

FIWARE Lab Cloud



Blanca Hilda Vázquez Gómez
Formación de expertos en FIWARE
15 y 16 de febrero de 2017

Co-funded by the Horizon 2020 Framework
Programme of the European Union



Agenda

1

FIWARE Lab: panorama general

2

FIWARE Lab: funcionalidades básicas

3

FIWARE Lab: servicios de almacenamiento

4

Información de referencia



FIWARE Lab Cloud

Panorama General

FIWARE Lab es un ambiente libre de experimentación (no comercial), donde los usuarios pueden desarrollar aplicaciones y servicios innovadores empleando los GEs de FIWARE.



FIWARE Lab no solamente permite experimentar con las tecnologías FIWARE, también permite **mostrar y testear** las aplicaciones con datos y **usuarios reales**, aprovechando los datos abiertos publicados por las ciudades y otras organizaciones. Esto permite **captar** la atención de los inversionistas y clientes potenciales.

Muchas ciudades ya están conectadas (Trento, Santander, Ciudad de México) y están exportando sus **datos abiertos** a la nube de FIWARE Lab.

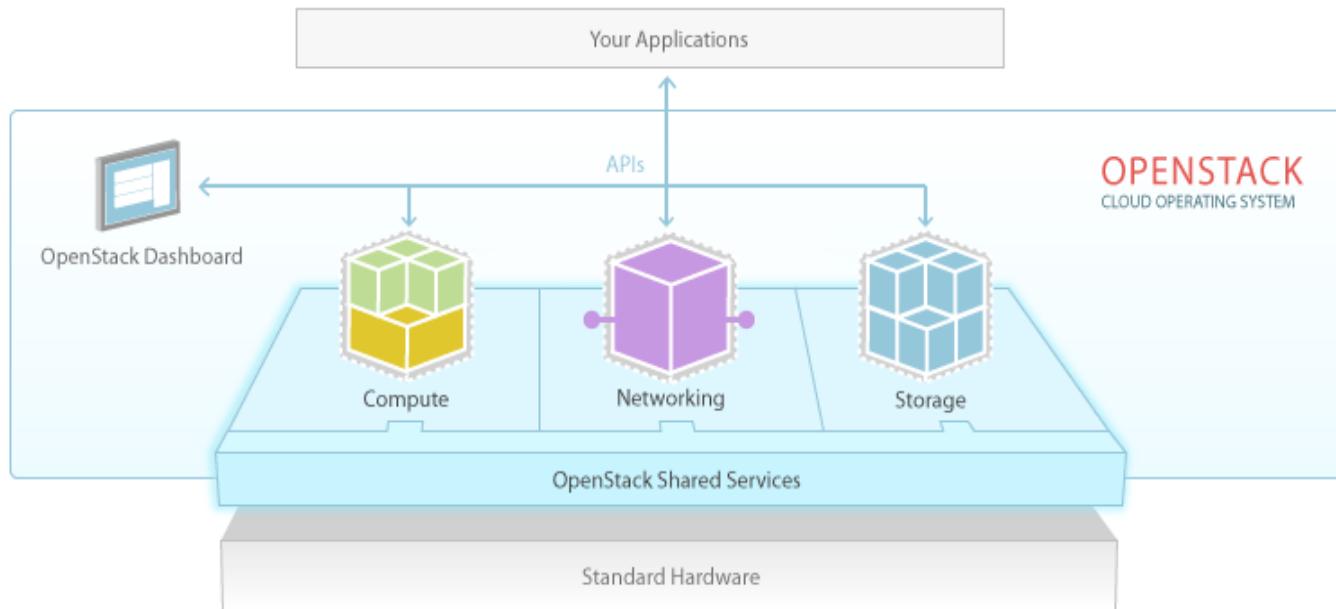


FIWARE Lab Cloud

Arquitectura

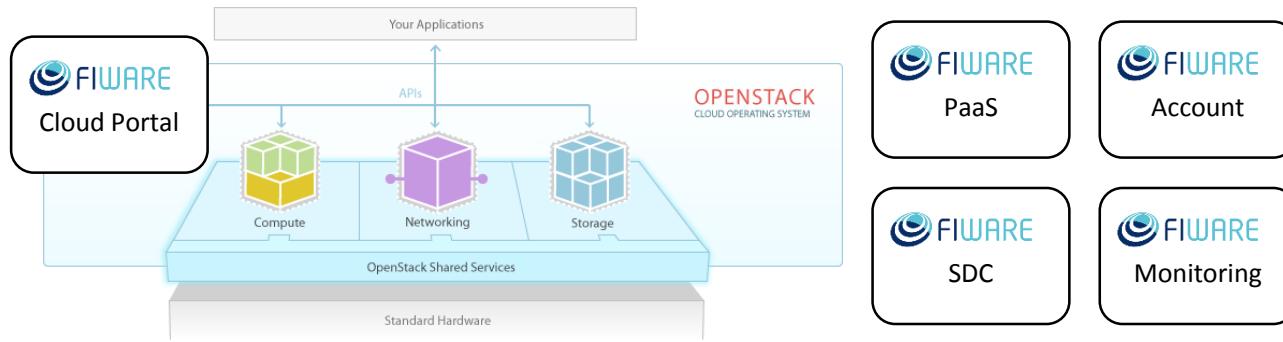
- FIWARE Lab emplea la tecnología de **OpenStack** para el despliegue de la nube virtual, la cual es una solución *cloud computing*.
- OpenStack es un sistema operativo abierto y escalable para la creación de nubes públicas y privadas.

Misión de OpenStack: creación de nubes **simples de implementar y masivamente escalables**.



FIWARE Lab Cloud

Arquitectura

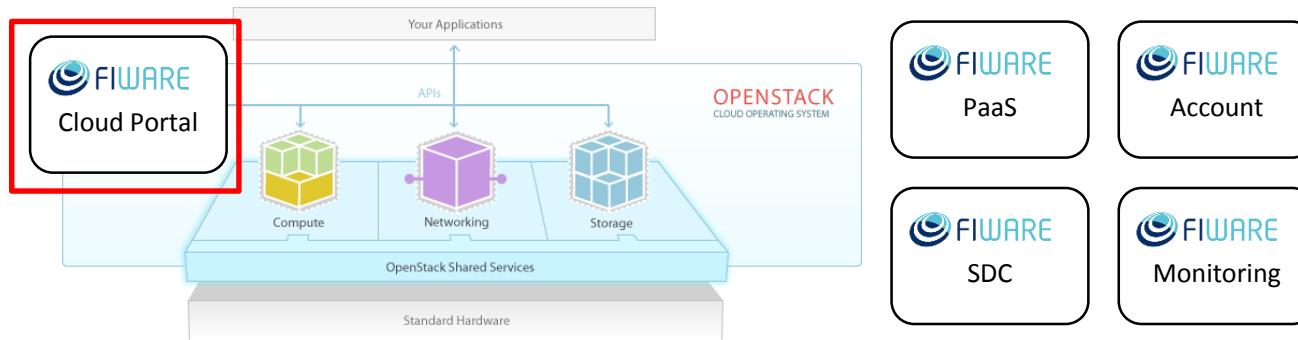


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FIWARE Lab Cloud

Arquitectura

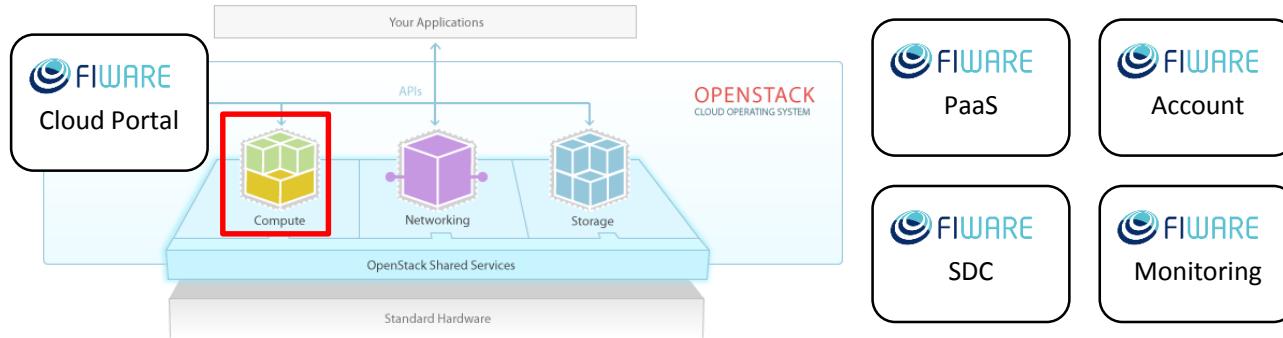


FIWARE Cloud portal: provee una **interfaz** a los usuarios finales y al administrador.



FIWARE Lab Cloud

Arquitectura

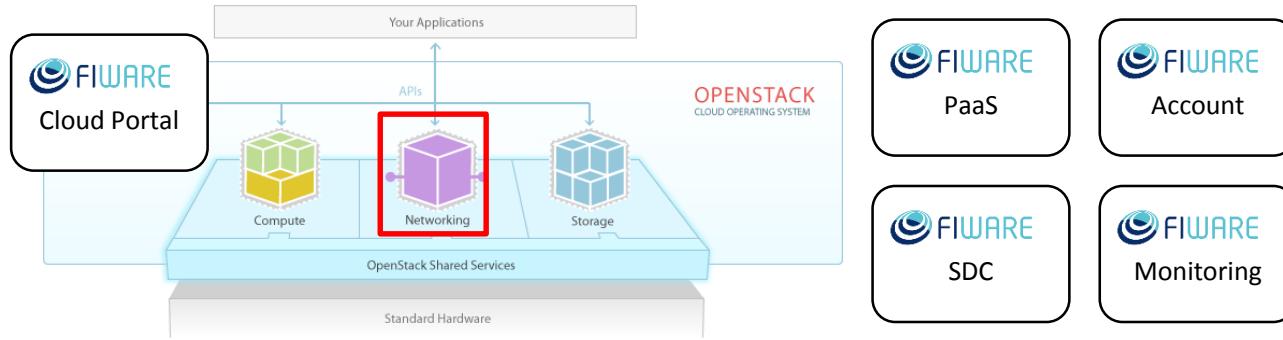


Compute: Administra el ciclo de vida de las instancias de cómputo. Es responsable de la creación, programación y desmantelamiento de las VMs (OpenStack Nova).



FIWARE Lab Cloud

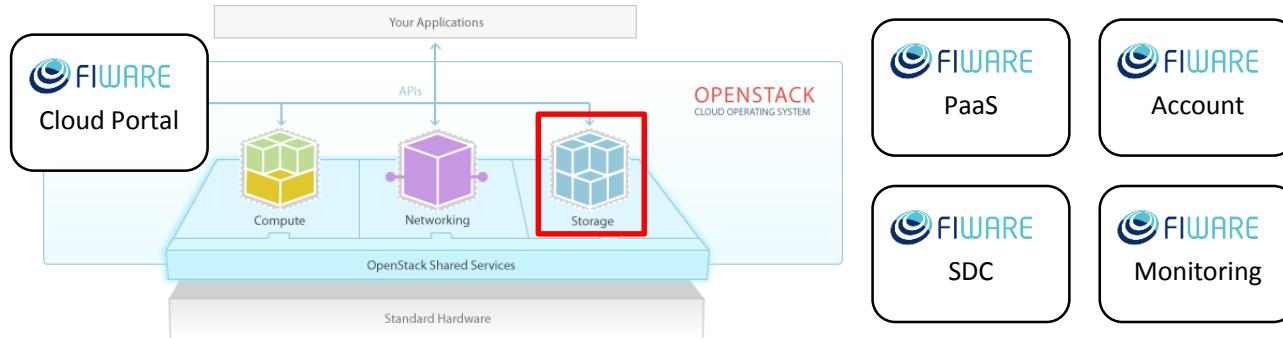
Arquitectura



Networking: provee **redes virtuales** como servicio entre dispositivos administrados por otros servicios de OpenStack, como puede ser una máquina virtual de Nova (OpenStack Neutron).

FIWARE Lab Cloud

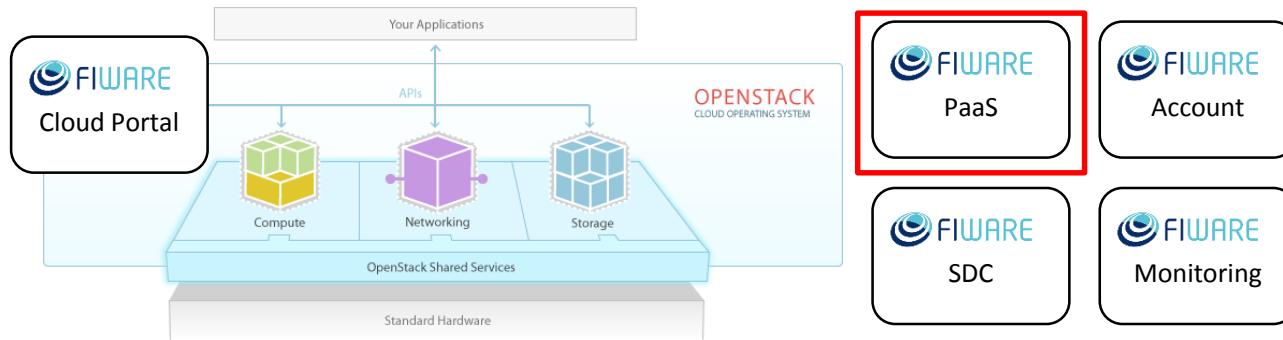
Arquitectura



Storage: provee **almacenamiento persistente** a las VMs alojadas en la nube. (OpenStack Cinder / OpenStack Swift).

FIWARE Lab Cloud

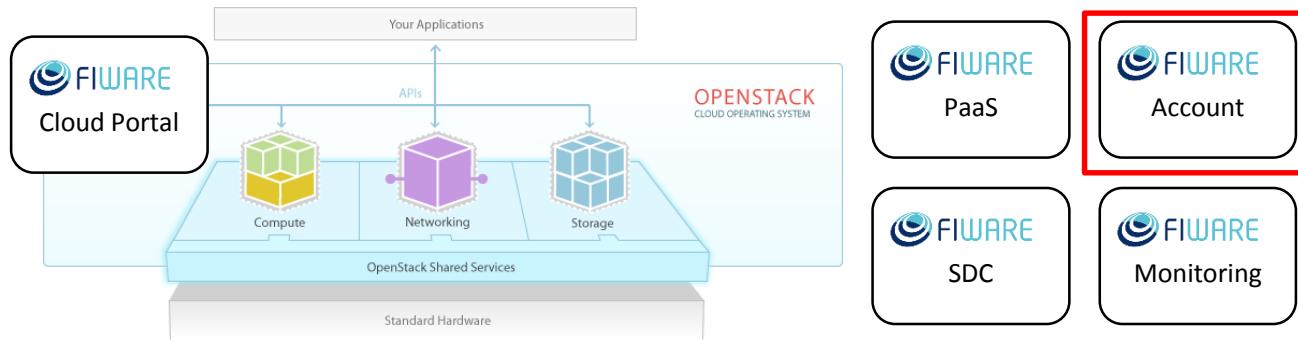
Arquitectura



FIWARE PaaS: proporciona una plataforma y un entorno que permiten a los desarrolladores **crear aplicaciones y servicios** que funcionen a través de internet. Además permite el trabajo con regiones, así como creación de niveles y despliegue de Blueprints.

FIWARE Lab Cloud

Arquitectura

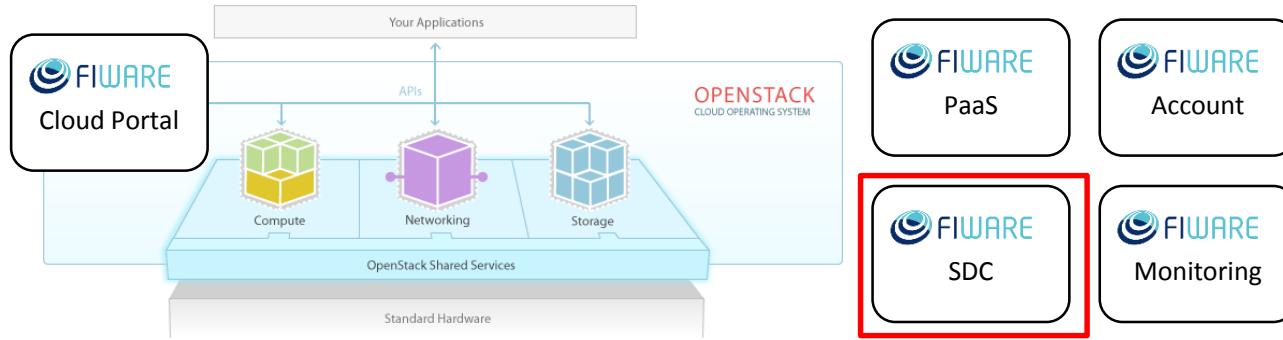


FIWARE Account: Administra la **identidad** y a las organizaciones, provee los servicios de autenticación y autorización (OpenStack Keystone).



FIWARE Lab Cloud

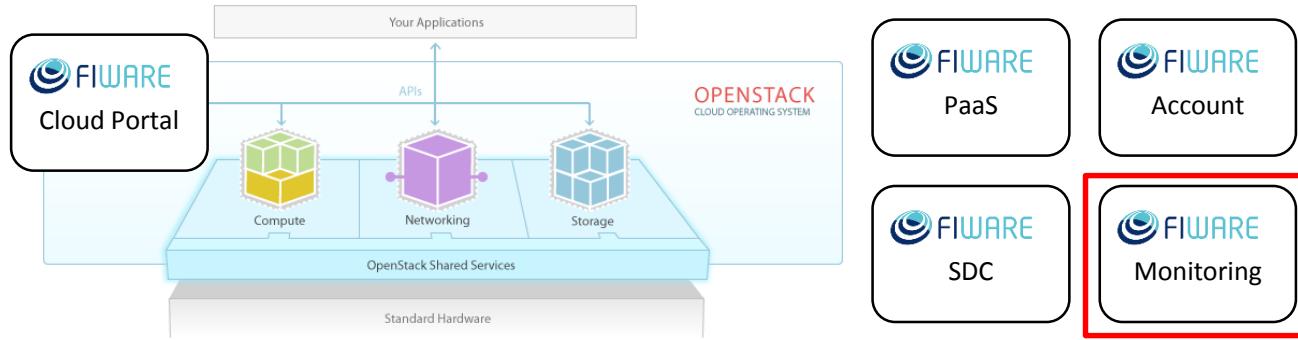
Arquitectura



SDC (Software Development and Configuration): Es el habilitador clave utilizado para soportar la implementación automatizada (**instalación y configuración**) de software (GEs) en la ejecución de máquinas virtuales.

FIWARE Lab Cloud

Arquitectura



Monitoring: es el encargo del monitorear la información sobre las máquinas virtuales (OpenStack Ceilometer).

FIWARE Lab Cloud

Arquitectura



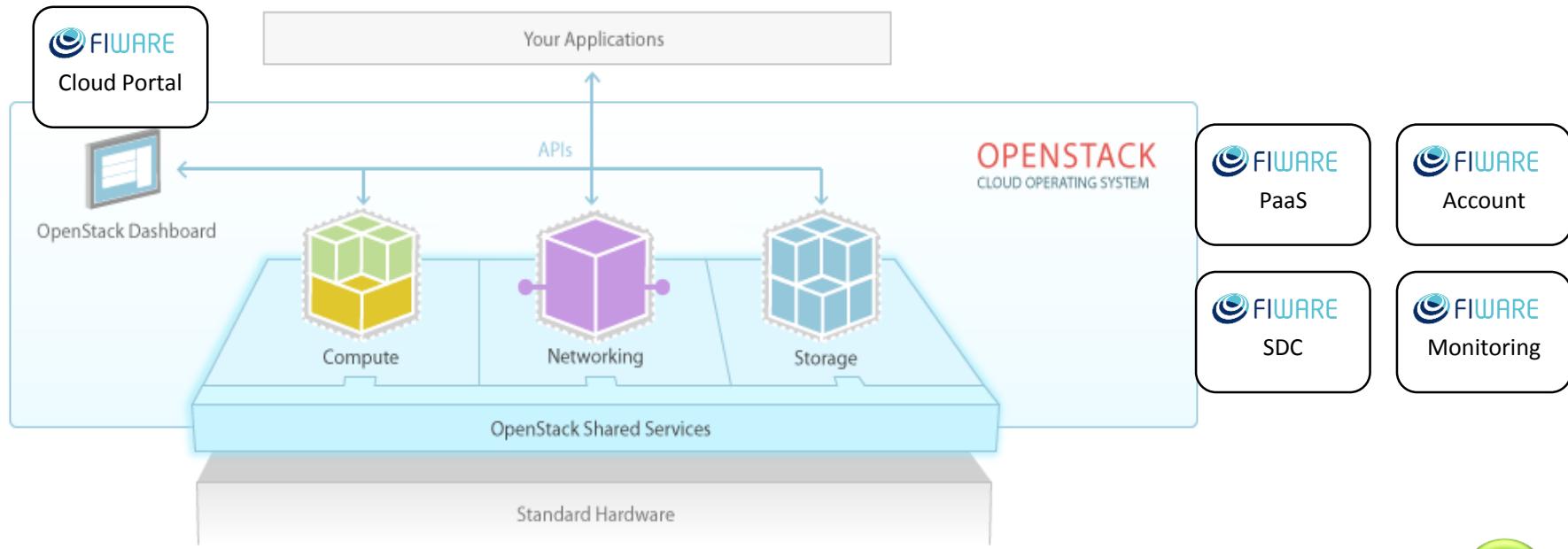
SANITY CHECK STATUS		
Brittany	last updated: 2017/02/15 11:49 UTC	took: 0h, 11m, 11s
Budapest2	last updated: 2017/02/15 11:58 UTC	took: 0h, 8m, 55s
Budapest3	last updated: 2017/02/15 11:51 UTC	took: 0h, 4m, 26s
Crete	last updated: 2017/02/15 12:00 UTC	took: 0h, 8m, 30s
Genoa	last updated: 2017/02/15 12:07 UTC	took: 0h, 18m, 19s
Hannover	last updated: 2017/02/15 11:49 UTC	took: 0h, 11m, 22s
Lannion3	last updated: 2017/02/15 11:45 UTC	took: 0h, 7m, 12s
Lannion4	last updated: 2017/02/15 11:57 UTC	took: 0h, 7m, 30s
Mexico	last updated: 2017/02/15 11:45 UTC	took: 0h, 7m, 35s
PiraeusU	last updated: 2017/02/15 11:54 UTC	took: 0h, 16m, 20s
Poznan	last updated: 2017/02/15 12:14 UTC	took: 0h, 23m, 12s
Prague	last updated: 2017/02/15 12:26 UTC	took: 0h, 39m, 44s
SaoPaulo	last updated: 2017/02/15 11:46 UTC	took: 0h, 8m, 7s
SophiaAntipolis2	last updated: 2017/02/15 11:47 UTC	took: 0h, 9m, 6s
Spain2	last updated: 2017/02/15 11:53 UTC	took: 0h, 7m, 46s

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FIWARE Lab Cloud

Arquitectura



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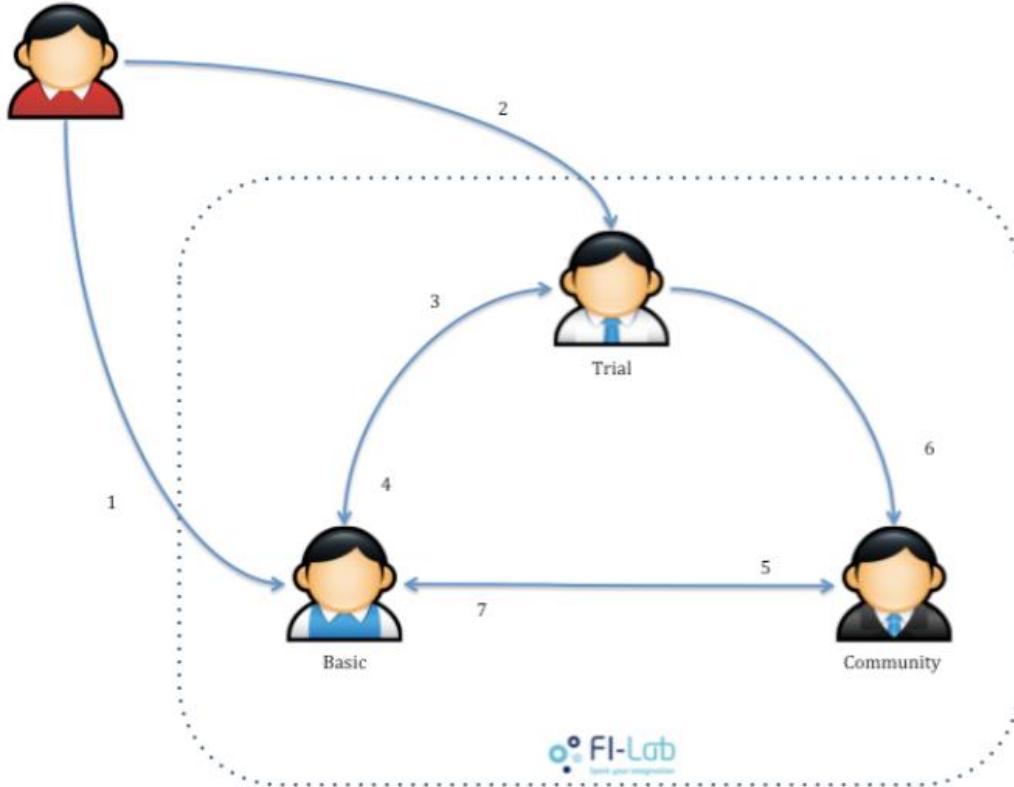
FIWARE Lab: funcionalidades básicas

- Servicios de identificación
- Servicios de cómputo



FIWARE Lab:funcionalidades básicas

Tipos de cuenta



- **Basic:** es solo un usuario registrado en FIWARE, sin embargo no tiene acceso a la nube de FIWARE.
- **Trial:** usuario que tiene acceso a la nube durante 14 días.
- **Community:** usuario con acceso completo a la nube.



FIWARE Lab:funcionalidades básicas

Creación de cuenta

<https://account.lab.fiware.org/>

The screenshot shows the FIWARE Lab website with a navigation bar at the top. The 'Account' tab is selected. On the left, there's a 'FIWARE Lab' section with a brief description and links to 'Request Community Account upgrade' and 'Sign up'. Below it are four cards: 'Need Help?' (Ask a question), 'Our GEs' (See our Catalogue), 'FIWARE Lab nodes' (Learn about FIWARE Ops), and 'FIWARE Academy' (Train yourself). On the right, there's a 'Log In' form with fields for 'Email' and 'Password', a 'remember me' checkbox, and a 'Sign In' button. Below the form are links for 'Sign up', 'Forgot password', and 'Didn't receive confirmation instructions?'



FIWARE Lab:funcionalidades básicas

Creación de cuenta

The screenshot shows the FIWARE Lab website interface. At the top, there is a navigation bar with links: FIWARE Lab, Cloud, Store, Mashup, Data, Account (which is highlighted in blue), and Help&Info. Below the navigation bar, there is a main content area with the following sections:

- FIWARE Lab**: A brief description stating "FIWARE Lab is a working instance of FIWARE available for experimentation. You will be able to setup the basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers deployed as a Service either globally or by you (as private instance)."
- Request Community Account upgrade** (button)
- Sign up** (button)
- Need Help?** (button): "Ask a question."
- Our GEs** (button): "See our Catalogue."
- FIWARE Lab nodes** (button): "Learn about FIWARE Ops."
- FIWARE Academy** (button): "Train yourself."

On the right side, there is a "Log In" form with fields for Email and Password, a "remember me" checkbox, and a "Sign In" button. Below the form, there are links for "Sign up", "Forgot password", and "Didn't receive confirmation instructions?". A large red arrow points from the "Sign up" button in the main content area to the "Sign up" link in the "Log In" form.



FIWARE Lab:funcionalidades básicas

Creación de cuenta

FIWARE Lab

FIWARE Lab is a working instance of FIWARE available for experimentation. You will be able to setup the basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers deployed as a Service either globally or by you (as private instance).

Request Community Account upgrade

Sign up

Need Help? >
Ask a question.

Our GEs >
See our Catalogue.

FIWARE Lab nodes >
Learn about FIWARE Ops.

FIWARE Academy >
Train yourself.

Registration

Username

E-mail

I have Gravatar and want to use it for my avatar.

Password

Password (again)

Captcha

I'm not a robot

reCAPTCHA

I want to be a trial user

I accept FIWARE Lab [Terms and Conditions](#)

Sign Up

Forgot password | Didn't receive confirmation instructions?



FIWARE Lab:funcionalidades básicas

Creación de cuenta

FIWARE Lab

FIWARE Lab is a working instance of FIWARE available for experimentation.

You will be able to setup the basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers deployed as a Service either globally or by you (as private instance).

Request Community Account upgrade

Sign up

Need Help? >
Ask a question.

Our GEs >
See our Catalogue.

FIWARE Lab nodes >
Learn about FIWARE Ops.

FIWARE Academy >
Train yourself.

Trial

Aceptar los términos y condiciones

Registration

Username

E-mail

I have Gravatar and want to use it for my avatar.

Password

Password (again)

Captcha

I'm not a robot

reCAPTCHA

I want to be a trial user

I accept FIWARE Lab [Terms and Conditions](#)

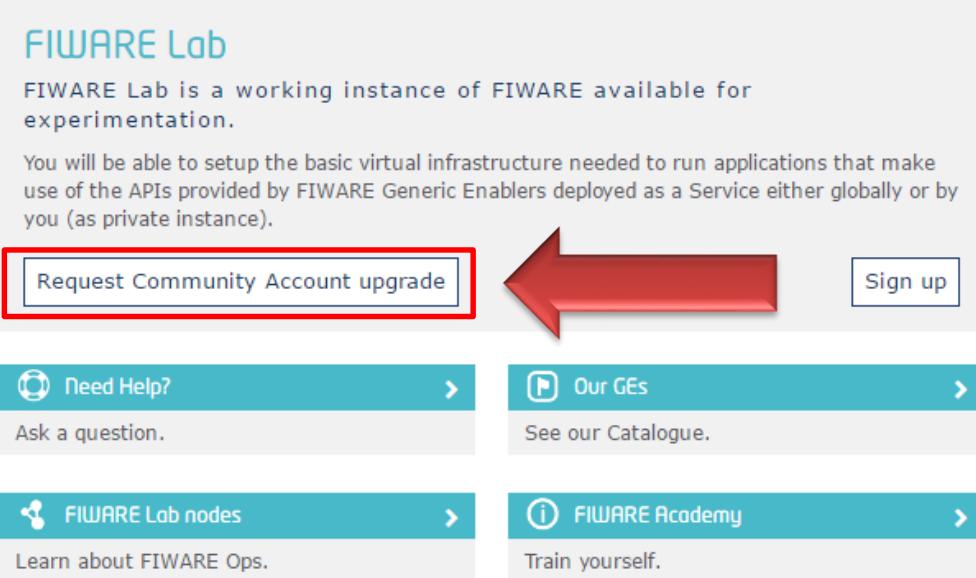
Sign Up

Forgot password | Didn't receive confirmation instructions?



FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community



The screenshot shows the FIWARE Lab homepage. At the top, there is a navigation bar with links: Cloud, Store, Mashup, Data, Account (which is highlighted), and Help&Info. Below the navigation bar, there is a section titled "FIWARE Lab" which says "FIWARE Lab is a working instance of FIWARE available for experimentation." It also states that users will be able to setup basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers. A large red arrow points from the "Request Community Account upgrade" button to the "Log In" form on the right.

FIWARE Lab
FIWARE Lab is a working instance of FIWARE available for experimentation.
You will be able to setup the basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers deployed as a Service either globally or by you (as private instance).

[Request Community Account upgrade](#) ← [Sign up](#)

[Need Help?](#) [Our GEs](#) [FIWARE Lab nodes](#) [FIWARE Academy](#)

Log In
Email

Password
 eye icon
 remember me Sign In
[Sign up](#) | [Forgot password](#) | [Didn't receive confirmation instructions?](#)

Para solicitar una cuenta Community, preferentemente se debe contar con un proyecto de investigación en desarrollo o contar con financiamiento para iniciar o desarrollar una aplicación para Ciudades Inteligentes.



FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community

Community Account Request

i Fill in the data to request a Community Account, you will receive a confirmation email at each step of the process from communityaccount@fiware.org email address. If not please check your SPAM inbox or contact the helpdesk: fiware-lab-help@lists.fiware.org.
In the project description, motivate why you apply for a FIWARE Lab account, describing how you plan to use FIWARE. Check <https://developer.fiware.org> for ideas!

User Full Name*

Your full name as by your ID

User Account Email*

Insert the email associated to the main representative in your project

Are you already* registered in FIWARE Lab? Yes No

Confirm that you created a main account for your project in **FIWARE Lab**. You should be able to register a "basic" account without any issue. In case of problems, the Help Desk will support you in the creation of the account.

Company*

Department

Submit **Close**



FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community

<http://lanif.infotec.mx>



The screenshot shows the official website for the FIWARE Lab at LaNIF. At the top, there's a banner with the text "El LaNIF hospeda al nodo FIWARE Lab de México primera instancia de la plataforma FIWARE que se crea en Latinoamérica". Below the banner, the header includes the Infotec logo, CONACYT logo, and a "Te invitamos a unirte a la comunidad de FIWARE" message. The main navigation menu has links for "Inicio", "Acerca de nosotros", "Infraestructura", "FIWARE Lab", "Solicita tu cuenta" (which is highlighted with a red box), "Eventos", and "Contacto". The central content area features a large blue banner with the text "Solicitar cuenta Community" and "FIWARE". Below this, there's a section titled "Instrucción de trabajo para solicitar cuenta FIWARE" with a version number "02". To the left of this section is an icon of a document labeled "FIWARE Lab". Below the main content area, there are two smaller icons: one of a clipboard and another of a document.

Solicitar cuenta Community
FIWARE

LaNIF
Laboratorio Nacional
del Internet del Futuro

**Instructión de trabajo para
solicitar cuenta FIWARE**

Versión: 02

Instructión de trabajo para la creación de una cuenta en FIWARE Lab.

Esta instrucción de trabajo describe los pasos para la creación de una cuenta en la plataforma de FIWARE Lab. Esta plataforma es una instancia de trabajo de FIWARE disponible para experimentación. FIWARE cuenta con componentes de software genéricos (*Generic Enablers GEs*), reutilizables y adaptables, que sirven como bloques de construcción para crear, en forma rápida, aplicaciones y servicios específicos basados en Internet. Los *GEs* ofrecen funciones para múltiples áreas de uso que son comunes a varios sectores.

Para tener acceso a FIWARE Lab, es necesario contar con una cuenta *basic* o *trial* para tener acceso a un espacio que permite el despliegue de una infraestructura virtual necesaria para experimentar con las tecnologías de internet de las cosas, cómputo en la nube y *Big Data*, a través de los *GEs* disponibles en FIWARE. A continuación se describen los pasos para la creación de la cuenta en FIWARE Lab.

FIWARE Lab: funcionalidades básicas

- Servicios de identificación
- Servicios de cómputo



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab

<https://account.lab.fiware.org/>

The image shows the FIWARE Lab homepage on the left and a log-in page on the right, connected by two red arrows.

FIWARE Lab Homepage:

- Header navigation: Cloud, Store, Mashup, Data, Account (highlighted), Help&Info.
- Main content:
 - FIWARE Lab is a working instance of FIWARE available for experimentation.
 - You will be able to setup the basic virtual infrastructure needed to run applications that make use of the APIs provided by FIWARE Generic Enablers deployed as a Service either globally or by you (as private instance).
- Buttons: Request Community Account upgrade, Sign up.
- Links:
 - Need Help? (Ask a question)
 - Our GEs (See our Catalogue)
 - FIWARE Lab nodes (Learn about FIWARE Ops)
 - FIWARE Academy (Train yourself)

Log In Page:

- Form fields: Email, Password, remember me.
- Buttons: Sign In (highlighted with a red box), Sign up, Forgot password, Didn't receive confirmation instructions.



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The screenshot shows the FIWARE Lab Cloud interface. At the top, there is a navigation bar with links: FIWARE Lab (highlighted with a red box), Cloud, Store, Mashup, Data, Account, and Help&Info. A user profile is also visible on the right. A red arrow points from the 'Cloud' link in the navigation bar down to the 'Cloud' application entry in the 'Applications' section of the main content area.

Identity Manager

- Home
- Organizations
- My Applications

Home

Applications

Cloud
http://cloud.lab.fiware.org/

Organizations

Blanca Vázquez cloud
This organization is intended to...



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The screenshot shows the FIWARE Lab Cloud interface. On the left, there's a sidebar with various project, blueprint, and region options. The main area displays a table of instances with columns for Status, Task, and Power State. A modal dialog titled "Important info" is overlaid on the page. The dialog contains a message about accepting new policies, a red box highlights the "I Accept" button, and a "Continue" button at the bottom right.

Important info

Dear User,

By clicking the "I accept" link below, you declare to accept the new defined policies. Otherwise, you can still work with your account but note that it will be removed by the defined deadline and the FIWARE Lab providers will not be responsible for creating a copy of the data you stored on the FIWARE Lab.

I Accept

Thanks

Continue

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff8347932373306a1f)

ARE Lab services is subject to the acceptance of the [Terms and Conditions](#), [Privacy Policy](#) and [Cookies Policy](#)



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The screenshot shows the FIWARE Lab Identity Manager interface. On the left, there's a sidebar with links: Home, Organizations, and My Applications. The main area has a title "Authorize Terms and Conditions?" and a sub-instruction "The application Terms and Conditions will be able to:". Below this is a box containing the text "Read your public information.". At the bottom right of this box are two buttons: "Deny" and "Authorize". The "Authorize" button is highlighted with a red border.



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

Do you Accept the New Term and Conditions?

The main new policies are summarized as follow:

1. Users will be categorized in "Trial" and "Community". Trial users will include the users accessing the Lab for testing the FIWARE technologies during a limited period of time. Community users will include users who have formally requested a longer term environment for working on the development of applications based on FIWARE technologies.
2. Trial users will be provided with a limited set of resources and for a limited period of time (14 days) within a single node part of FIWARE Lab. To keep resources, Trial users who wish to have a longer term environment will need to apply (and obtain) a Community account (see point 3). After the expiration of their trial period, the account assigned to a Trial user is disabled and the associated resources released - any backup is up to the user. FIWARE Lab is not responsible for the loss of any data. Reminders are sent one week before the expiration and the day before. The total resources made available to Trial Users are documented at this link. However, the amount of resources assigned to Trial Users may vary depending on availability of new nodes and change of internal policies.
3. Community users will be selected through an application process. The application process, which may result with a negative answer, will be handled with the eventual support of FIWARE Accelerator projects (see [1], [2]) that will identify users that are part of their acceleration programme. Users beyond the FIWARE Accelerator programme are also admitted. Users willing to become Community users will need to describe the application they are developing and the planned usage of FIWARE resources. Community users will be assigned a default FIWARE Lab node and will have access to it for a 9 month period unless the application process is renewed. This node is selected according to their preference and/or ascription to a given FIWARE accelerator project, each of which is linked to a default node. By issuing a request for additional resources, Community users may be able to access additional nodes if well motivated.
4. If the total quota assigned to Trial users gets exhausted, requests to create a Trial user account that require management of cloud resources will be queued and notified once resources are available on a "first arrived, first served" basis.
5. Users requesting a Public IP need to provide a verifiable identity information that will be handled by FIWARE infrastructure providers to ensure the possibly to track liable actions within the FIWARE Lab.
6. Users will not be able to create new "Organizations" anymore beyond the organization linked to their account. FIWARE Lab allows to share access to the cloud environment set up by a given user by adding users to the organization linked to that user. As a consequence, existing organizations will be blocked from accessing cloud resources.

[1] <http://www.fiware.org/accelerators/>

[2] <http://www.fiware.org/fiware-accelerator-programme/>

Should you not accept the new defined policies by 24/02/2015, your account will be removed and your resources released. FIWARE Lab providers will not be responsible for creating a copy of the data you stored in FIWARE Lab.

Additionally, we have added a few statements to adapt to the latest changes in FIWARE Lab:

- The initiative formerly known as "FI-WARE" is now referred to as "FIWARE"
- The environment formerly known as "FI-Lab" or "FI-Lab" is now referred to as "FIWARE Lab"
- The communication with the support channels or other channels can be published.
- Clarification on the number of users that an individual may have

The complete text of term and conditions is available [here](#).



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The screenshot shows a user interface for the FIWARE Lab Cloud. At the top left is the FIWARE Lab logo. Next to it is a red rectangular button labeled "Account". A large red arrow points from the text below towards this button. On the far right, there is a user profile icon and the name "Blanca Vázquez". The main content area contains two lines of text: "You accepted the new term and conditions!" and "You can go on using FIWARE Lab".

You accepted the new term and conditions!
You can go on using FIWARE Lab



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The screenshot shows the FIWARE Lab Cloud interface. At the top, there is a navigation bar with links: FIWARE Lab (highlighted with a red box), Cloud, Store, Mashup, Data, Account, and Help&Info. A user profile is also visible on the right. A red arrow points from the 'Cloud' link in the navigation bar down to the 'Cloud' application entry in the 'Applications' section of the main content area.

Identity Manager

- Home
- Organizations
- My Applications

Home

Applications

Cloud
http://cloud.lab.fiware.org/

Organizations

Blanca Vázquez cloud
This organization is intended to...



FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud

The image shows a screenshot of the FIWARE Lab Cloud interface. At the top, there is a navigation bar with the following items: FIWARE Lab (with a logo), Cloud, Store, Mashup, Data, Account, and Help&info. Below the navigation bar, the main content area displays the text "Loading FIWARE Cloud Portal..." above a progress bar consisting of a blue hatched segment followed by a white segment.



FIWARE Lab: funcionalidades básicas

FIWARE Lab Cloud



Cloud

Store

Mashup

Data

Account

Help&info



blancavazquez2013@gmail.com



Instances

Menu

Project

Blanca Vázquez cloud

Info

Blueprint

Blueprint Instances

Blueprint Templates

Region

Spain2



Compute

Instances

Images

Flavors

Security

S snapshots

Storage

Containers

Volumes

Network

Networks

Routers

Launch New Instance

Actions

<input type="checkbox"/>	Instance Name	IP Address	Size	Keypair	Status	Task	Power State
<input type="checkbox"/>	Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING

Displaying 1 item

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6af)

FIWARE Lab: funcionalidades básicas

Información de la cuenta



FIWARE Lab Cloud Store Mashup Data Account Help&info

blancavazquez2013@gmail.com

Instances

	Instance Name	IP Address	Size	Keypair	Status	Task	Power State	Actions
	Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING	<button>Launch New Instance</button>

Menu

Project

Blanca Vázquez cloud

Info

Blueprint

Blueprint Instances

Blueprint Templates

Region

Spain2



Compute

Instances

Images

Flavors

Security

Snapshots

Storage

Containers

Volumes

Network

Networks

Routers

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6af)

FIWARE Lab: funcionalidades básicas

Información de la cuenta

Project Info ×

Credentials

User name: blancavazquez2013@gmail.com
Tenant name: Blanca Vázquez cloud
Tenant Id: 93715909ea814bff83479323733a6a1f
Region: Spain2
Authentication URL: <http://130.206.84.8:4730/v3/>

Description

The information shown here, refers to the main variables of authentication required to access Openstack services from the console.

How to:

1. Download your openrc file.
2. Edit the file configuring your OS_PASSWORD variable.
3. Source openrc file in your console.
4. Start working!.

[Cancel](#) [Download openrc file](#)



FIWARE Lab: funcionalidades básicas

Información de la cuenta

FIWARE Lab Cloud Store Mashup Data Account Help&info  blancavazquez2013@gmail.com ▾

Instances

Menu

Project
Blanca Vázquez cloud ▾
 Info

Blueprint
 Blueprint Instances
 Blueprint Templates

Region
Spain2 ▾

Compute
 Instances
 Images
 Flavors
 Security
 Snapshots

Storage
 Containers
 Volumes

Network
 Networks
 Routers

<input type="checkbox"/>	Instance Name ▾	IP Address	Size	Keypair	Status	Task	Power State
<input type="checkbox"/>	Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING

Displaying 1 item

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6af)

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FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Para llevar a cabo el despliegue de una instancia, es necesario seguir los siguientes pasos:

- Creación de una llave privada (keypair).
- Creación de un grupo de seguridad (se definen los puertos para la instancias, ejemplo el puerto 22 para ssh).
- Desplegar tu instancia:
 - ✓ Seleccionar del repositorio una imagen predefinida (Centos, Ubuntu, etc.)
 - ✓ Seleccionar el tamaño de la instancia (vCPU, memoria, usuario, disco).
 - ✓ Seleccionar un grupo de seguridad.
 - ✓ Seleccionar la llave privada para acceso.
- Asociar una IP pública a la instancia.



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

Screenshot of the FIWARE Lab interface showing the Instances page. A red arrow points from the 'Security' menu item in the left sidebar to the 'Keypair' column header in the table.

Instances

Instance Name	IP Address	Size	Keypair	Status	Task	Power State
Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6alf)

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Se debe crear una llave privada (keypair) para acceder a las instancias



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

The screenshot shows the FIWARE Lab interface with the following details:

- Header:** FIWARE Lab, Cloud, Store, Mashup, Data, Account, Help&info, User: blancavazquez2013@gmail.com.
- Left Sidebar (Menu):**
 - Project: Blanca Vázquez cloud
 - Blueprint: Blueprint Instances, Blueprint Templates
 - Region: Spain2
 - Compute: Instances, Images, Flavors, Security (highlighted), Snapshots
 - Storage: Containers, Volumes
 - Network: Networks, Routers
- Central Content (Security - Keypairs):**
 - Header tabs: Floating IPs, Security Groups, Keypairs (highlighted with a red box and arrow).
 - Buttons: Allocate IP to Project, Actions.
 - Table:

IP Address	Instance	Fixed Address	Floating IP Pool
130.206.125.221	Instancecapacitacion	192.168.241.255	public-ext-net-01
 - Info bar: Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6a1f)
 - Footer: ARE Lab services is subject to the acceptance of the [Terms and Conditions](#), [Privacy Policy](#) and [Cookies Policy](#).



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

The screenshot shows the FIWARE Lab interface with the following details:

- Header:** FIWARE Lab, Cloud, Store, Mashup, Data, Account, Help&info.
- User:** blancavazquez2013@gmail.com
- Left Sidebar (Menu):**
 - Project: Blanca Vázquez cloud
 - Blueprint: Blueprint Instances, Blueprint Templates
 - Region: Spain2
 - Compute: Instances, Images, Flavors, Security (highlighted), Snapshots
 - Storage: Containers, Volumes
 - Network: Networks, Routers
- Central Content:** Security tab, Keypairs sub-tab selected. A large red arrow points to the "Create Keypair" button, which is highlighted with a red border.
- Bottom Status Bar:** Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6alf). A note: ARE Lab services is subject to the acceptance of the Terms and Conditions, Privacy Policy and Cookies Policy.



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

Create Keypair ×

Keypair Name *
keyfiware

Description
Keypairs are ssh credentials which are injected into Images when they are launched. Creating a new key pair registers the public key and downloads the private key (a .pem file).
Protect and use the key as you would any normal ssh private key.

* Mandatory fields.

Cancel Create Keypair



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

Create Keypair ✖

Keypair Name * Download Keypair

Description
Keypairs are ssh credentials which are injected into Images when they are launched. Creating a new key pair registers the public key and downloads the private key (a .pem file).
Protect and use the key as you would any normal ssh private key.

* Mandatory fields. Close ←

Descargar la keypair (archivo.pem)

**Este es el único momento para DESCARGAR la llave.
Al momento de la descarga, NO CAMBIAR el nombre del archivo**



FIWARE Lab: funcionalidades básicas

Creación de una llave privada

Floating IPs Security Groups Keypairs

Create Keypair Import Keypair Actions

Name	Fingerprint
keycap	17:c2:14:34:22:2e:56:30:77:03:82:01:1d:26:e4:15
keyfiware	3b:fd:05:33:cf:fb:89:40:89:8d:e8:34:31:52:6e:4f

Displaying 2 items

Success: Keypair keyfiware created.



FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad

The screenshot shows the FIWARE Lab interface for creating a security group. The top navigation bar includes 'Cloud', 'Store', 'Mashup', 'Data', 'Account', and 'Help&info'. The user is logged in as 'blancavazquez2013@gmail.com'. On the left, a sidebar menu lists 'Project' (Blanca Vázquez cloud), 'Info', 'Blueprint' (Blueprint Instances, Blueprint Templates), 'Region' (Spain2), 'Compute' (Instances, Images, Flavors, Security, Snapshots), and 'Storage' (Containers, Volumes). The main content area is titled 'Security' and shows tabs for 'Floating IPs', 'Security Groups' (which is selected and highlighted with a red box), and 'Keypairs'. A large red arrow points from the 'Create Security Group' button (also highlighted with a red box) to the 'Create Security Group' button in the top right of the list view. The list view displays one item: 'default' (Name) with a checkbox, 'Description' (Default security group), and an 'Actions' dropdown. At the bottom right of the list view, it says 'Displaying 2 items'.



FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad

Create Security Group ×

Name *

Description
From here you can create a new security group

Description *

* Mandatory fields.

Cancel Create Security Group

Se recomienda describir adecuadamente los nombres de los grupos de seguridad y las instancias



FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad

Floating IPs Security Groups Keypairs

Create Security Group Actions ▾

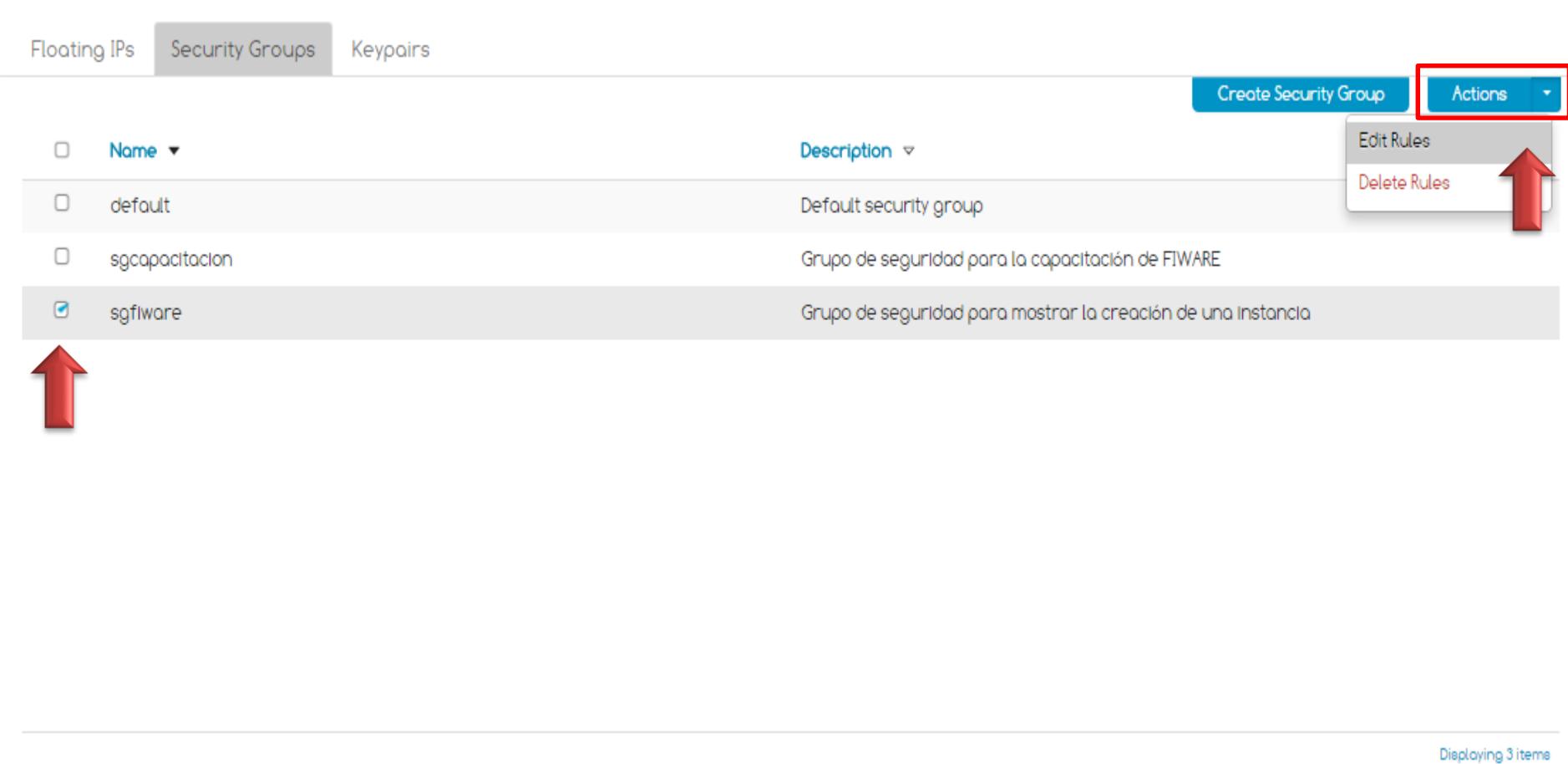
<input type="checkbox"/> Name ▾	Description ▾
<input type="checkbox"/> default	Default security group
<input type="checkbox"/> sgcapacitacion	Grupo de seguridad para la capacitación de FIWARE
<input type="checkbox"/> sgsoftware	Grupo de seguridad para mostrar la creación de una instancia

Displaying 3 items



FIWARE Lab: funcionalidades básicas

Definición de reglas



Floating IPs Security Groups Keypairs

Create Security Group Actions ▾

Name	Description
default	Default security group
sgcapacitacion	Grupo de seguridad para la capacitación de FIWARE
<input checked="" type="checkbox"/> sgfiware	Grupo de seguridad para mostrar la creación de una instancia

Displaying 3 items



FIWARE Lab: funcionalidades básicas

Definición de reglas

Edit Security Group Rules

Security Group Rules

IP Protocol	From Port	To Port	Source	Action
TCP	1	22	0.0.0.0/0 (CIDR)	<button>Delete Rule</button>
TCP	1	80	0.0.0.0/0 (CIDR)	<button>Delete Rule</button>

Displaying 2 items

Add Rule

IP Protocol From Port * To Port * Source Group CIDR

TCP CIDR

Success: Security group rule created.

* Mandatory fields.



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Screenshot of the FIWARE Lab Instances page.

The left sidebar shows the following navigation:

- Project: Blanca Vázquez cloud
- Blueprint: Blueprint Instances, Blueprint Templates
- Region: Spain2
- Compute:
 - Instances (highlighted with a red box)
 - Images
 - Flavors
 - Security
 - Snapshots
- Storage: Containers, Volumes
- Network: Networks, Routers

The main content area displays the "Instances" table with one row:

Instance Name	IP Address	Size	Keypair	Status	Task	Power State
Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING

A red arrow points from the "Launch New Instance" button at the top right of the table to the "Instances" link in the Compute section of the sidebar.

Info bar at the bottom: Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6a1f)

Text at the bottom: ARE Lab services is subject to the acceptance of the [Terms and Conditions](#), [Privacy Policy](#) and [Cookies Policy](#)



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

FIWARE Lab Cloud Store Mashup Data Account Help&info blancavazquez2013@gmail.com

Images

Repositorio de imágenes de FIWARE Lab

Name	Type	Status	Visibility	Container Format	Disk Format	Actions
base_ubuntu_14.04	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
base_centos_6	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
base_centos_7	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
base_debian_7	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
base_ubuntu_12.04	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
base_debian_8	baseimages	active	public	BARE	QCOW2	<button>Launch</button>
repository-image-R3.2	fiware:apps	active	public	AMI	AMI	<button>Launch</button>
wstore-img	fiware:apps	active	public	OVF	QCOW2	<button>Launch</button>
SpagoBI	fiware:apps	active	public	BARE	QCOW2	<button>Launch</button>
marketplace	fiware:apps	active	public	BARE	QCOW2	<button>Launch</button>
wirecloud-image-R5.4	fiware:apps	active	public	BARE	QCOW2	<button>Launch</button>

Displaying 62 items

Info: Connected to project Blanca Vázquez cloud (ID 93715909ea814bff83479323733a6af)

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FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details **2. Access & Security** **3. Networking** **4. Post-Creation** **5. Summary**

Instance Name *
instanciawire

Flavor
m1.small

Instance Count *
1

Description
Specify the details for launching an instance. The chart below shows the resources used by this project in relation to the project's quotas.

Flavor Details

Name	m1.small
VCPUs	1
Root Disk	20 GB
Ephemeral Disk	0 GB
Total Disk	20 GB
RAM	2048 MB

Project Quotas

Instance Count (1)	2 Available
VCPUs (1)	11 Available
Memory (2048 MB)	10952 MB Available

* Mandatory fields.

Cancel Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details

2. Access & Security

3. Networking

4. Post-Creation

5. Summary

Instance Name *

instanciafiware

Description

Specify the details for launching an instance. The chart below shows the resources used by this project in relation to the project's quotas.

Flavor

m1.small

m1.small

m1.medium

m1.large

m1.large.ephemeral

esp.cantera1

Flavor Details

Name	m1.small
VCPUs	1
Root Disk	20 GB
Ephemeral Disk	0 GB
Total Disk	20 GB
RAM	2048 MB

Project Quotas

Instance Count (1) 2 Available

VCPUs (1) 11 Available

Memory (2048 MB) 10952 MB Available

* Mandatory fields.

Cancel

Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Instance Name *

Description
Specify the details for launching an instance. The chart below shows the resources used by this project in relation to the project's quotas.

Flavor

m1.small

Instance Count *

Flavor Details

Name	m1.small
VCPUs	1
Root Disk	20 GB
Ephemeral Disk	0 GB
Total Disk	20 GB
RAM	2048 MB

Project Quotas

Instance Count (1)	2 Available
VCPUs (1)	11 Available
Memory (2048 MB)	10952 MB Available

* Mandatory fields.

Cancel Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Instance Name *

Description

Specify the details for launching an instance. The chart below shows the resources used by this project in relation to the project's quotas.

Flavor

m1.small

Instance Count *

1

Flavor Details

Name	m1.small
VCPU	1
Root Disk	20 GB
Ephemeral Disk	0 GB
Total Disk	20 GB
RAM	2048 MB

Project Quotas

Instance Count (1)	2 Available
VCPU (1)	11 Available
Memory (2048 MB)	10952 MB Available

* Mandatory fields.

Cancel Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances x

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Keypair →

Description
Control access to your instance via keypairs, security groups, and other mechanisms.

Security Groups
 default
 sgcapacitacion
 sgfliware

* Mandatory fields. Back



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances x

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Keypair

Select a keypair

Select a keypair
keycap
keyfiware

Description

Control access to your instance via keypairs, security groups, and other mechanisms.

default
 sgcapacitacion
 sgfiware

Add new Security Group

* Mandatory fields. Back Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Keypair
keyfiware
[Create new Keypair](#)

Description
Control access to your instance via keypairs, security groups, and other mechanisms.

Security Groups
 default
 sgcapacitacion
 sgfiware
[Add new Security Group](#)

* Mandatory fields.

[Back](#) [Next](#)



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances x

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Selected Networks

Description
Control access to your Instance via keypairs, security groups, and other mechanisms.
Drag and drop the networks to which you want to connect the instance from "Available" to "Selected".

Available Networks

node-int-net-01

node-int-net-01-dual

node-int-noinet-net-02

 * Mandatory fields. Back **Next**



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Selected Networks

node-int-net-01

Available Networks

node-int-net-01-dual
node-int-noinet-net-02

Description

Control access to your Instance via keypairs, security groups, and other mechanisms.

Drag and drop the networks to which you want to connect the Instance from "Available" to "Selected".

* Mandatory fields.

Back **Next**



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Customization Script

```
#cloud-config
#
# This script automatically performs some needed actions for ...
# You can modify it, but be careful not to change network configuration ...
write_files:
- encoding: b64
  content: |
    YXV0byBsbyAKaWZhY2UgbG8gaW5ldCBsb29wYmFjawsd
  path: /etc/network/interfaces
```

Description

You can customize your instance after it's launched using the options available here. The "Customization Script" field is analogous to "User Data" in other systems.

No cambiar nada

* Mandatory fields.

Back Next



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Launch Instances

1. Details 2. Access & Security 3. Networking 4. Post-Creation 5. Summary

Instance Name: Instanciafiware
Image: base_ubuntu_14.04
Flavor: m1.small
Instance Count: 1
Keypair: keyfiware
Security Group: sgfiware

To access the instance:
You need to include a security group with port 22 opened to access via SSH.
You need to assign a floating IP to access from a external network.

* Mandatory fields.

Back Launch instance



FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Instances

Menu

Project
Blanca Vázquez cloud ▾
Info

Blueprint
Blueprint Instances
Blueprint Templates

Region
Spain2 ▾

Compute
 Instances
 Images
 Flavors
 Security
 Snapshots

Storage
 Containers
 Volumes

Network
 Networks
 Routers

Instances

Instance Name	IP Address	Size	Keypair	Status	Task	Power State
Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING
Instanciafiware		2048 MB RAM 1 VCPU 20GB Disk	keyfiware	BUILD	spawning	NO STATE

Success: Instance Instanciafiware launched.

Displaying 2 items

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FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

Screenshot of the FIWARE Lab interface showing the Instances page. The page displays a list of instances with columns for Instance Name, IP Address, Size, Keypair, Status, Task, and Power State. Two instances are listed: 'Instancecapacitacion' and 'Instanciafiware'. A red arrow points to the 'Instanciafiware' row. A callout text says: 'Pulsar sobre la instancia para ver su información'. Another red arrow points to the 'Actions' button at the top right of the table.

Instance Name	IP Address	Size	Keypair	Status	Task	Power State
Instancecapacitacion	192.168.241.255 130.206.125.221	2048 MB RAM 1 VCPU 20GB Disk	keycap	ACTIVE	None	RUNNING
Instanciafiware	192.168.241.43	2048 MB RAM 1 VCPU 20GB Disk	keyfiware	ACTIVE	None	RUNNING

Success: Instance Instanciafiware launched.



FIWARE Lab: funcionalidades básicas

Resumen de la instancia

The screenshot shows the FIWARE Lab interface for managing cloud instances. The top navigation bar includes links for Cloud, Store, Mashup, Data, Account, and Help&Info, along with a user account dropdown. The left sidebar provides navigation for Project, Blueprint, Region, Compute, and Storage. The main content area is titled 'Instances' and displays an 'Overview' tab for a selected instance. The instance details are as follows:

Info		Specs	IP Addresses
Name: Instanciafiware	ID: 472c190f-70cf-4c75-a770-f7d70a0244e2	RAM: 2048MB VCPU: 1 VCPU Disk: 20GB	node-int-net-01: 192.168.241.43
Security Groups		Meta	Volumes
sgfiware		Key name: keyfiware Image Name: base_ubuntu_14.04 region: Spain2	
Installed Software		Edit	



FIWARE Lab: funcionalidades básicas

Asignar una IP

The screenshot shows the FIWARE Lab interface with the following details:

- Header:** FIWARE Lab, Cloud, Store, Mashup, Data, Account, Help&info.
- User Information:** blancavazquez2013@gmail.com
- Left Sidebar (Menu):**
 - Project: Blanca Vázquez cloud
 - Blueprint: Blueprint Instances, Blueprint Templates
 - Region: Spain2
 - Compute: Instances, Images, Flavors, **Security** (highlighted with a red box)
 - Storage: Containers, Volumes
- Central Content:** Security section with tabs: Floating IPs (selected), Security Groups, Keypairs. A red arrow points to the "Allocate IP to Project" button.
- Bottom Right:** Displaying 0 items



FIWARE Lab: funcionalidades básicas

Asignar una IP

Allocate Floating IP ×

Pool ▼

Description
Allocate a floating IP from a given floating ip pool.

Project Quotas

Floating IP (0)	1 Available
<div style="width: 100%; background-color: #0070C0; height: 10px;"></div>	

Cancel Allocate IP



FIWARE Lab: funcionalidades básicas

Asignar una IP

The screenshot shows the FIWARE Lab web interface. In the top navigation bar, the 'Cloud' tab is selected. Below it, the 'Security' section is active. On the left, there's a sidebar with project, blueprint, region, compute, storage, and network sections. The main area displays a table for 'Floating IPs'. A red arrow points up from the table to a large red arrow pointing right towards the 'Actions' dropdown menu. This menu contains four options: 'Allocate IP to Project' (disabled), 'Associate IP' (highlighted with a red border), 'Dissociate Floating IP', and 'Release Floating IPs'. A success message at the bottom states 'Success: Successfully allocated floating IP'.

Project
Blanca Vázquez cloud ▾
Info
Blueprint
Blueprint Instances
Blueprint Templates
Region
Spain2
Compute
Instances
Images
Flavors
Security
Solutions
Schemas
Schemas
Schemas
Schemas
Storage
Containers
Volumes
Network

Cloud

Store Mashup Data Account Help&info

blancavazquez2013@gmail.com ▾

Security

Floating IPs Security Groups Keypairs

IP Address ▾ Instance ▾ Fixed Address ▾ Allocate IP to Project Actions

130.206.125.68 public-ext-net-01 Associate IP Dissociate Floating IP Release Floating IPs

Selecciónar la IP asignada

Success: Successfully allocated floating IP



FIWARE Lab: funcionalidades básicas

Asignar una IP

Associate Floating IP

Associate Floating IP:

130.206.125.68

to instance:



Select an instance

Select an instance

instanciafiware

Select IP to associate with

A dropdown menu with four options: "Select an instance", "Select an instance" (highlighted in blue), "instanciafiware", and "Select IP to associate with".

Description

Associate a floating Ip with an Instance.

Cancel

Associate IP



FIWARE Lab: funcionalidades básicas

Asignar una IP

Associate Floating IP ×

Associate Floating IP:
130.206.125.68

to instance:
 instanciafiware

and to IP Address:
 192.168.241.43

Description
Associate a floating ip with an instance.



FIWARE Lab: funcionalidades básicas

Asignar una IP

Screenshot of the FIWARE Lab interface showing the 'Security' section for managing Floating IPs.

The interface includes a top navigation bar with Cloud, Store, Mashup, Data, Account, Help&info, and a user account dropdown for blancavazquez2013@gmail.com.

The left sidebar contains a 'Menu' section with Project (Blanca Vázquez cloud), Blueprint (Blueprint Instances, Blueprint Templates), Region (Spain2), Compute (Instances, Images, Flavors, Security, Snapshots), Storage (Containers, Volumes), and Network.

The main content area shows a table for Floating IPs:

IP Address	Instance	Fixed Address	Floating IP Pool
130.206.125.68	Instanciafiware	192.168.241.43	public-ext-net-01

Two large red arrows point upwards from the bottom of the slide towards the 'IP Address' and 'Instance' columns in the table.

A success message at the bottom states: Success: Successfully associated Floating IP 130.206.125.68 with Instance: Instanciafiware.



FIWARE Lab: funcionalidades básicas

Acceder a la instancia

The screenshot shows the FIWARE Lab interface with the 'Instances' tab selected. A red box highlights the IP address column for the first instance, 'Instanciafiware', which lists two addresses: 192.168.241.43 and 130.206.125.68. The table includes columns for Instance Name, IP Address, Size, Keypair, Status, Task, and Power State. The instance 'Instanciafiware' is listed as ACTIVE with a RUNNING power state.

Instance Name	IP Address	Size	Keypair	Status	Task	Power State
Instanciafiware	192.168.241.43 130.206.125.68	2048 MB RAM 1 VCPU 20GB Disk	keyfiware	ACTIVE	None	RUNNING

Puntos a considerar (en caso de Linux):

- Identificar la IP externa de la instancia



FIWARE Lab: funcionalidades básicas

Acceder a la instancia en Ubuntu



- 1) Desde una terminal localizar el archivo.pem
- 2) Instrucción de acceso: **sudo ssh –i archivo.pem ubuntu@ipExterna**

```
blanca@blanca-VirtualBox:~/Capacitación$ ls  
keyfiware.pem  
blanca@blanca-VirtualBox:~/Capacitación$ sudo ssh -i keyfiware.pem ubuntu@130.206.125.68  
[sudo] password for blanca:  
The authenticity of host '130.206.125.68 (130.206.125.68)' can't be established.  
ECDSA key fingerprint is 41:e4:5e:2f:26:ff:fe:05:5a:9e:1d:50:59:fa:6f:89.  
Are you sure you want to continue connecting (yes/no)? █
```



FIWARE Lab: funcionalidades básicas

Acceder a la instancia

```
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 3.13.0-86-generic x86_64)

 * Documentation: https://help.ubuntu.com/

 System information as of Sun Feb 12 04:30:06 UTC 2017

 System load: 0.0           Memory usage: 2%   Processes:      53
 Usage of /: 4.0% of 19.65GB Swap usage: 0%   Users logged in: 0

 Graph this data and manage this system at:
 https://landscape.canonical.com/

 Get cloud support with Ubuntu Advantage Cloud Guest:
 http://www.ubuntu.com/business/services/cloud
```

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

ubuntu@instanciafiware:~\$ █

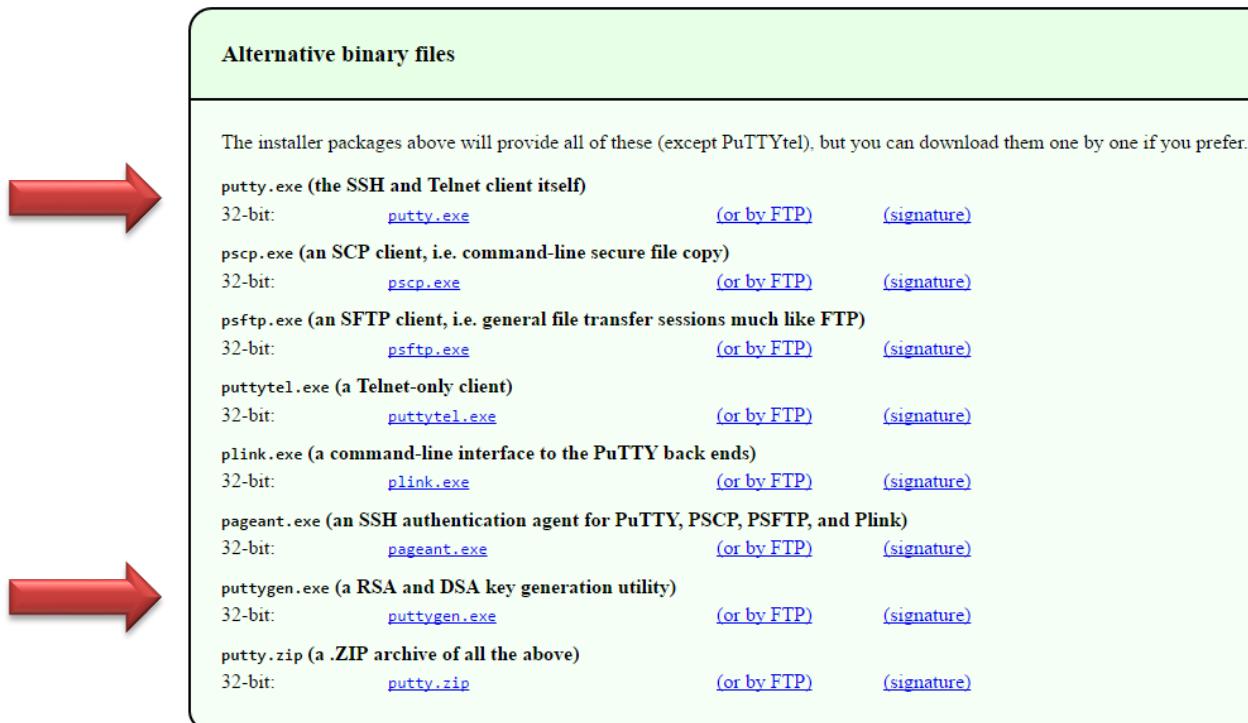


FIWARE Lab: funcionalidades básicas

Conexión por SSH en Windows utilizando PuTTY

1. Descargar PuTTYgen y PuTTY del siguiente link:

<http://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>



The installer packages above will provide all of these (except PuTTYtel), but you can download them one by one if you prefer.

putty.exe (the SSH and Telnet client itself)

32-bit: [putty.exe](#) ([or by FTP](#)) ([signature](#))

pscp.exe (an SCP client, i.e. command-line secure file copy)

32-bit: [pscp.exe](#) ([or by FTP](#)) ([signature](#))

psftp.exe (an SFTP client, i.e. general file transfer sessions much like FTP)

32-bit: [psftp.exe](#) ([or by FTP](#)) ([signature](#))

puttytel.exe (a Telnet-only client)

32-bit: [puttytel.exe](#) ([or by FTP](#)) ([signature](#))

plink.exe (a command-line interface to the PuTTY back ends)

32-bit: [plink.exe](#) ([or by FTP](#)) ([signature](#))

pageant.exe (an SSH authentication agent for PuTTY, PSCP, PSFTP, and Plink)

32-bit: [pageant.exe](#) ([or by FTP](#)) ([signature](#))

puttygen.exe (a RSA and DSA key generation utility)

32-bit: [puttygen.exe](#) ([or by FTP](#)) ([signature](#))

putty.zip (a .ZIP archive of all the above)

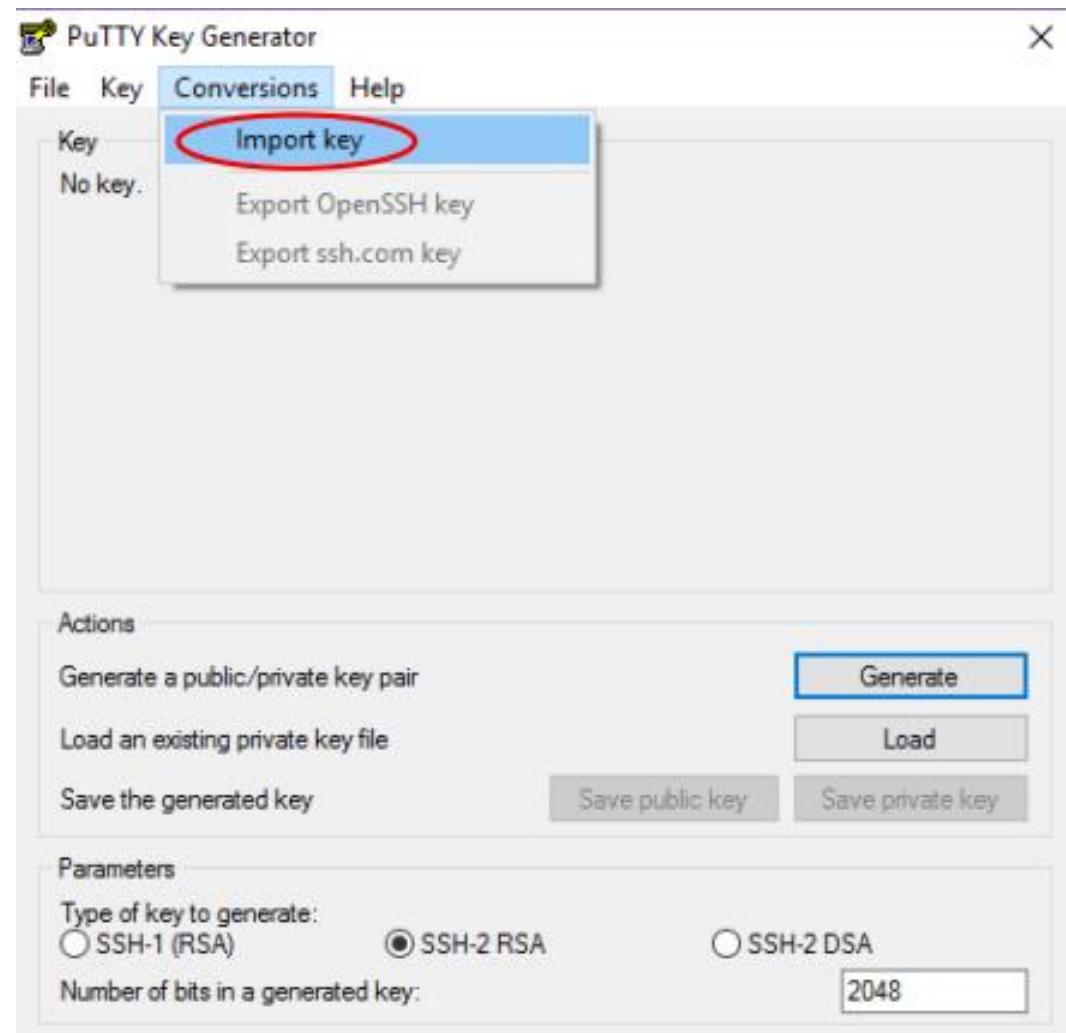
32-bit: [putty.zip](#) ([or by FTP](#)) ([signature](#))



FIWARE Lab: funcionalidades básicas

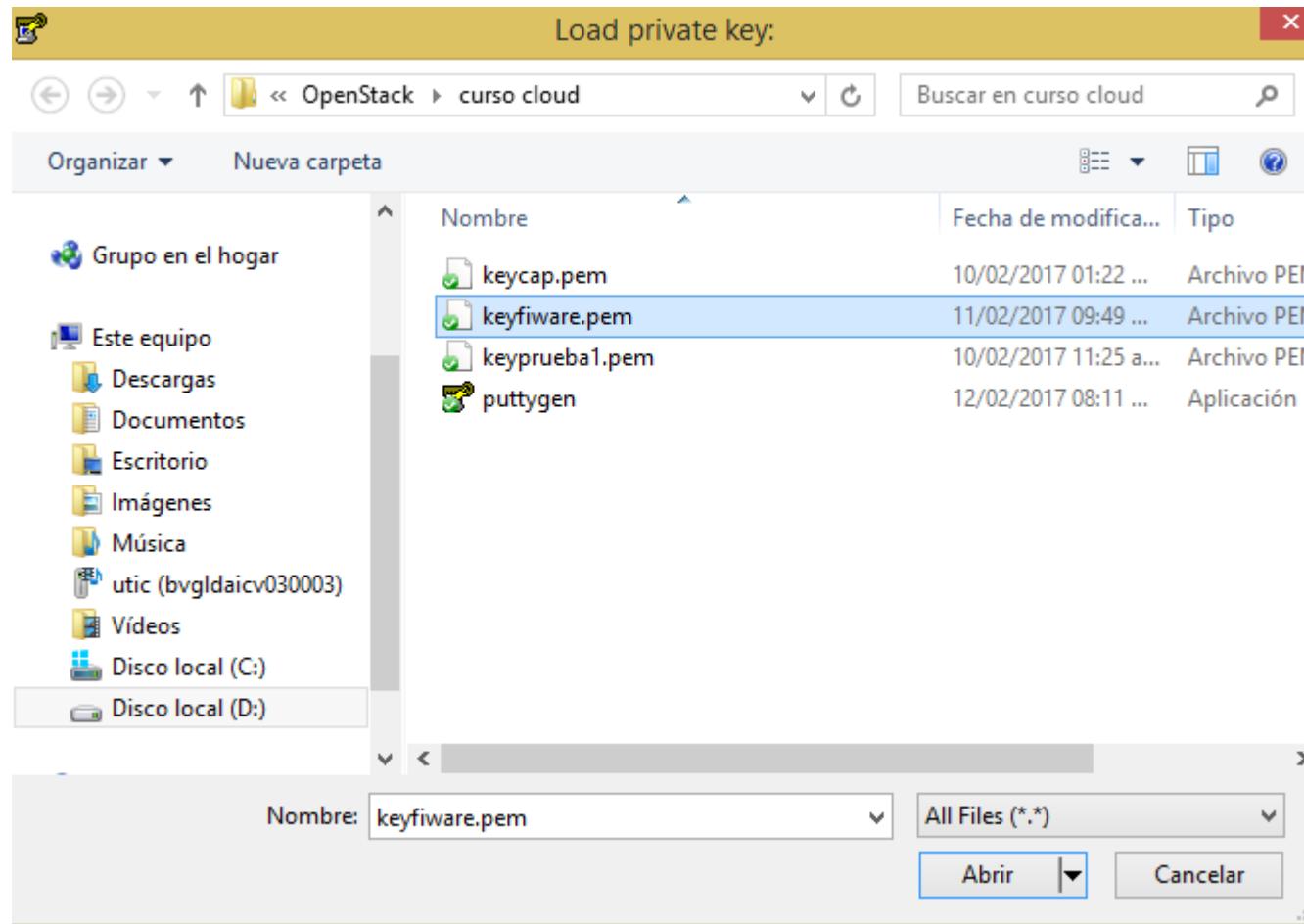
Generación de la clave para el acceso con PuTTY

1. Contar con la llave privada (archivo.pem)
2. Procedemos a convertir el archivo.pem a archivo.ppk



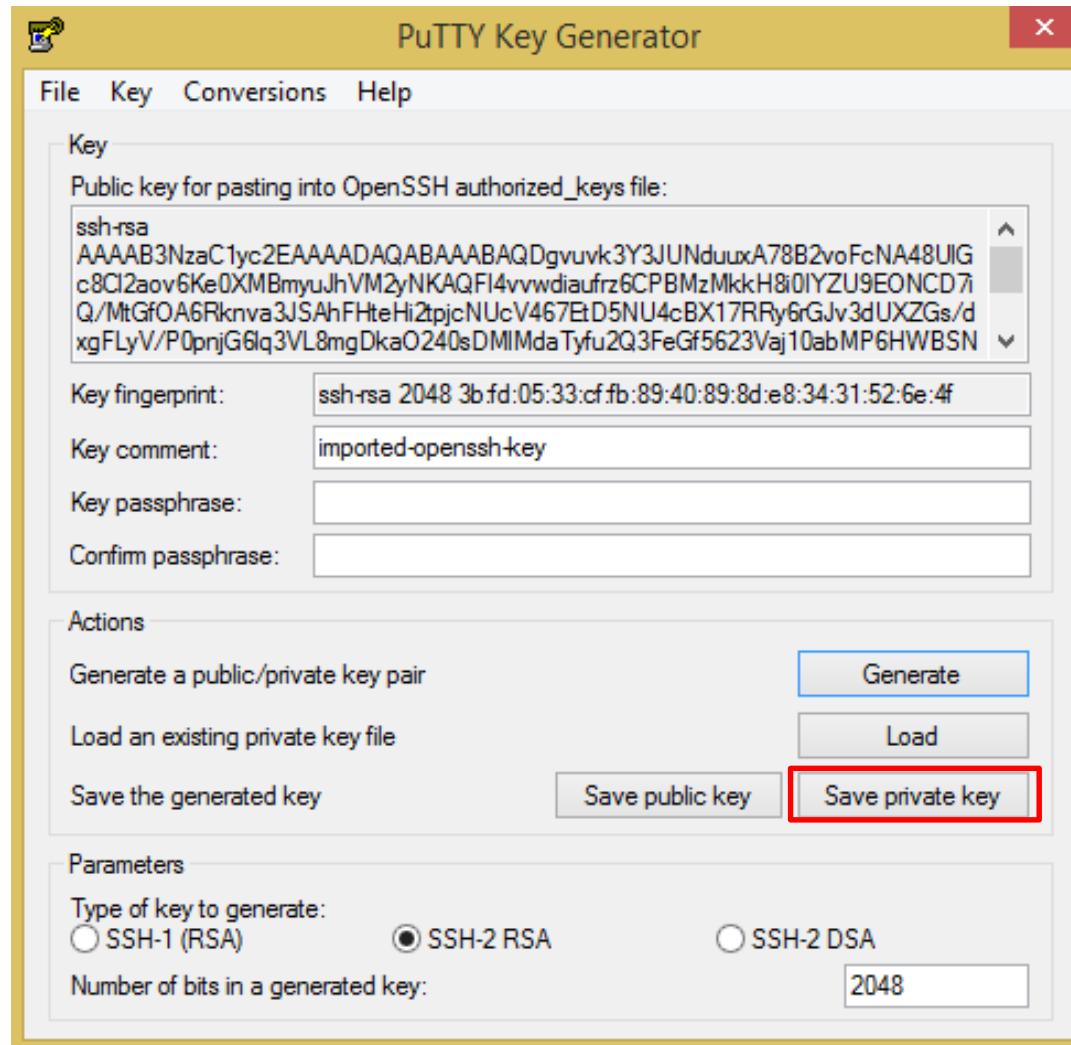
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



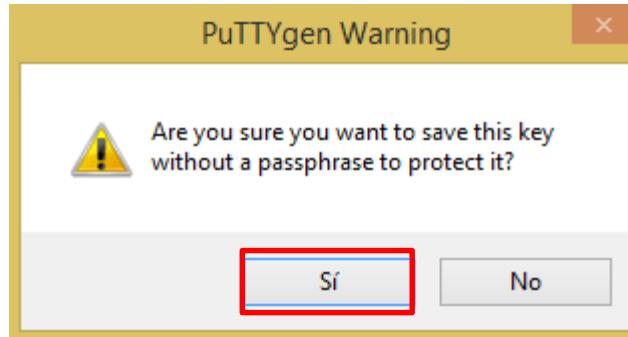
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



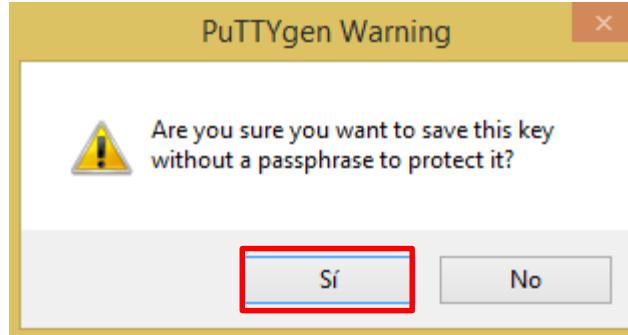
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



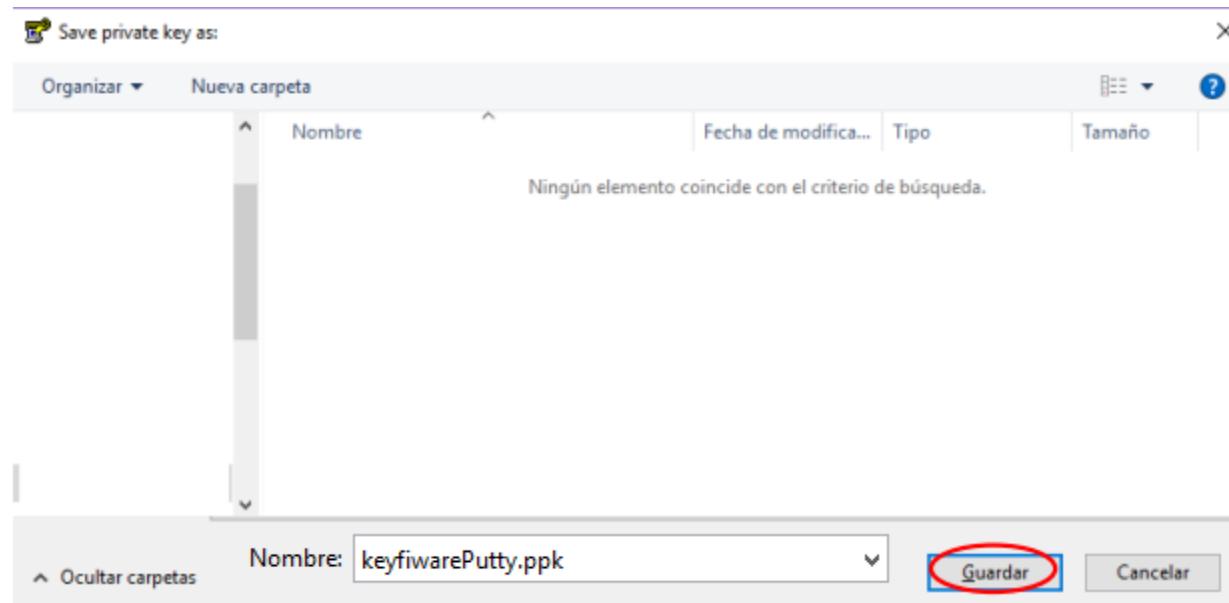
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



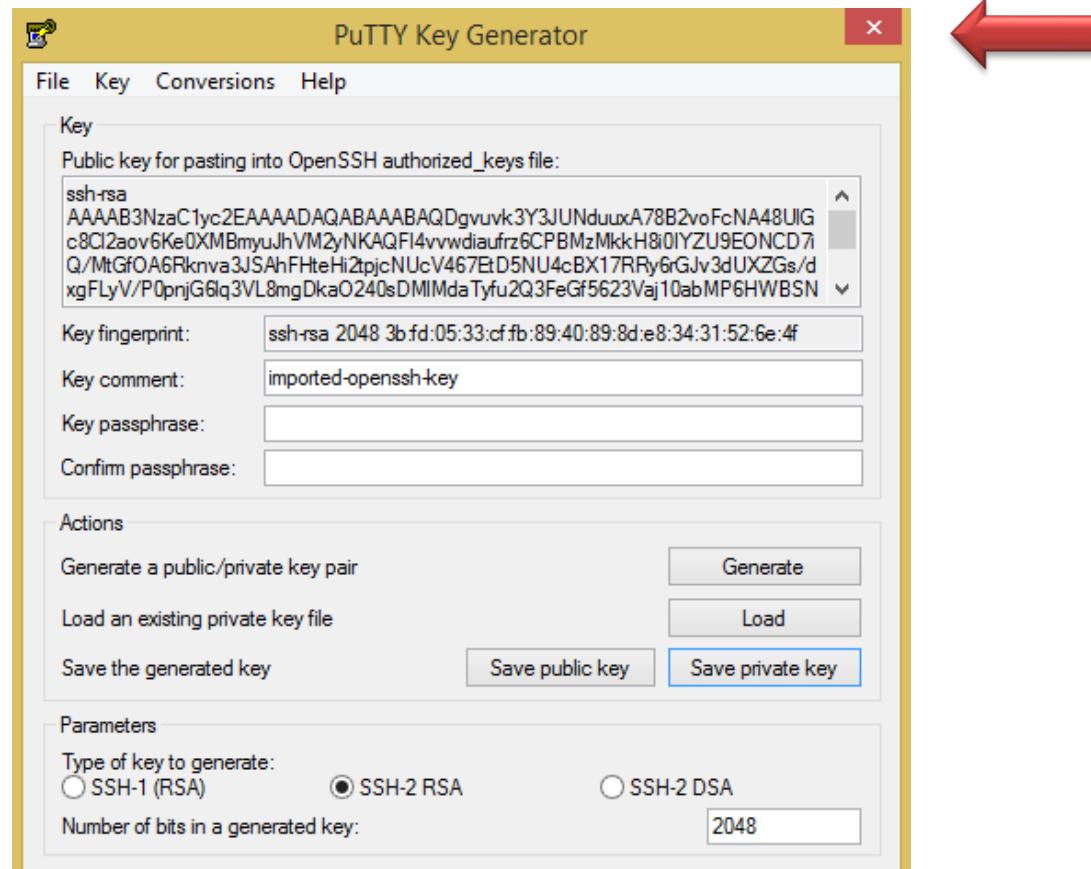
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY

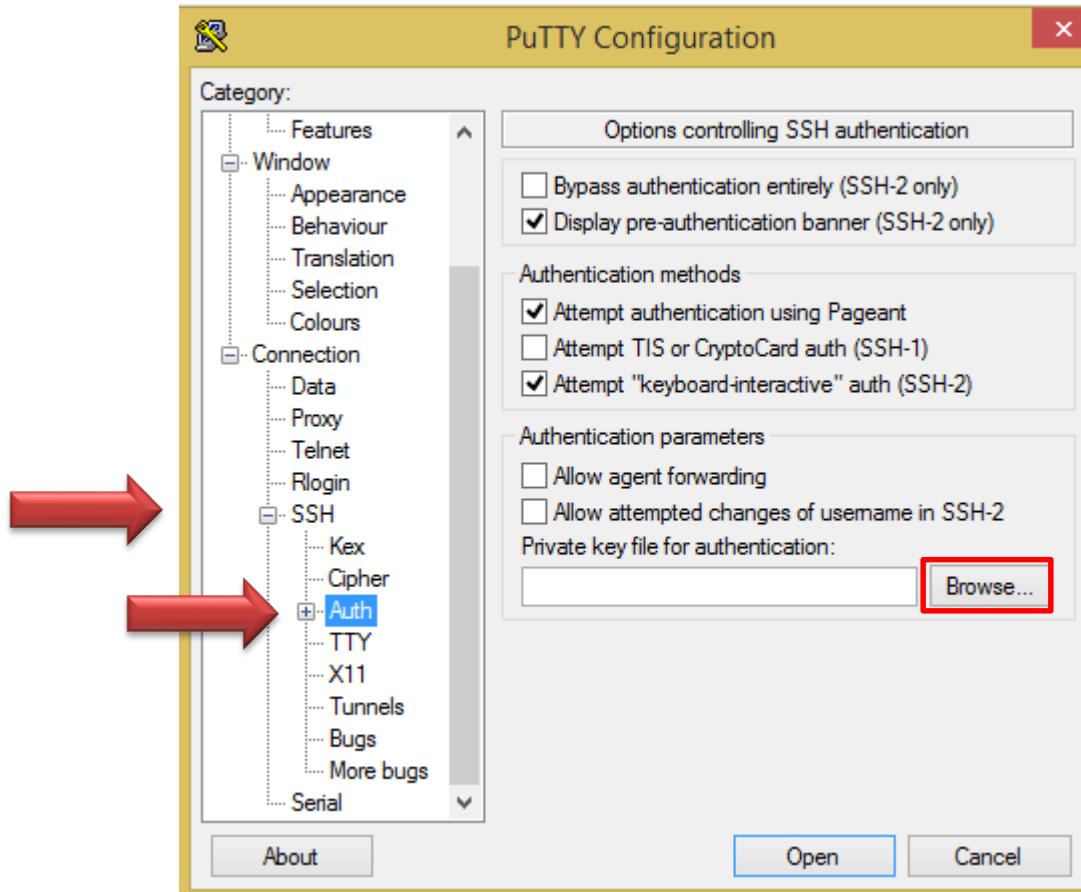


El archivo.ppk solamente se genera una sola vez.



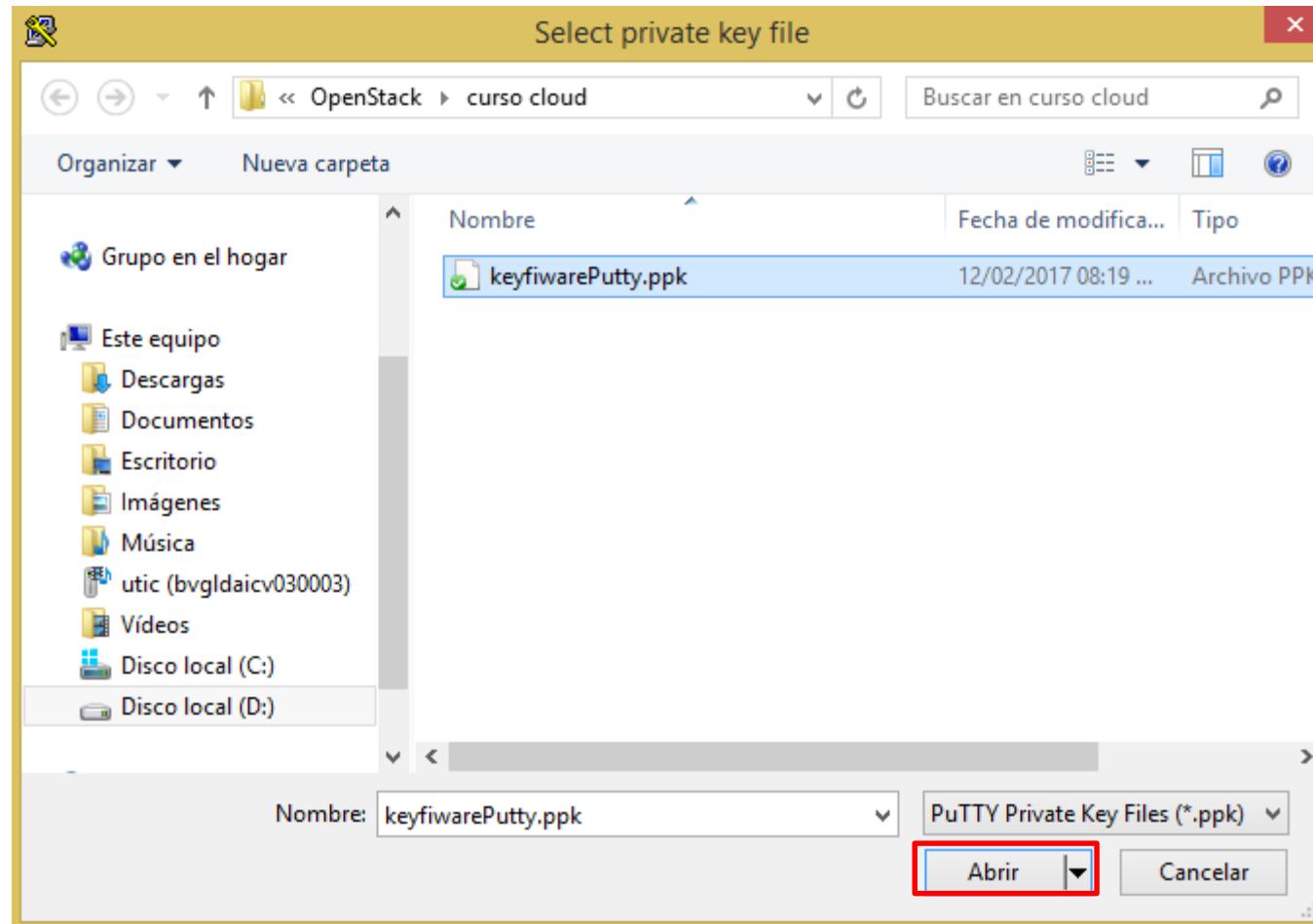
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



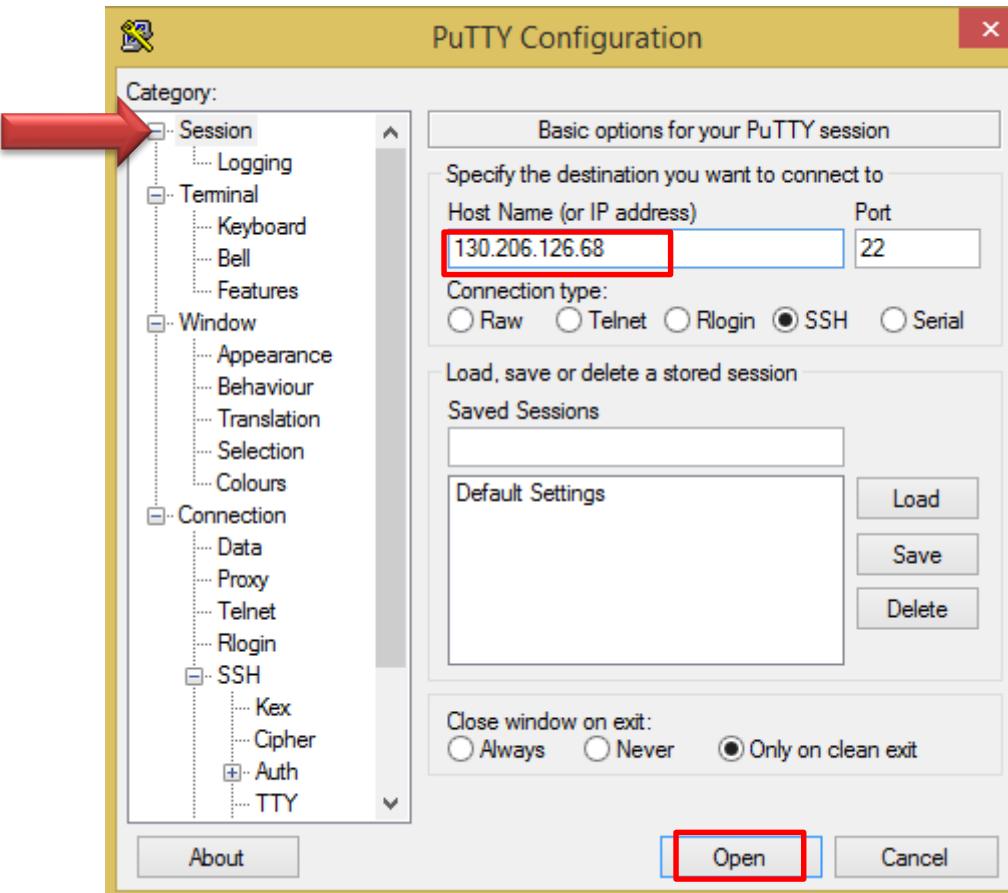
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



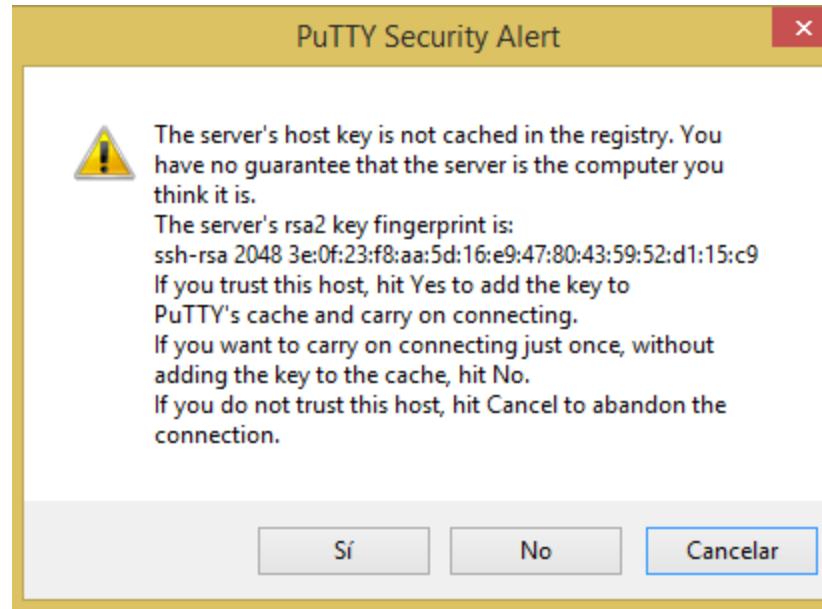
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



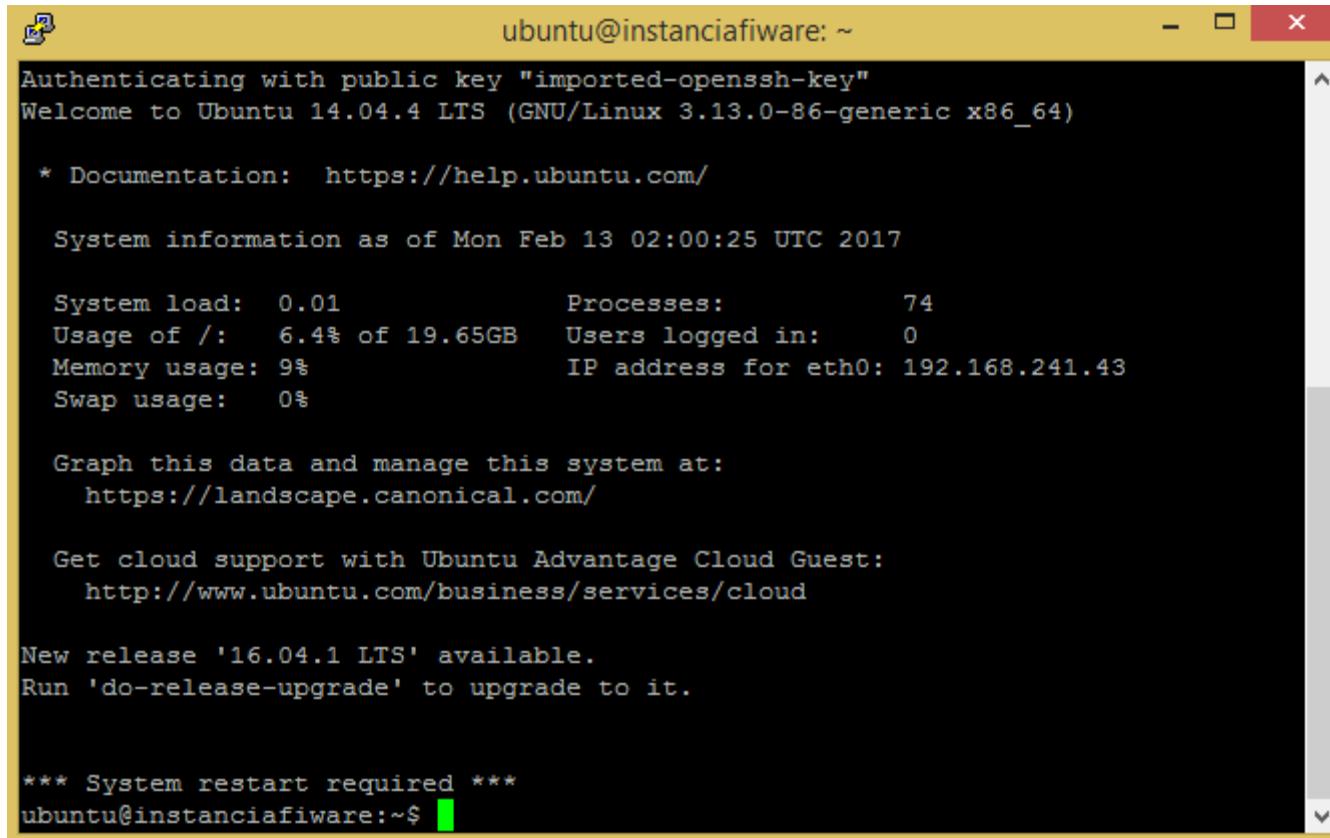
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



The screenshot shows a PuTTY terminal window with a yellow title bar. The title bar displays the session name "ubuntu@instanciafiware: ~". The main window shows the following text output:

```
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 14.04.4 LTS (GNU/Linux 3.13.0-86-generic x86_64)

 * Documentation:  https://help.ubuntu.com/

 System information as of Mon Feb 13 02:00:25 UTC 2017

 System load:  0.01          Processes:           74
 Usage of /:   6.4% of 19.65GB  Users logged in:    0
 Memory usage: 9%
 Swap usage:   0%

 Graph this data and manage this system at:
 https://landscape.canonical.com/

 Get cloud support with Ubuntu Advantage Cloud Guest:
 http://www.ubuntu.com/business/services/cloud

 New release '16.04.1 LTS' available.
 Run 'do-release-upgrade' to upgrade to it.

*** System restart required ***
ubuntu@instanciafiware:~$
```



3

FIWARE Lab: servicios de almacenamiento



FIWARE Lab: servicios de almacenamiento

Crear un volumen

Cuotas para cuentas Trials

Cuota estándar:

- Número de instancias: 2
- Número de cores: 2
- Cantidad de memoria RAM: 4 Gb
- Capacidad de disco: 40 Gb
- IPs: 1

Cuotas para cuentas Community

Cuota estándar:

- Número de instancias: 2
- Número de cores: 2
- Cantidad de memoria RAM: 4 Gb
- Capacidad de disco: 40 Gb
- IPs: 1

Cuota máxima:

- Número de instancias: 5
- Número de cores: 10
- Cantidad de memoria RAM: 10 Gb
- Capacidad de disco: 100 Gb
- IPs: 5

Dependiendo de la cuota de la cuenta (**capacidad de disco**) será el espacio disponible para la creación de un volumen



FIWARE Lab: servicios de almacenamiento

Crear un volumen

The screenshot shows the FIWARE Lab web interface for managing storage services. The top navigation bar includes links for Cloud, Store, Mashup, Data, Account, and Help&info. The user is logged in as blancavazquez2013@gmail.com. On the left, a sidebar menu provides access to various services: Project (Blanca Vázquez cloud selected), Info, Blueprint (Blueprint Instances, Blueprint Templates), Region (Spain2 selected), Compute (Instances, Images, Flavors, Security, Snapshots), Storage (Containers, Volumes selected), and a status message "Displaying 0 items". The main content area is titled "Volumes" and contains a table header with columns: Name, Description, Size (GB), Status, and Actions. A prominent red box highlights the "Create Volume" button in the Actions column.



FIWARE Lab: servicios de almacenamiento

Crear un volumen

Create Volume ×

Volume Name * *
volumenfiware

Description
Este volumen se asignará a la instancia de prueba "instanciafiware"

Size (GB) * *
 ▼

* Mandatory fields.

Cancel Create Volume



FIWARE Lab: servicios de almacenamiento

Crear un volumen

The screenshot shows the FIWARE Lab interface for managing storage volumes. On the left, there's a sidebar with a 'Menu' section containing 'Project' (Blanca Vázquez cloud), 'Blueprint' (Blueprint Instances, Blueprint Templates), 'Region' (Spain2), 'Compute' (Instances, Images, Flavors, Security, Snapshots), 'Storage' (Containers, Volumes), and 'Network'. The 'Storage' section is currently selected, and under it, 'Volumes' is highlighted.

The main content area is titled 'Volumes' and displays a table with one row. The table columns are 'Name', 'Description', 'Size (GB)', and 'Status'. The single row contains the following data:

Name	Description	Size (GB)	Status
volumenfiware	Este volumen se asignará a ...	1	available

A large red arrow points upwards from the bottom of the table towards the 'Actions' dropdown menu. The 'Actions' menu is open and shows the following options: Create Volume (disabled), Attach (disabled), Edit Attachments, Create Snapshot, Create Backup, and Delete Volumes. A success message at the bottom of the page reads "Success: Volume volumenfiware created".



FIWARE Lab: servicios de almacenamiento

Crear un volumen

Manage Volume Attachments

Attachments

Detach Volumes

	Instance	Device	Actions
Displaying 0 items			

Attach To Instance

Attach to Instance *

Select an instance

Select an instance
instanciafiware

Device Name *

/dev/vdc

* Mandatory fields.

Cancel Attach Volume



FIWARE Lab: servicios de almacenamiento

Crear un volumen

FIWARE Lab Cloud Store Mashup Data Account Help&info blancavazquez2013@gmail.com

Volumes

Name	Description	Size (GB)	Status	Attachments
volumenfiware	Este volumen se asignará a ...	1	In-use	1

Create Volume **Actions**

Project: Blanca Vázquez cloud

Info

Blueprint: Blueprint Instances, Blueprint Templates

Region: Spain2

Compute: Instances, Images, Flavors, Security, Snapshots

Storage: Containers, **Volumes**

Network

Success: Volume attached



FIWARE Lab: servicios de almacenamiento

Eliminar el volumen de una instancia

The screenshot shows the FIWARE Lab interface for managing storage volumes. On the left, there's a sidebar with navigation links for Project, Blueprint, Region, Compute, Storage, and Network. The 'Storage' section is currently selected, showing 'Containers' and 'Volumes'. A large red arrow points upwards towards the 'volumenfiware' entry in the main table. Another red arrow points to the 'Actions' dropdown menu, which is open and displays options like 'Edit Attachments', 'Create Snapshot', 'Create Backup', and 'Delete Volumes'. The table has columns for Name, Description, Size (GB), Status, and Actions. The 'volumenfiware' row shows a size of 1 GB and a status of 'available'. A success message at the bottom of the table area says 'Success: Volume volumenfiware created'.

Name	Description	Size (GB)	Status	Actions
volumenfiware	Este volumen se asignará a ...	1	available	Edit Attachments Create Snapshot Create Backup Delete Volumes

Success: Volume volumenfiware created



FIWARE Lab: servicios de almacenamiento

Eliminar el volumen de una instancia

Manage Volume Attachments

Attachments

Detach Volumes

	Instance	Device	Actions
	472c190f-70cf-4c75-a770-f7...	/dev/vdc	Detach Volume

Displaying 1 items

Attach To Instance

Attach to Instance *

Select an instance

Device Name *

/dev/vdc

* Mandatory fields.

Cancel **Attach Volume**



FIWARE Lab: servicios de almacenamiento

Asignar el volumen a la instancia

1. Entrar a la instancia `sudo ssh -i archivo.pem ubuntu@ipExterna`
2. Ejecutar el comando: `sudo fdisk -l`



```
*** System restart required ***
ubuntu@instanciafiware:~$ sudo fdisk -l
sudo: unable to resolve host instanciafiware

Disk /dev/vda: 21.5 GB, 21474836480 bytes
4 heads, 32 sectors/track, 327680 cylinders, total 41943040 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x000bf53c

      Device Boot      Start        End      Blocks   Id  System
/dev/vda1  *          2048    41943039    20970496   83  Linux

Disk /dev/vdb: 1073 MB, 1073741824 bytes
16 heads, 63 sectors/track, 2080 cylinders, total 2097152 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00000000

Disk /dev/vdb doesn't contain a valid partition table
ubuntu@instanciafiware:~$
```



FIWARE Lab: servicios de almacenamiento

Asignar el volumen a la instancia

- Ejecutamos el comando: **sudo fdisk /dev/vdb**

```
ubuntu@instanciafiware:~$ sudo fdisk /dev/vdb
sudo: unable to resolve host instanciafiware
Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel
Building a new DOS disklabel with disk identifier 0xd9523b03.
Changes will remain in memory only, until you decide to write them.
After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

Command (m for help):
```



FIWARE Lab: servicios de almacenamiento

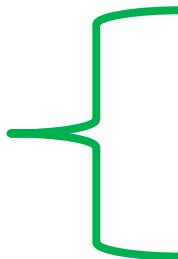
Asignar el volumen a la instancia

Escribir la letra “n”
y pulsar enter



```
Command (m for help): n
Partition type:
  p  primary (0 primary, 0 extended, 4 free)
  e  extended
Select (default p):
Using default response p
Partition number (1-4, default 1):
Using default value 1
First sector (2048-2097151, default 2048):
Using default value 2048
Last sector, +sectors or +size{K,M,G} (2048-2097151, default 2097151):
Using default value 2097151
```

Pulsar enter en
cada una de
las opciones
(4)



Escribir la letra “w”
y pulsar enter



```
Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
```



FIWARE Lab: servicios de almacenamiento

Asignar el volumen a la instancia

- Ejecutamos el comando: **sudo mkfs -t ext3 /dev/vdb1**

```
ubuntu@instanciafiware:~$ sudo mkfs -t ext3 /dev/vdb1
sudo: unable to resolve host instanciafiware
mke2fs 1.42.9 (4-Feb-2014)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
65536 inodes, 261888 blocks
13094 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=268435456
8 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
      32768, 98304, 163840, 229376

Allocating group tables: done
Writing inode tables: done
Creating journal (4096 blocks): done
Writing superblocks and filesystem accounting information: done

ubuntu@instanciafiware:~$ █
```

El comando **mkfs** se emplea para dar formato a un dispositivo de almacenamiento, en este caso es ext3.



FIWARE Lab: servicios de almacenamiento

Asignar el volumen a la instancia

- Ejecutamos el comando: `sudo mkdir /data`

→ `ubuntu@instanciafiware:~$ sudo mkdir /data
sudo: unable to resolve host instanciafiware
ubuntu@instanciafiware:~$ cd /data
ubuntu@instanciafiware:/data$ ls
ubuntu@instanciafiware:/data$ █`

- Ejecutamos el comando: `sudo mount /dev/vdb1 /data`

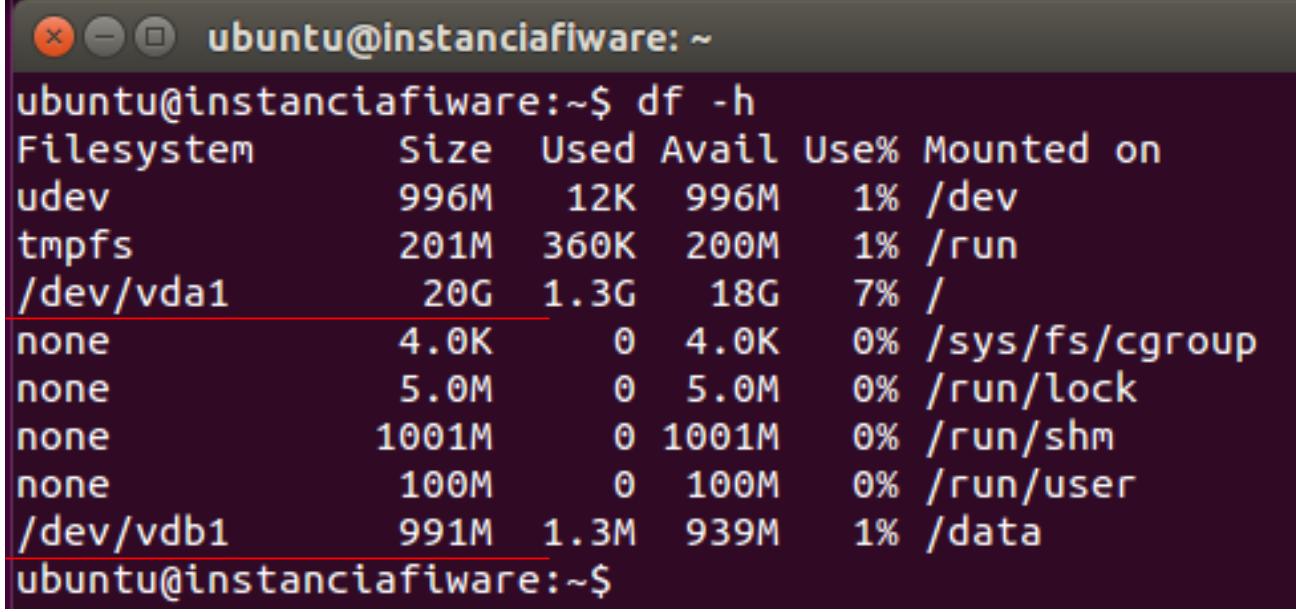
→ `ubuntu@instanciafiware:/data$ sudo mount /dev/vdb1 /data
sudo: unable to resolve host instanciafiware
to-sin-ta-cia-fi-ware`



FIWARE Lab: servicios de almacenamiento

Asignar el volumen a la instancia

- Ejecutamos el comando: `df -h`



```
ubuntu@instanciafiware:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            996M   12K  996M   1% /dev
tmpfs           201M  360K  200M   1% /run
/dev/vda1        20G  1.3G   18G   7% /
none            4.0K     0  4.0K   0% /sys/fs/cgroup
none            5.0M     0  5.0M   0% /run/lock
none           1001M     0 1001M   0% /run/shm
none            100M     0  100M   0% /run/user
/dev/vdb1        991M  1.3M  939M   1% /data
ubuntu@instanciafiware:~$
```

El comando `df` muestra el uso del disco duro, punto de montaje y sistema de ficheros.



FIWARE Lab: servicios de almacenamiento

Asignación del volumen de manera permanente

- Ejecutamos el comando: `sudo vi /etc/fstab`



FIWARE Lab: servicios de almacenamiento

Asignación del volumen de manera permanente

- Ejecutamos el comando: /dev/vdb1 /data ext3 defaults 0 0

105

15/02/2017

Co-funded by the Horizon 2020 Framework
Programme of the European Union



4

Información de referencia



Información de referencia

- FIWARE Cloud portal

<https://catalogue.fiware.org/enablers/self-service-interfaces-cloud-portal-upm>

- FIWARE Cloud Infraestructure

Account: <https://catalogue.fiware.org/enablers/identity-management-keyrock>

SDC: <https://catalogue.fiware.org/enablers/software-deployment-configuration-sagitta>

PaaS Manager: <https://catalogue.fiware.org/enablers/paas-manager-pegasus>

- FIWARE Academy

<https://edu.fiware.org/>



Información de referencia

- **Nodo FIWARE México**
nodofiwaremexico@infotec.mx

- **stackoverflow**
<http://stackoverflow.com/>

- **FIWARE**
fiware-lab-help@lists.fi-ware.org

fiware
filab



Thank you

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