FIWARE Lab Cloud

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Co-funded by the Horizon 2020 Framework
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Agenda

1. FIWARE Lab: panorama general
2. FIWARE Lab: funcionalidades básicas
3. Información de referencia

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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
THE OPEN INNOVATION LAB

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.

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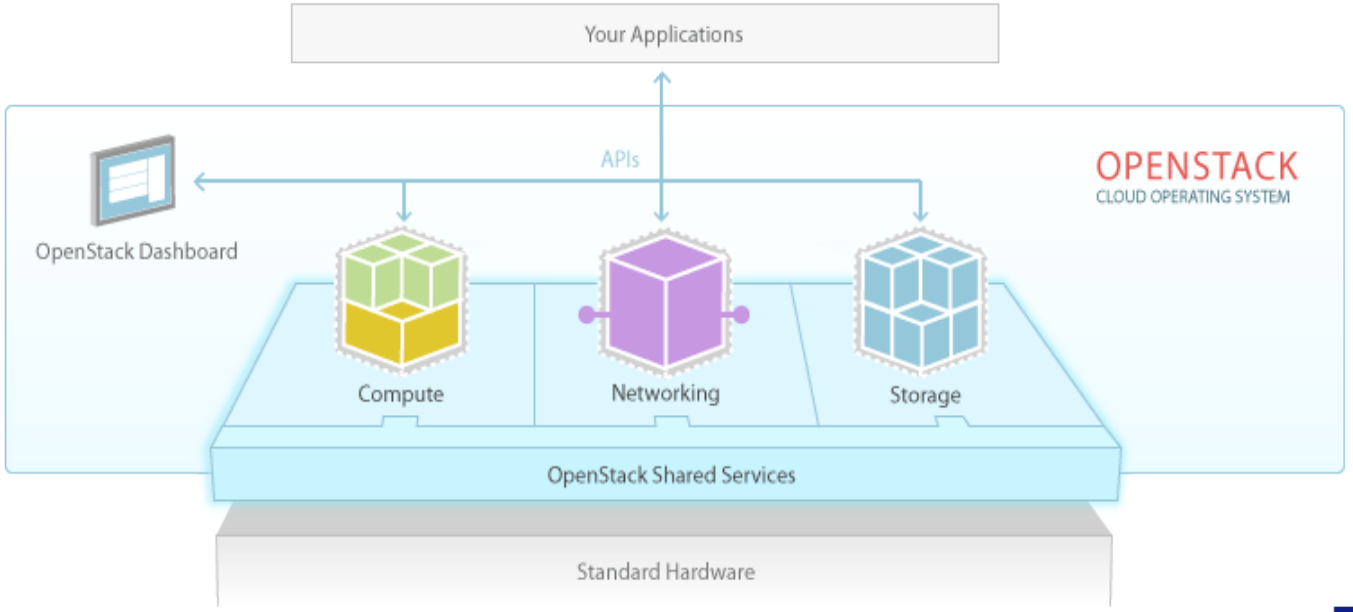
FIWARE Lab Cloud

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.



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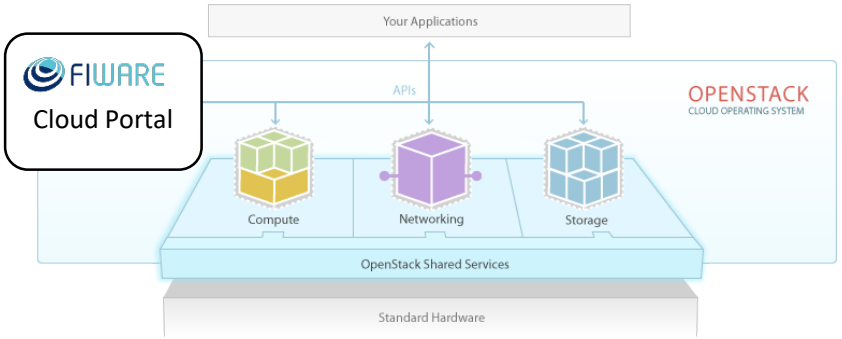
FIWARE Lab Cloud

Arquitectura



FIWARE Cloud Portal

FIWARE PaaS

FIWARE Account

FIWARE SDC

FIWARE Monitoring

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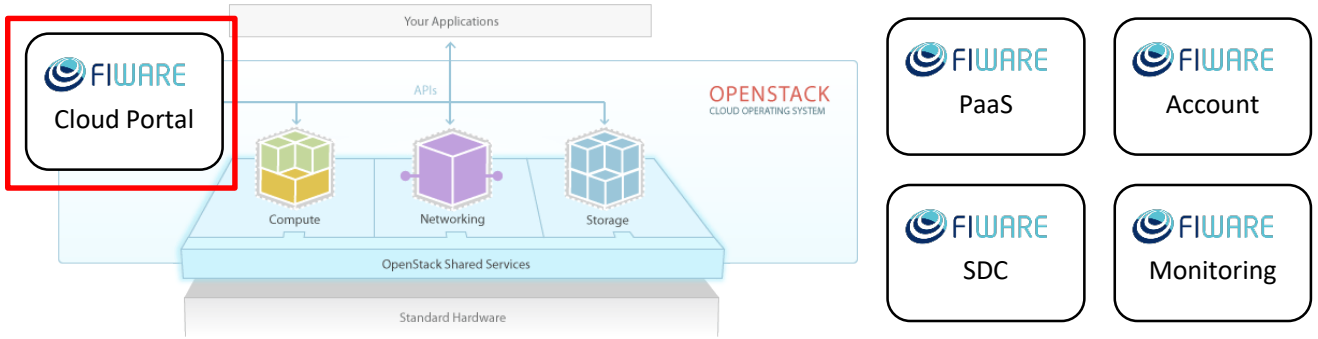
FIWARE Lab Cloud

Arquitectura



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

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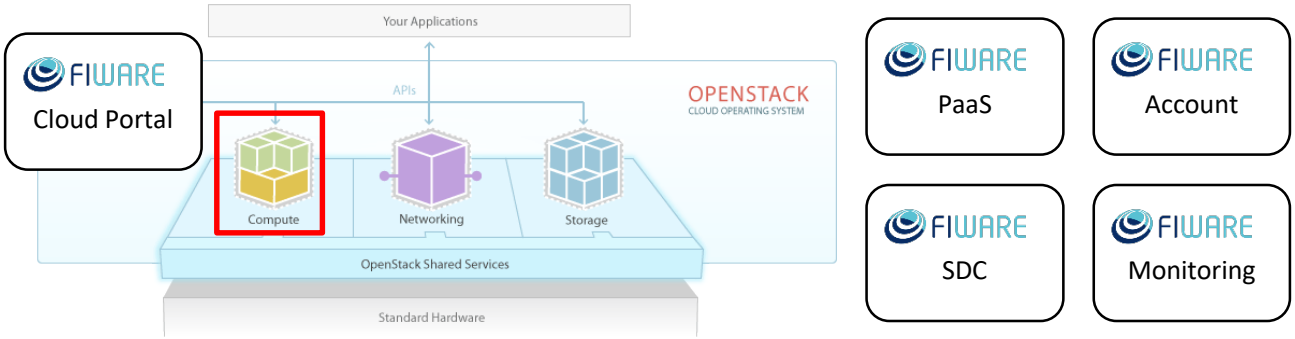
FIWARE Lab Cloud

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).

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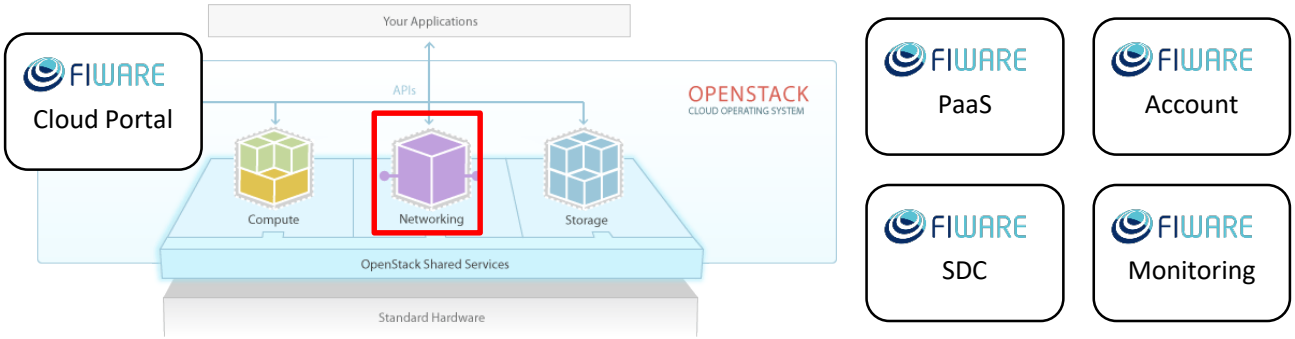
FIWARE Lab Cloud

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).

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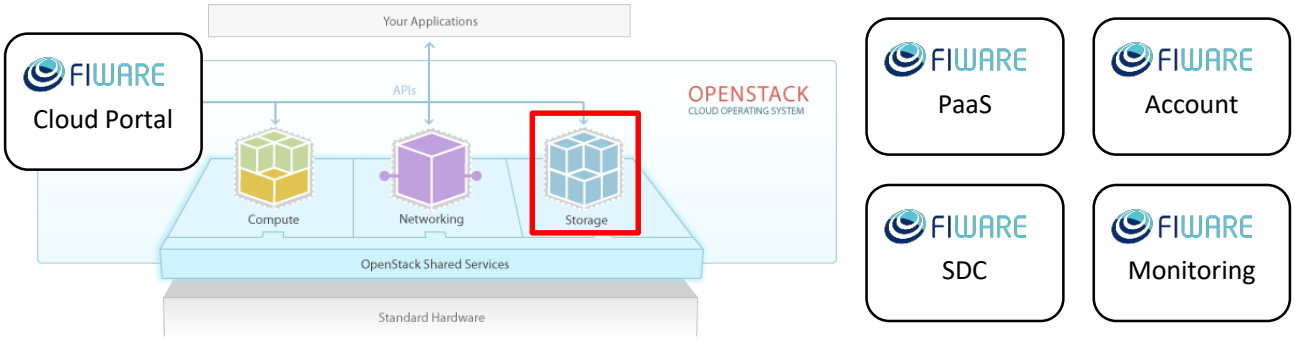
FIWARE Lab Cloud

Arquitectura



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

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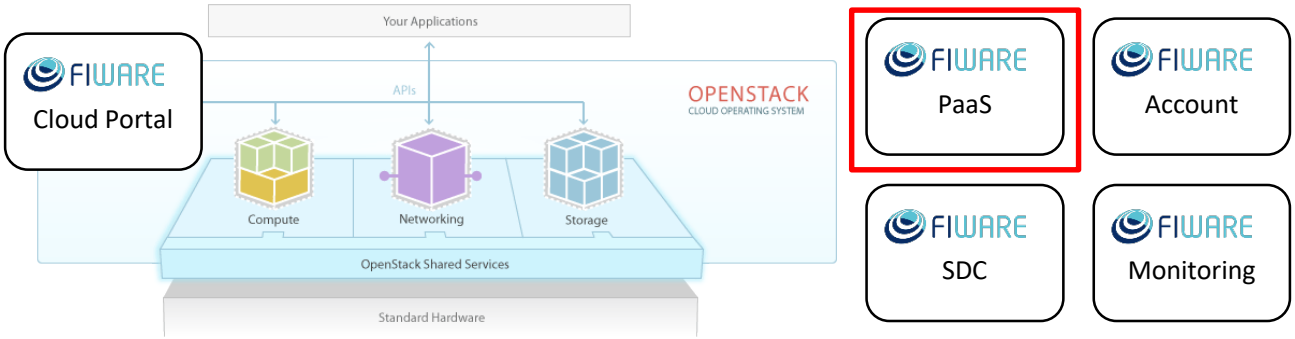
FIWARE Lab Cloud

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.

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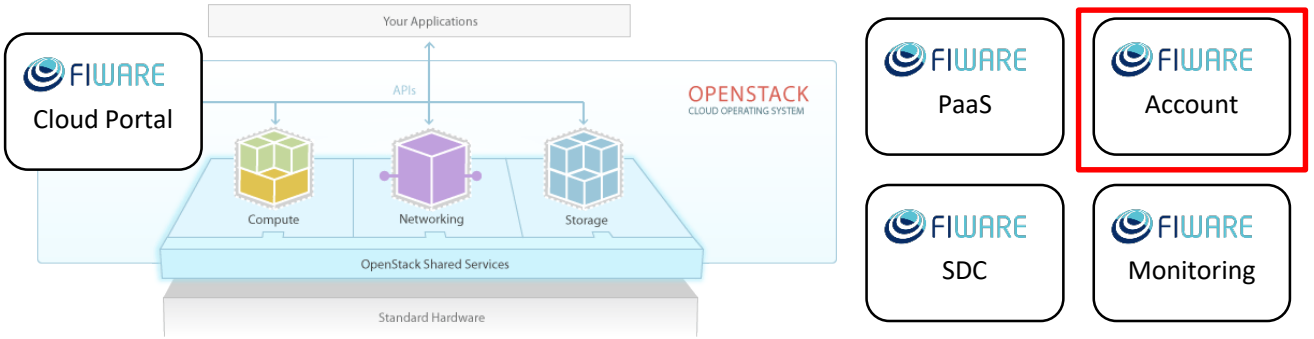
FIWARE Lab Cloud

Arquitectura



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

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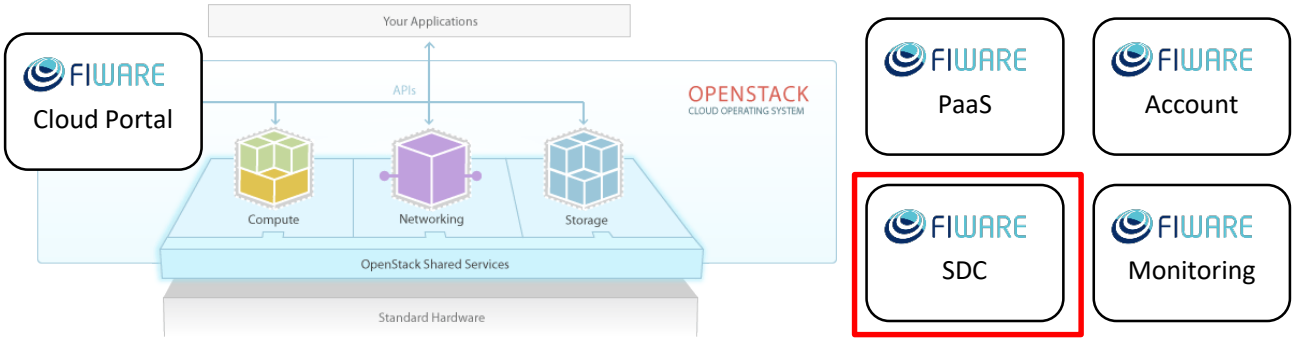
FIWARE Lab Cloud

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.

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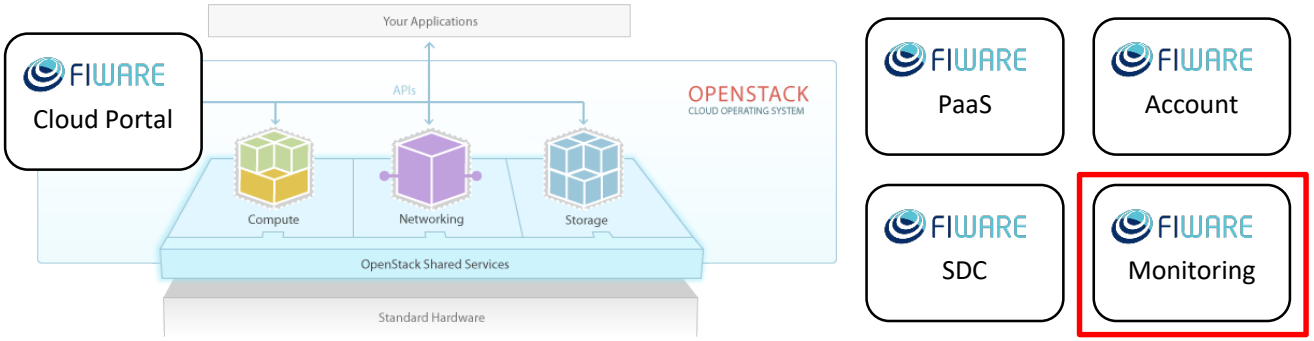
FIWARE Lab Cloud

Arquitectura



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

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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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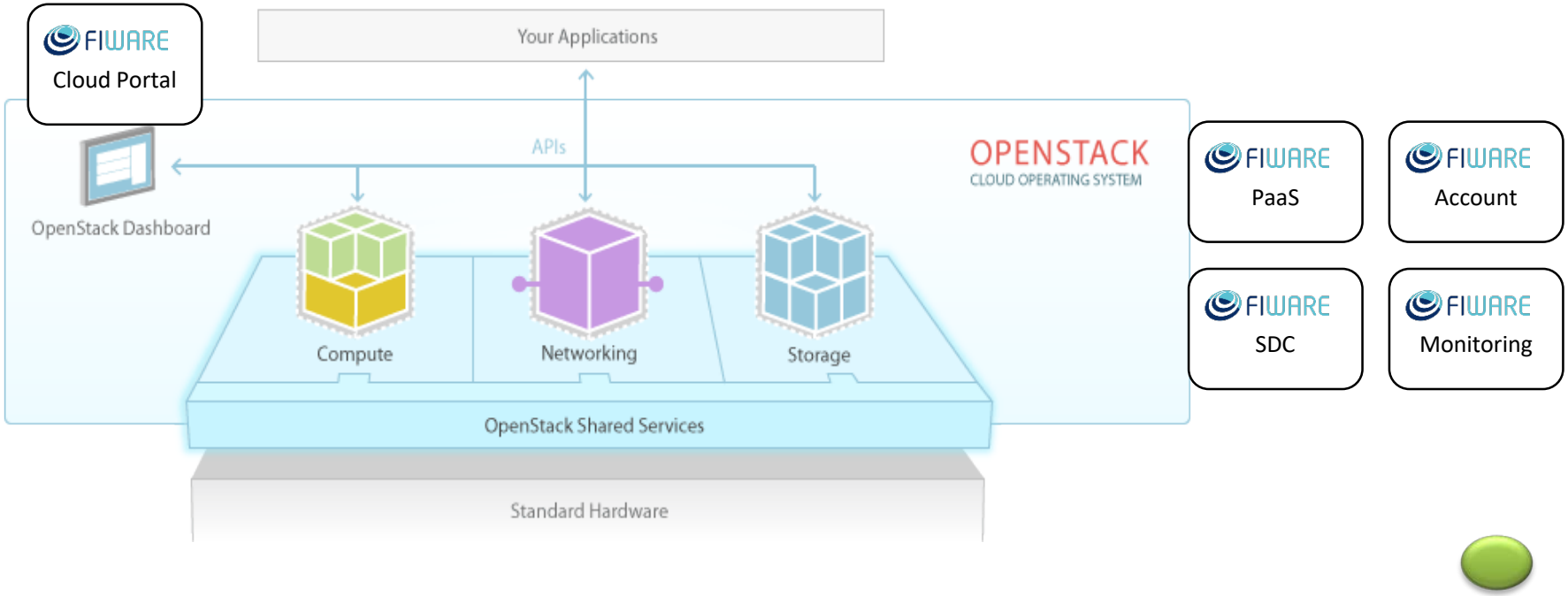
FIWARE Lab Cloud

Arquitectura



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2

FIWARE Lab: funcionalidades básicas

- Servicios de identificación
- Servicios de cómputo

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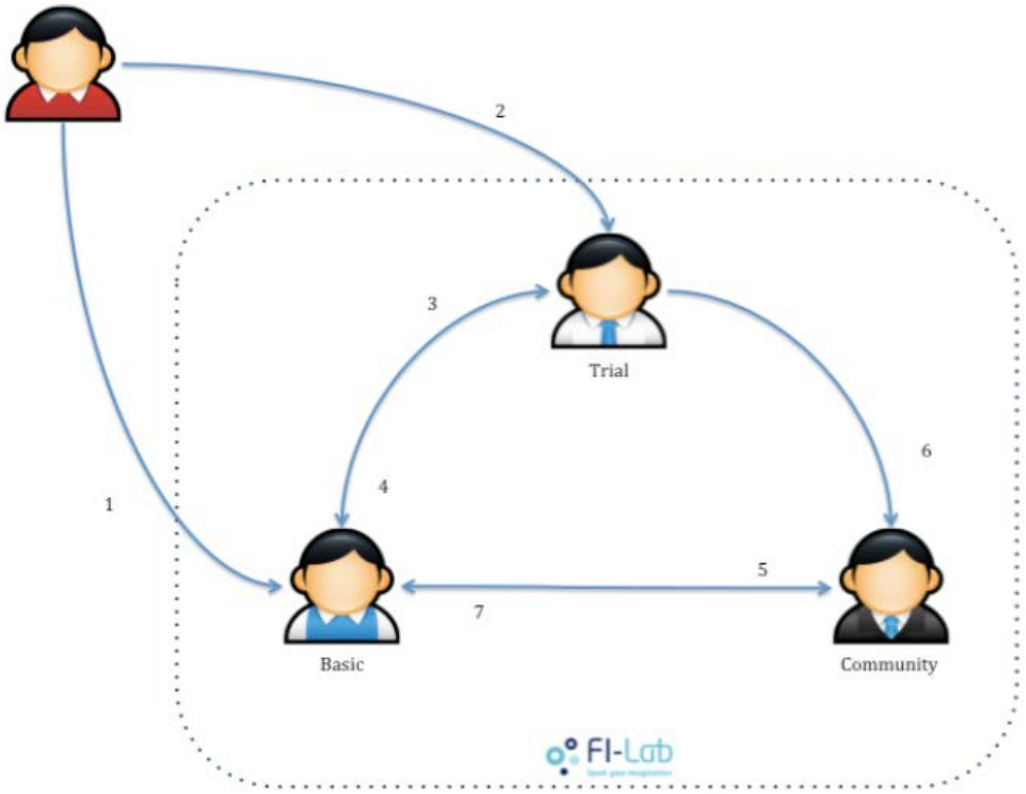
FIWARE Lab:funcionalidades básicas

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.

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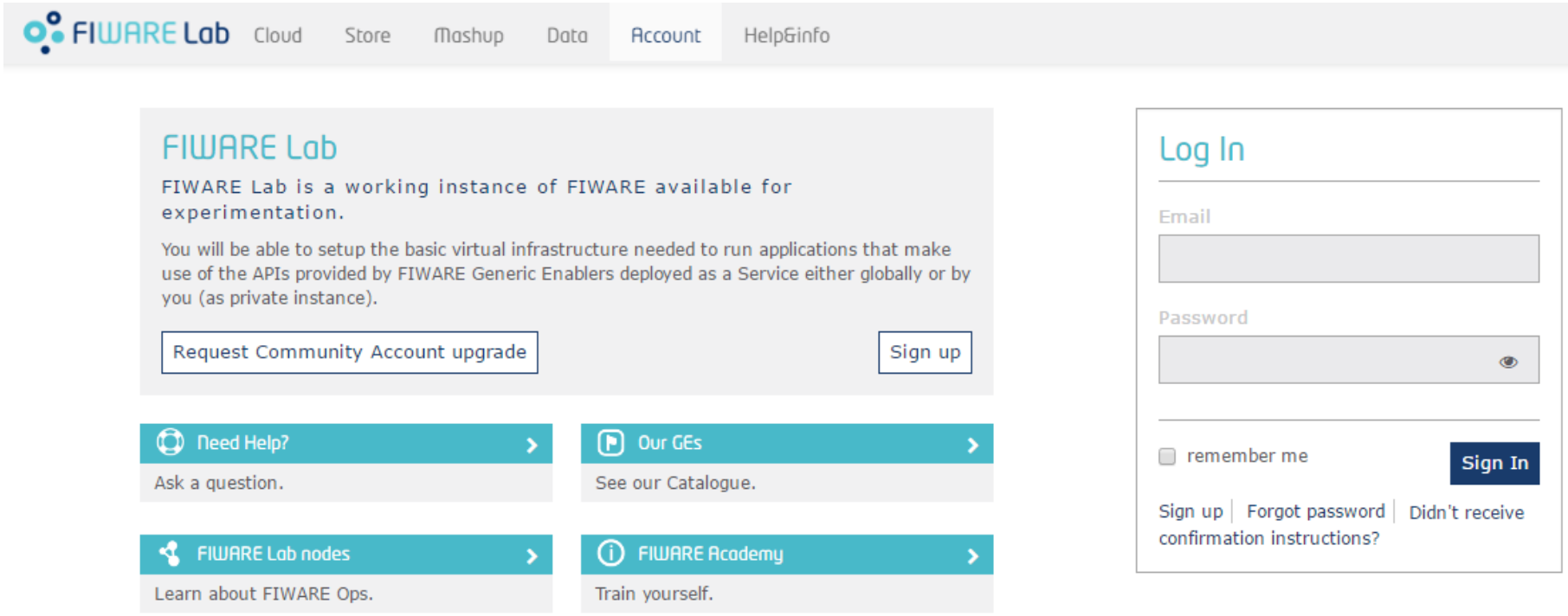
FIWARE Lab:funcionalidades básicas

Creación de cuenta

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



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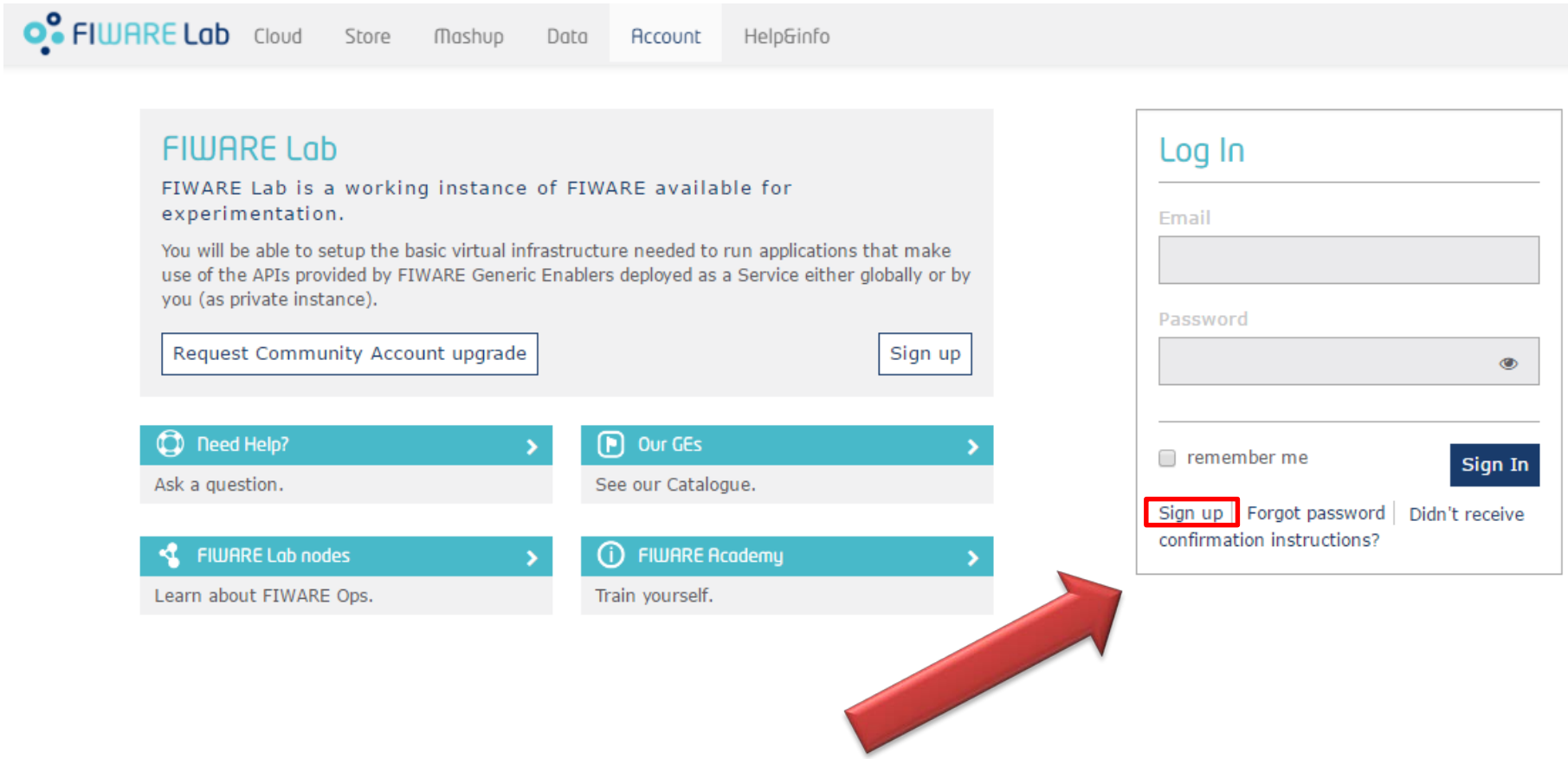
FIWARE Lab:funcionalidades básicas

Creación de cuenta



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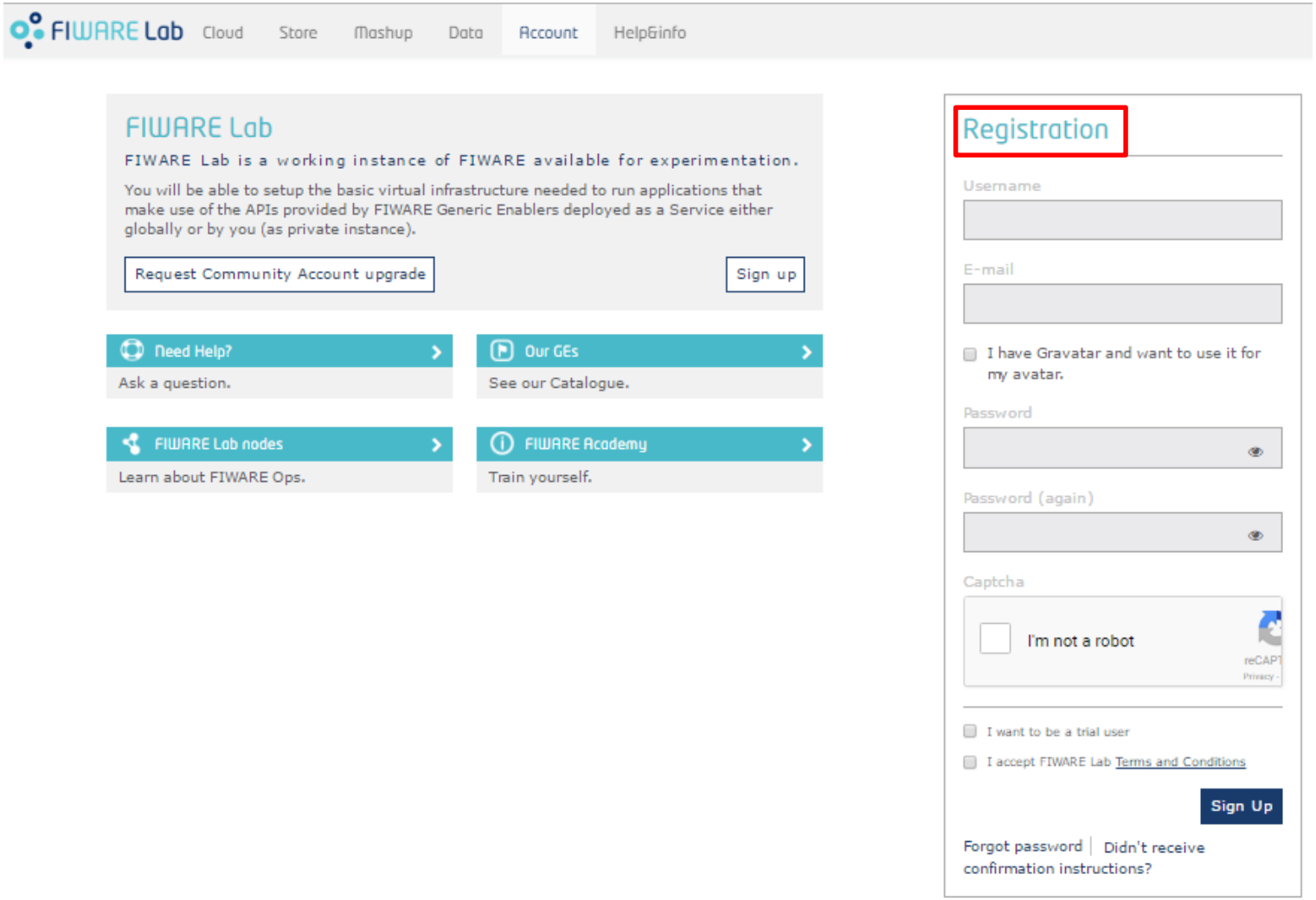
FIWARE Lab:funcionalidades básicas

Creación de cuenta



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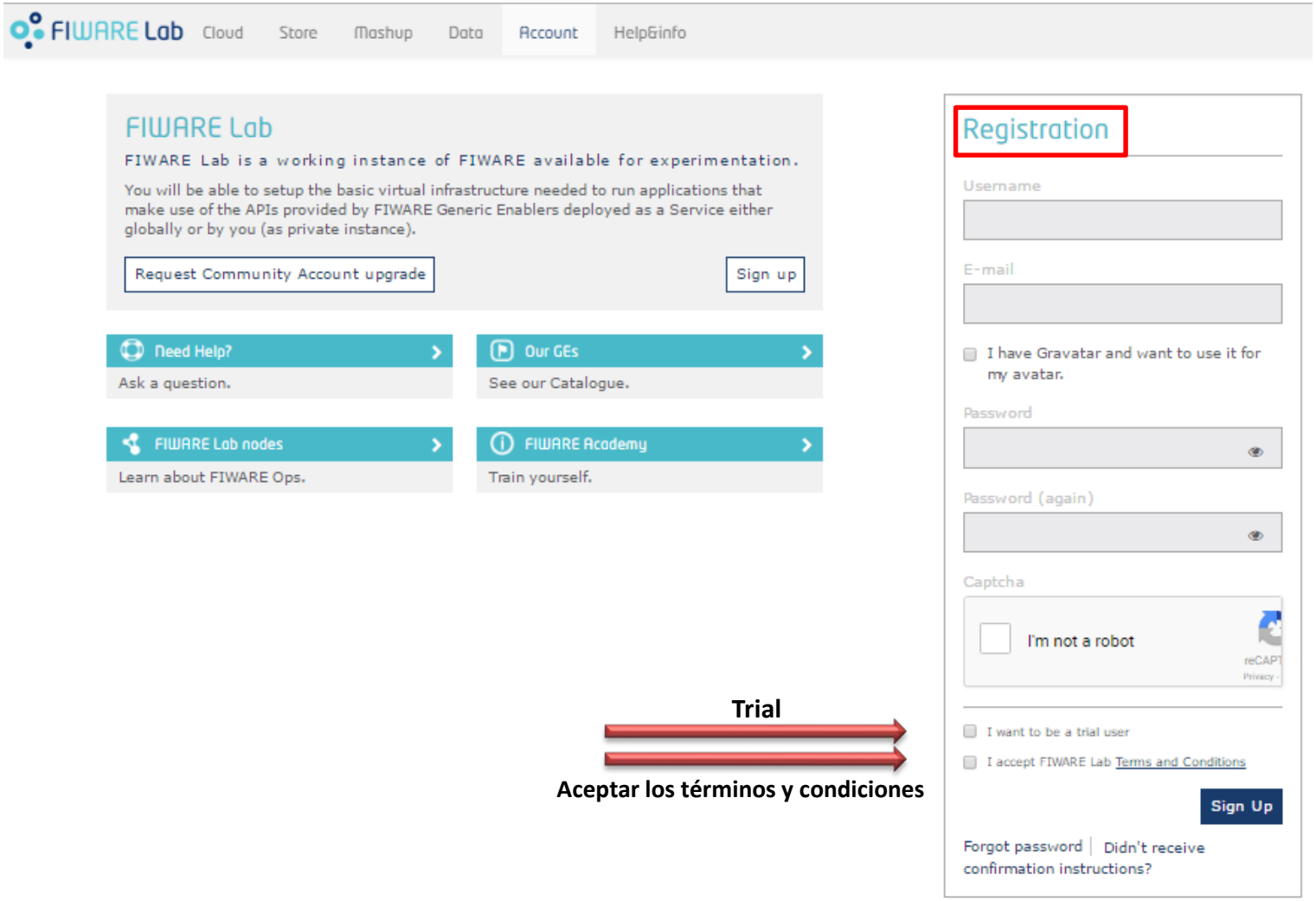
FIWARE Lab:funcionalidades básicas

Creación de cuenta



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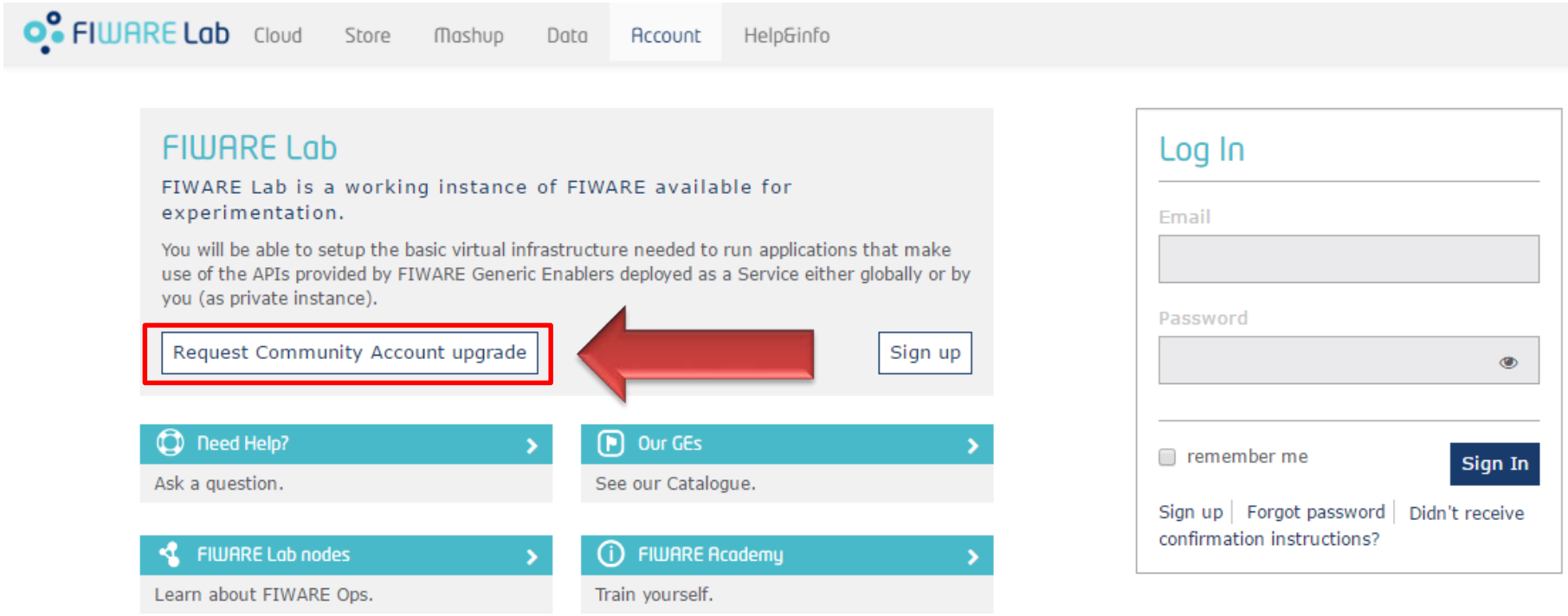
FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community



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.

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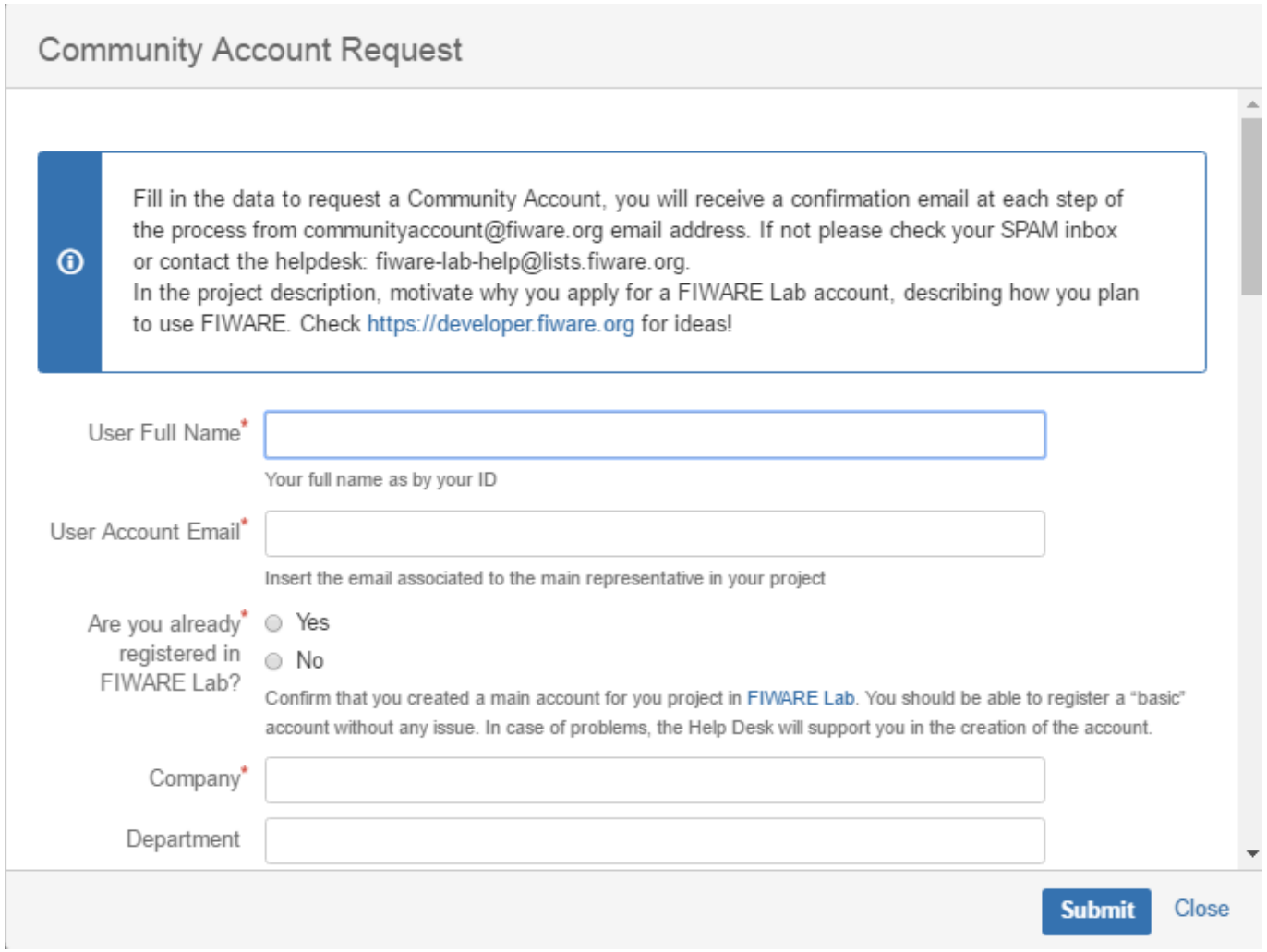
FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community



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FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community

http://lanif.infotec.mx

FIWARE Lab:funcionalidades básicas

Solicitar una cuenta Community

La evaluación se realizará de acuerdo a los siguientes criterios:

- Objetivo
- Áreas de aplicación (turismo, salud, seguridad, etc.)
- Descripción de la aplicación que desea desarrollar y sus beneficios
- Tiempo estimado de desarrollo
- Recursos de FIWARE que impactan a su proyecto

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

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FIWARE Lab: funcionalidades básicas

- Servicios de identificación
- **Servicios de cómputo**

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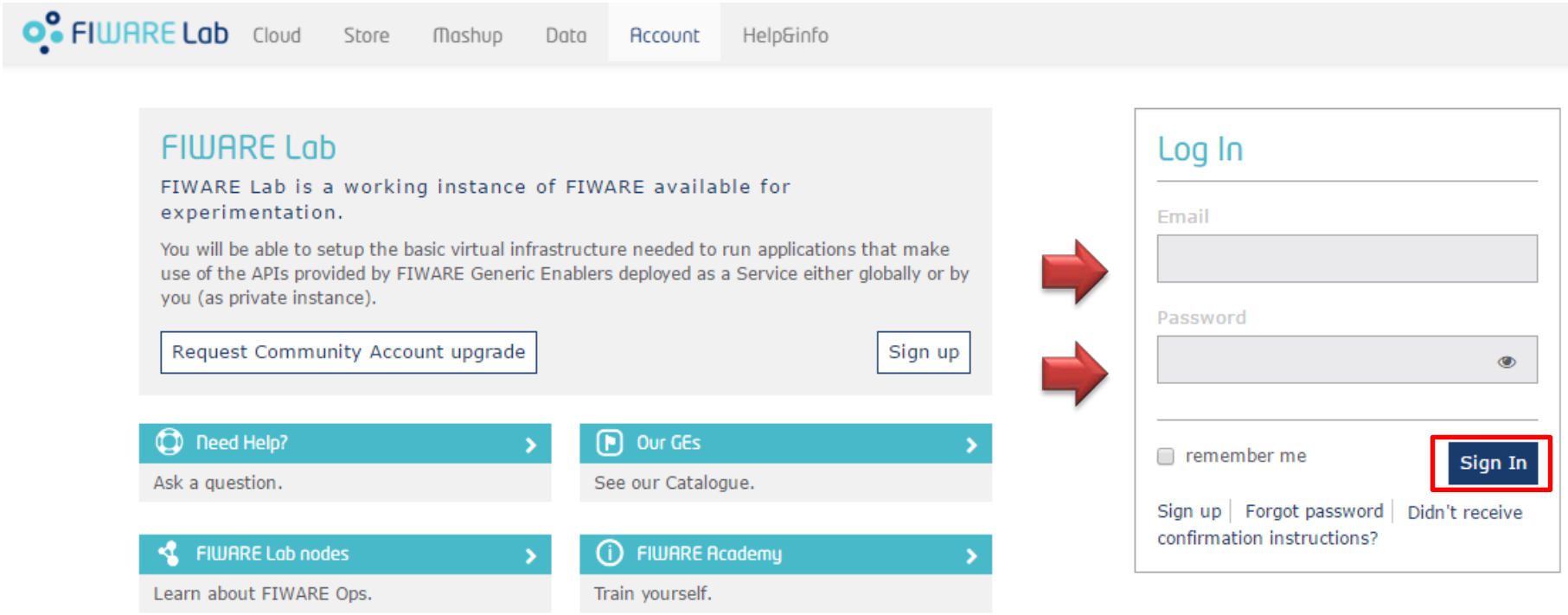
FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab

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



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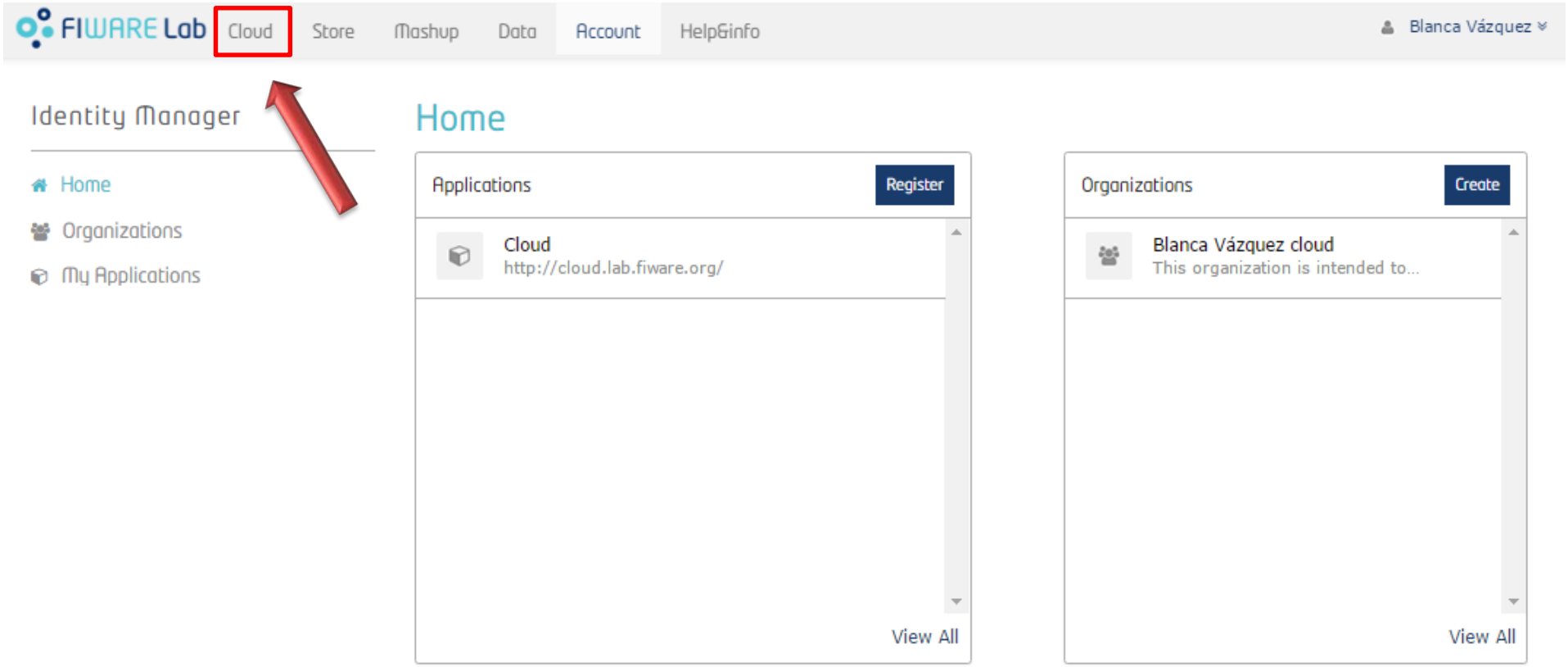
FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud



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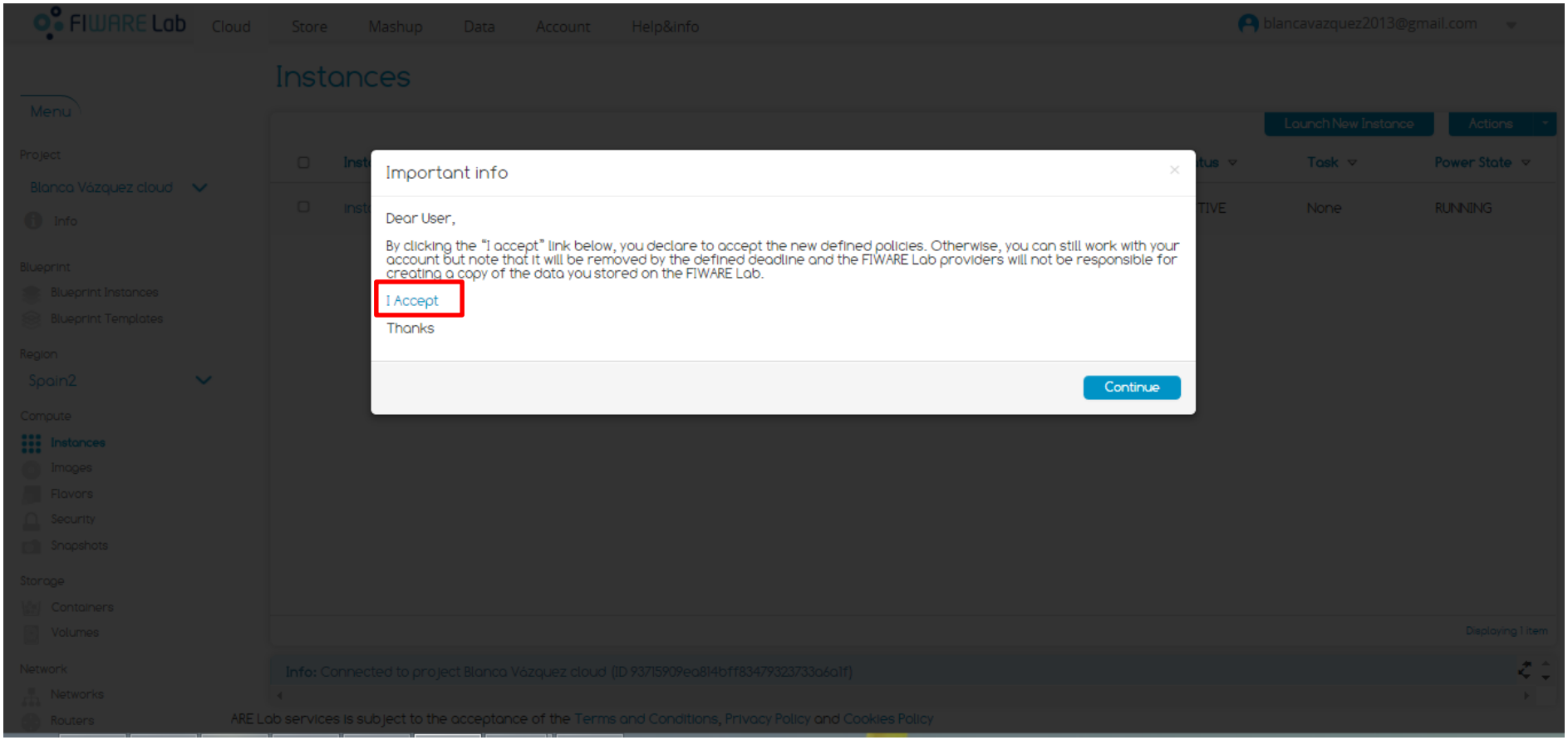
FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud



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FIWARE Lab: funcionalidades básicas

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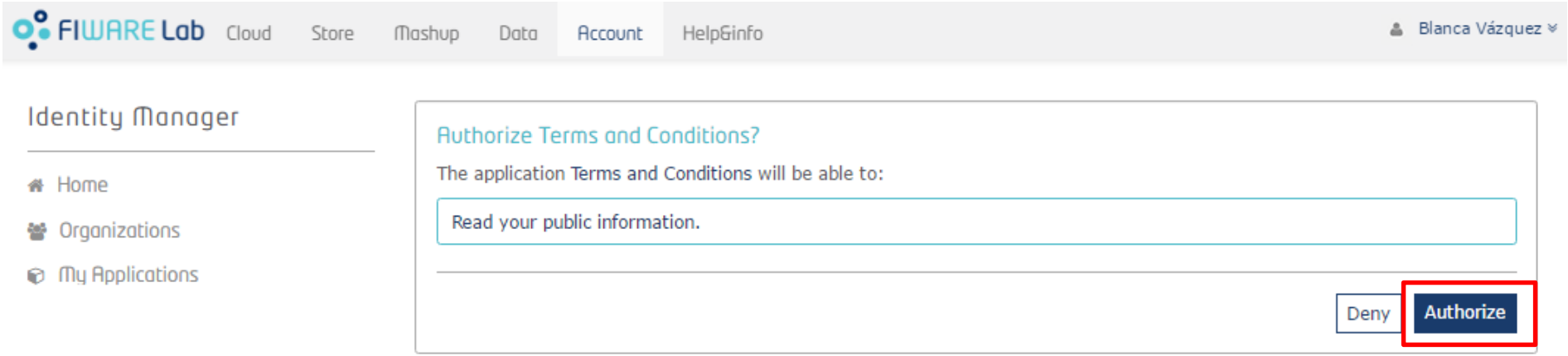

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FIWARE Lab: funcionalidades básicas

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) and 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.

Accept

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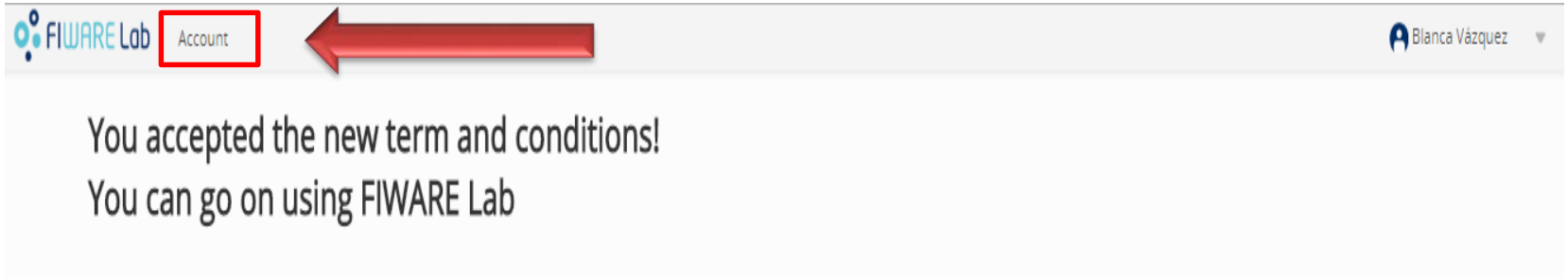
FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud



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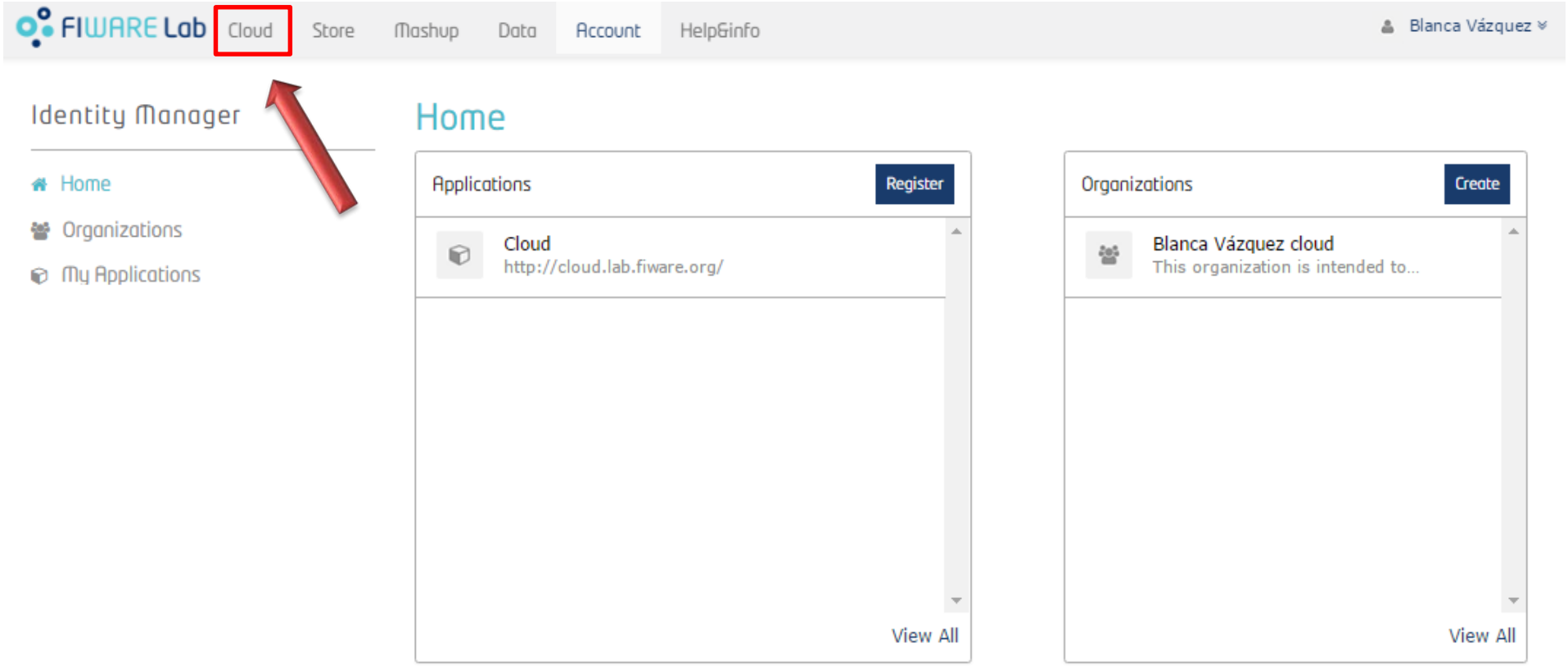
FIWARE Lab: funcionalidades básicas

Acceso a FIWARE Lab Cloud



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FIWARE Lab: funcionalidades básicas

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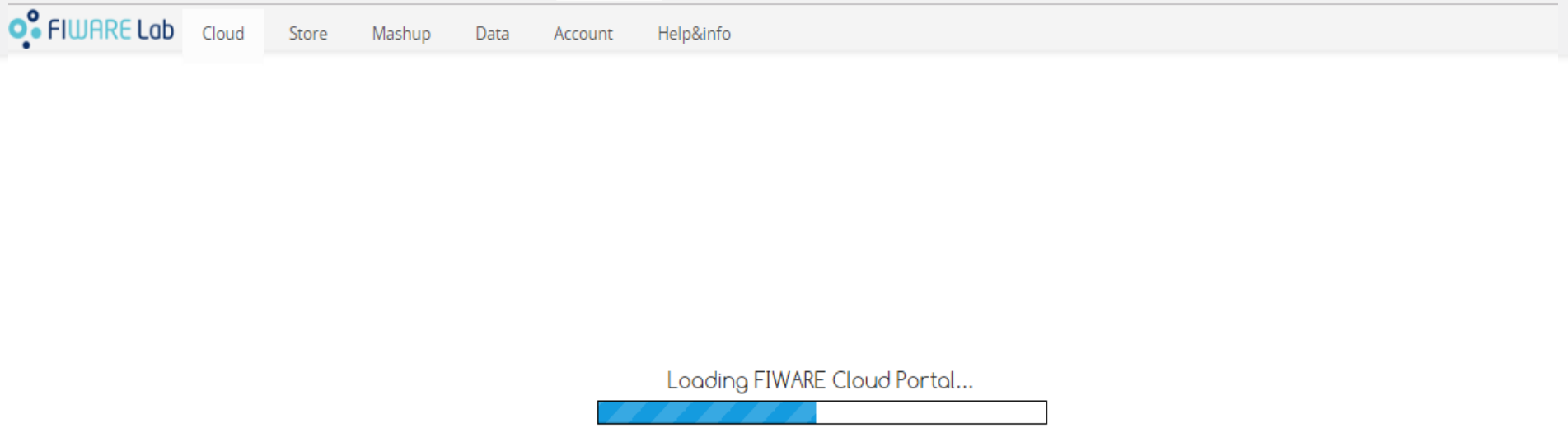

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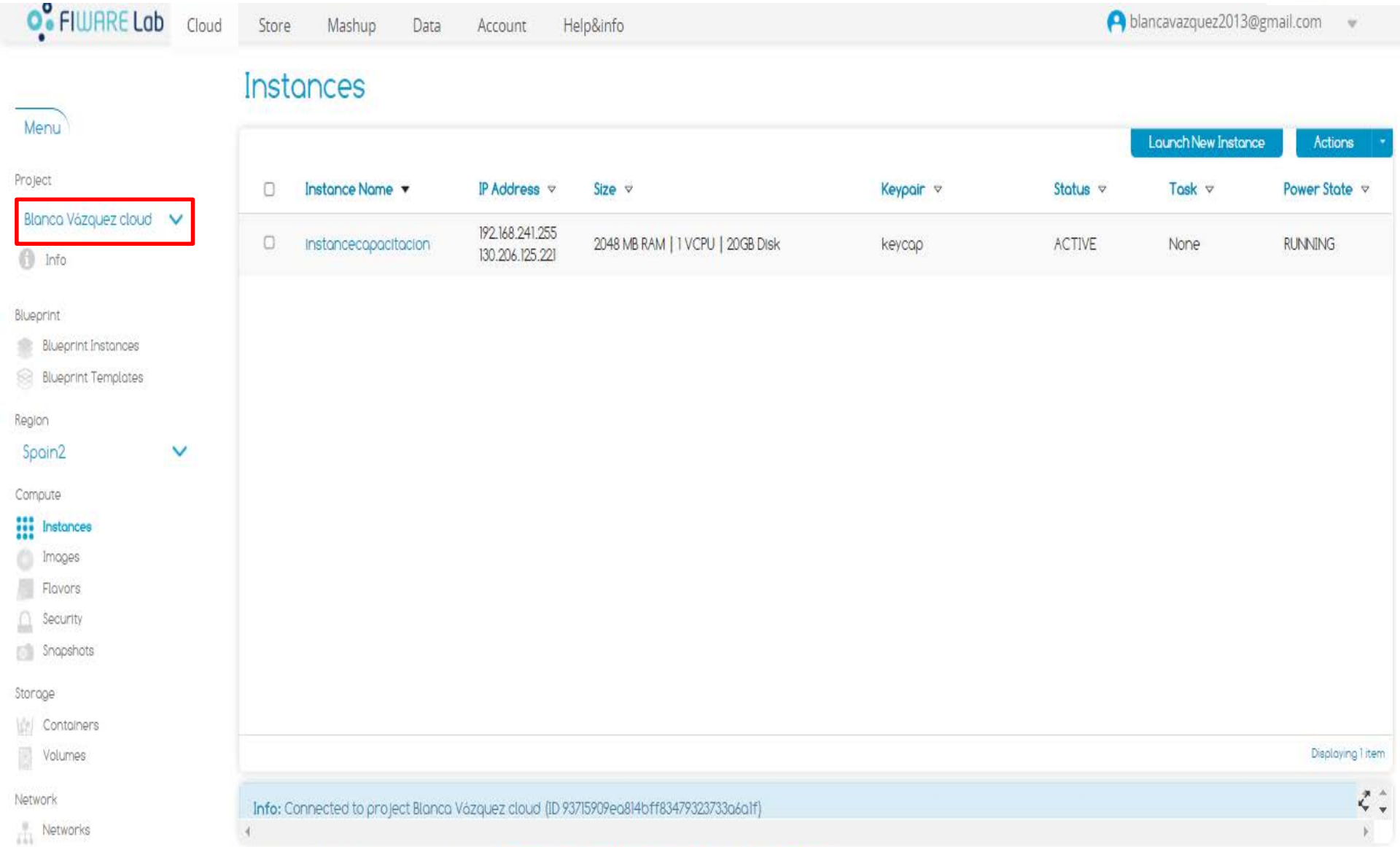
FIWARE Lab: funcionalidades básicas

FIWARE Lab Cloud



FIWARE Lab: funcionalidades básicas

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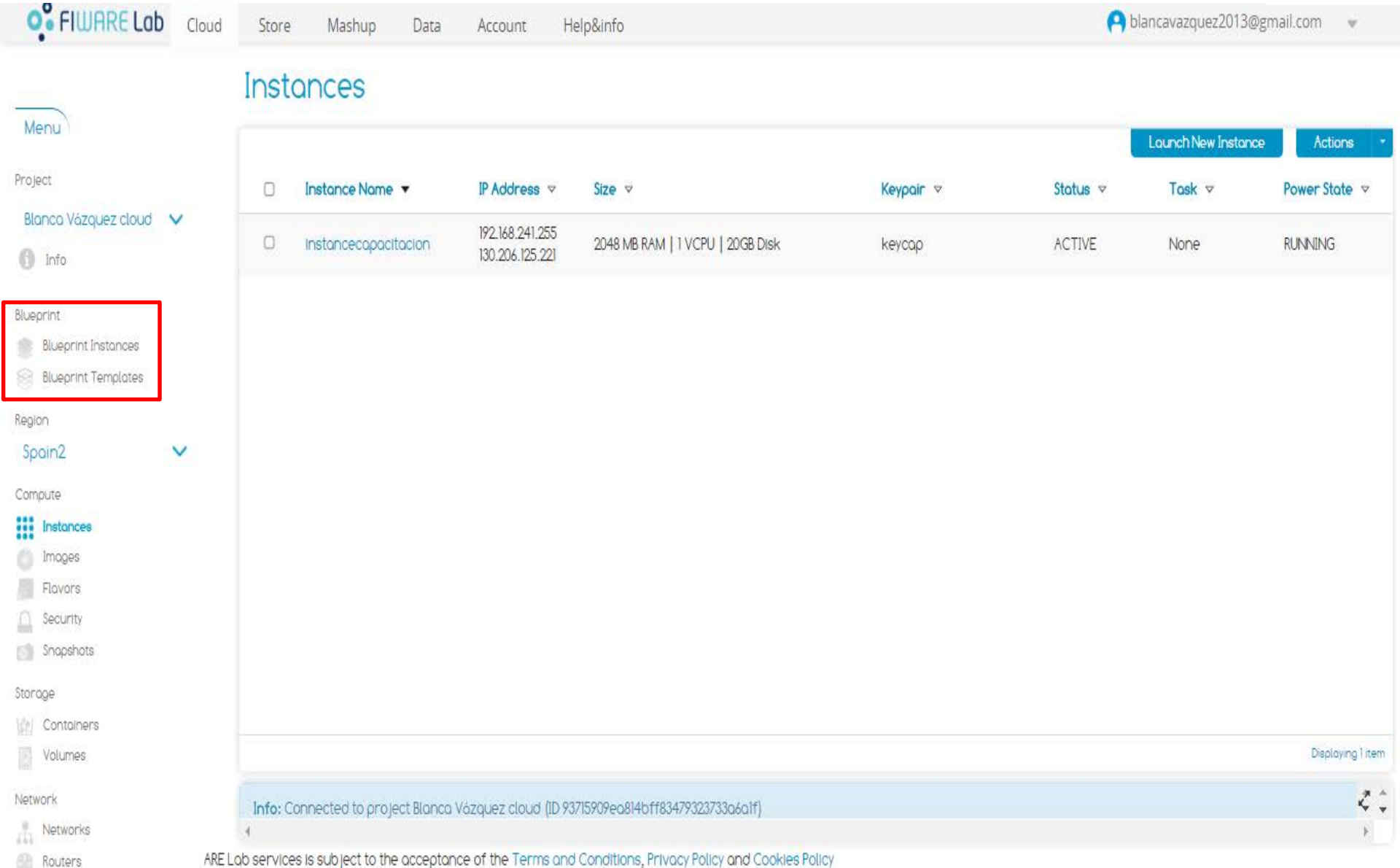

FIWARE Lab: funcionalidades básicas

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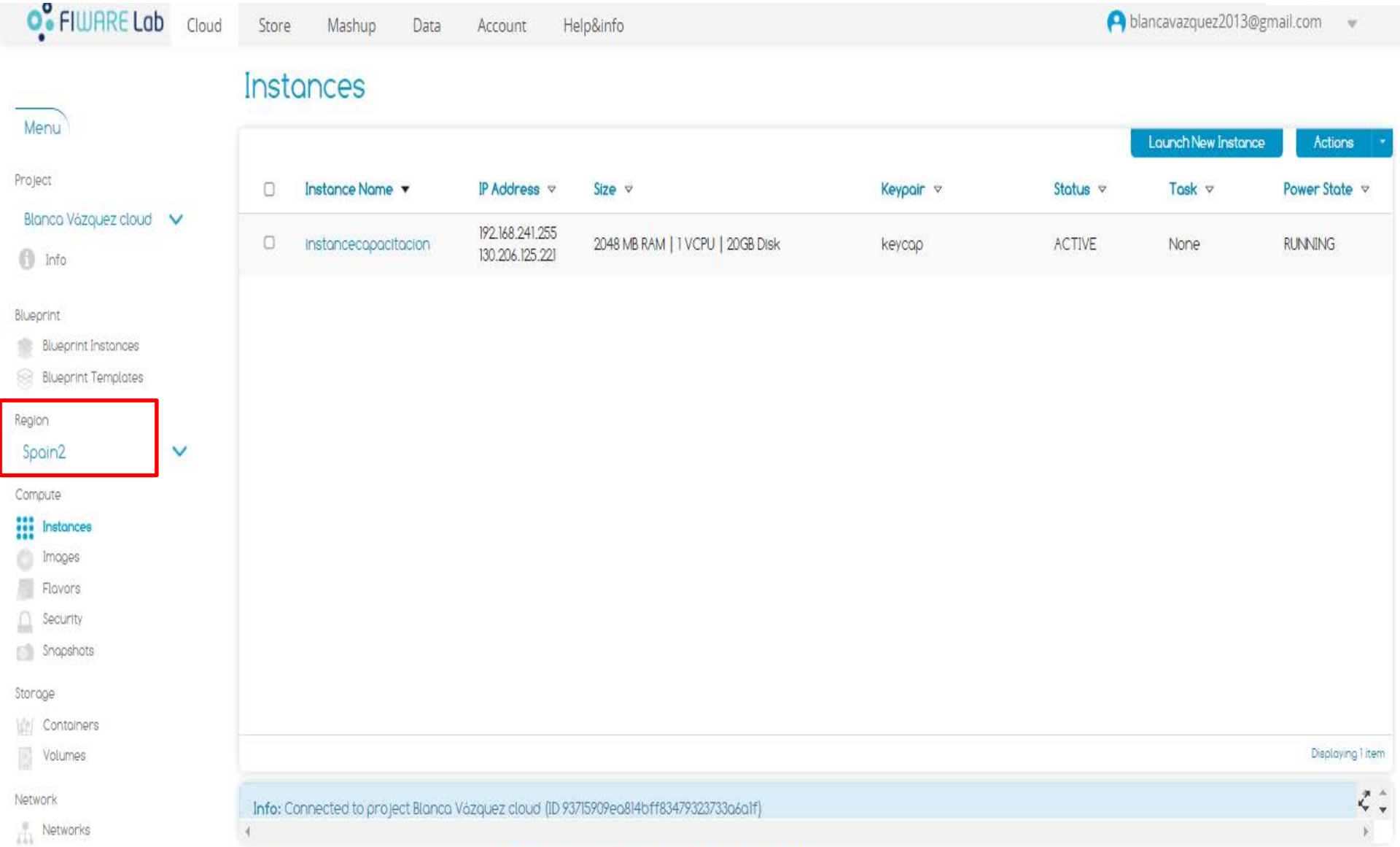
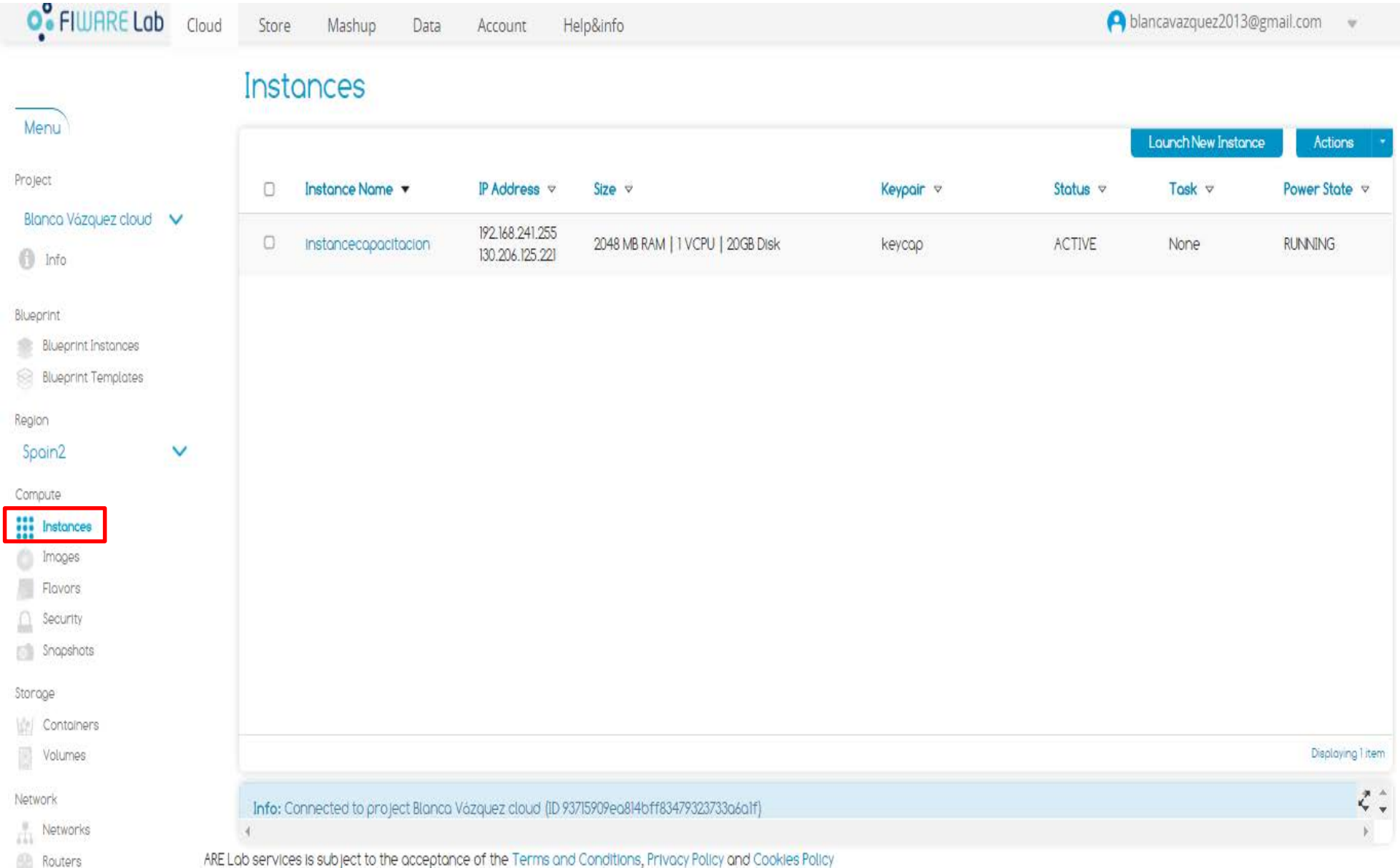


FIWARE Lab: funcionalidades básicas

Información de la cuenta



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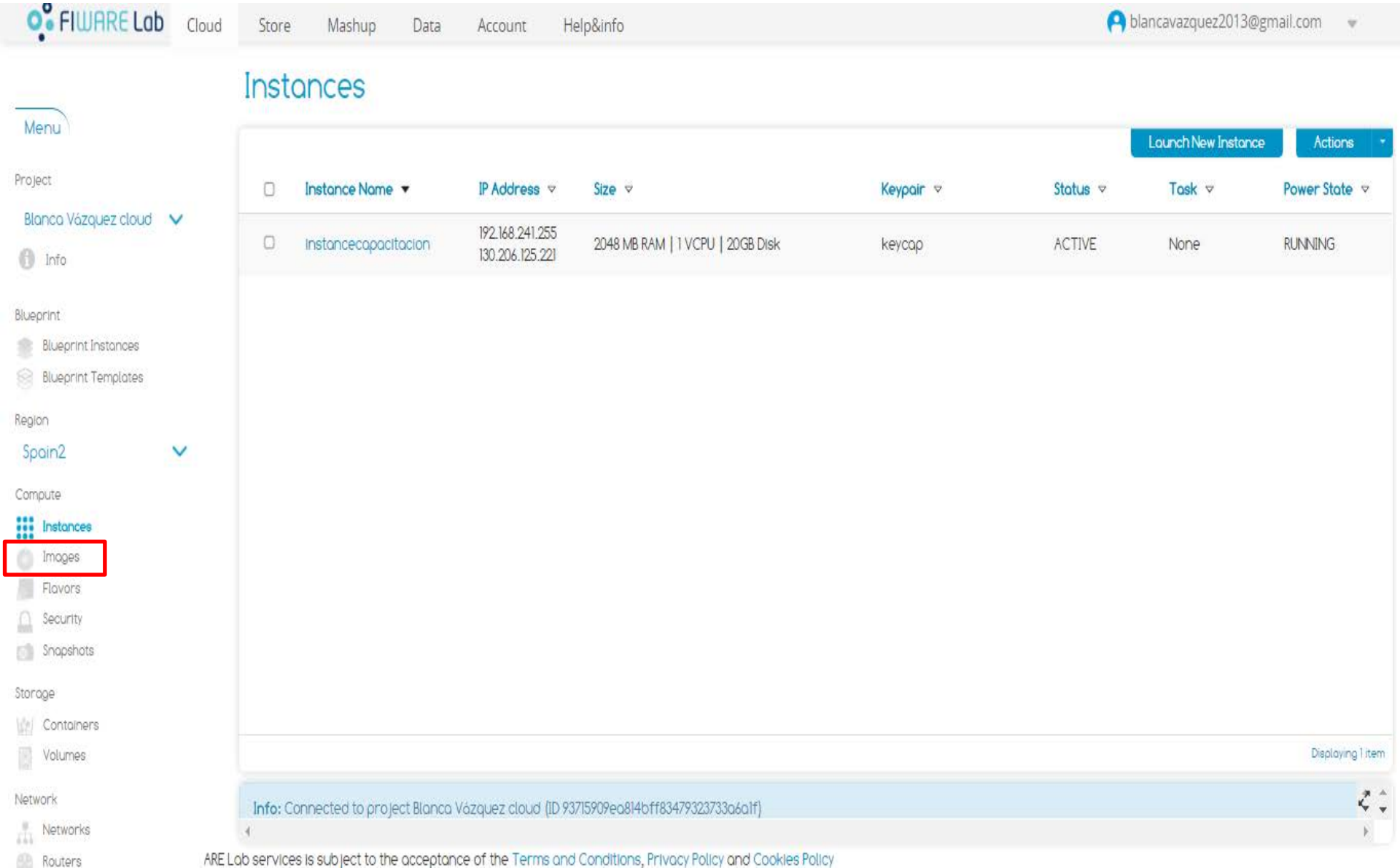

FIWARE Lab: funcionalidades básicas

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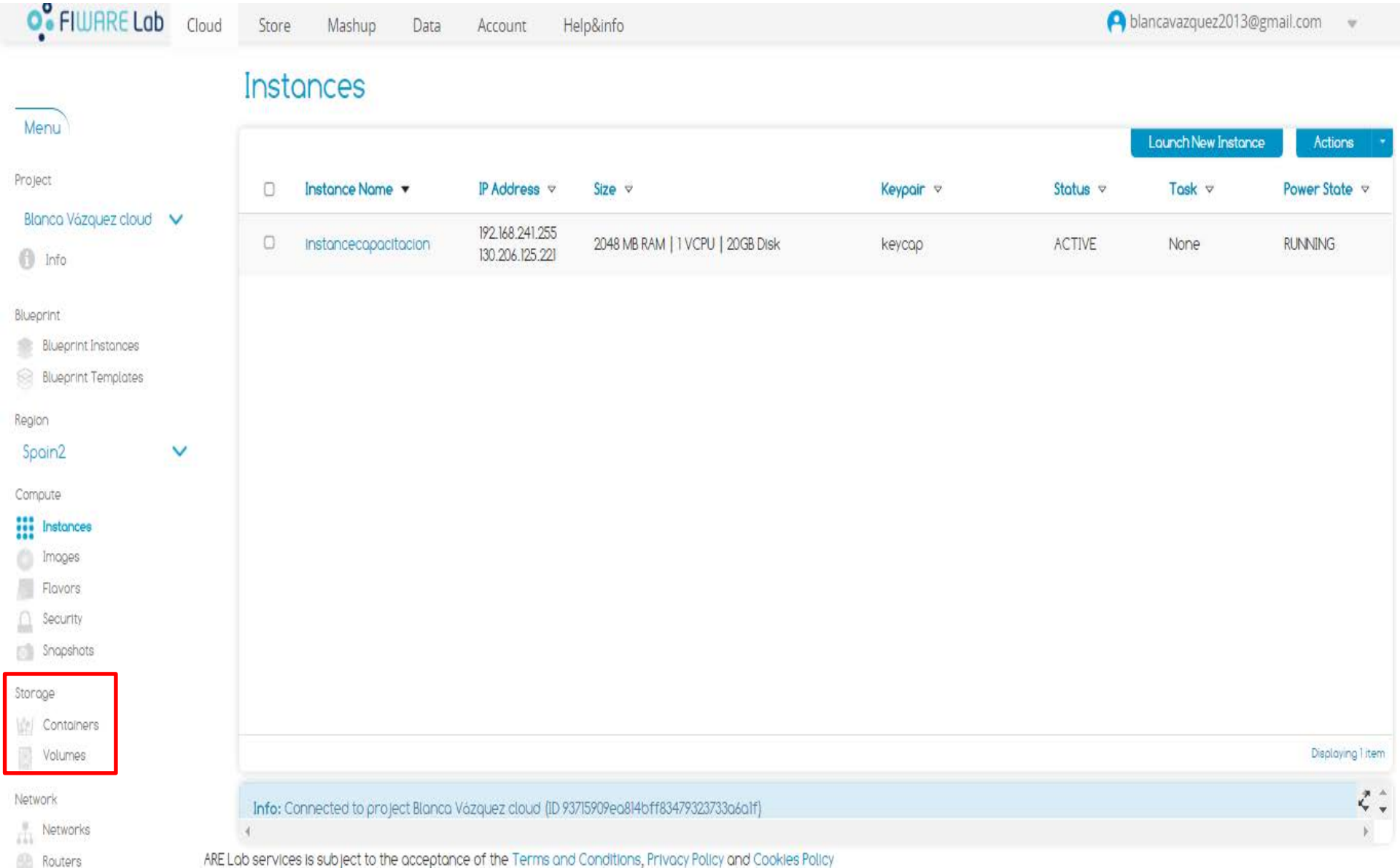

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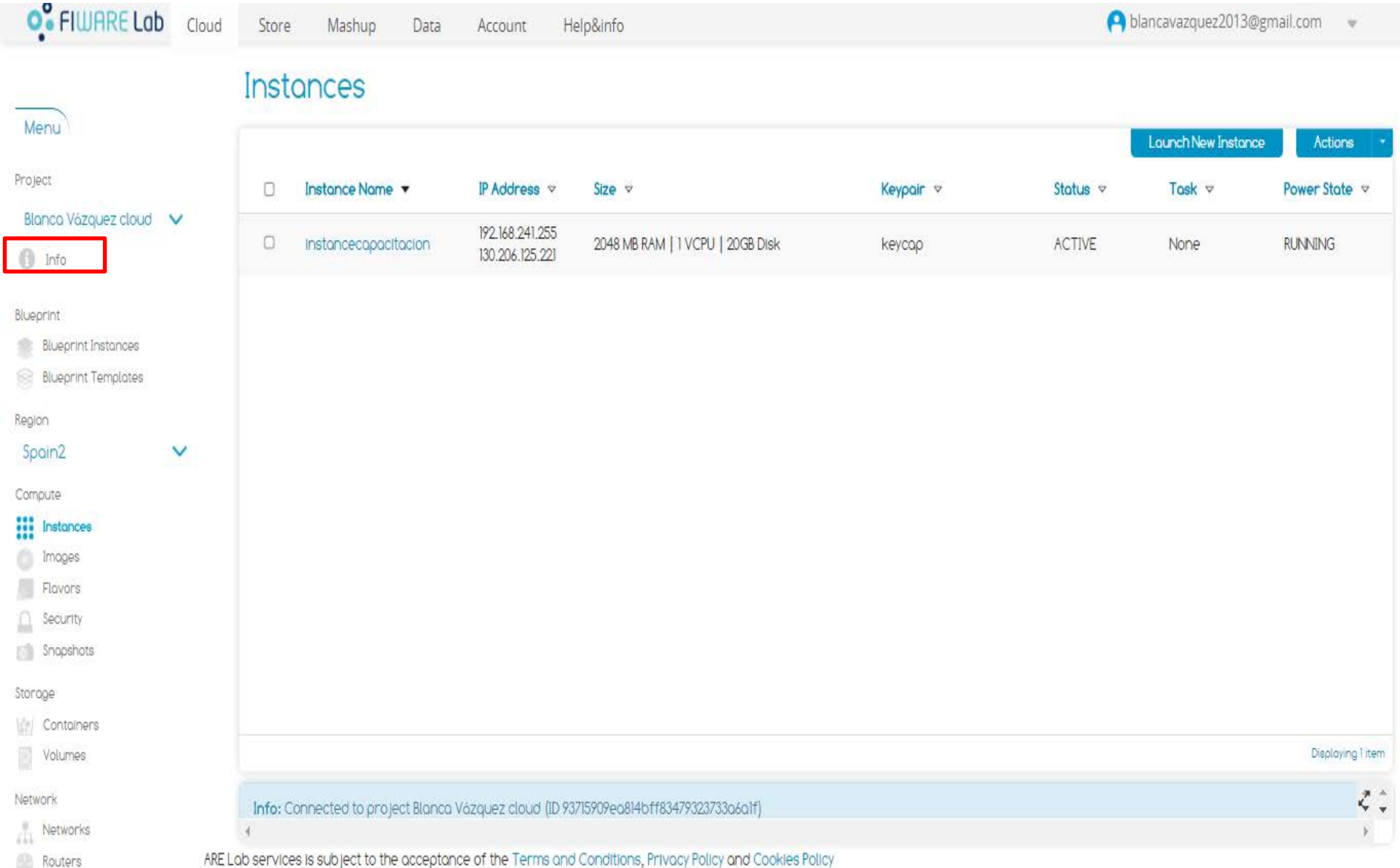

FIWARE Lab: funcionalidades básicas

Información de la cuenta

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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.

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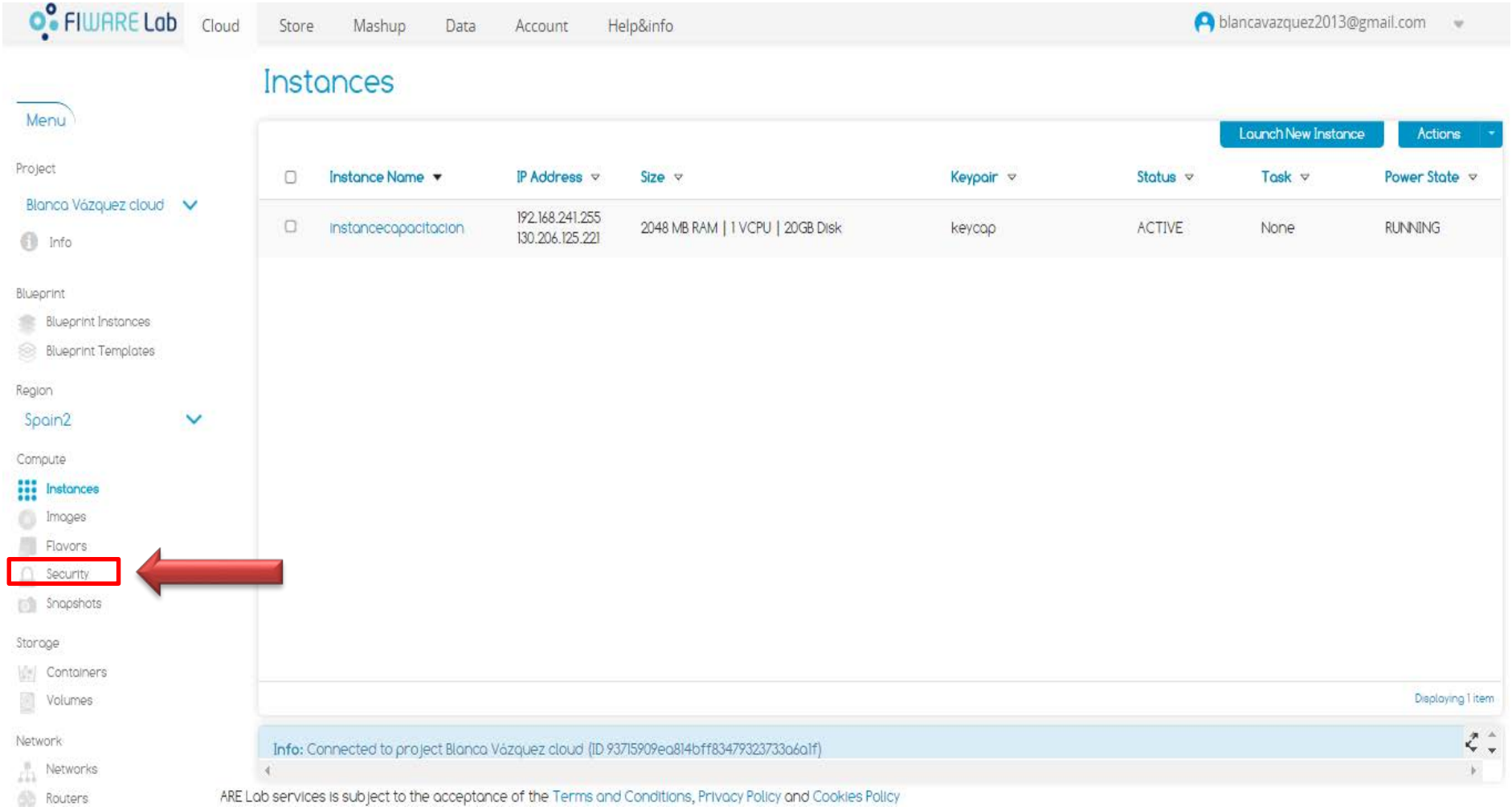
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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

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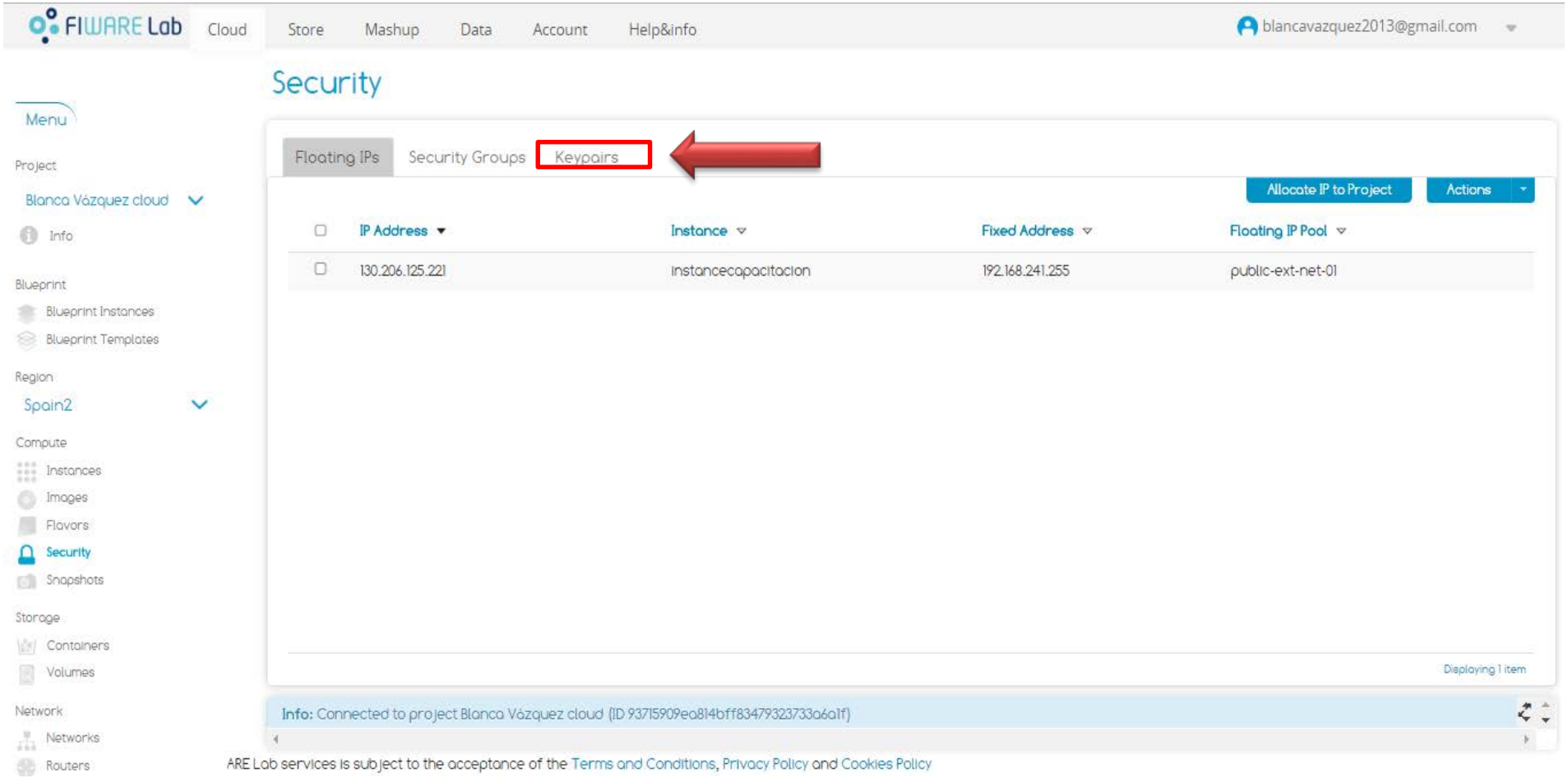
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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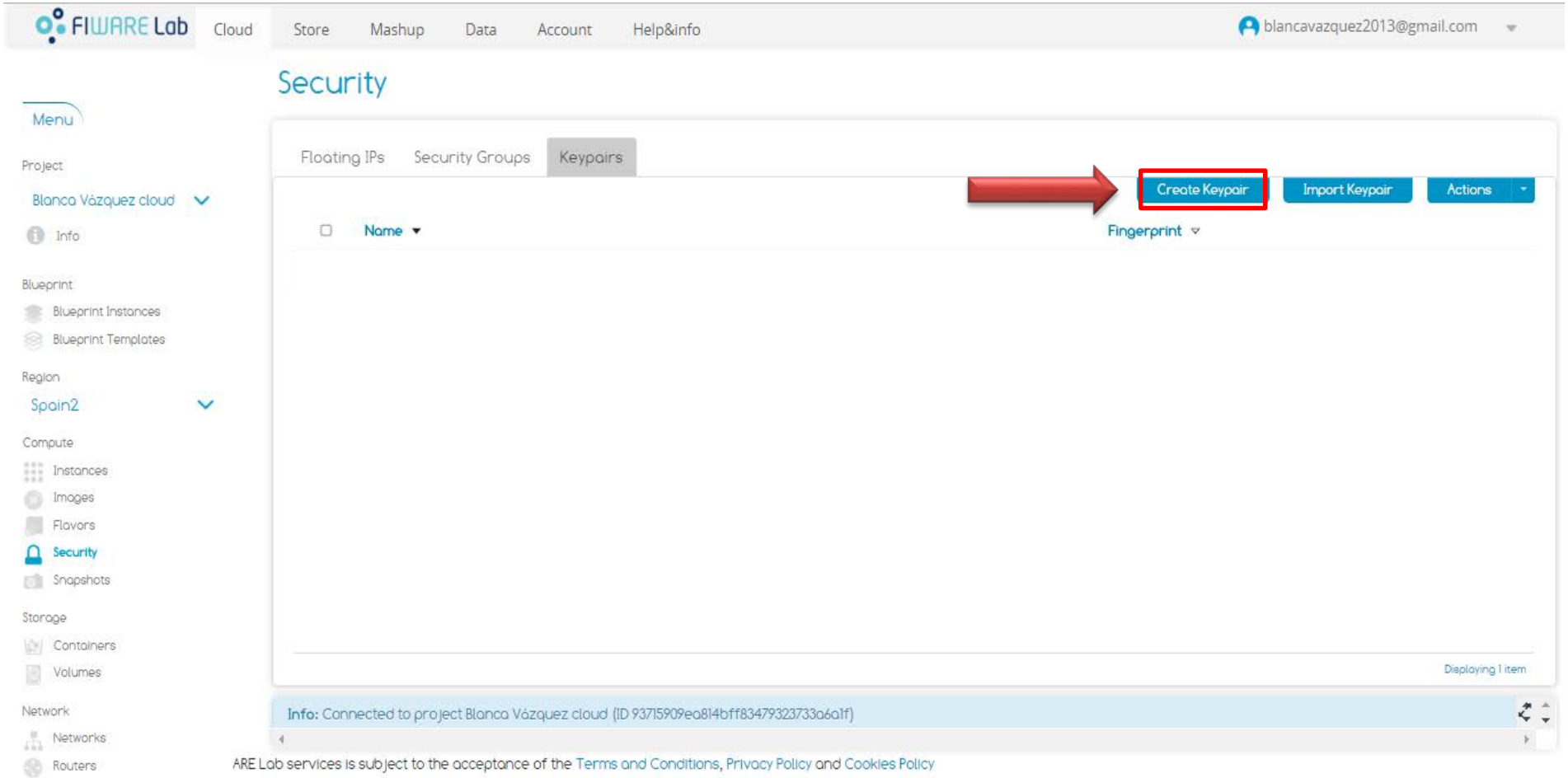
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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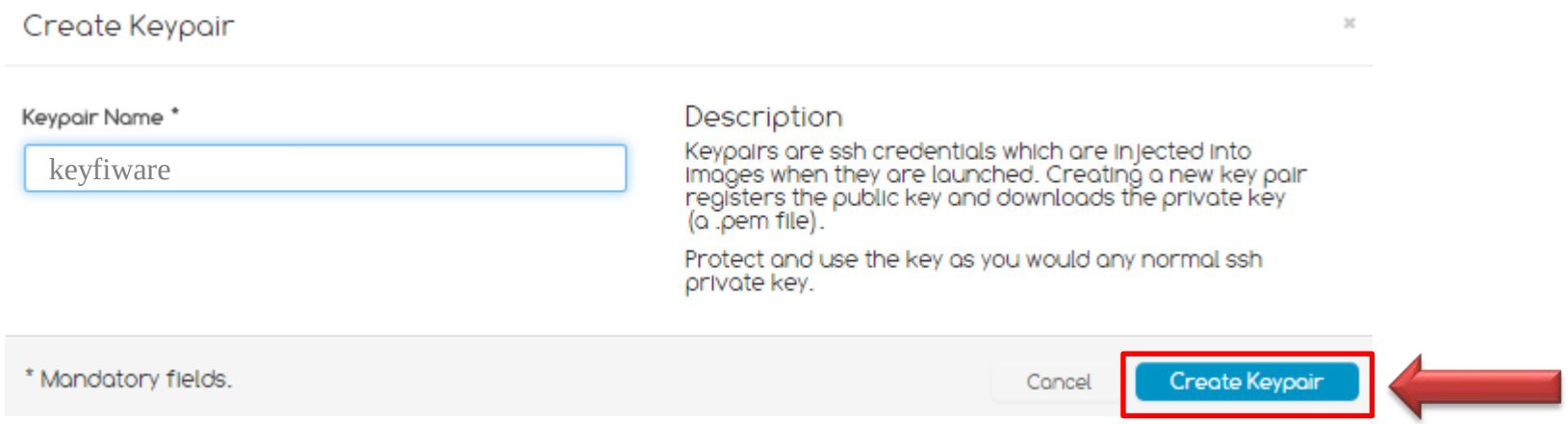
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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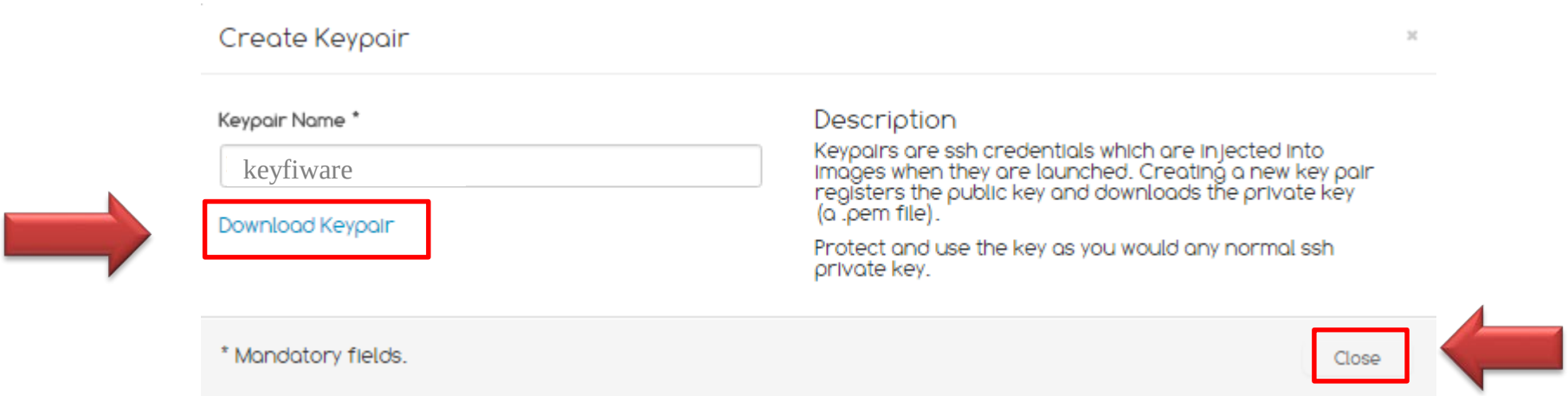
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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

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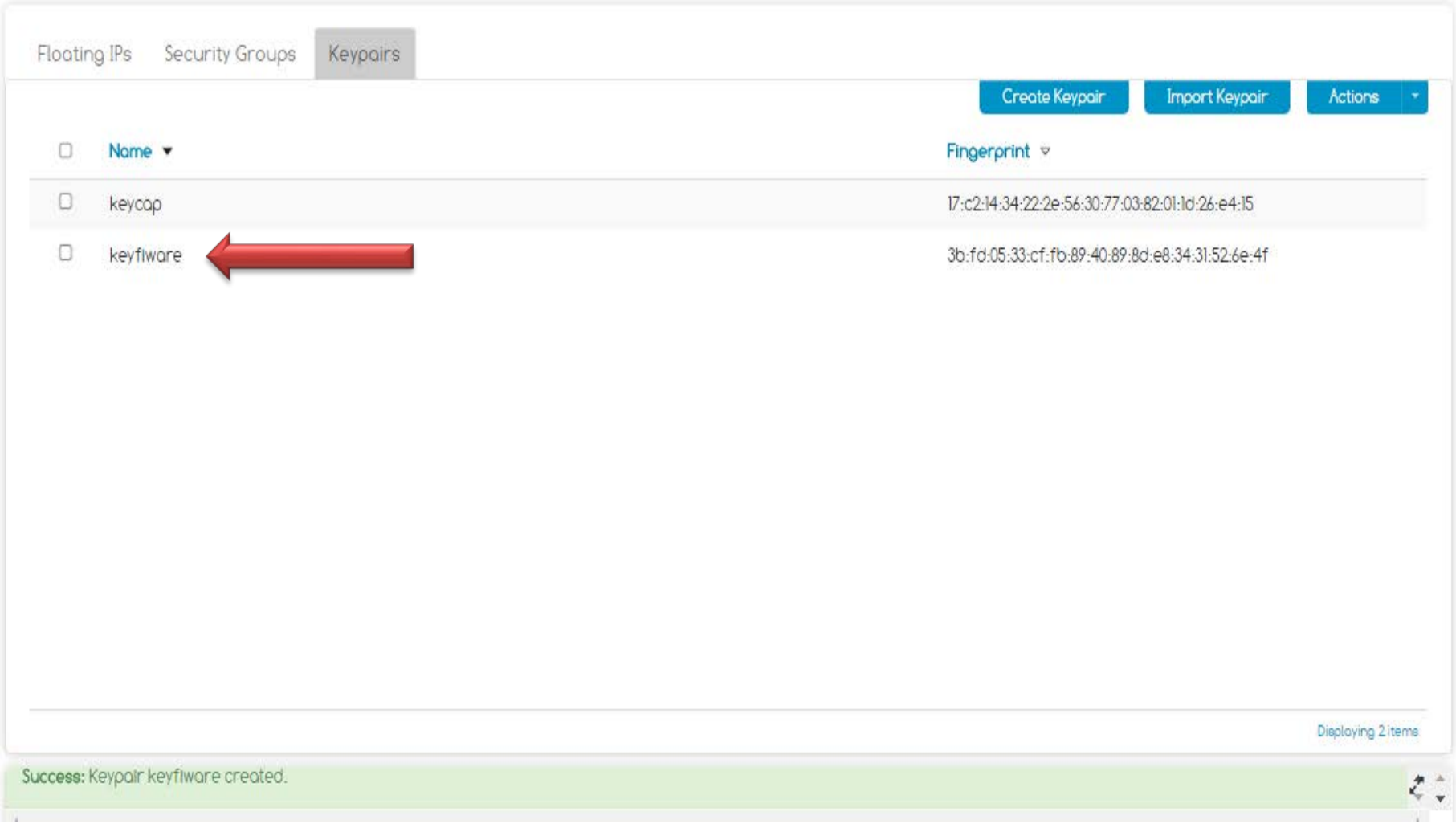
FIWARE Lab: funcionalidades básicas

Creación de una llave privada



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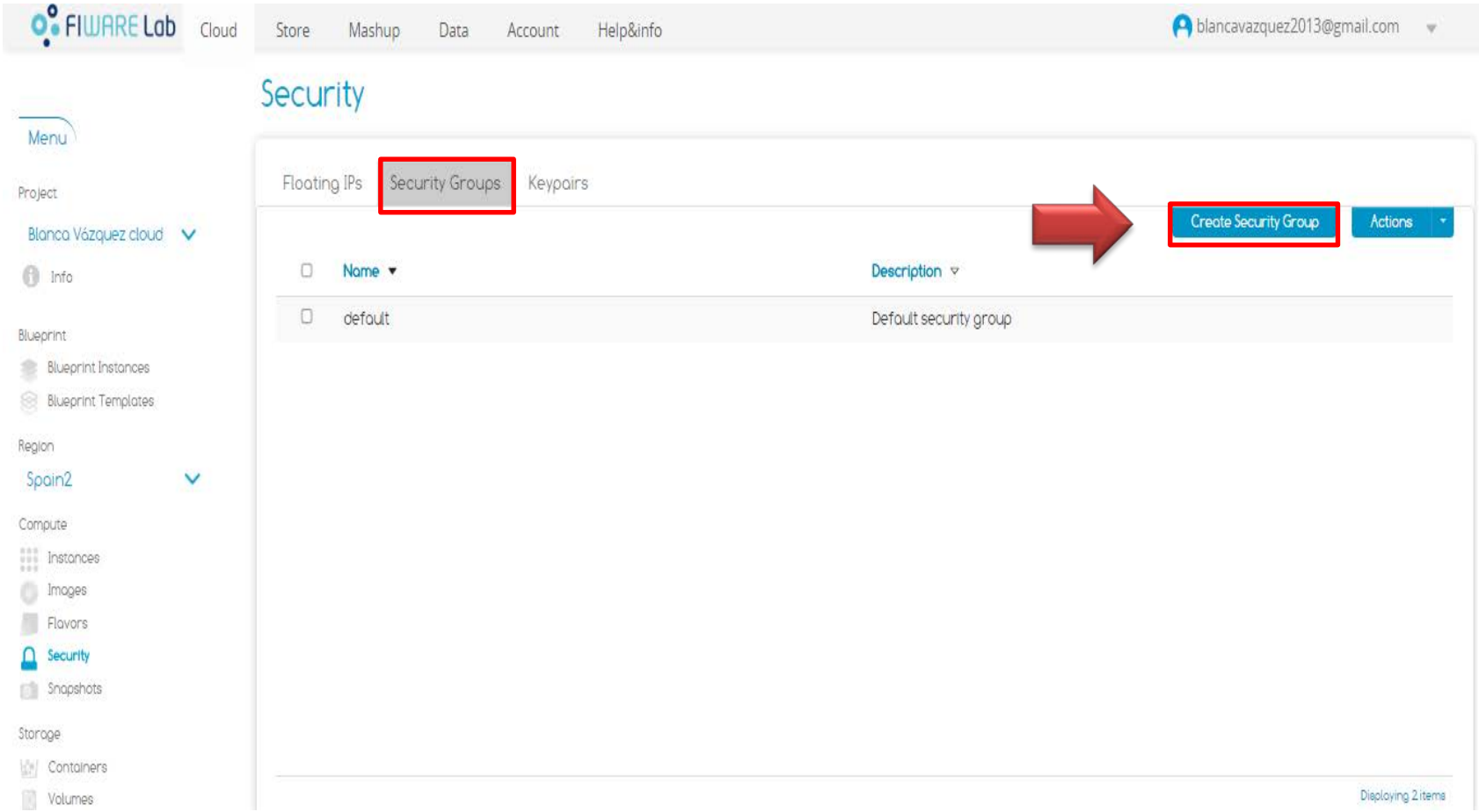
FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad



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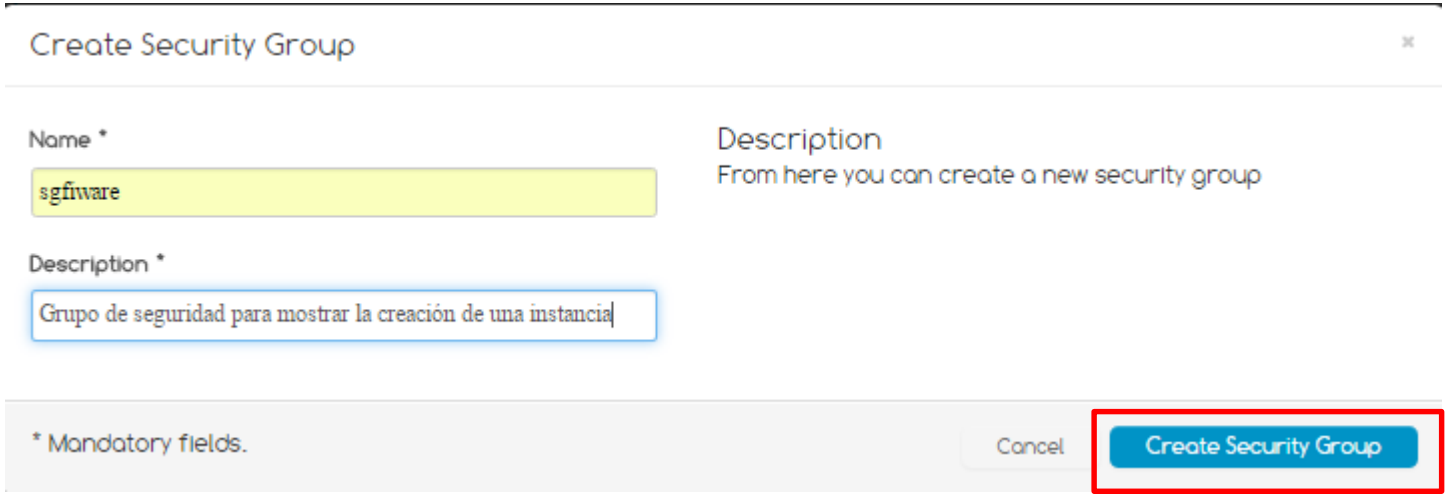
FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad



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

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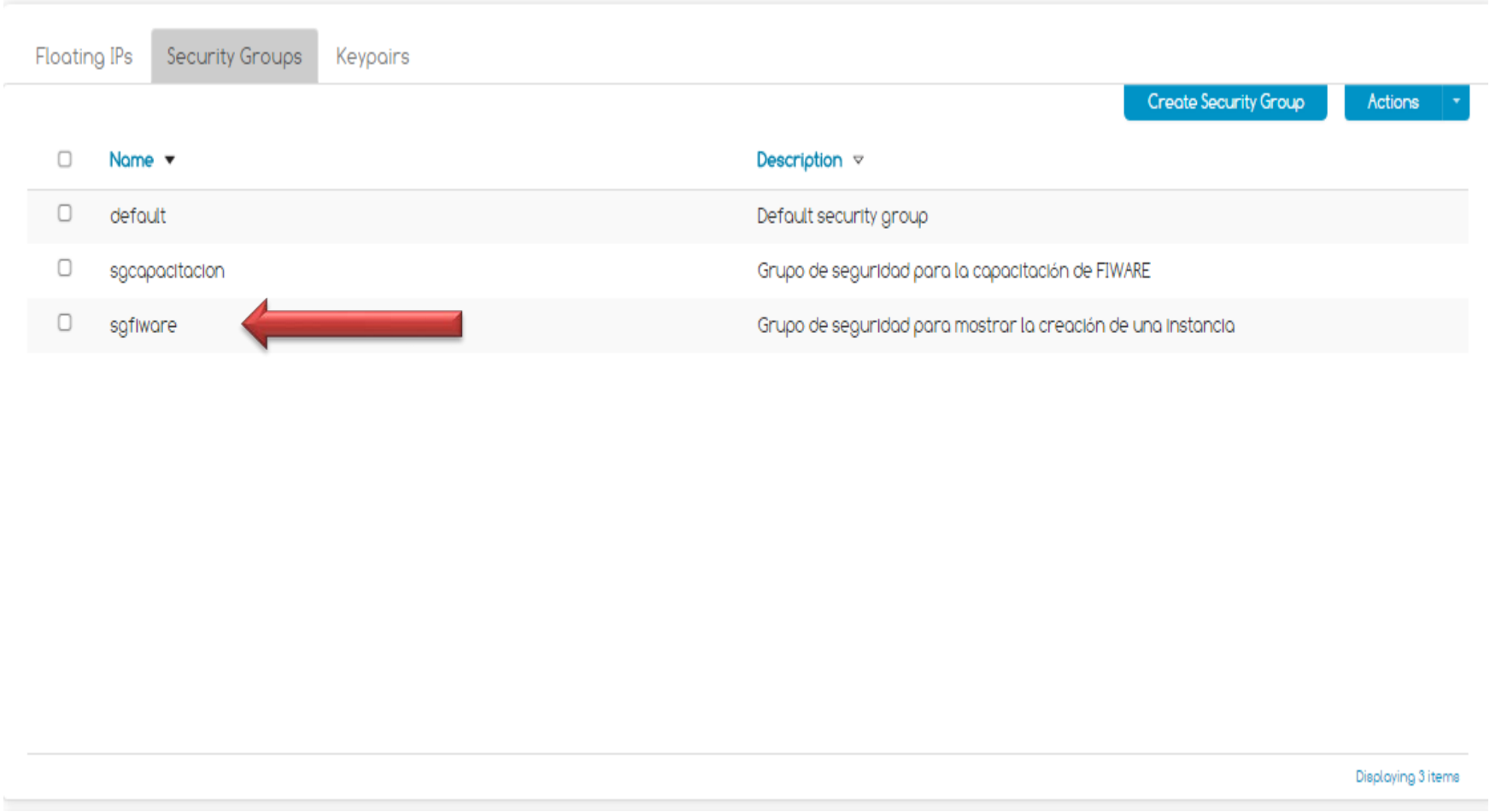
FIWARE Lab: funcionalidades básicas

Creación de un grupo de seguridad



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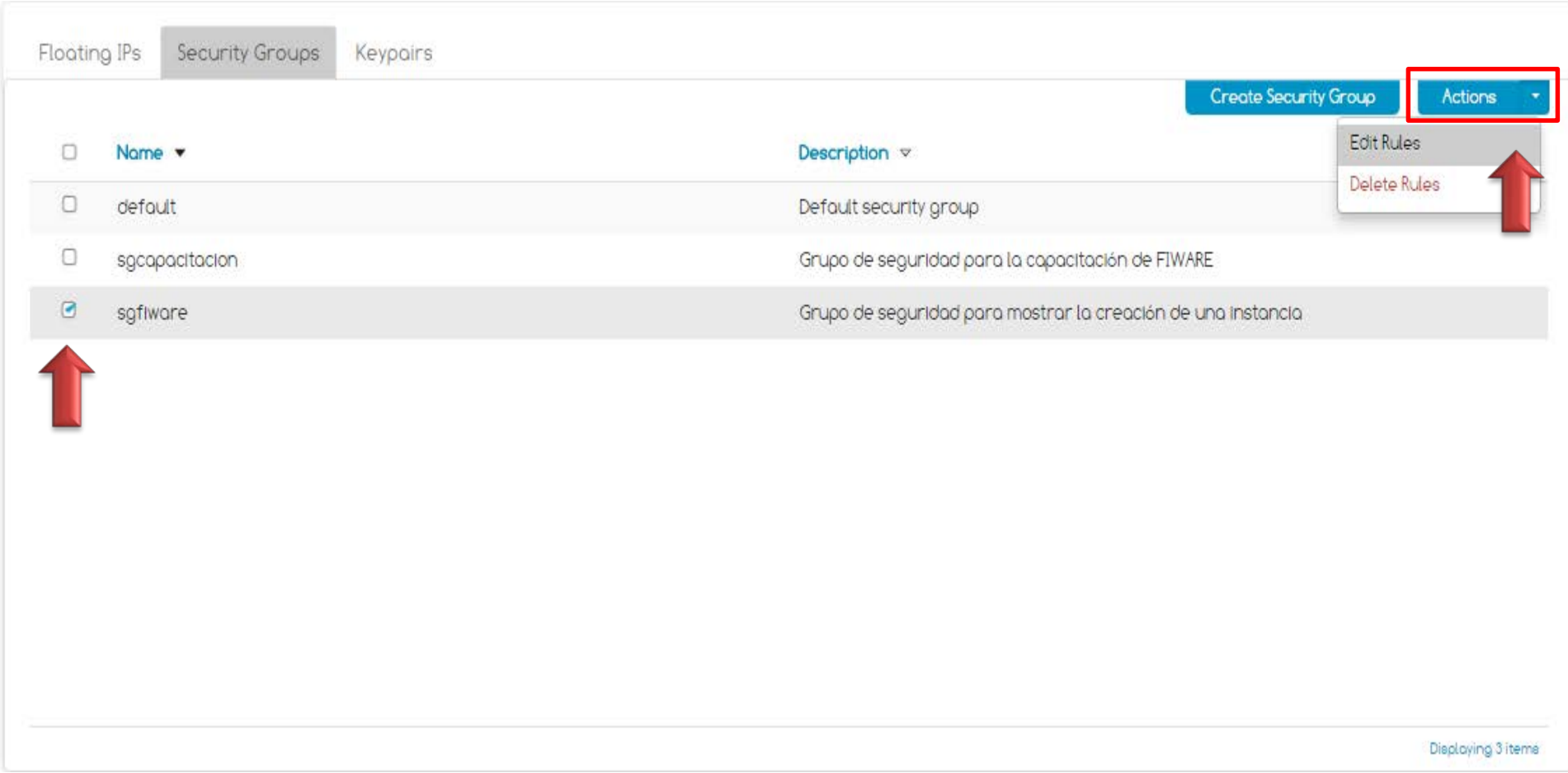
FIWARE Lab: funcionalidades básicas

Definición de reglas



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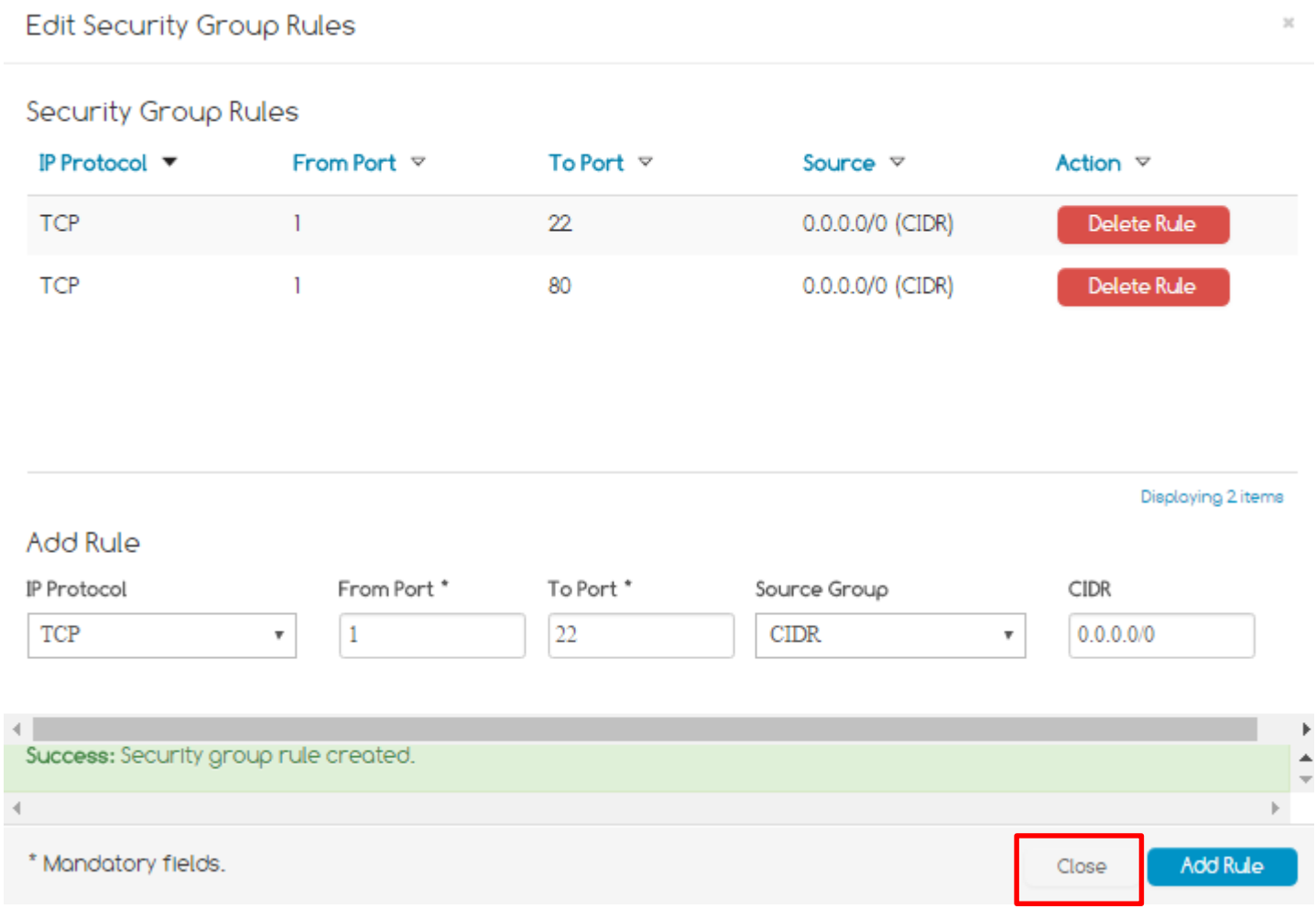
FIWARE Lab: funcionalidades básicas

Definición de reglas



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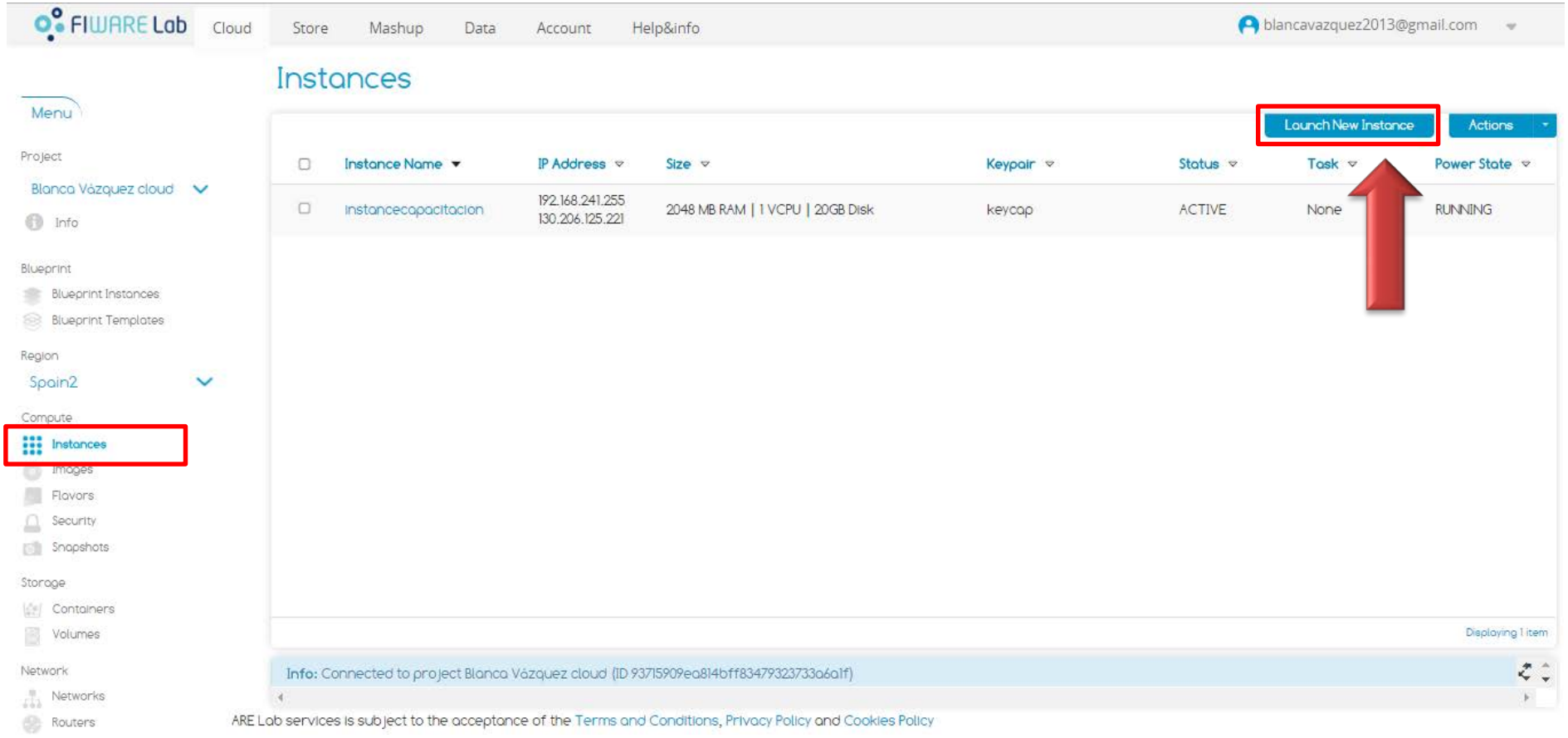
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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FIWARE Lab: funcionalidades básicas

Despliegue de una instancia

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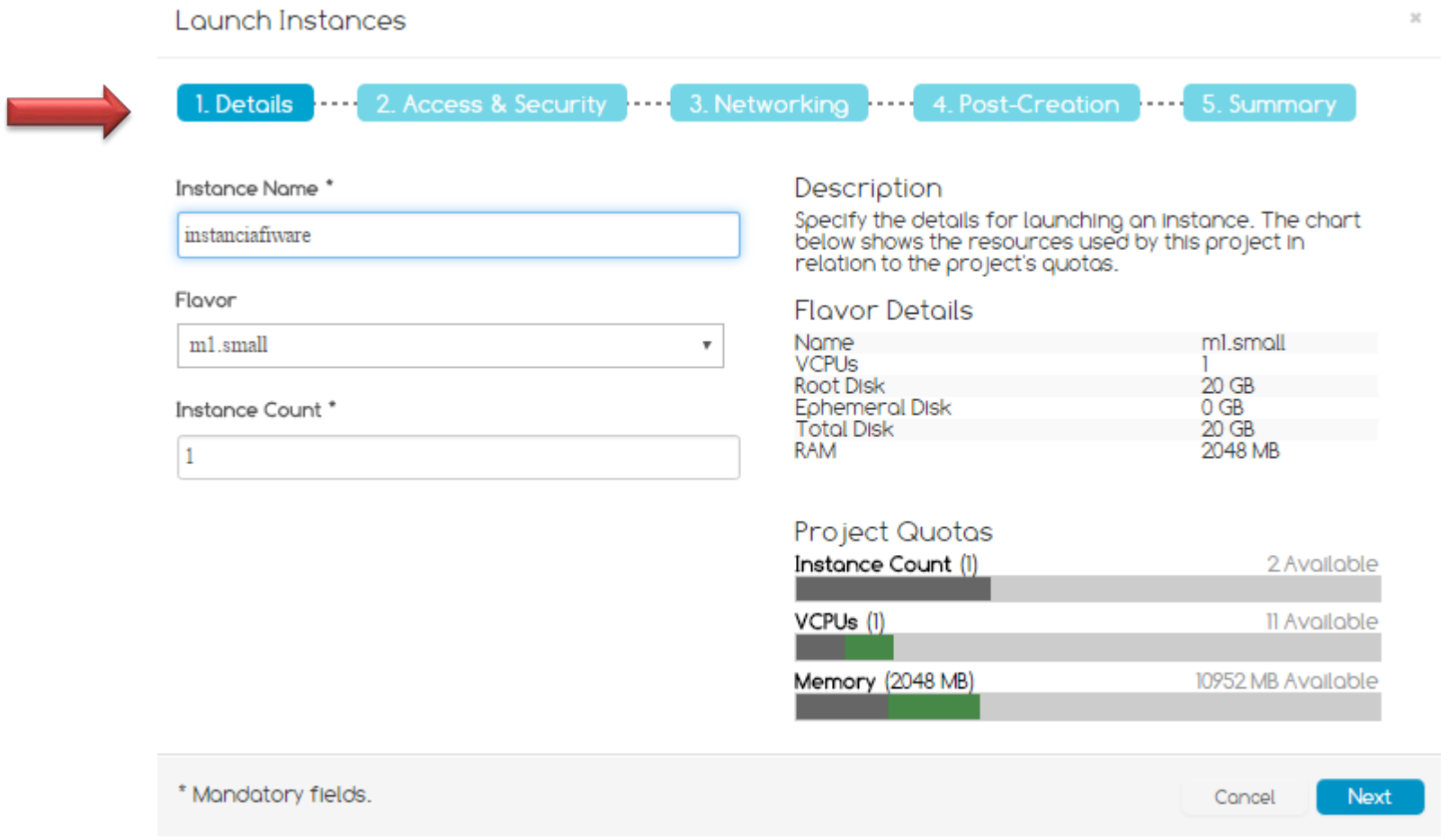
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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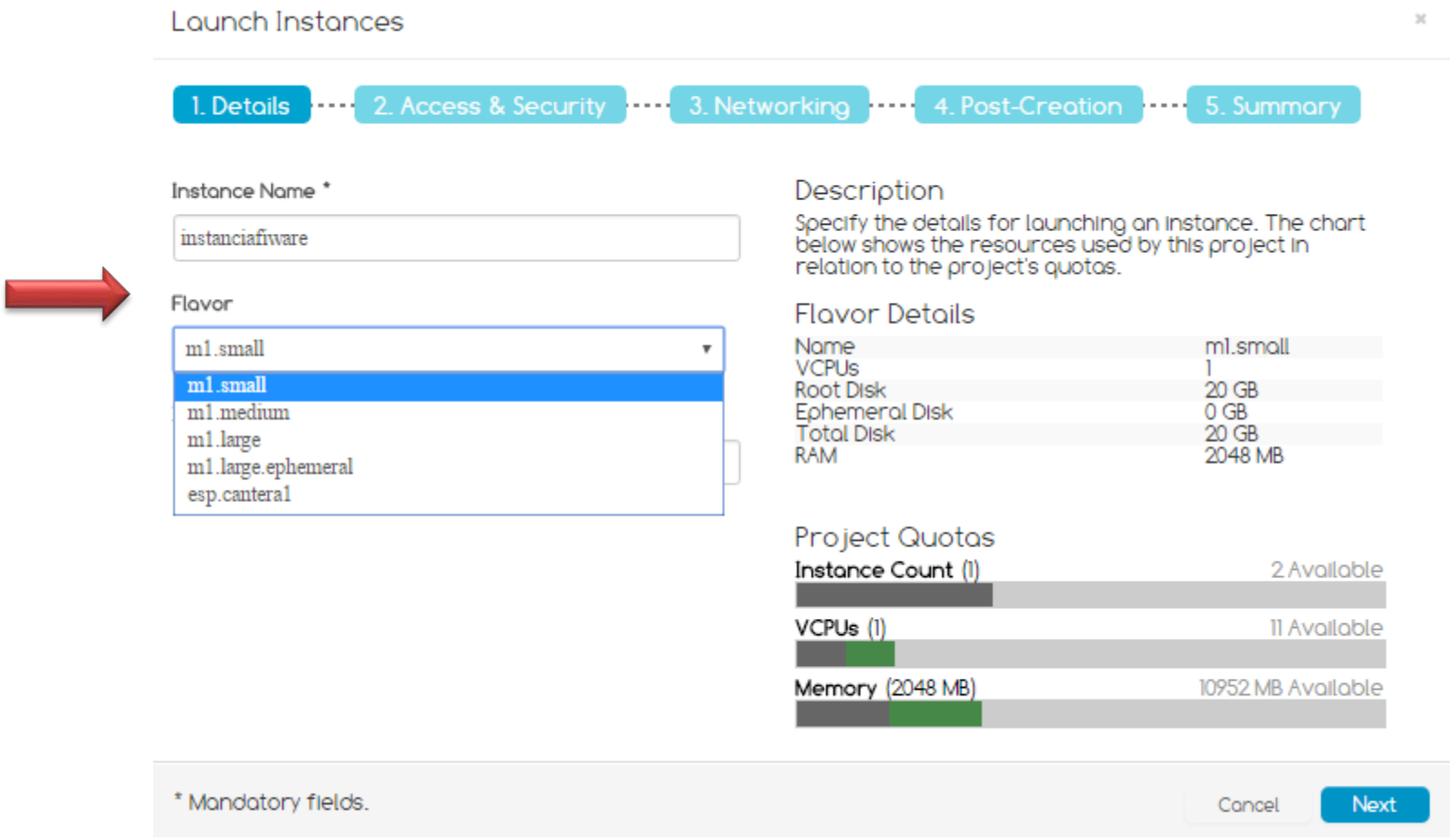
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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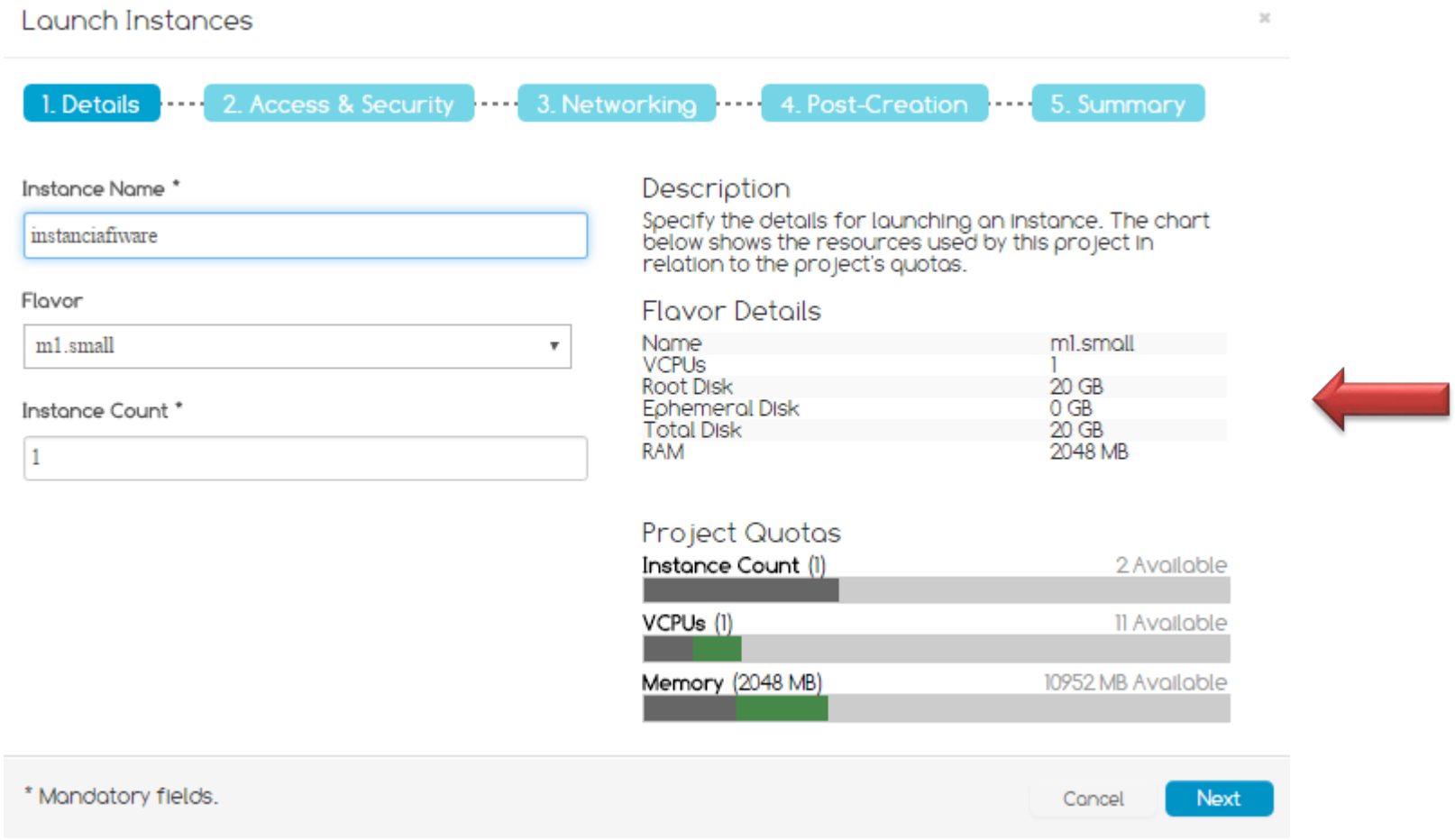
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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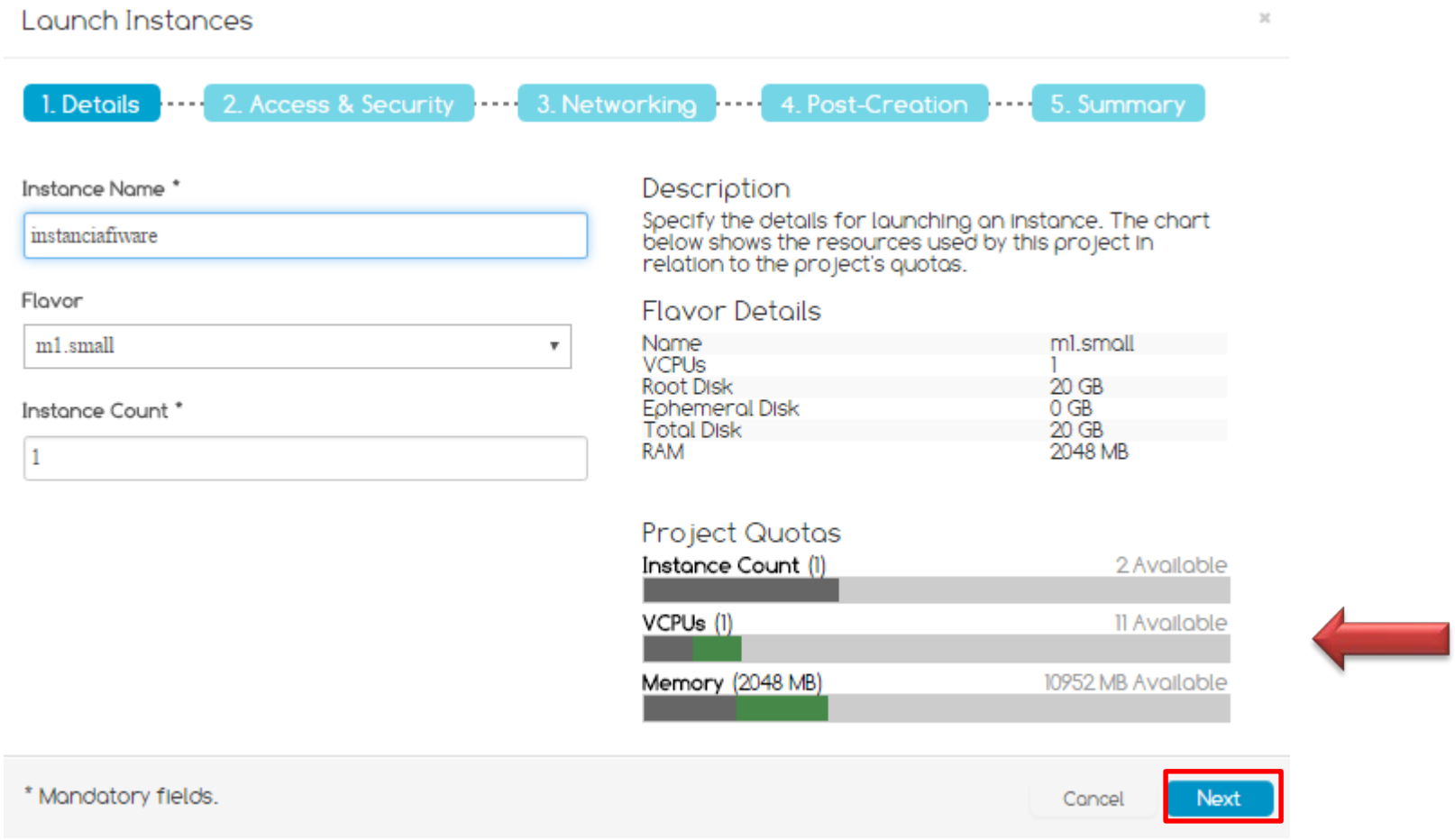
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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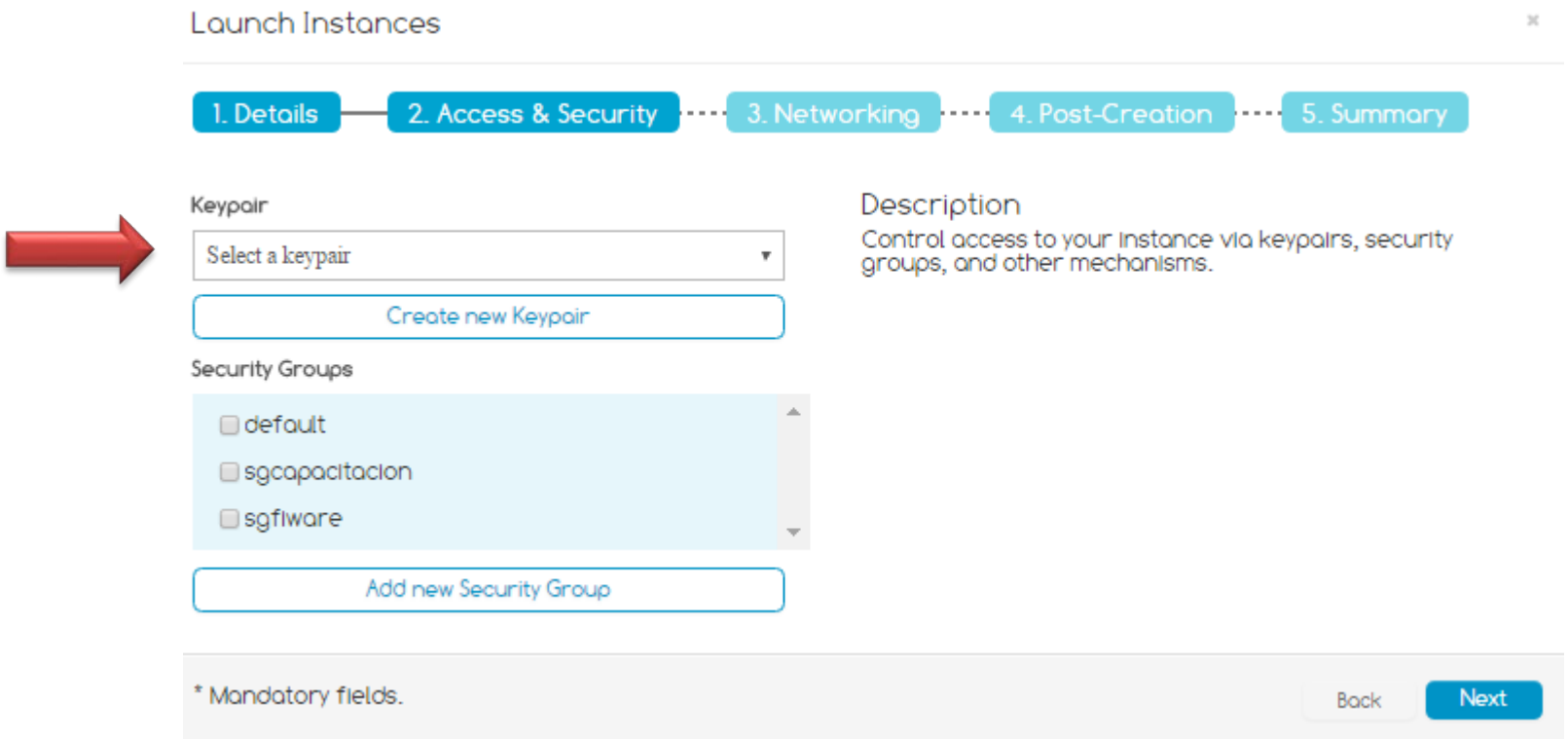
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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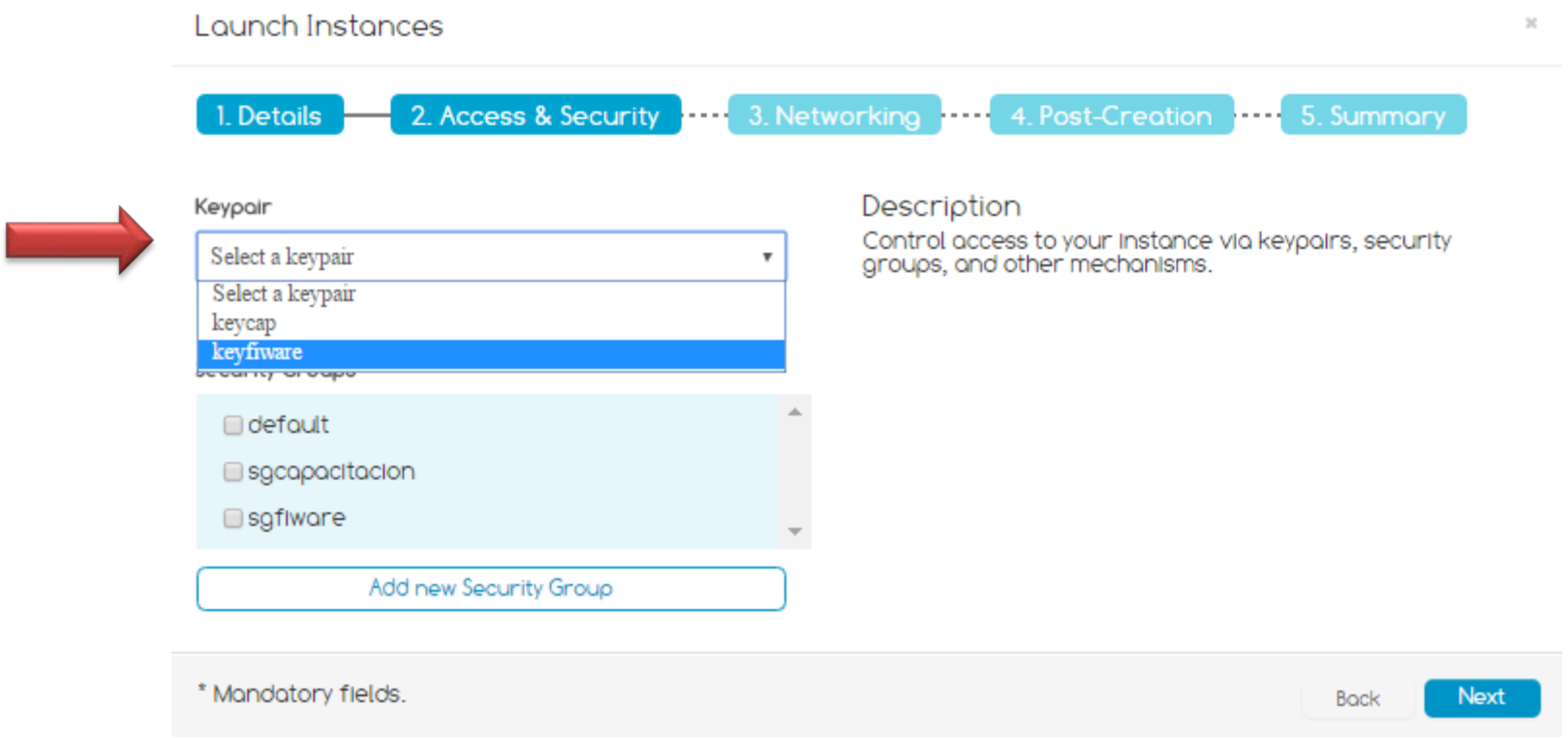
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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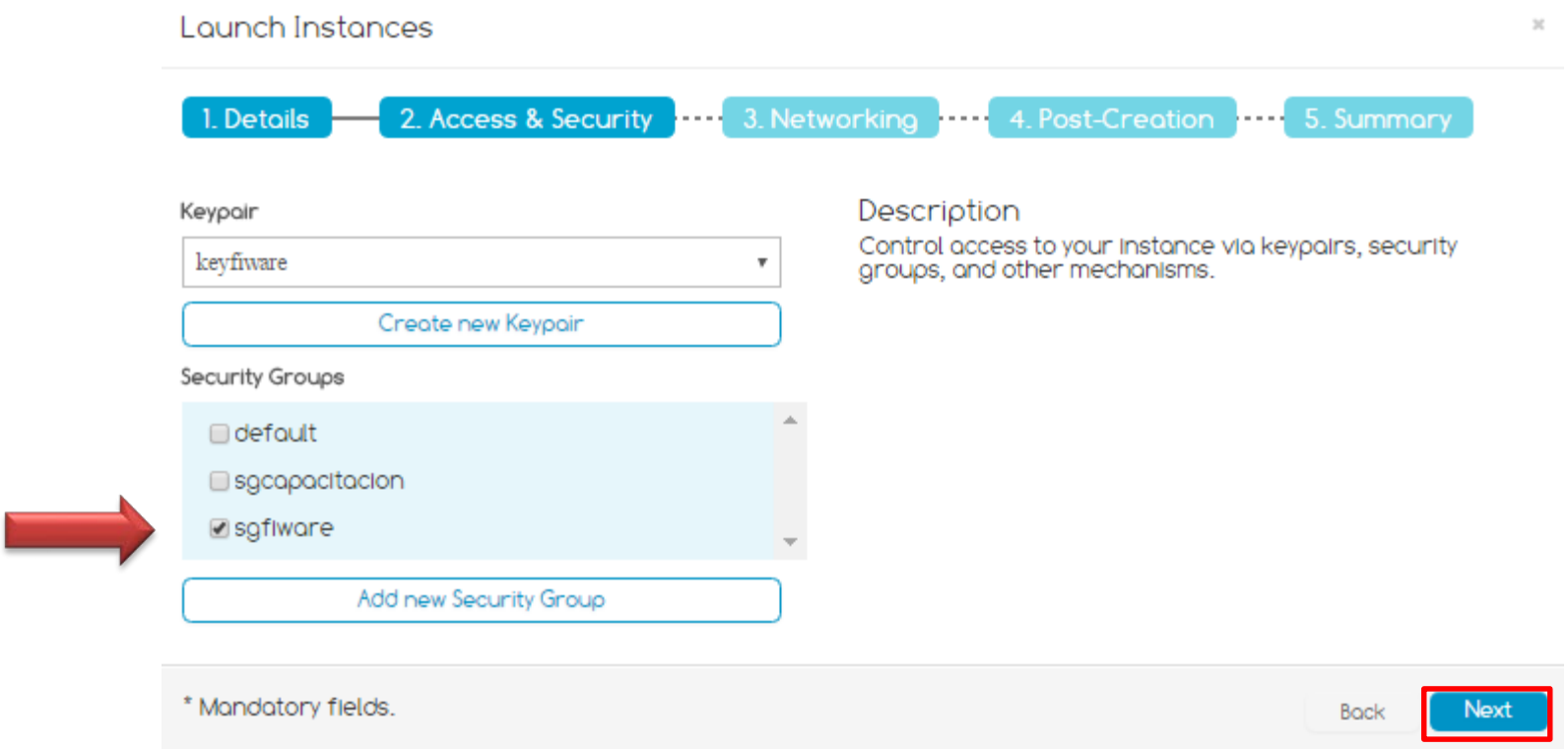
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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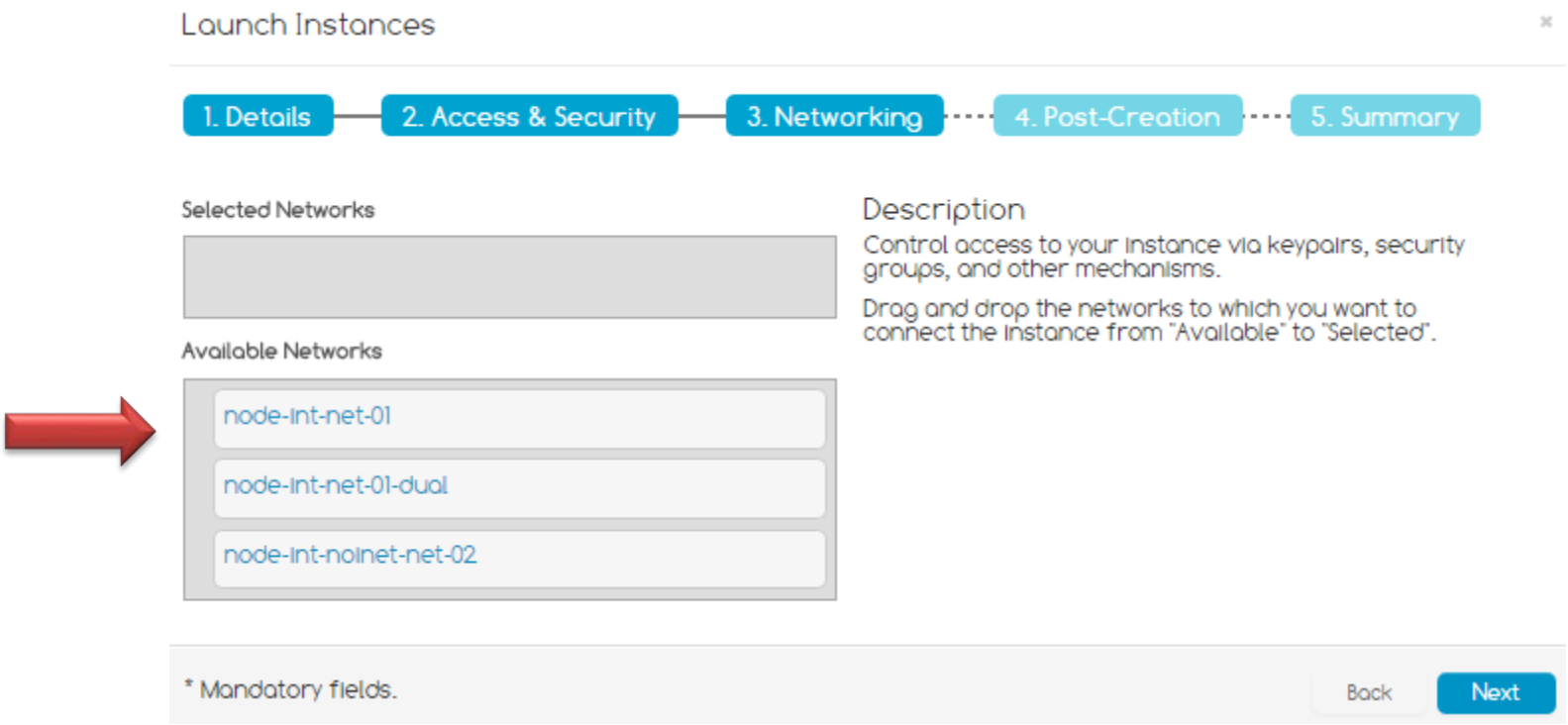
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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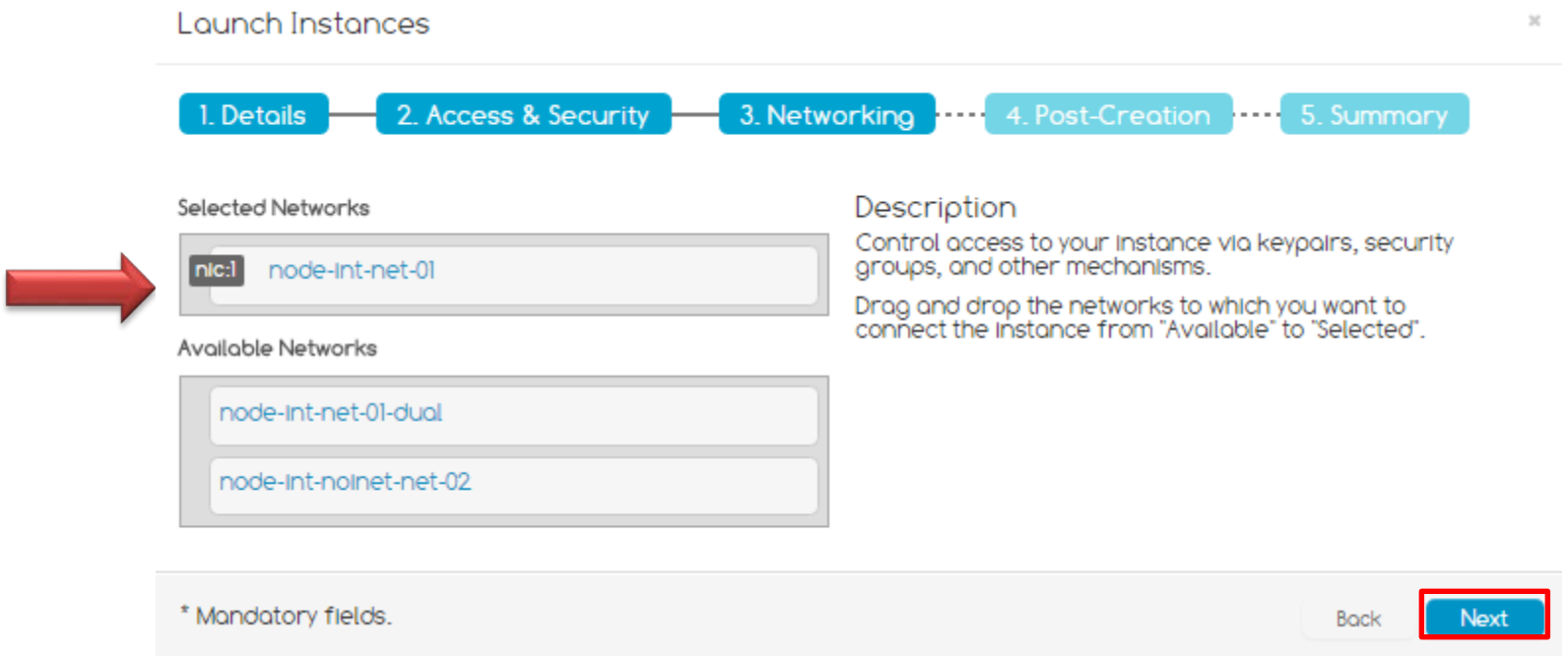
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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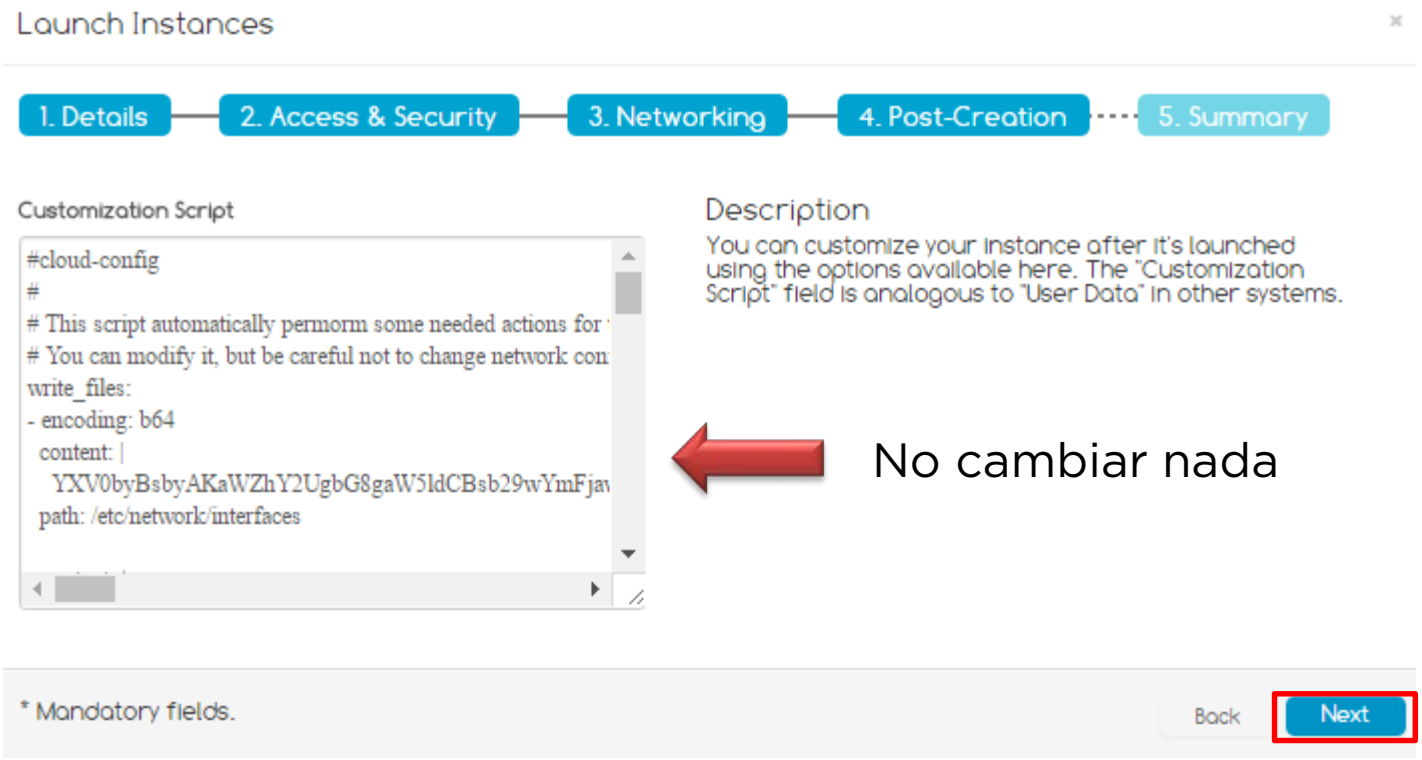
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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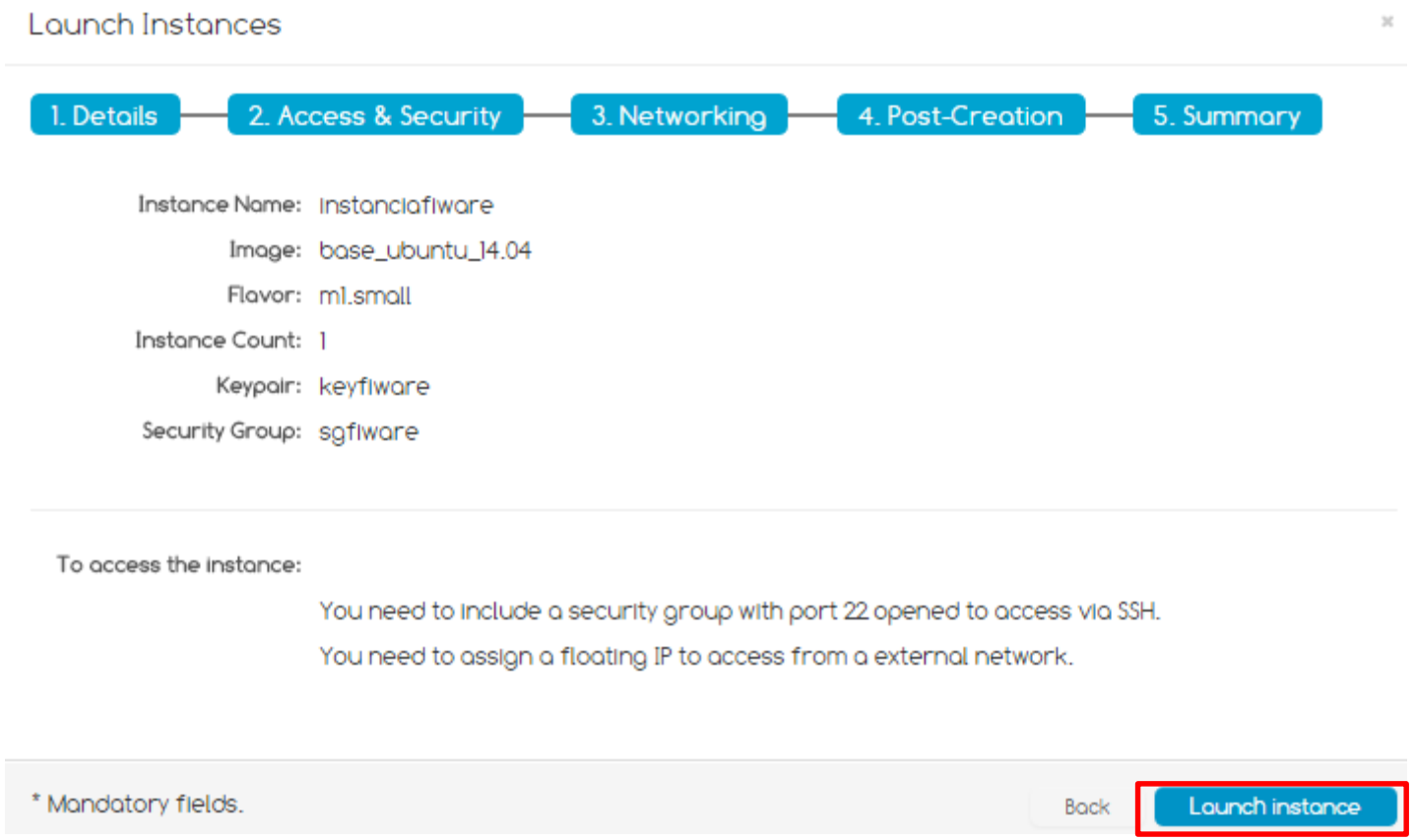
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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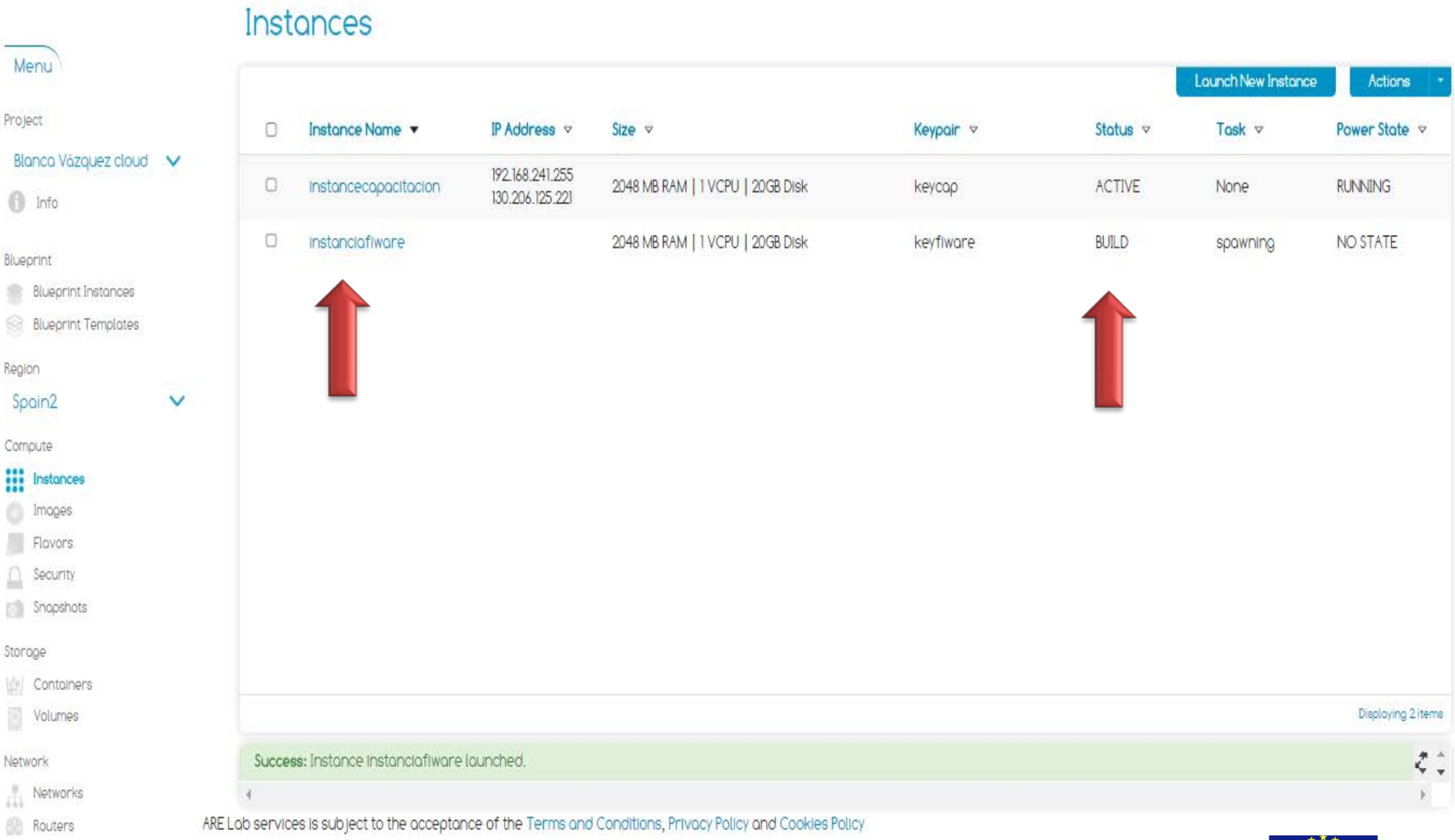
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



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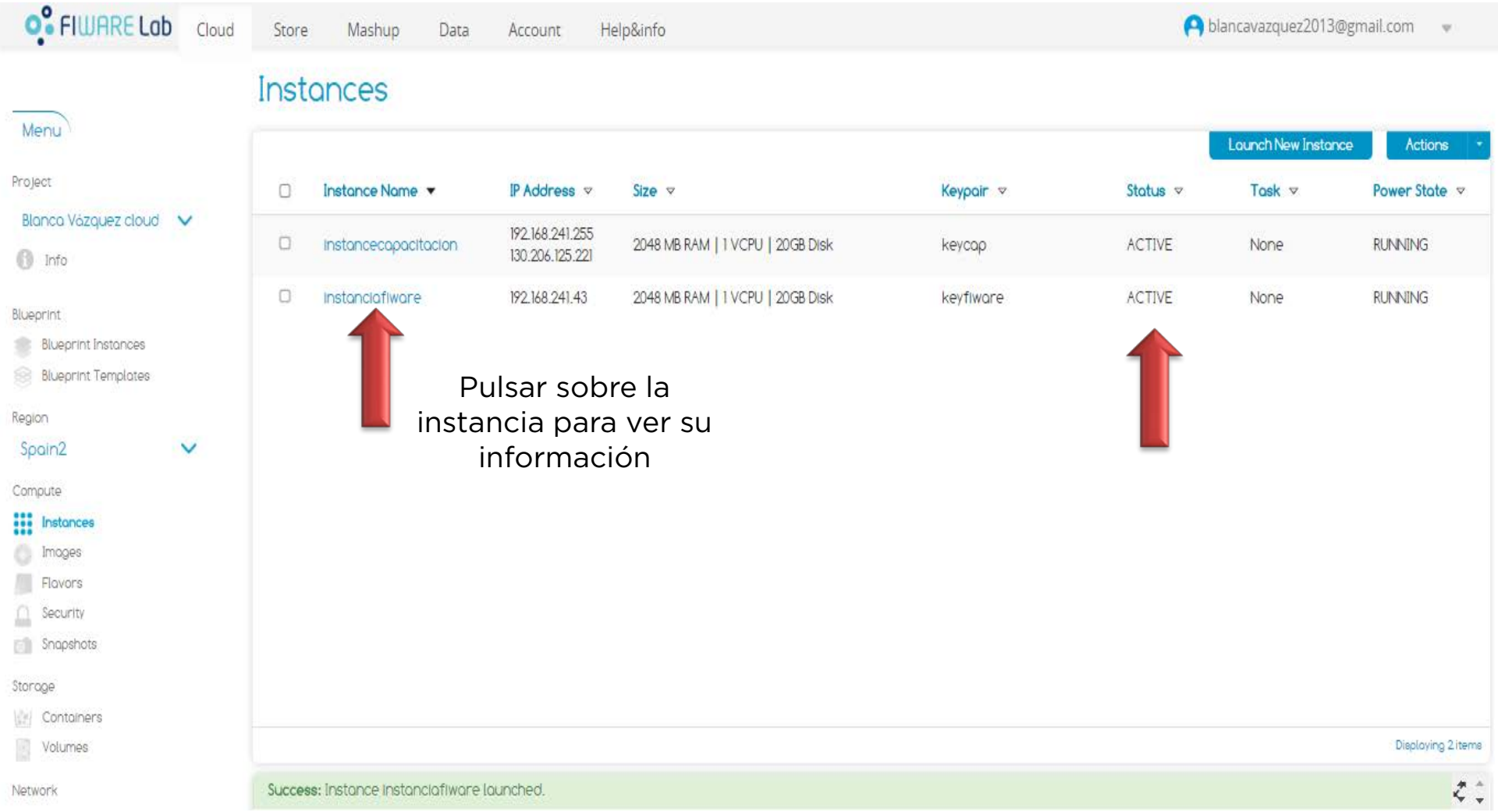
FIWARE Lab: funcionalidades básicas

Despliegue de una instancia



Pulsar sobre la instancia para ver su información

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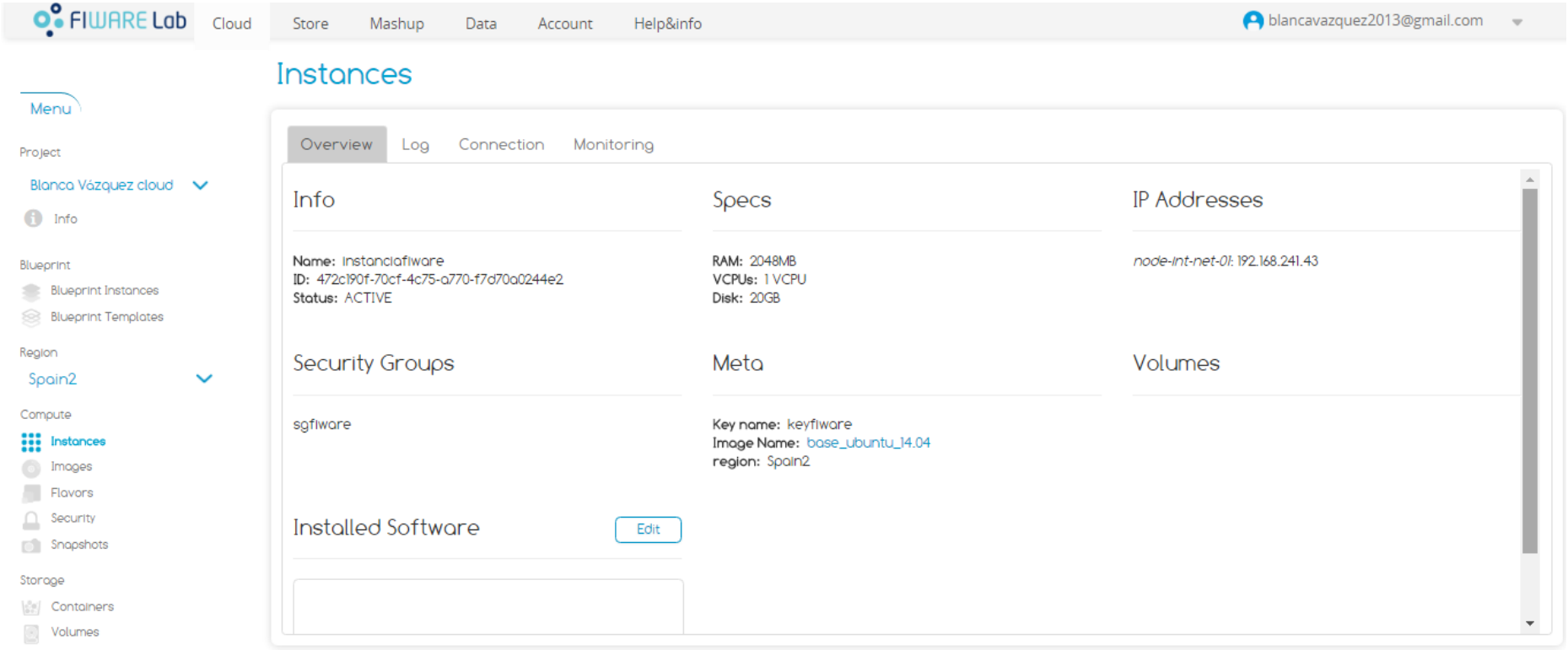
FIWARE Lab: funcionalidades básicas

Resumen de la instancia



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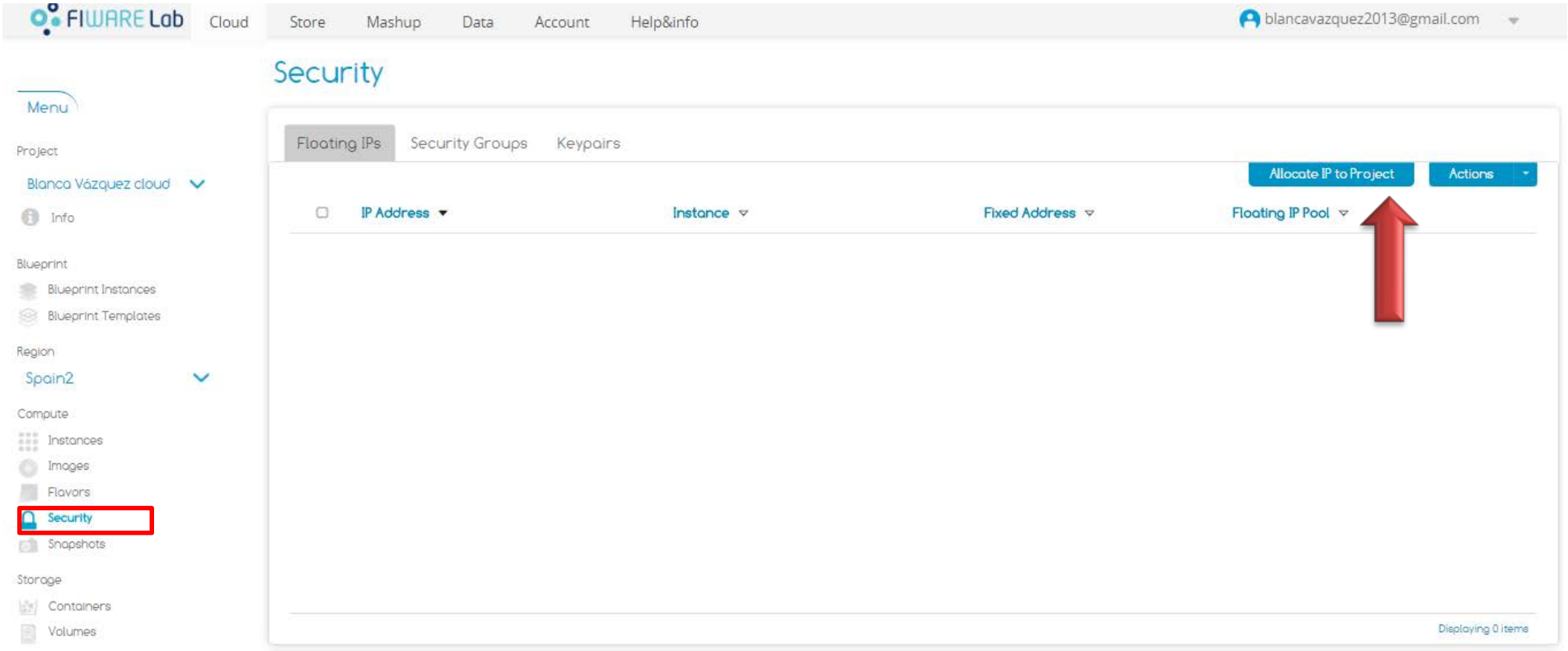
FIWARE Lab: funcionalidades básicas

Asignar una IP



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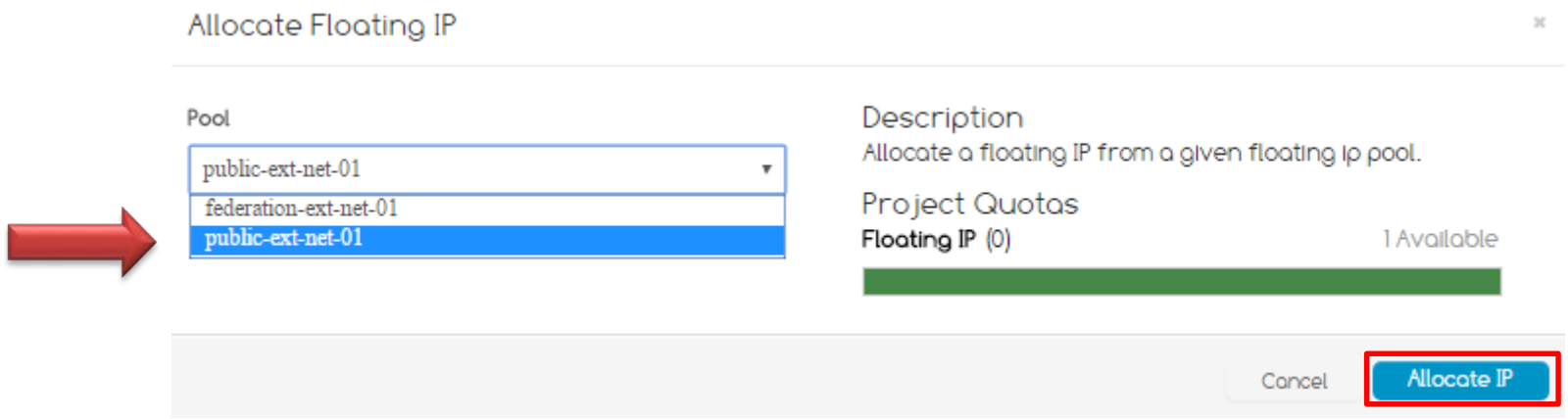
FIWARE Lab: funcionalidades básicas

Asignar una IP



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FIWARE Lab: funcionalidades básicas

Asignar una IP

Seleccionar la IP asignada

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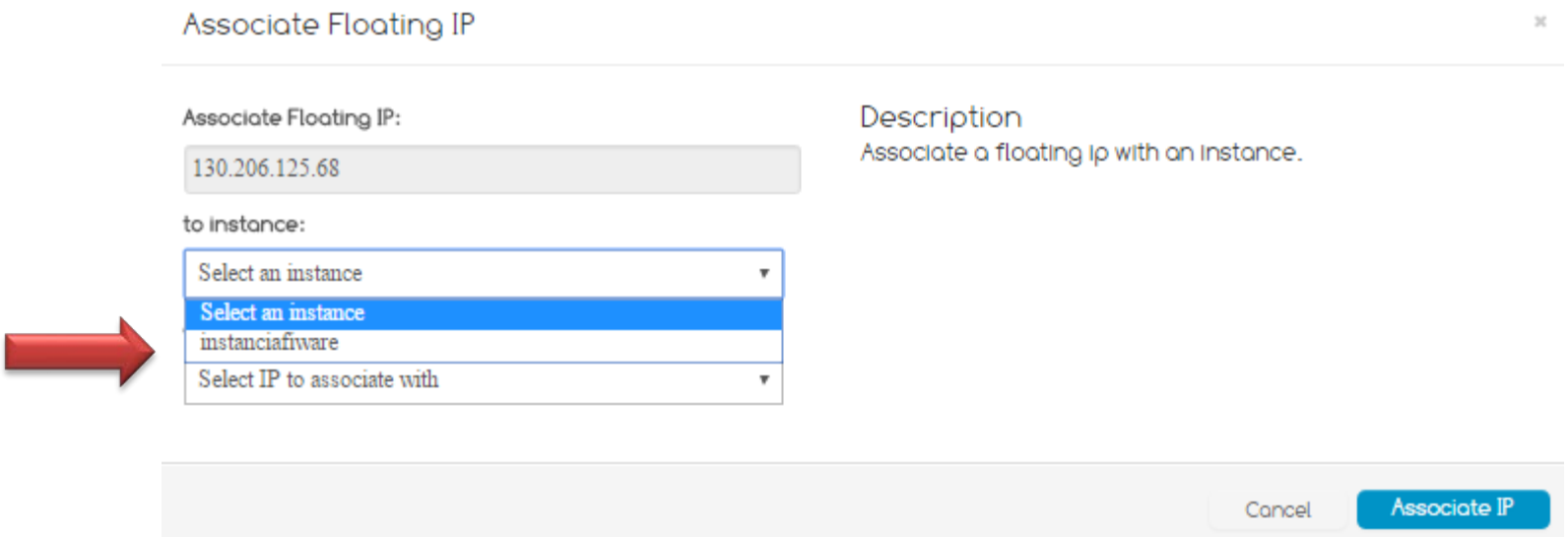
FIWARE Lab: funcionalidades básicas

Asignar una IP



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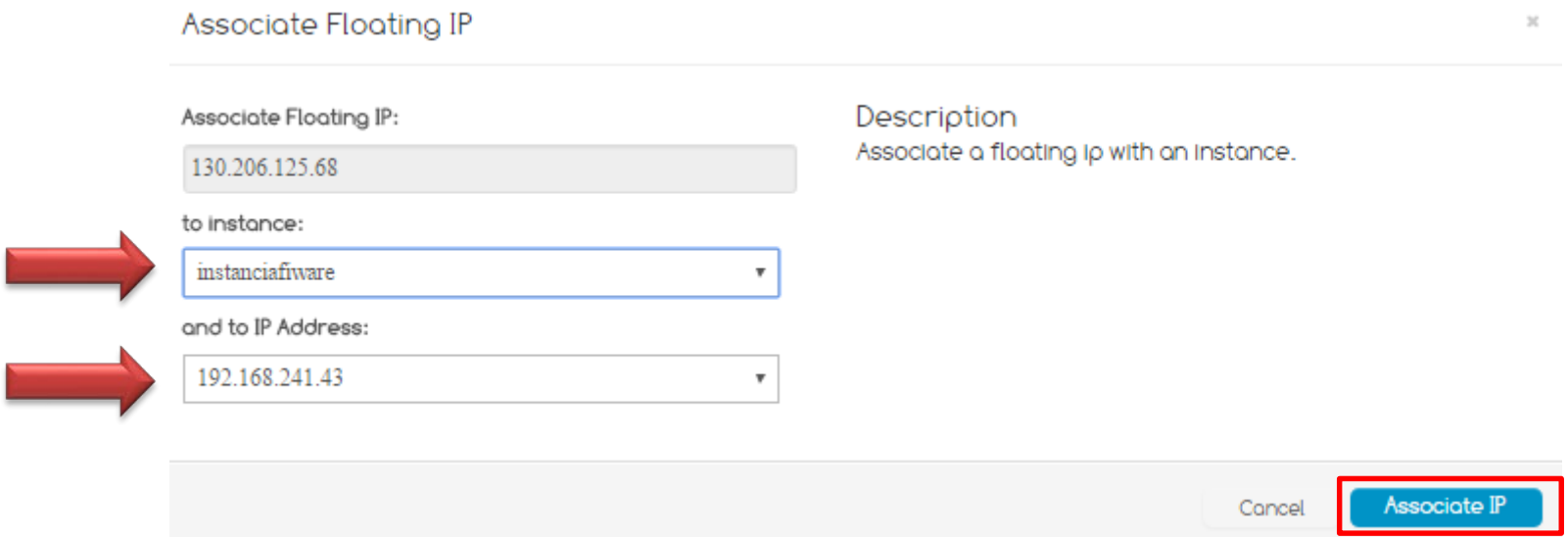
FIWARE Lab: funcionalidades básicas

Asignar una IP



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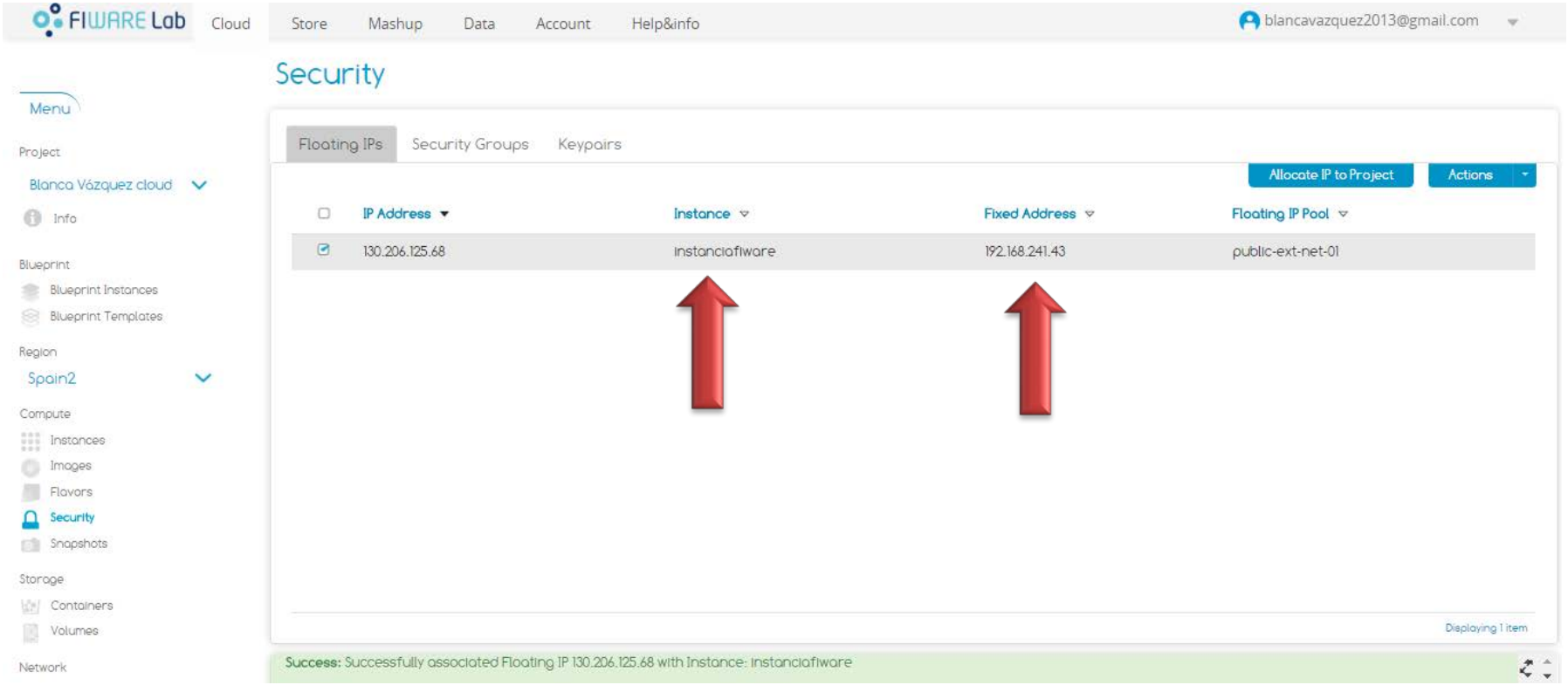
FIWARE Lab: funcionalidades básicas

Asignar una IP



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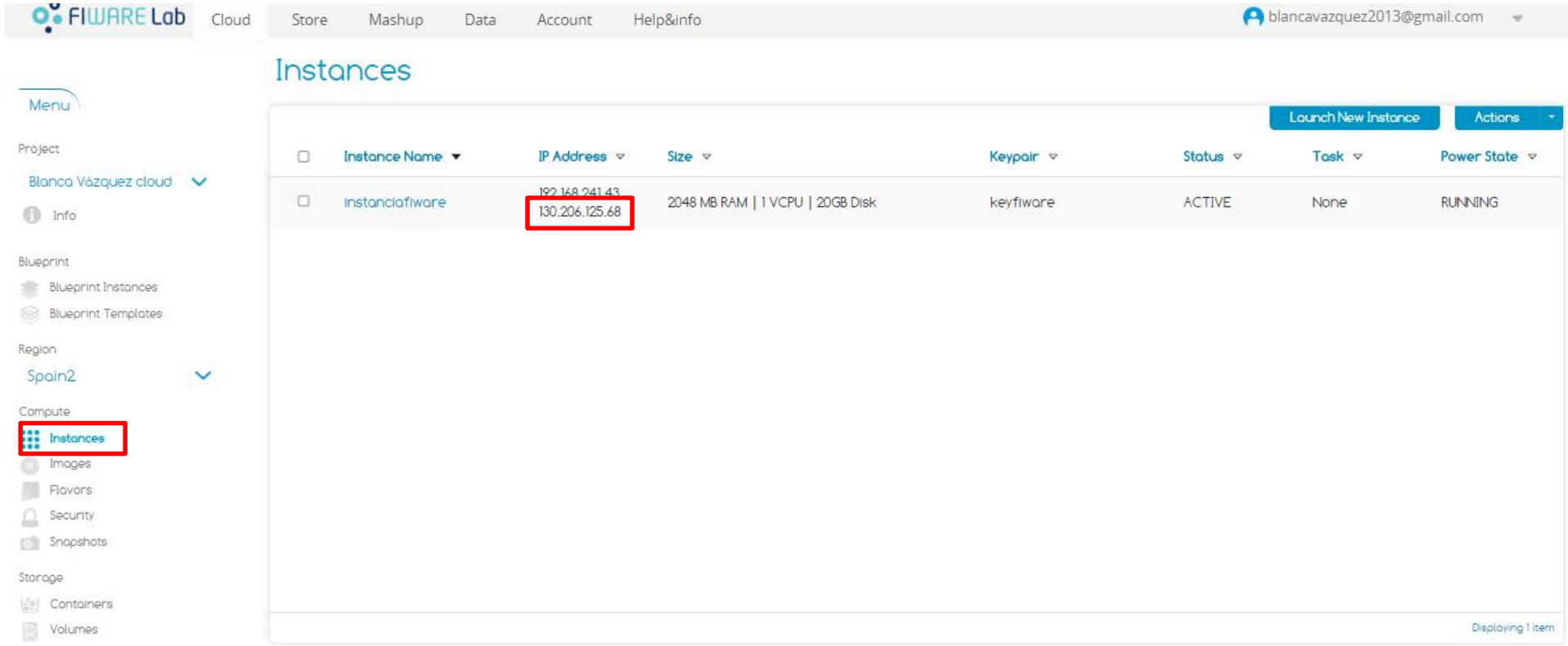
FIWARE Lab: funcionalidades básicas

Acceder a la instancia



Puntos a considerar (en caso de Linux):

- Identificar la IP externa de la instancia

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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)?
```


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FIWARE Lab: funcionalidades básicas

Acceder a la instancia

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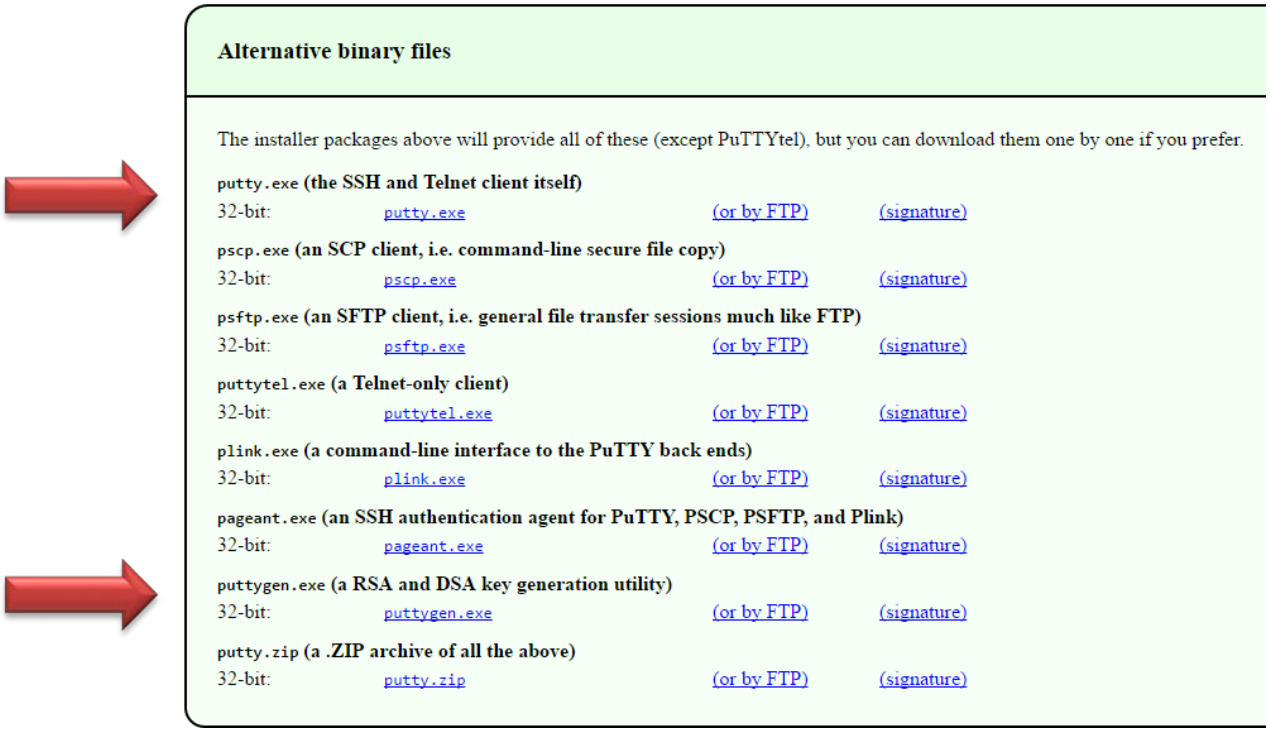
FIWARE Lab: funcionalidades básicas

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



Alternative binary files

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)

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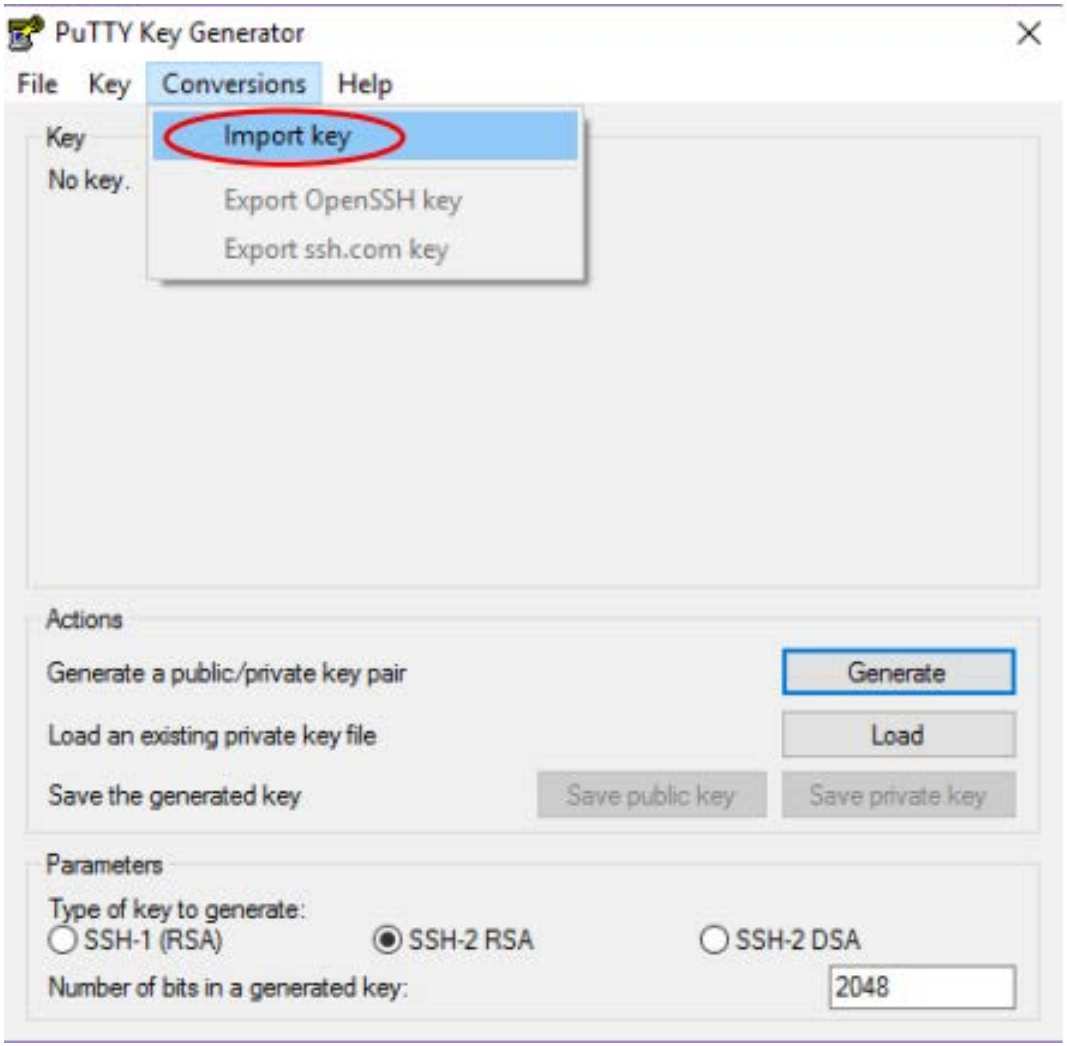
FIWARE Lab: funcionalidades básicas

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



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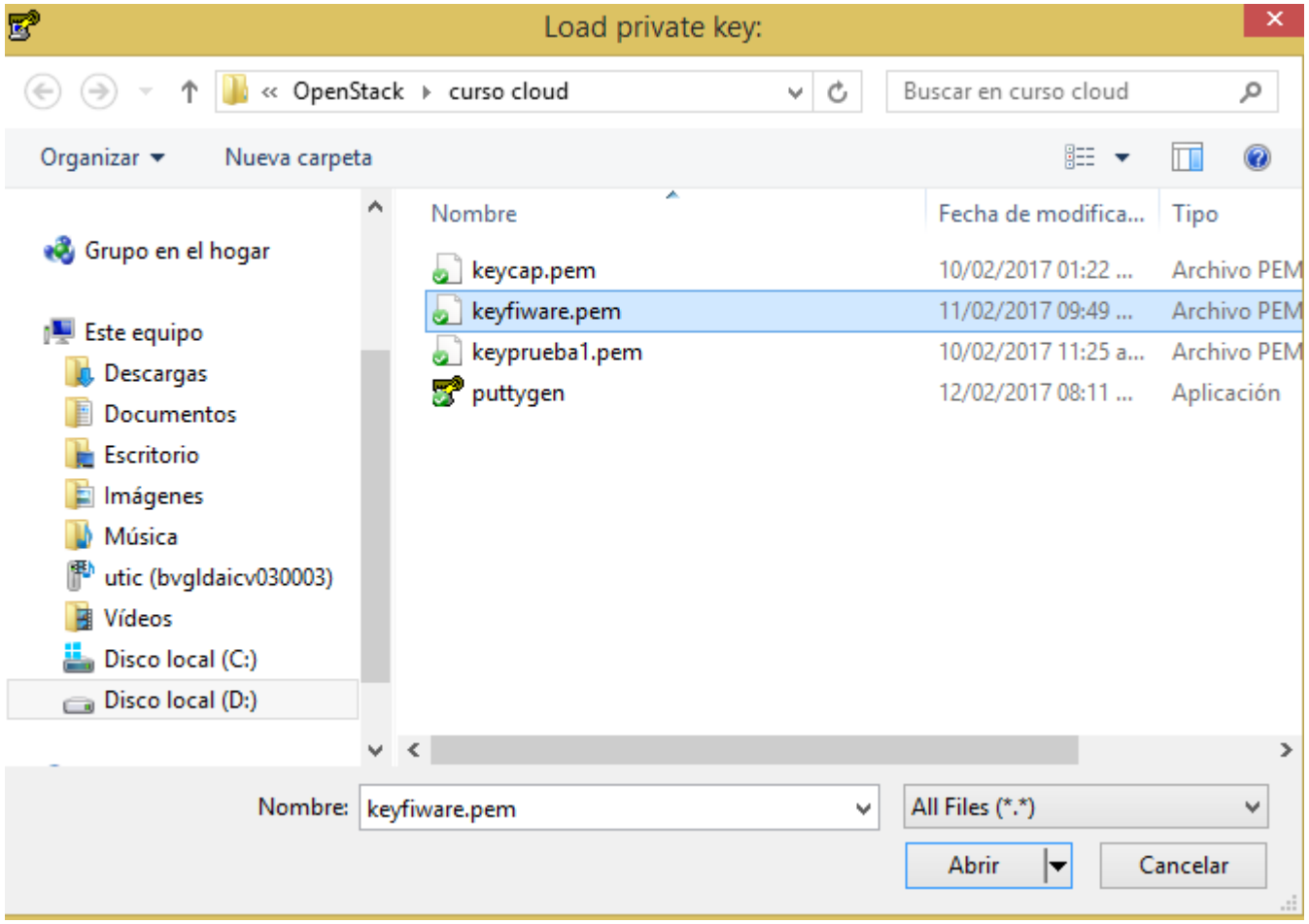
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



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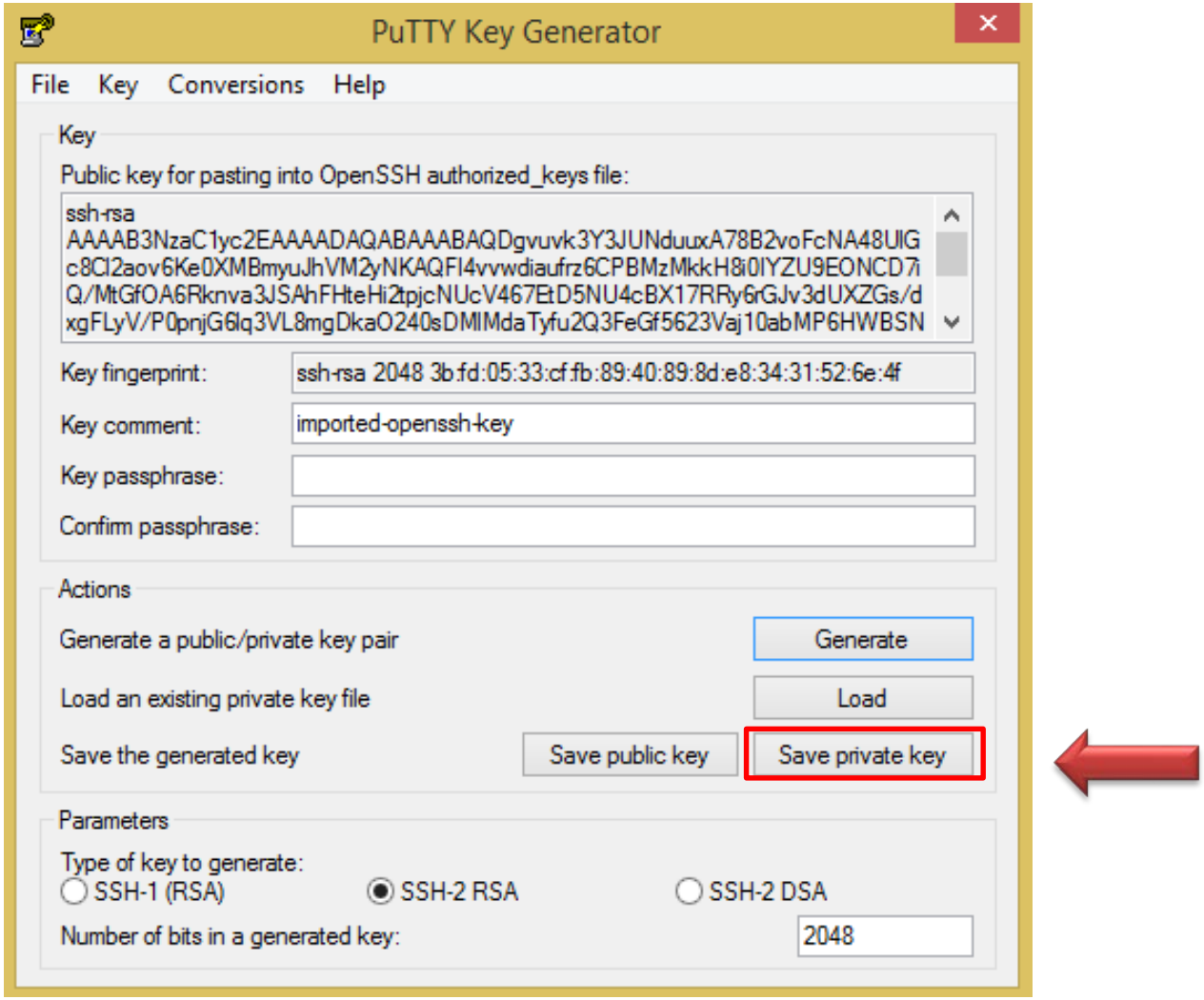
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



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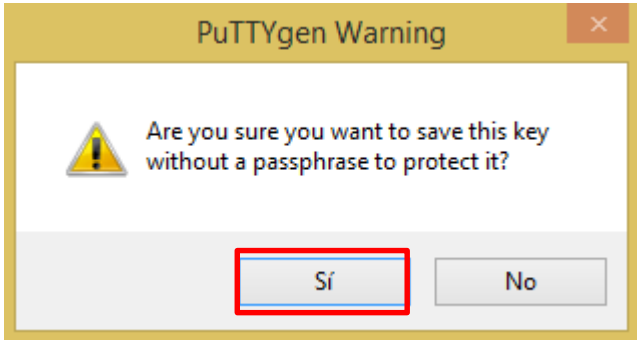
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



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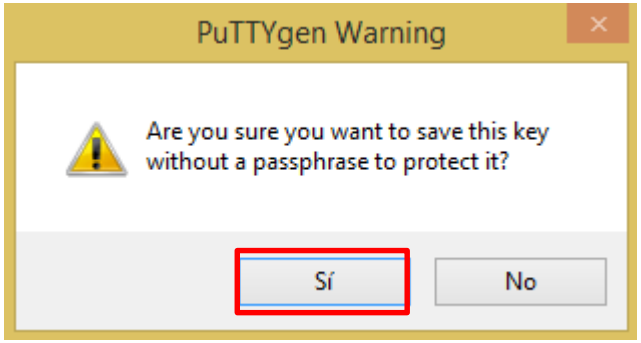
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



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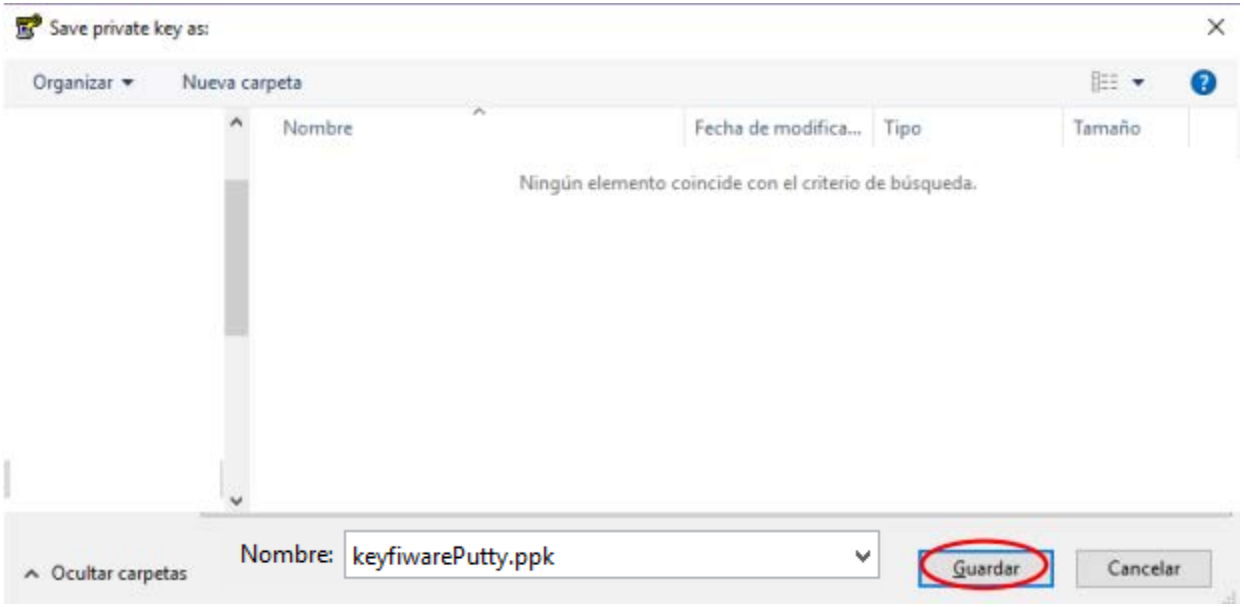
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



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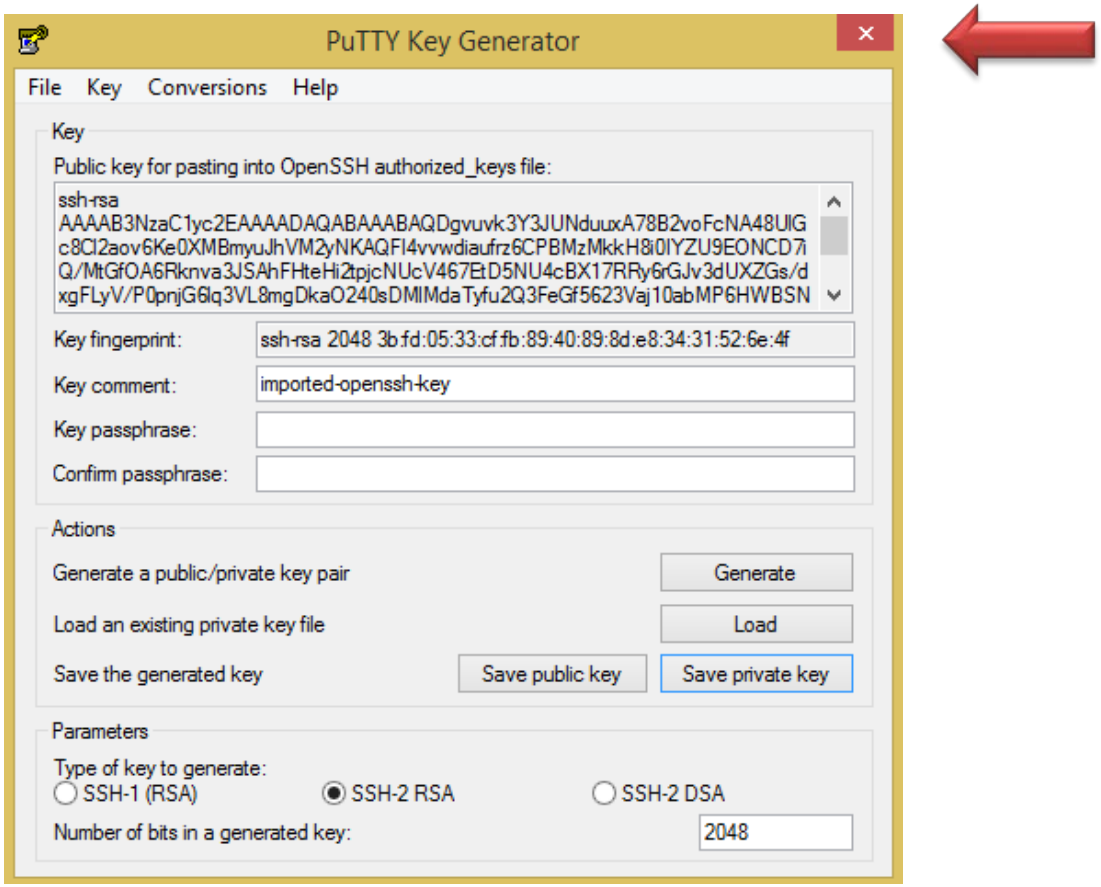
FIWARE Lab: funcionalidades básicas

Generación de la clave para el acceso con PuTTY



El archivo.ppk solamente se genera una sola vez.

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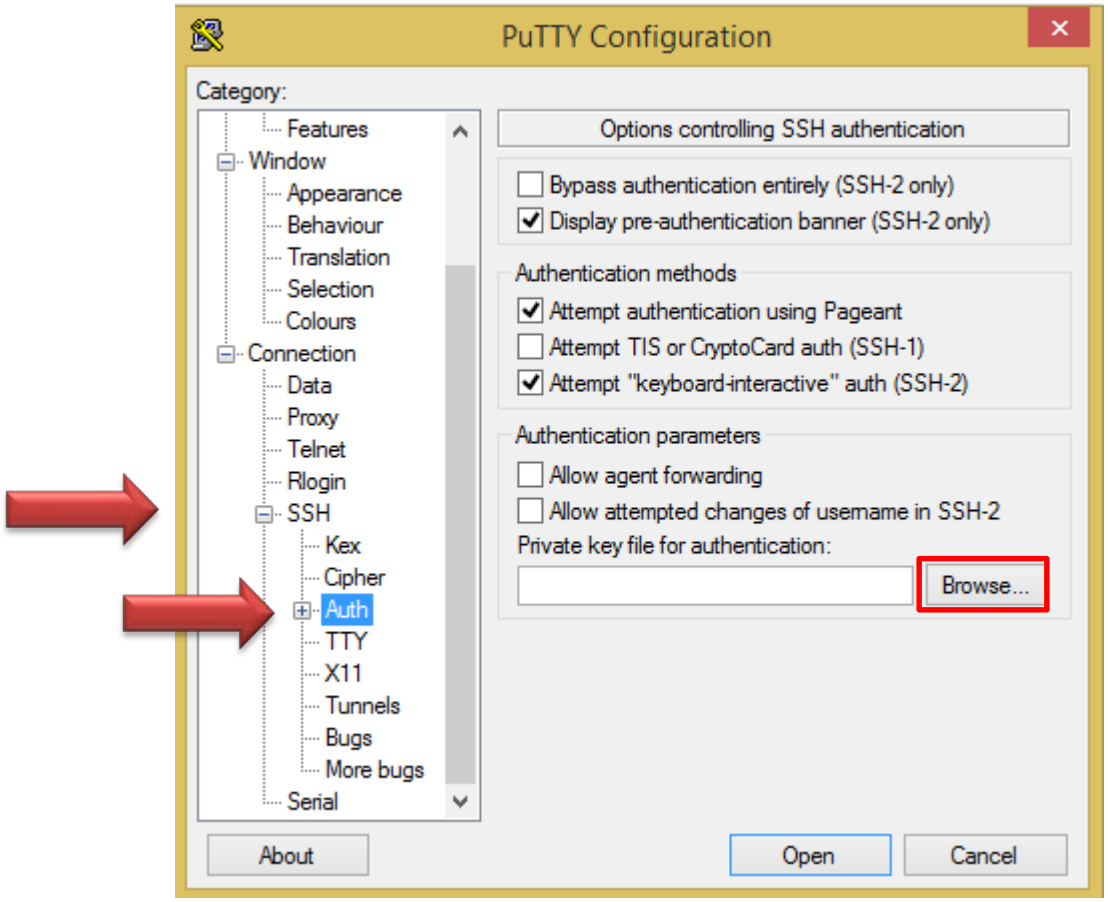
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



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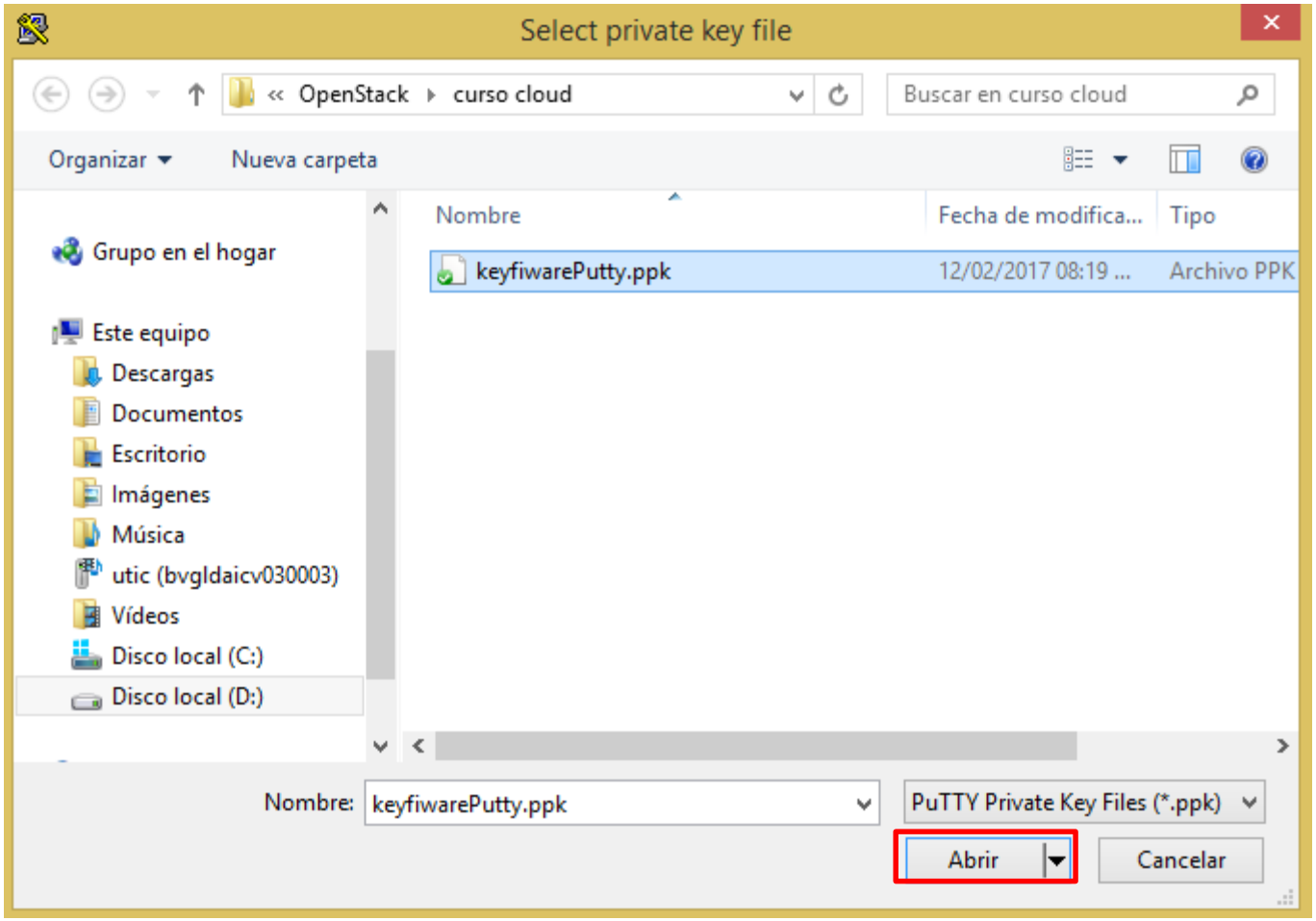
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



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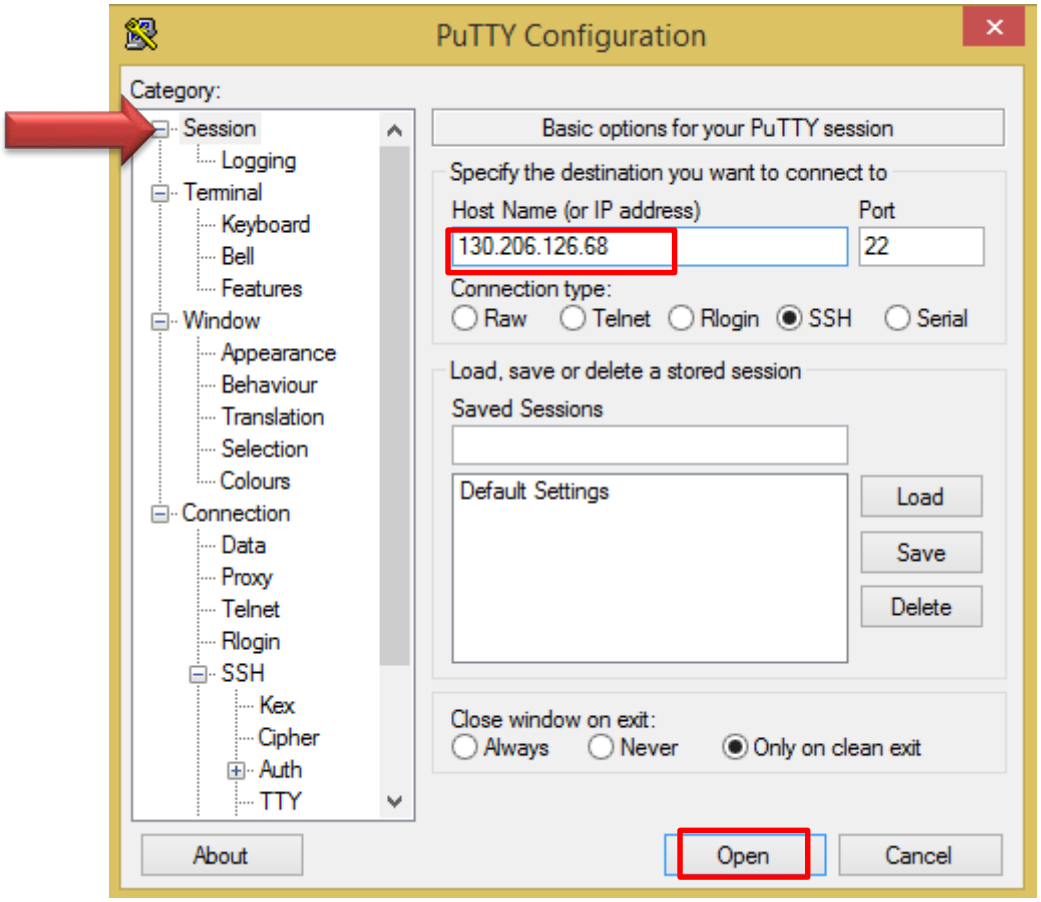
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



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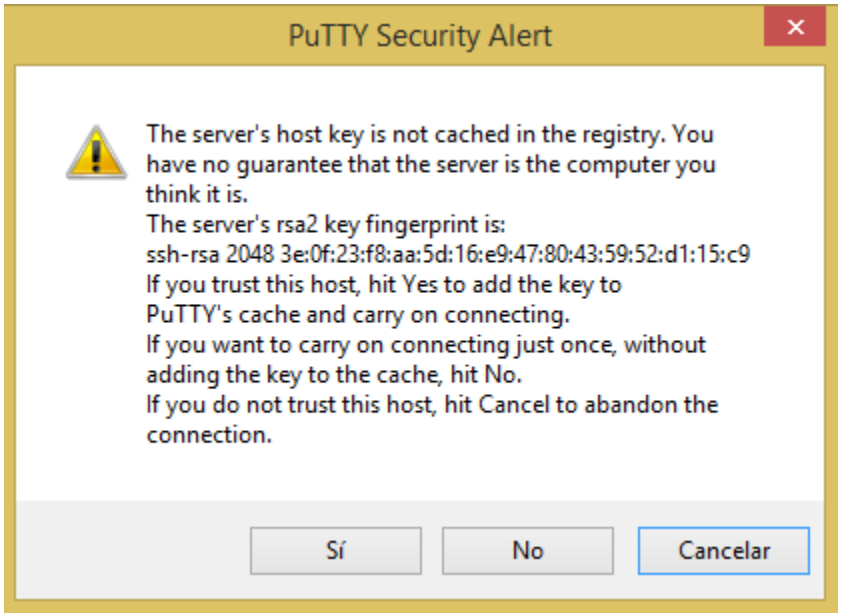
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



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FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY

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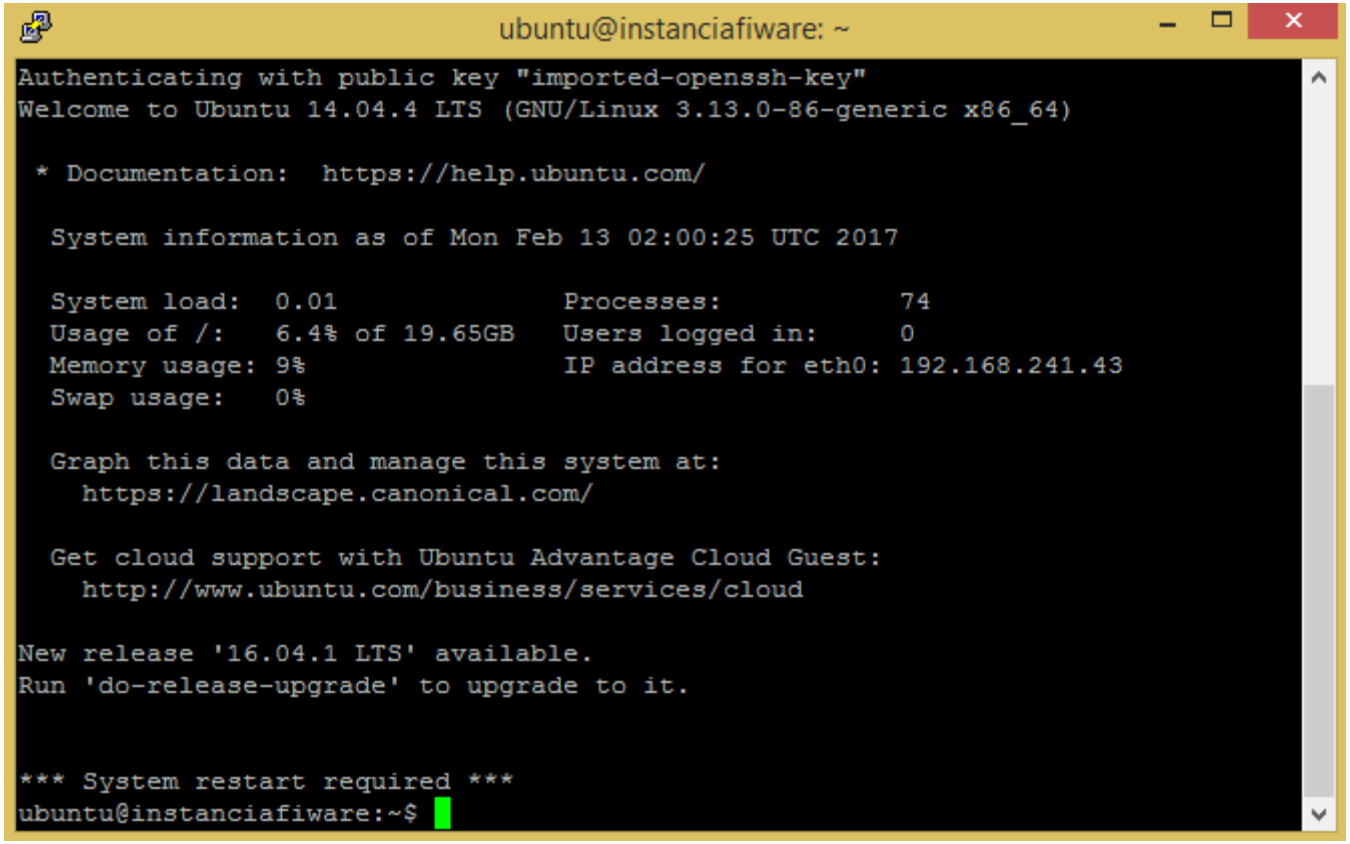
FIWARE Lab: funcionalidades básicas

Acceso a la instancia a través de PuTTY



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3 Información de referencia

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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/

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Thank you

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- www.fiwaremexico.org

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