- Send usage statistics to Mirantis
- Identify my error reports so that Mirantis Support can assist me

[Save Changes](#)

# Creazione dell'environment

Si può scegliere e configurare:

- sistema operativo e release di OpenStack
- Deployment mode (HA o meno)
- hypervisor (vCenter oltre a KVM e QEMU)
- Network (nova network, neutron con GRE, neutron con VLAN)
- Backend storage
  - Cinder (default: block storage con LVM condivisi via ISCSI oppure Ceph con due o più Ceph-OSD e KVM)
  - Glance (default: Swift in HA, altrimenti usa lo storage locale dei controller, in alternativa Ceph con due o più Ceph-OSD)
- Servizi aggiuntivi: sahara (hadoop-aaS), murano (application catalog), ceilometer

Fuel permette successivi cambiamenti e deployment (cambiare i servizi aggiuntivi ed aggiungere o levare nodi), ma non si può cambiare la configurazione iniziale.

# Assegnazione dei ruoli ad un nodo

Assign Roles

- Controller**  
*The controller initiates orchestration activities and provides an external API. Other components like Glance (OpenStack dashboard) and Nova-Scheduler are installed on the controller as well.*
- Compute** *This role cannot be combined with the other roles already selected.*  
*A compute node creates, manages and terminates virtual machine instances.*
- Cinder**  
*Cinder provides an infrastructure for managing block storage volumes in OpenStack. Block storage can be providing a server with access to raw block level storage.*
- Ceph OSD**  
*Ceph OSD is the object storage daemon for the Ceph distributed file system. It is responsible for storing obj network, for example to Glance.*

## Unallocated Nodes (3 nodes)

HDD: 112.0 GB RAM: 742.6 MB (2)

<input checked="" type="checkbox"/>		Untitled (C5:16) CONTROLLER · CEPH-OSD		DISCOVERED
<input type="checkbox"/>		Untitled (98:84) UNALLOCATED		DISCOVERED

# Configurazione di rete (1/2)

Nodes Networks Settings Logs Health Check Actions Deploy Changes

## Network Settings

Neutron with GRE segmentation

Public

	<b>Start</b>	<b>End</b>	
IP Range	<input type="text" value="131.154.98.3"/>	<input type="text" value="131.154.98.20"/>	<input type="button" value="⊕"/>
CIDR	<input type="text" value="131.154.98.0/24"/>		
Use VLAN tagging	<input type="checkbox"/>		
Gateway	<input type="text" value="131.154.98.1"/>		

Management

CIDR	<input type="text" value="10.20.98.0/24"/>
Use VLAN tagging	<input checked="" type="checkbox"/> <input type="text" value="2098"/>

I range di ip, gli ip dei gateway, l'uso o meno di VLAN taggate va indicato manualmente

# Configurazione di rete (2/2)

**Storage**

CIDR: 10.30.98.0/24

Use VLAN tagging:  3098

---

**Neutron L2 Configuration**

	Start	End
Tunnel ID range	2	65535
Base MAC address	fa:16:3e:00:00:00	

---

**Neutron L3 Configuration**

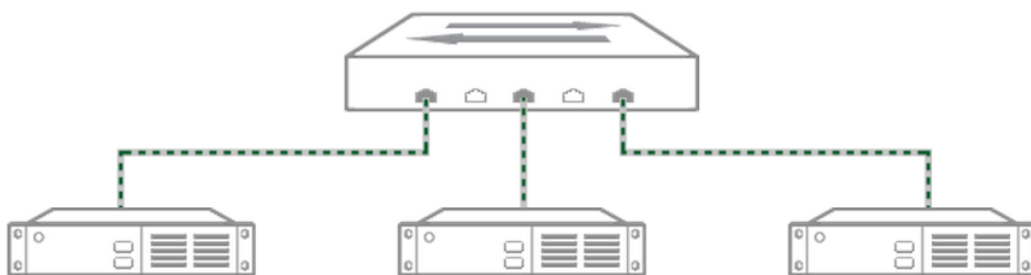
Internal network CIDR: 192.168.111.0/24

Internal network gateway: 192.168.111.1

	Start	End
Floating IP ranges	131.154.98.100	131.154.98.254
DNS Servers	131.154.1.3	131.154.3.1

Finito tutto rimane da fare il controllo della rete

# Verifica dei settings di rete



### Network Verification is done in 4 steps:

1. Every node starts listening for test frames
2. Every node sends out 802.1Q tagged UDP frames
3. Nodes listeners register test frames from other nodes
4. Send DHCP discover messages on all available ports.

Verify Networks

Cancel Changes

Save Settings

# Settings (1/4)



## OpenStack Settings

### Access

<b>username</b>	<input type="text" value="admin"/>	Username for Administrator
<b>password</b>	<input type="password" value="•••••"/> <input type="checkbox"/>	Password for Administrator
<b>tenant</b>	<input type="text" value="admin"/>	Tenant (project) name for Administrator
<b>email</b>	<input type="text" value="admin@example.org"/>	Email address for Administrator

### Additional Components

- Install Sahara**  
If selected, Sahara component will be installed
- Install Murano**  
If selected, Murano component will be installed
- Install Ceilometer**  
If selected, Ceilometer component will be installed



# Settings (2/4)

## Common

- OpenStack debug logging**  
Debug logging mode provides more information, but requires more disk space.
- Nova quotas**  
Quotas are used to limit CPU and memory usage for tenants. Enabling quotas will increase load on the Nova database.

## Hypervisor type

- KVM**  
Choose this type of hypervisor if you run OpenStack on hardware.
- QEMU**  
Choose this type of hypervisor if you run OpenStack on virtual hosts.
- vCenter**  
Choose this type of hypervisor if you run OpenStack in a vCenter environment.
- Auto assign floating IP**  
If selected, OpenStack will automatically assign a floating IP to a new instance.

## Scheduler driver

- Filter scheduler**  
Currently the most advanced OpenStack scheduler. See the OpenStack documentation for details.
- Simple scheduler**  
This is 'naive' scheduler which tries to find the least loaded host.
- Use qcow format for images**  
For most cases you will want qcow format. If it's disabled, raw image format will be used to run VMs. OpenStack with raw format currently does not support snapshotting.
- Start guests on host boot**  
Whether to (re-)start guests when the host reboots. If enabled, this option causes guests assigned to the host to be unconditionally restarted when nova-compute starts. If the guest is found to be stopped, it starts. If it is found to be running, it reboots.

Public Key

Public key(s) to include in authorized\_keys on deployed nodes

# Settings (3/4)

## Syslog

Hostname

Remote syslog hostname

Port

Remote syslog port

Syslog transport protocol

UDP

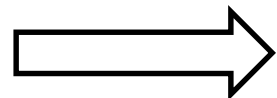
TCP

# Settings (4/4)

## Storage

- Cinder LVM over iSCSI for volumes**  
Requires at least one Storage - Cinder LVM node.
  - iSER protocol for volumes (Cinder)**  
High performance block storage: Cinder volumes over iSER protocol (iSCSI over RDMA). This feature requires SR-IOV capabilities in the NIC, and will use a dedicated virtual function for the storage network.
  - VMware vCenter for volumes (Cinder)**  
Configures Cinder to store volumes via VMware vCenter.
  - Ceph RBD for volumes (Cinder)**  
Configures Cinder to store volumes in Ceph RBD images.
  - Ceph RBD for images (Glance)**  
Configures Glance to use the Ceph RBD backend to store images. If enabled, this option will prevent Swift from installing.
  - Ceph RBD for ephemeral volumes (Nova)**  
Configures Nova to store ephemeral volumes in RBD. This works best if Ceph is enabled for volumes and images, too. Enables live migration of all types of Ceph backed VMs (without this option, live migration will only work with VMs launched from Cinder volumes).
  - Ceph RadosGW for objects (Swift API)**  
Configures RadosGW front end for Ceph RBD. This exposes S3 and Swift API interfaces. If enabled, this option will prevent Swift from installing.
- Ceph object replication factor**  Configures the default number of object replicas in Ceph. This number must be equal to or lower than the number of deployed 'Storage - Ceph OSD' nodes.

NECESSARIO PER LA LIVE MIGRATION



## Zabbix Access

**username**  Username for Zabbix Administrator

**password**  Password for Zabbix Administrator

Nodes Networks Settings Logs Health Check Actions 15%

### Actions

#### Rename Environment

#### Reset Environment

Reset Environment is not available for an environment still being deployed.

#### Delete Environment

*Clean up each node and return it to the pool of unallocated nodes.*

#### Update Environment

The current environment is already being updated.

# Dettagli HV dei singoli nodi

node-8



**Manufacturer:** ASUSTeK Computer INC.

**MAC Address:** 9e:32:ec:7b:0f:45

**FQDN:** node-8

**System** ASUSTeK Computer INC. RS700D-E6-RS8



**CPU** 16 x 2.40 GHz



**Memory** 6 x 4.0 GB, 24.0 GB total



**Disks** 1 drive, 0.3 TB total



**Interfaces** 2 x 1.0 Gbps



Configure Interfaces

Configure Disks

Close

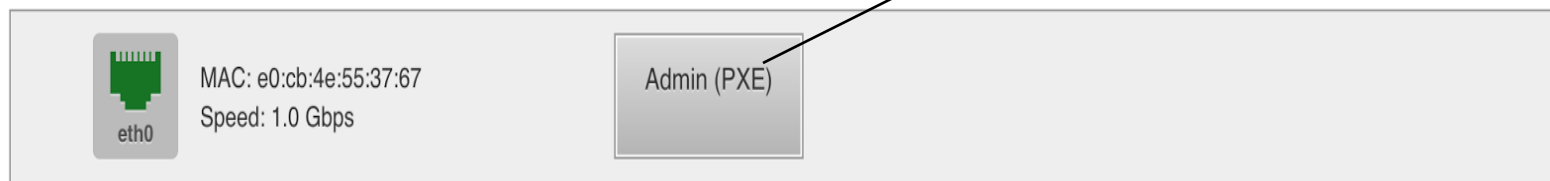
# Dettagli sulla configurazione di rete

È stato necessario definire 4 VLAN

Eth0: rete admin di Fuel VLAN untagged

Eth1: rete pubblica VLAN untagged, rete management VLAN tagged e rete data VLAN tagged

Usata durante l'installazione



Usata per l'accesso ai nodi e alle VM

Traffico storage

Traffico interno all'environment (e.g. le query MySQL)

Nodes Networks Settings Logs Health Check Actions Deploy Changes

### Configure disks on node-8

sda (disk/by-path/pci-0000:08:00.0-scsi-0:0:0:0) Total Space: 0.3 TB

Base System 62.0 GB	MongoDB 216.8 GB
------------------------	---------------------

Back To Node List Load Defaults Cancel Changes Apply

# Installazione sistema operativo

OpenStack Release: Icehouse on CentOS 6.5 (2014.1.1-5.1) Deployment Mode: Multi-node with HA Status: Deployment

Nodes Networks Settings Logs Health Check Actions

23%

Group By

Filter By

Roles

Node name/mac

Configure Disks

Configure Interfaces

+ Add Nodes

Select All

## Controller, Telemetry - MongoDB (3)

Select All

<input type="checkbox"/>	<b>Untitled (c4:41)</b> CONTROLLER · MONGO		INSTALLING CENTOS	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	
<input type="checkbox"/>	<b>207-01-06-b</b> CONTROLLER · MONGO		INSTALLING CENTOS	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	
<input type="checkbox"/>	<b>Untitled (08:ca)</b> CONTROLLER · MONGO		INSTALLING CENTOS	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	

## Compute (2)

Select All

<input type="checkbox"/>	<b>Untitled (c4:cc)</b> COMPUTE		INSTALLING CENTOS	CPU: 16	HDD: 0.3 TB	RAM: 36.0 GB	
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# Installazione Openstack

OpenStack Release: Icehouse on CentOS 6.5 (2014.1.1-5.1) Deployment Mode: Multi-node with HA Status: Deployment

Nodes Networks Settings Logs Health Check Actions

44%

Group By: Roles Filter By: Node name/mac

Configure Disks Configure Interfaces + Add Nodes

Select All

### Controller, Telemetry - MongoDB (3)

Select All

<input type="checkbox"/>	<b>Untitled (c4:41)</b> CONTROLLER - MONGO		✓ READY	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	
<input type="checkbox"/>	<b>207-01-06-b</b> CONTROLLER - MONGO		INSTALLING OPENSTACK	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	
<input type="checkbox"/>	<b>Untitled (08:ca)</b> CONTROLLER - MONGO		INSTALLING OPENSTACK	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	

### Compute (2)

Select All

<input type="checkbox"/>	<b>Untitled (c4:cc)</b> COMPUTE		CENTOS IS INSTALLED	CPU: 16	HDD: 0.3 TB	RAM: 36.0 GB	
<input type="checkbox"/>	<b>Untitled (f9:94)</b> COMPUTE		CENTOS IS INSTALLED	CPU: 16	HDD: 0.3 TB	RAM: 24.0 GB	

# Multi-node con HA vs. multi node

- Con HA vengono installati un cluster MySQL/Galera(master- master), RabbitMQ e HAProxy ed è necessario avere almeno tre controller
- Senza HA si installa solo UN controller ed uno o più compute/cinder node

Nota: non si possono avere installazioni “all in one”

# Verifica dei servizi (1/2)



Deploy Changes

## OpenStack Health Check

Select All

Stop Tests

<input checked="" type="checkbox"/> HA tests. Duration 30 sec - 8 min	Expected Duration	Actual Duration	Status
Check data replication over mysql	1-40 s.	20.4 s.	
Check amount of tables in os databases is the same on each node	1-40 s.	19.3 s.	
RabbitMQ availability	100 s.	—	
RabbitMQ queues availability	100 s.	—	
RabbitMQ messages availability	100 s.	—	

<input checked="" type="checkbox"/> Sanity tests. Duration 30 sec - 2 min	Expected Duration	Actual Duration	Status
Flavor list availability	20 s.	0.4 s.	
Images list availability	20 s.	0.3 s.	
Instance list availability	20 s.	0.4 s.	

# Verifica dei servizi (1/2)

✓	<b>Functional tests. Duration 3 min - 14 min</b>	Expected Duration	Actual Duration	Status
✓	Create instance flavor	30 s.	0.2 s.	
✓	Create volume and boot instance from it	350 s.	—	
✓	Create volume and attach it to instance	350 s.	—	
✓	Create keypair	25 s.	—	
✓	Create security group	25 s.	—	
✓	Check network parameters	50 s.	—	
✓	Launch instance	200 s.	—	

# File di log consultabili tramite GUI

The screenshot shows the Fuel GUI interface for an OCP environment. At the top, there's a navigation bar with 'Environments', 'Releases', and 'Support'. The main content area shows 'OCP (9 nodes)' with deployment details. A 'Success' message indicates the deployment is complete. Below this is a navigation bar with icons for 'Nodes', 'Networks', 'Settings', 'Logs', 'Health Check', and 'Actions'. The 'Logs' icon is active, and a dropdown menu is open, listing log sources: 'Web backend', 'REST API', 'RPC consumer', 'Astute', and 'HealthCheck'. The 'Web backend' option is highlighted.

This screenshot shows the 'Logs' section of the Fuel GUI. The navigation bar at the top is the same as in the previous image. The 'Logs' section has a search bar with 'Logs' selected, 'Fuel Master' in the dropdown, and 'Source' set to 'Web backend'. The 'Min. level' is set to 'INFO'. A 'Show' button is present. Below the search bar, a table header is visible with columns for 'Date', 'level', and 'Message'. The 'Other servers' option is highlighted in the dropdown menu.

Nodes Networks Settings Logs Health Check Actions Deploy Changes

## Logs

Logs Other servers Node node-8 Source puppet Min. level INFO Show

Date	Level	Message
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) node id='18' already has an IP address inside 'storage' network. [pid: 487 app: 0 req: 64202/88820] 172.17.42.1 ( ) [44 vars in 856 bytes] [wed Nov 19 15:23:52 2014] GET /api/nodes/allocation/stats?_=-1416400501678 -> generated 31 bytes in 24 msec (HTTP/1.1 200) 5 headers in 217 bytes (2 switches on core 0) [pid: 487 app: 0 req: 64203/88821] 172.17.42.1 ( ) [44 vars in 838 bytes] [wed Nov 19 15:23:52 2014] GET /api/notifications?_=-1416400501679 -> generated 13008 bytes in 20 msec (HTTP/1.1 200) 5 headers in 217 bytes (2 switches on core 0)

- DEBUG
- INFO
- NOTICE
- WARNING
- ERR
- CRIT
- ALERT
- EMERG

Nodes Networks Settings Logs Health Check Actions Deploy Changes

## Logs

Logs Other servers Node node-8 Source puppet Min. level INFO Show

Date	Level	Message
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) node id='18' already has an IP address inside 'storage' network. [pid: 487 app: 0 req: 64202/88820] 172.17.42.1 ( ) [44 vars in 856 bytes] [wed Nov 19 15:23:52 2014] GET /api/nodes/allocation/stats?_=-1416400501678 -> generated 31 bytes in 24 msec (HTTP/1.1 200) 5 headers in 217 bytes (2 switches on core 0) [pid: 487 app: 0 req: 64203/88821] 172.17.42.1 ( ) [44 vars in 838 bytes] [wed Nov 19 15:23:52 2014] GET /api/notifications?_=-1416400501679 -> generated 13008 bytes in 20 msec (HTTP/1.1 200) 5 headers in 217 bytes (2 switches on core 0)

- node-8
- node-10
- node-12
- node-13
- node-14
- node-15
- node-16
- node-17
- Untitled (e6:c7)

Nodes Networks Settings Logs Health Check Actions Deploy Changes

### Logs

Logs Other servers Node node-8 Source puppet Min. level INFO Show

Date	Level	Message
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1' [pid: 487 app: 0 req: 64202/88820] 2014] GET /api/nodes/allocation/sta 1.1 200) 5 headers in 217 bytes (2 [pid: 487 app: 0 req: 64203/88821] 2014] GET /api/notifications?_=1416 0) 5 headers in 217 bytes (2 switch
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='8'
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='18'

puppet  
anaconda  
syslog  
*Other install logs*  
storage  
kickstart-pre  
kickstart-post  
*Bootstrap logs*  
dmesg  
secure  
messages  
mcollective  
agent  
*Openstack logs*  
nova-cert  
nova-consoleauth  
nova-scheduler  
nova-conductor  
nova-objectstore  
nova-manage  
keystone-all

Nodes Networks Settings Logs Health Check Actions Deploy Changes

### Logs

Logs Fuel Master Source Web backend Min. level INFO Show

Date	Level	Message
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='1' already has an IP address inside 'storage' network. [pid: 487 app: 0 req: 64202/88820] 2014] GET /api/nodes/allocation/stats?_=1416400501678 => generated 31 bytes in 24 msecs (HTTP/ 1.1 200) 5 headers in 217 bytes (2 switches on core 0) [pid: 487 app: 0 req: 64203/88821] 172.17.42.1 () [44 vars in 838 bytes] [wed Nov 19 15:23:52 2014] GET /api/notifications?_=1416400501679 => generated 13008 bytes in 20 msecs (HTTP/1.1 20 0) 5 headers in 217 bytes (2 switches on core 0)
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='17' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='16' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='15' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='14' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='13' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='12' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='10' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='8' already has an IP address inside 'storage' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='18' already has an IP address inside 'public' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='12' already has an IP address inside 'public' network.
2014-11-19 15:23:51	INFO	[7f15419e0740] (manager) Node id='10' already has an IP address inside 'public' network.

DEBUG  
INFO  
WARNING  
ERROR  
CRITICAL

# Zabbix (1/2)

/etc/passwd has been changed on {HOST.NAME}	
Ceilometer Agent Compute service is down on {HOST.NAME}	
Ceilometer Alarm Agent Central service is down on {HOST.NAME}	
Ceilometer Alarm Alarm Evaluator service is down on {HOST.NAME}	
Ceilometer Alarm Notifier service is down on {HOST.NAME}	
Ceilometer API Server service is down on {HOST.NAME}	
Ceilometer Collector service is down on {HOST.NAME}	
Cinder API Server process is not running on {HOST.NAME}	DNS resolve error on {HOST.NAME}
Cinder API Server service is down on {HOST.NAME}	Glance API Server process is not running on {HOST.NAME}
Cinder API test failed	Glance API Server service is down on {HOST.NAME}
Cinder Scheduler process is not running on {HOST.NAME}	Glance API test failed on {HOST.NAME}
Cinder Volume process is not running on {HOST.NAME}	Glance Registry Server process is not running on {HOST.NAME}
Configured max number of opened files is too low on {HOST.NAME}	Glance Registry Server service is down on {HOST.NAME}
Configured max number of processes is too low on {HOST.NAME}	Horizon HTTP Server process is not running on {HOST.NAME}
Disk I/O is overloaded on {HOST.NAME}	Horizon HTTP Server service is down on {HOST.NAME}
	Host information was changed on {HOST.NAME}
	Host name of zabbix_agentd was changed on {HOST.NAME}
	Hostname was changed on {HOST.NAME}
	Keystone Admin API Server service is down on {HOST.NAME}
	Keystone API Server service is down on {HOST.NAME}
	Keystone API test failed on {HOST.NAME}
	Keystone Server process is not running on {HOST.NAME}
	Keystone Service API test failed on {HOST.NAME}
	Lack of available memory on server {HOST.NAME}
	Lack of free swap space on {HOST.NAME}
	Less than 25% free in the configuration cache
	Less than 25% free in the history cache
	Less than 25% free in the text history cache



# Zabbix (2/2)

Less than 25% free in the trends cache	
Libvirtd process is not running on {HOST.NAME}	
Memcache service is down on {HOSTNAME}	Open vSwitch Server process is not running on {HOST.NAME}
Memcached process is not running on {HOST.NAME}	Processor load is too high on {HOST.NAME}
More than 100 items having missing data for more than 10 minutes	RabbitMQ EPMD service is down on {HOST.NAME}
MySQL is down	RabbitMQ Server process is not running on {HOST.NAME}
Neutron API test failed on {HOST.NAME}	RabbitMQ Server service is down on {HOST.NAME}
Neutron DHCP Agent process is not running on {HOST.NAME}	RsyslogD Server process is not running on {HOST.NAME}
Neutron L3 Agent process is not running on {HOST.NAME}	SSH Server process is not running on {HOST.NAME}
Neutron Metadata Agent process is not running on {HOST.NAME}	SSH Server service is down on {HOST.NAME}
Neutron Server process is not running on {HOST.NAME}	Swift Account Replicator process is not running on {HOST.NAME}
Neutron Server service is down on {HOST.NAME}	Swift Account Server process is not running on {HOST.NAME}
Nova API EC2 Server service is down on {HOST.NAME}	Swift Account Server service is down on {HOST.NAME}
Nova API OSAPI Compute Server service is down on {HOST.NAME}	Swift Container Replicator process is not running on {HOST.NAME}
Nova API process is not running on {HOST.NAME}	Swift Container Server process is not running on {HOST.NAME}
Nova API test failed on {HOST.NAME}	Swift Container Server service is down on {HOST.NAME}
Nova Cert process is not running on {HOST.NAME}	Swift Object Replicator process is not running on {HOST.NAME}
Nova Compute process is not running on {HOST.NAME}	Swift Object Server process is not running on {HOST.NAME}
Nova ConsoleAuth process is not running on {HOST.NAME}	Swift Object Server service is down on {HOST.NAME}
Nova Scheduler process is not running on {HOST.NAME}	Swift Proxy Server process is not running on {HOST.NAME}
NTP Server process is not running on {HOST.NAME}	

# Configurazione usata per i test

Icehouse su CentOS6.5 (OCP per il momento è vincolato ad usare questa versione)

HA Multi-nodo

Neutron con GRE

Nodi:

- 1 fuel master
- 3 controller (con ceilometer)
- 2 compute
- 1 cinder
- 2 ceph
- 1 zabbix

# Componenti

- controller
  - neutron (rete)
  - glance (API RESTful per la gestione delle immagini di VM e metadati)
  - horizon (dashboard)
  - keystone (identity service)
- compute (su di loro vengono create le VM)
  - nova (modulo di OpenStack usato per i compute node)
  - HV
- ceph
  - backend storage (sia di nova che di glance) e delle immagini delle VM e dei dati
- cinder
  - serve per generare dei volumi storage da usare tramite le VM
- zabbix
  - monitoring

# Test effettuati/problemi emersi 1/2

- Live migration OK → ceph
- HA: l'istanza rimane operativa finché almeno un controller risulta essere funzionante
- aggiungere togliere macchine a deploy effettuato: OK, anche se la macchina va rimossa a mano dal server Zabbix
- aggiornamento Fuel e Openstack a “caldo”
  - nota: l'aggiornamento può essere fatto solo partendo da una versione ad una successiva maintenance release, non è possibile aggiornare Havana o precedente ad IceHouse o IceHouse a Juno

# Test effettuati/problemi emersi 2/2

- Se il server zabbix viene aggiunto in un secondo momento (i.e. dopo il deploy iniziale) gli agenti non vengono installati sugli host
- Regioni attualmente non supportate
- I vari elementi del controller vanno installati assieme sulla stessa macchina
  
- Creare un'infrastruttura con compute node fisici e la parte rimanente dei nodi virtuali: durante le fasi di installazione del bootstrap e del sistema operativo, ogni nodo ha connettività e gli viene assegnato un IP (dhcp da FUELMaster) nella sottorete specificata, dopo la fase di configurazione di OpenStack, la connettività risulta assente.

# Conclusioni

Fuel è un tool di installazione e gestione di Openstack

- facilita il lavoro di installazione grazie alla GUI e può essere utile per chi vuole creare e gestire velocemente un'infrastruttura Openstack
- trattandosi di un tool grafico la macchinaria che c'è sotto è nascosta, quindi può non essere utile per chi è interessato ad essa

# Riferimenti

- <https://www.mirantis.com/>
- <https://software.mirantis.com/key-related-openstack-projects/project-fuel/>
- <http://docs.mirantis.com/fuel-dev/develop/architecture.html>
- [https://wiki.openstack.org/wiki/Fuel#Fuel\\_architecture](https://wiki.openstack.org/wiki/Fuel#Fuel_architecture)

“DEMO”



# Domande

