



# Infrastructure as a Service (IaaS)

IaaS is a pay-per-use model, scalable based on storage and processing needs. Provide infrastructure quickly and inexpensively. The customer pays exclusively for the services they use, without making large investments in IT equipment. It allows companies to increase the efficiency, redundancy, security and control of their infrastructures; but forgetting about its installation and maintenance, which TeideHPC is in charge of.

A cloud computing service provider, such as TeideHPC, manages the infrastructure, while you buy, install, configure and manage your own software (operating systems, middleware and applications).

As main characteristics the following can be highlighted:

- Rather than purchasing hardware, users pay for IaaS on demand.
- The infrastructure is scalable, based on storage and processing needs.
- Saves businesses the cost of purchasing and maintaining their own hardware.

## OpenNebula

OpenNebula is an Open Source Cloud Computing Platform to build and manage Enterprise Clouds. The OpenNebula platform manages a data center's virtual infrastructure to build private, public and hybrid implementations of Infrastructure as a Service (IaaS).

### Access to OpenNebula interface

After connecting to TeideHPC VPN server, you will be provided with a private network route to access the OpenNebula web interface.

- <https://one.iter.es>
- <https://10.5.22.19>

#### Remember

To access any of the TeideHPC domains as *one.iter.es* you must **connect to VPN**

# OpenNebula Sunstone

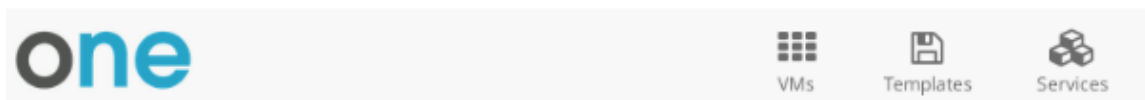
**Username**

**Password**

Keep me logged in

## Interface

After login, the default view gives information about virtual machines (VM) and quotas of the user.



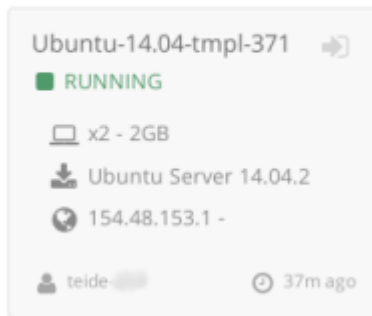
The *VMs menu* gives information about actually defined virtual machines.

The *Templates* menu lists templates created from virtual machines to be used as a source for new virtual machines.

The *Services menu* is the user view of a tool called *OneFlow*, which is designed to allow scalability of applications by launching new virtual machines based on different parameters, as the load of the running services. It is not currently enabled.

## Virtual machines

### Virtual Machines



The Virtual Machines view lists all VMs associated with the account or the group. For each VM is shown the capacity parameters and network interfaces.

Virtual machines can be reached through its network interfaces when configured and through the VNC console provided by the web interface:

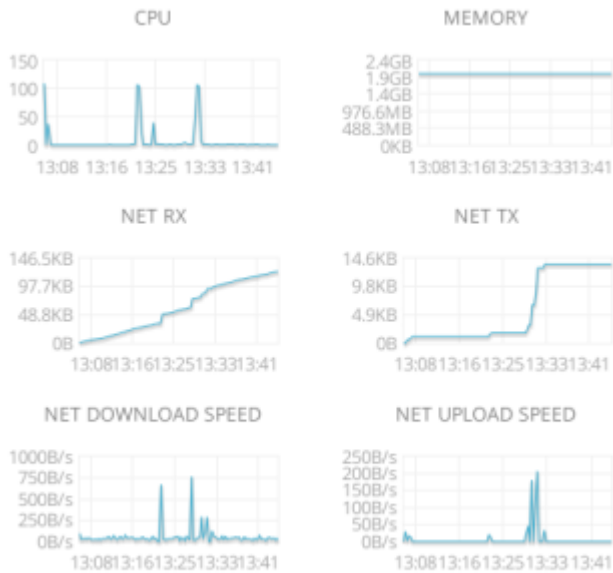
# Virtual Machines

Ubuntu-14.04-tmpl-371



■ RUNNING

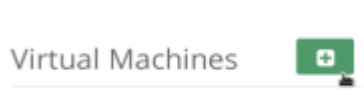
- x2 - 2GB
- Ubuntu Server 14.04.2
- 154.48.153.1 -
- 40m ago
- teide-



## Templates

New instances of virtual machines can be launched in two ways, using previously defined templates in the system or taking snapshots of already running VMs.

## Template instantiation



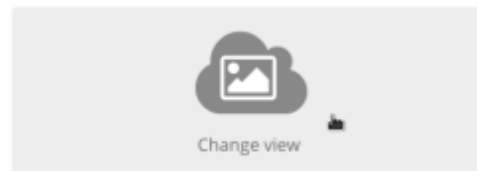
Using the plus (+) button in the VMs menu it is possible to create a new virtual machines with the configuration defined in a template.

*Templates* previously defined in the cloud interface are listed in the System menu, meanwhile templates created from running virtual machines are listed in the Saved menu.

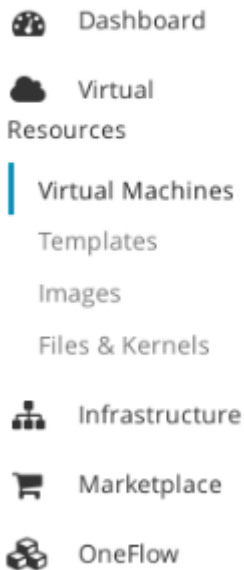
With both options for creating a new VM, after selecting the source template, you can set the name of the VM and start the creation with the Create button.

## User view

The OpenNebula web interface (called Sunstone) provides views for different user roles in the cloud management systems. An extended view (user view) can be accessed by the user with the option Change view in the user profile settings.



## OpenNebula



The Dashboard gives a glimpse on how resources are used.

Under the *Virtual Resources* menu you can access to the list of virtual machines actually running on the cloud, to the Templates that define the parameters of new virtual machines and Images associated with virtual machines or related data like CDROM images of other operating systems. There are other supplementary files that permit implement other features on virtual machines under the menu Files & Kernels

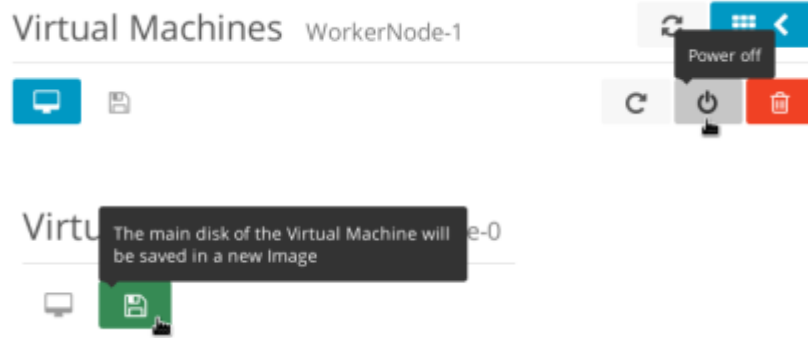
*Infrastructure* gives some information about the storage datastores and virtual networks in the cloud.

The *Marketplace* is a tool that give us fast access to ready-to-run images and appliances to test some variety of software and operating systems, provided by different publisher entities.

Finally, *OneFlow* is an advanced tool to improve scalability of applications by launching new virtual machines based on different parameters, for example the load of the running services.

## Snapshot creation

It is possible to take a snapshot of a VM and use it as a template for new virtual machines. To do this the first step is to power off the VM. You can send a Power off command with the power button inside the VM menu or using shutdown command in the VM shell.



When the VM is off the save button is enabled and the copy of the image can be done. This procedure also creates a new template under the Saved templates.

The time necessary to take the snapshot depends on the VM image size.