



FIWARE HANDS-ON

Gradiant

Galician research and development center
in advanced telecommunications

2015

www.gradiant.org

Creación de conta de usuario

https://account.lab.fi-ware.org/users/sign_in

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).

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Name

Email

Password

Confirm password

Captcha

LDDQO

Enter the image value

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FIWARE Lab

Cloud Store Mashup Data Account Help&info

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Email

Password

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Creación de par de claves

The screenshot shows the FIWARE Lab Cloud console interface. The navigation path for creating a keypair is highlighted with red arrows and boxes:

- Cloud** (top navigation bar)
- Security** (left sidebar menu)
- Keypairs** (sub-menu under Security)
- Create Keypair** (button in the top right of the Keypairs section)

The **Create Keypair** modal window is displayed, showing the following fields and options:

- Keypair Name *** (required field, with a text input box containing "Keypair Name")
- Description** (text area with placeholder text: "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.** (note at the bottom left)
- Create Keypair** (button at the bottom right)
- Cancel** (button at the bottom left)

A success message at the bottom of the console reads: "Success: Keypair Orion deleted."

Definición de perfil de seguridad

The screenshot displays the FIWARE Lab Cloud interface. The top navigation bar includes 'Cloud', 'Store', 'Mashup', 'Data', 'Account', and 'Help&info'. The left sidebar shows a tree structure with categories like Project, Region, Compute, and Storage. The 'Security' category is highlighted. The main content area shows the 'Security Groups' section with a table listing existing groups (Name, Description). A 'Create Security Group' button is visible. A modal form titled 'Create Security Group' is open, showing input fields for 'Name' and 'Description'. The 'Name' field has a validation message: 'Lower case letters, numbers, underscores and hyphens.' The 'Description' field has a validation message: 'This field is required.' The modal also includes a 'Cancel' button and a 'Create Security Group' button. A red error message at the bottom states: 'Error: Wrong values for Keypair. Please try again.'

Cloud

Store Mashup Data Account Help&info

Project

Project Name

gradient-1

Blueprint

Blueprint Instances

Blueprint Templates

Region

Spain

Compute

Instances

Images

Flavors

Security

Snapshots

Storage

Containers

Volumes

Security

Floating IPs

Security Groups

Keypairs

Create Security Group

Actions

Name

Description

default

default

Create Security Group

Name *

Lower case letters, numbers, underscores and hyphens.

Description *

This field is required.

* Mandatory fields.

Cancel

Create Security Group

Deploying 1 item

Error: Wrong values for Keypair. Please try again.

Edición de perfil de seguridade (apertura de portos)

The screenshot shows the FIWARE Lab Cloud interface. The left sidebar contains a navigation menu with items like Project, Region, Compute, and Storage. The 'Security' item is highlighted. The main content area shows the 'Security' section with a 'Floating IPs' tab. A table lists security groups: 'default' and 'testing'. The 'testing' group is selected, and the 'Actions' dropdown menu is open, showing 'Edit Rules'. A modal window titled 'Edit Security Group Rules' is displayed, showing a table of existing rules and a form to add a new rule.

IP Protocol	From Port	To Port	Source	Action
TCP	22	22	0.0.0.0/0 (CIDR)	Delete Rule
TCP	1026	1026	0.0.0.0/0 (CIDR)	Delete Rule
TCP	80	80	0.0.0.0/0 (CIDR)	Delete Rule

Displaying 3 items

Add Rule

IP Protocol: TCP, From Port: Required field, To Port: Required field, Source Group: CIDR, CIDR: 0.0.0.0/0

* Mandatory fields.

Close Add Rule

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Creación de instancia (II)

The image displays four sequential screenshots of the OpenStack 'Launch Instances' wizard, illustrating the steps to create a new instance. Red boxes and arrows highlight the progression from step 1 to step 4.

Step 1: Details

- InstanceName ***: A text input field.
- Flavor**: A dropdown menu showing 'ml.tiny'.
- Instance Count**: A text input field with '1'.
- Description**: A text area for specifying details.
- Flavor Details**: A table showing resources for the selected flavor.
- Project Quotas**: A table showing available resources.
- Next**: A button to proceed to the next step.

Name	ml.tiny
VCPUs	1
Root Disk	0 GB
Ephemeral Disk	0 GB
Total Disk	0 GB
RAM	512 MB

Resource	Available
Instance Count (0)	3 Available
VCPUs (0)	6 Available
Disk (0 GB)	50 GB Available
Memory (0 MB)	25000 MB Available

Step 2: Access & Security

- Keypair**: A dropdown menu showing 'Select a keypair'.
- Security Groups**: A list of security groups with checkboxes for 'default' and 'ssh'.
- Add new Security Group**: A button to add a new security group.
- Next**: A button to proceed to the next step.

Step 3: Post-Creation

- Customization Script**: A text area for entering a script.
- Description**: A text area for specifying details.
- Next**: A button to proceed to the next step.

Step 4: Summary

- Instance Name**: Ubuntu
- Image**: Ubuntu Server 14.04.1 (x64)
- Flavor**: ml.small
- Instance Count**: 1
- Keypair**: Orion
- Security Group**: ssh
- 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 an external network.
- Launch instance**: A button to launch the instance.

Asignación de IP pública (I)

The screenshot shows the FIWARE Lab Cloud interface. The navigation menu on the left includes Project, Region, Compute, and Storage. The 'Security' section is highlighted. The 'Floating IPs' tab is selected, showing a table with columns for IP Address, Instance, and Floating IP Pool. A modal window titled 'Allocate Floating IP' is open, displaying a dropdown for the pool (set to 'net8300'), a description, and project quotas. The 'Allocate IP' button is highlighted.

Cloud

Store Mashup Data Account Help&Info

Gradiant

Project

Project Name

gradiant-1

Blueprint

Blueprint Instances

Blueprint Templates

Region

Spain

Compute

Instances

Images

Flavors

Security

Snapshots

Storage

Containers

Volumes

Security

Floating IPs

Security Groups

Keypairs

Allocate IP to Project

Actions

IP Address

Instance

Floating IP Pool

Allocate Floating IP

Pool

net8300

Description

Allocate a floating IP from a given floating ip pool.

Project Quotas

Floating IP (0)

1 Available

Cancel

Allocate IP

Success: Instance Orion.testing launched.

Displaying 0 items

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Edición de Blueprint

FIWARE Lab Cloud Store Mashup Data Account Help&info

Project Name
gradiant-1

Blueprint
Blueprint Instances

Region

Blueprint Templates / Orion

Tools Add Tier

Create Tier

1. Details 2. Install Software

Name *:

Region: Spain

Flavor *: m1.small (1VCPU / 10GB Disk / 2048MB R)

Image *: CentOS-6.5init

Icon: View

Keypair: keyOrion

Public IP: ☒

Modify the minimum and maximum instances number in the textboxes. Drag the white circle to modify the initial instances number.

* Mandatory fields.

Cancel Next

Create Tier

Software in Tier

orion 0.13.0

Software in Catalogue

R 3.0.2
apache2 4.0
ceph 3.2.0
cygnus 0.5
django 1.5.5
git 1.7
marketplace 3.2.1 marketplace-ri

* Mandatory fields.

Back Create tier

Publicación en Orion Context Broker (I)

Entity Creation

```
(curl localhost:1026/v1/updateContext -s -S --header 'Content-Type: application/json' --header 'Accept: application/json' -d @- | python -mjson.tool) <<EOF
```

```
{
  "contextElements": [
    {
      "type": "Room",
      "isPattern": "false",
      "id": "Room1",
      "attributes": [
        {
          "name": "temperature",
          "type": "float",
          "value": "23"
        },
        {
          "name": "pressure",
          "type": "integer",
          "value": "720"
        }
      ]
    }
  ],
  "updateAction": "APPEND"
}
EOF
```

entityId="Room1"
entityType="Room"

Attribute 1

Attribute 2

Operation Mode: APPEND

Query Context operation

```
(curl localhost:1026/v1/queryContext -s -S --header 'Content-Type: application/json' --header 'Accept: application/json' -d @- | python -mjson.tool) <<EOF
```

```
{
  "entities": [
    {
      "type": "Room",
      "isPattern": "false",
      "id": "Room1"
    }
  ],
  "attributes": [
    "temperature"
  ]
}
EOF
```

Requesting from entity "Room1" of type "Room"

Requesting attribute name="temperature"

Note:

If you use an **empty attributeList** element in the request the response will include **all the attributes** of the entity.

Publicación en Orion Context Broker (II)

```
{
  "contextElements": [
    {
      "type": "TestSensor",
      "isPattern": "false",
      "id": "Sensor #1",
      "attributes": [
        {
          "name": "lastupdated",
          "value": "10/12/2014 13:43:34",
          "type": "timestamp"
        },
        {
          "name": "temperature",
          "type": "float",
          "value": "23,5"
        },
        {
          "name": "humidity",
          "type": "integer",
          "value": "56"
        }
      ],
      "position": {
        "name": "position",
        "type": "coords",
        "value": "42.231709,-8.7261241",
        "metadata": [
          {
            "name": "location",
            "type": "string",
            "value": "WSG84"
          }
        ]
      }
    },
    {
      "updateAction": "APPEND"
    }
  ]
}
```

Request Maker <http://requestmaker.com/> POST

Request URL: Example: mysite.com

Request Headers: Add

Header: Content-Type	Value: application/json	×
Header: Accept	Value: application/json	×

Request Data: Example: foo=bar&guy=cool

```
{
  "updateAction": "APPEND"
}
```

Submit

Publicación en Orion Context Broker (III)

Request Maker <http://requestmaker.com/> **POST**

Request URL: Example: mysite.com

Request Headers: Add

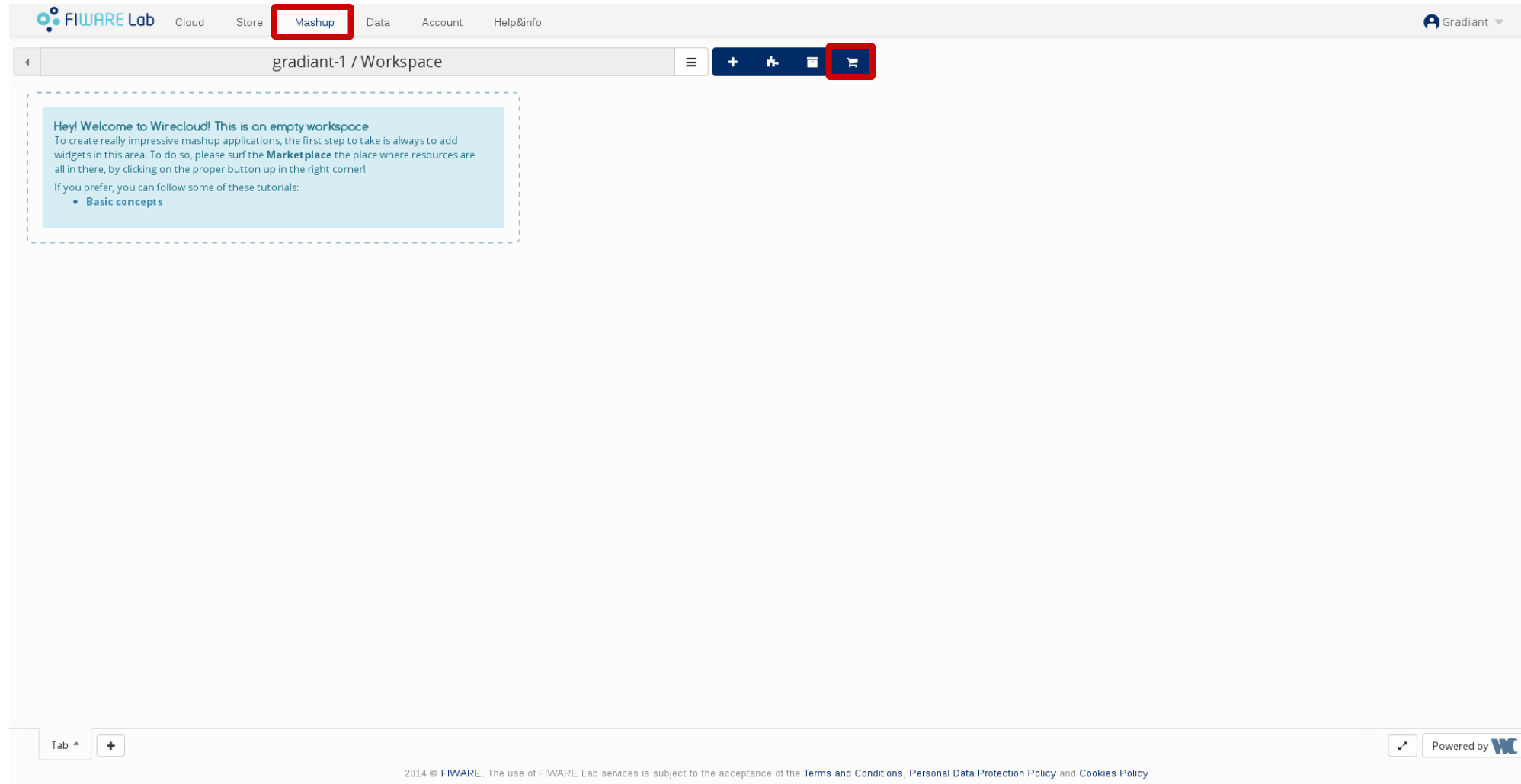
Header:	Content-Type	Value:	application/json	×
Header:	Accept	Value:	application/json	×

Request Data: Example: foo=bar&guy=cool

```
{  
  "entities": [  
    {  
      "type": "TestSensor",  
      "isPattern": "false",  
      "id": "Sensor #1"  
    },  
    {  
      "type": "TestSensor",  
      "isPattern": "false",  
      "id": "Sensor #2"  
    }  
  ],  
  "attributes": [  
  ]  
}
```

Submit

Creación de Mashup en Wirecloud (I)



Creación de Mashup en Wirecloud (II)

FIWARE Lab Cloud Store **Mashup** Data Account Help&Info

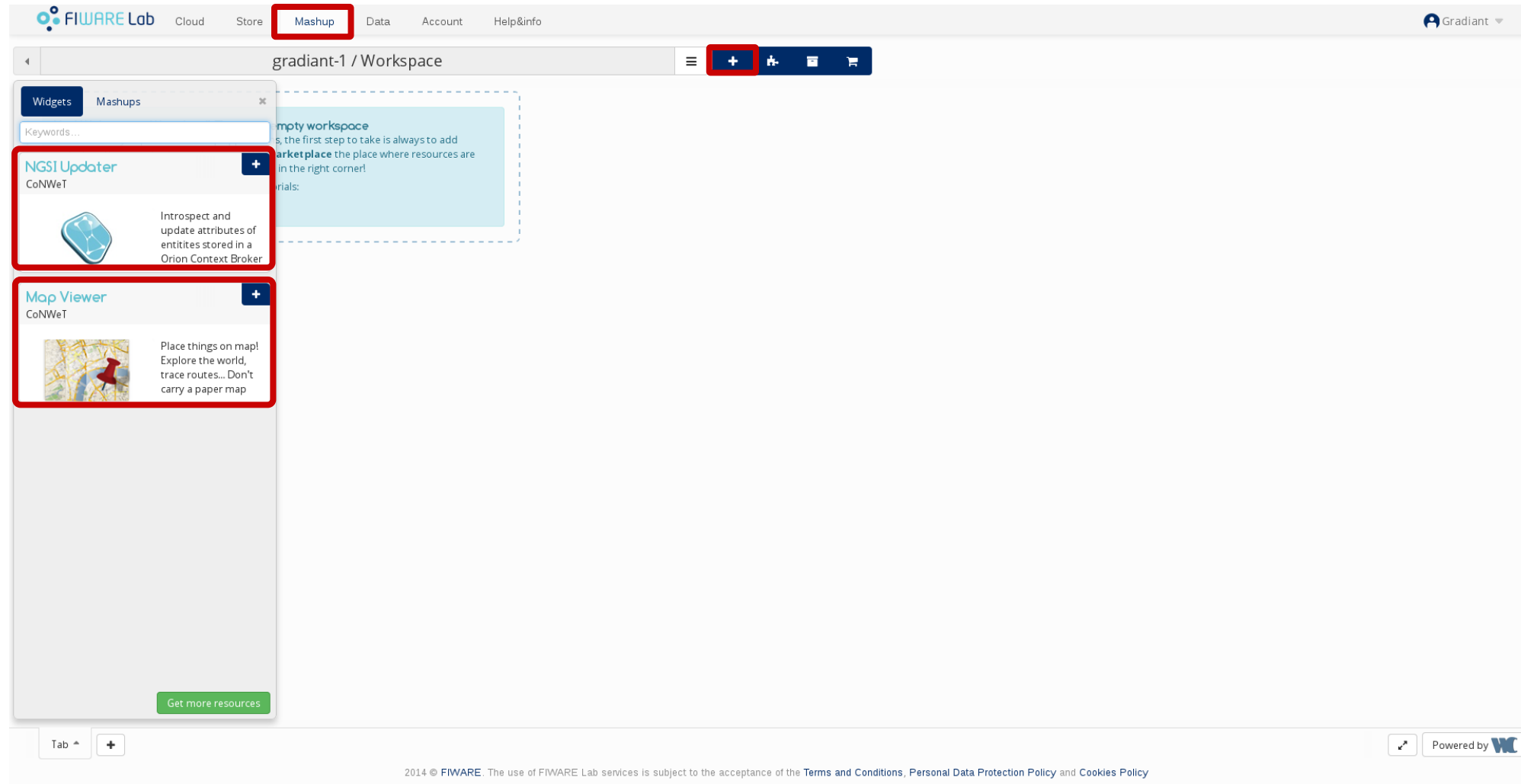
marketplace / FIWARE Lab

Filtering
View All
Keywords:
Keywords...
Store:
All stores

MyLiveDemo other ★★★★★ Details This is a live demo	InputBoxWidget widget ★★★★★ Free A simple widget with an input box	Mines Weeper Wirecloud widget ★★★★★ Free Classic game of Minesweeper. Find all mine!	Map viewer widget ★★★★★ Uninstall Place things on map! Explore the world, trace routes... Don't carry a paper map	Smart City Lights app unknown ★★★★★ Details Smart City Lights is an application that allows the management and
Linear Graph widget ★★★★★ Free Generic linear graph.	History Module to Line operator ★★★★★ Free Produces data from History Mod to feed a line graph.	Photo Viewer widget ★★★★★ Free This widget shows photos from different sources.	Web Map Service widget ★★★★★ Free This widget gives users the ability to handle different map layers.	SecondTry other ★★★★★ Details A second demo app
RoutingDemo widget ★★★★★ Free Routing app	MyRouterAssistant other ★★★★★ Details A Routing application	NavigationDemoApp widget ★★★★★ Free A Navigation demo app	MultimediaPack pack ★★★★★ Free A pack of multimedia Wirecloud widgets	RGBActuator widget ★★★★★ Free A test Widget able to change RGB leds!!!
NGSIInspector widget ★★★★★ Free A testing widget able to get sensors info	Offering Name unknown ★★★★★ Details Beschreibung offering	EntityService operator ★★★★★ Free This operator is an example for the Live Demo and it's used to gather information	EntityToPoi operator ★★★★★ Free This operator transforms entities (Lamp posts, AMMSs and regulators) to	Clock widget ★★★★★ Free Shows analog clock
dlmapi other ★★★★★ Details	GeoWidgets pack ★★★★★ Free Set of Wirecloud widgets and mashups for displaying geospatial	EvolutionOfMadridTr pack ★★★★★ Free This offering contains the access to a dataset describing the evolution of the price	OrionStarterKit pack ★★★★★ Uninstall Offering composed of three mashable application components: ngsi-	ImdeaChat mashup ★★★★★ 1.0 € Chat app created for FI-PPP Liaison
CKAN2 ★★★★★	MadridTransportMas ★★★★★	SmallSignalsSwitch ★★★★★	BerlinChat ★★★★★	LED Panel ★★★★★

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Creación de Mashup en Wirecloud (III)



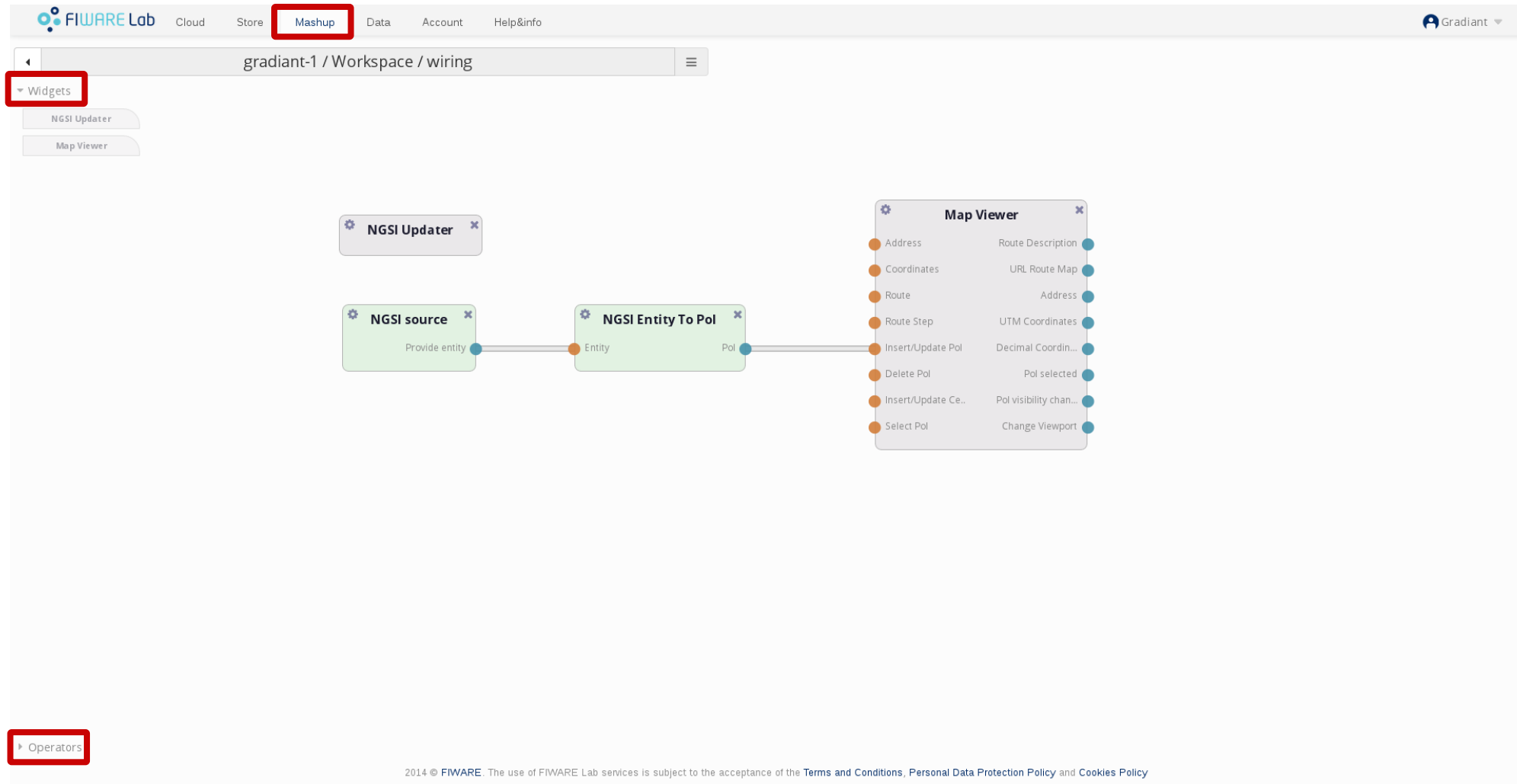
Creación de Mashup en Wirecloud (IV)

The screenshot displays the FIWARE Lab interface for a Mashup workspace named 'gradient-1 / Workspace'. The top navigation bar includes links for Cloud, Store, Mashup, Data, Account, and Help&info. The user 'Gradient' is logged in. The workspace contains two main components:

- NGSI Updater:** A panel for updating data. It features three input fields: 'Entity Id *' (set to 'OUTSMART.NODE_3513'), 'Attribute Name *', and 'Attribute Value *' (set to 'undefined'). An 'Accept' button is located at the bottom.
- Map Viewer:** A map of the Santander region in Spain, showing various towns and roads. The map includes a search bar, a compass, and a scale bar. The map data is sourced from Google Maps, as indicated by the copyright notice at the bottom: 'Datos de mapas ©2014 Google, basado en BDN IGN España'.

The bottom of the interface shows a 'Tab' button and a 'Powered by WC' logo. A footer note states: '2014 © FIWARE. The use of FIWARE Lab services is subject to the acceptance of the Terms and Conditions, Personal Data Protection Policy and Cookies Policy'.

Creación de Mashup en Wirecloud (IV)



Creación de Mashup en Wirecloud (V)

The screenshot shows the FIWARE Lab interface for creating a Mashup. The top navigation bar includes 'Cloud', 'Store', 'Mashup' (highlighted with a red box), 'Data', 'Account', and 'Help&info'. The breadcrumb trail indicates the current location: 'gradient-1 / Workspace / wiring'. On the left, a 'Widgets' panel lists 'NGSI Updater' and 'Map Viewer'. The main workspace displays a wiring diagram with three components: 'NGSI Updater', 'NGSI source' (highlighted with a red box), and 'NGSI Entity To Pol'. The 'NGSI source' widget is connected to the 'NGSI Entity To Pol' widget. An 'Operator Settings' dialog is open, showing configuration fields for the 'Map Viewer' widget. The fields are: 'NGSI server URL' (http://130.206.83.116:1026/), 'NGSI proxy URL' (http://mashup.lab.fi-ware.org:3000/), 'Use the FIWARE credentials of the user' (checked), 'NGSI entity types' (TestSensor), 'Id pattern' (Sensor.*), and 'Monitored NGSI Attributes' (lastupdated, temperature, humidity, position). The dialog has 'Set Defaults', 'Accept', and 'Cancel' buttons at the bottom.

FIWARE Lab Cloud Store **Mashup** Data Account Help&info gradient-1 / Workspace / wiring

Widgets

- NGSI Updater
- Map Viewer

NGSI Updater

NGSI source

NGSI Entity To Pol

Operator Settings

NGSI server URL http://130.206.83.116:1026/

NGSI proxy URL http://mashup.lab.fi-ware.org:3000/

Use the FIWARE credentials of the user ☒

NGSI entity types TestSensor

Id pattern Sensor.*

Monitored NGSI Attributes lastupdated, temperature, humidity, position

Set Defaults Accept Cancel

Operators

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Creación de Mashup en Wirecloud (V)

The screenshot displays the FIWARE Lab Wirecloud interface. The top navigation bar includes 'Cloud', 'Store', 'Mashup' (highlighted with a red box), 'Data', 'Account', and 'Help&info'. The user 'Gradiant' is logged in. The workspace path is 'gradiant-1 / Workspace / wiring'. On the left, a 'Widgets' panel lists 'NGSI Updater' and 'Map Viewer'. The main workspace contains two widgets: 'NGSI Updater' (highlighted with a red box) and 'NGSI source'. A 'Widget Settings' dialog box is open for the 'NGSI Updater' widget. It shows the 'NGSI Server' field set to 'http://130.206.83.116:1026/' and the 'EntityId Filter' field set to 'Sensor.*', both highlighted with red boxes. The dialog has 'Set Defaults', 'Accept', and 'Cancel' buttons. The 'NGSI source' widget is connected to the 'NGSI Updater' widget via a 'Provide entity' connection point. The bottom of the screen shows the FIWARE logo and copyright information.

Uso de KeyRock – Solicitar token de usuario

```
{  
  "auth":{  
    "passwordCredentials":{  
      "username":"$USER",  
      "password":"$PASSWORD"  
    }  
  }  
}
```

Request Maker POST

Request URL: Example: [mysite.com](#)

Request Headers: Add

Header	Value
Content-type	application/json

Request Data: Example: [foo=bar&guy=cool](#)

```
{  
  "auth":{  
    "passwordCredentials":{  
      "username":"$USER",  
      "password":"$PASSWORD"  
    }  
  }  
}
```

Submit

Uso de KeyRock – Solicitar *tenants*

Request Maker

GET

Request URL:

Example: mysite.com

http://cloud.lab.fi-ware.org:4730/v2.0/tenants

Request Headers:

Add

Header: x-auth-token

Value: GYA-PiVoQmSJCd1Ks6kWPMJL-wi

X

Request Data:

Example: foo=bar&guy=cool

Submit

Uso de KeyRock – Solicitar token para un *tenant*

```
{
  "auth":{
    "passwordCredentials":{
      "username":"$USER",
      "password":"$PASSWORD"
    },
    "tenantName":"$TENANT"
  }
}
```

Request Maker POST

Request URL: Example: `mysite.com`
`http://cloud.lab.fi-ware.org:4730/v2.0/tokens`

Request Headers: Add

Header:	Value:
Content-Type	application/json

Request Data: Example: `foo=bar&guy=cool`

```
{
  "auth":{
    "passwordCredentials":{
      "username":"$USER",
      "password":"$PASSWORD"
    },
    "tenantName":"$TENANT"
  }
}
```

Submit

Creación de contedor

Request Maker

PUT

Request URL:

Example: mysite.com

http://130.206.82.9:8080/cdmi/AUTH_000000000000000000000000000008347/

Request Headers:

Add

Header:	Content-Type	Value:	application/cdmi-container	x
Header:	x-auth-token	Value:	7d45df9120bdd8fac0e85e5d31034	x
Header:	Accept	Value:	application/cdmi-container	x

Request Data:

Example: foo=bar&guy=cool

```
{  
  "metadata":{  
  }  
}
```

```
{
  "mimetype": "text/plain",
  "metadata": {
    },
  "value": "Hello CDMI World"
}
```



THANK YOU FOR YOUR ATTENTION

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in advanced telecommunications

2015