

GAEV Project



## Compute Engine

Virtual machines ^

VM instances

Instance templates

Sole-tenant nodes

Machine images

TPUs

Committed use discounts

Migrate for Compute Engi...

## Create a project

The Google Cloud Platform uses projects to manage resources. To use Google Compute Engine, create your first project.

Select a project

Create a project

Project name ?

GAEV

Project ID ?

test-gaev-20210906

Google Compute Engine requires billing to be enabled. You will be guided to set up your billing profile in the next step. [Pricing detail](#)

Create



## Create a new billing account

---

Name \*

GAEV Billing Account

The name of this billing account is only used to help you remember what it is.

Country \*

France

Currency

EUR

**CONTINUE**

CANCEL



## Compute Engine API

Google Enterprise API

Compute Engine API

ENABLE

TRY THIS API [↗](#)

Click to try this API in API Explorer

OVERVIEW

DOCUMENTATION

SUPPORT

### Overview

Creates and runs virtual machines on Google Cloud Platform.

- Compute Engine
- Storage
  - Disks
  - Snapshots
  - Images
- Instance groups
  - Instance groups
  - Health checks
- VM Manager
  - OS patch management
  - OS configuration manage...
- Settings
  - Metadata**
  - Zones
  - Network endpoint groups
  - Operations
  - Security scans
  - Settings

### Metadata

Metadata SSH Keys

All instances in this project inherit these SSH keys. [Learn more](#)

Username ^	Key
djacob	ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDz...dxuLpu1vRE4wQURtInr/Py1U6AqfbDo+f djacob
djacob65	ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDz...uLpu1vRE4wQURtInr/Py1U6AqfbDo+f djacob65

Equivalent [REST](#)

SSH KEY available at the project level

Compute Engine

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Instance groups ^

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VM Manager ^

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- OS configuration manage...

Settings ^

- Metadata
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Settings

Usage export

Daily usage reports export as CSV files to a Cloud Storage location of your choice. A Google Service Account will be granted write access to this location. [Learn more](#)

Enable usage export

Default location

Newly created resources, like VM instances, will be deployed to the selected region and/or zone

Region: europe-west1 (Belgium) Zone: europe-west1-b

Microsoft Licence Mobility verification

If you are using Licence Mobility through Software Assurance, you must complete a licence verification process and Microsoft will ensure that you have the eligible licences with active Software Assurance. To start the verification process please fill in the form below. [Learn more](#)

[Licence Verification Form](#)

Skip confirmation messages

To avoid mistakes, some actions will ask you for confirmation before proceeding. You can skip those prompts by ticking one or more boxes below:

- Start VM instance
- Stop VM instance
- Reset VM instance

SAVE CANCEL

- VPC network
- VPC networks
- External IP addresses
- Bring your own IP
- Firewall**
- Routes
- VPC network peering
- Shared VPC
- Serverless VPC access
- Packet mirroring

### Firewall

[+ CREATE FIREWALL RULE](#)
[REFRESH](#)
[CONFIGURE LOGS](#)
[DELETE](#)

**web**

Description

**Logs**  
Turning on firewall logs can generate a large number of logs which can increase costs in Cloud Logging. [Learn more](#)

On  
 Off

**Network**  
default

Priority \*  
1000 [CHECK PRIORITY OF OTHER FIREWALL RULES](#)

Priority can be 0-65535

**Direction**  
Ingress

**Action on match**  
Allow

**Targets**  
Specified target tags

**Target tags**  
https-server http-server

**Source filter**  
IP ranges

**Source IP ranges \***  
0.0.0.0/0 for example, 0.0.0.0/0, 192.168.2.0/24

**Second source filter**  
None

**Protocols and ports**

Allow all  
 Specified protocols and ports

tcp : 80,443  
 udp : all  
 Other protocols  
 protocols, comma separated, e.g. ah, sctp

[DISABLE RULE](#)  
[SAVE](#) [CANCEL](#)

### Project info

Project name  
GAEV

Project ID  
test-gaev-20210906

Project number  
188926165780

[ADD PEOPLE TO THIS PROJECT](#)

→ [Go to project settings](#)

### Monitoring

[Create my dashboard](#)

[Set up alerting policies](#)

[Create uptime checks](#)

[View all dashboards](#)

→ [Go to Monitoring](#)

### Getting started

- [API](#) Explore and enable APIs
- [Deploy a prebuilt solution](#)
- [Add dynamic logging to a running application](#)
- [Monitor errors with Error Reporting](#)
- [Deploy a "Hello World" app](#)
- [Take a VM quickstart](#)
- [Create a Cloud Storage bucket](#)
- [Create a Cloud Function](#)
- [Install the Cloud SDK](#)

→ [Explore all tutorials](#)



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- Kubernetes Engine
- VMware Engine
- SERVERLESS
- Cloud Run
- Cloud Functions
- App Engine
- STORAGE
- Filestore
- Cloud Storage
- Data Transfer

Create a Bucket

1- Preparing the storage space

Name your bucket

Pick a globally unique, permanent name. [Naming guidelines](#)

img\_bucket\_1

Tip: Don't include any sensitive information

CONTINUE

Choose where to store your data

This permanent choice defines the geographic placement of your data and affects cost, performance and availability. [Learn more](#)

Location type

- Multi-region  
Highest availability across largest area
- Dual-region  
High availability and low latency across 2 regions
- Region  
Lowest latency within a single region

Location

europa-west1 (Belgium)

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Create a Bucket

Choose a default storage class for your data

A storage class sets costs for storage, retrieval and operations. Pick a default storage class based on how long you plan to store your data and how often it will be accessed. [Learn more](#)

- Standard Best for short-term storage and frequently accessed data
- Nearline Best for backups and data accessed less than once a month
- Coldline Best for disaster recovery and data accessed less than once a quarter
- Archive Best for long-term digital preservation of data accessed less than once a year

CONTINUE

Choose how to control access to objects

Prevent public access

Restrict data from being publicly accessible via the Internet. Will prevent this bucket from being used for web hosting. [Learn more](#)

- Enforce public access prevention on this bucket

Access control

- Uniform Ensure uniform access to all objects in the bucket by using only bucket-level permissions (IAM). This option becomes permanent after 90 days. [Learn more](#)
- Fine-grained Specify access to individual objects by using object-level permissions (ACLs) in addition to your bucket-level permissions (IAM). [Learn more](#)

CONTINUE

- Browser
- Monitoring
- Settings

### User account HMAC

You can authenticate yourself when making requests to Cloud Storage using access keys tied to your user account instead of your organisation's service accounts. With this option, members of your organisation maintain their own access keys and set their own default projects. Note that service account HMAC authentication is recommended for production workloads, to reduce administrative oversight and ensure continuity. [Learn more](#)

### Default project for interoperable access

The Interoperability API uses your default project for all create bucket and list bucket requests made from your user account.

✔ test-gaev-20210906 is your default project for interoperable access

### Access keys for your user account

Access key	Secret
GOOGPYALB7SWLGQ7SNTJZCW	Sbej0608xVtoIvKSIZAK

CREATE A KEY

2 - Place the VM file in the storage space

Google Cloud Platform GAEV

Cloud Storage Bucket details REFRESH

Browser **img\_bucket\_1**

Monitoring

Settings

Objects CONFIGURATION PERMISSIONS RETENTION LIFECYCLE

Buckets > img\_bucket\_1

UPLOAD FILES UPLOAD FOLDER CREATE FOLDER MANAGE HOLDS DOWNLOAD DELETE

Filter by name prefix only Filter Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created time ?	Storage class	Last modified	Public access ?	Encryption ?	Retention expiry date ?	Holds ?
No rows to display										

Filter by name prefix only Filter Filter objects and folders

<input type="checkbox"/>	Name	Size	Type	Created time ?	Storage class	Public access ?	Retention expiry date ?
<input type="checkbox"/>	box-disk001.vmdk	3.3 GB	application/x-virtualbox-vmdk	6 Sep 2021, 17:20:...	Coldline	Not public	—

VMDK  
Final Box





Buckets > img\_bucket\_1 > box-disk001.vmdk

Overview

Type	application/x-virtualbox-vmdk
Size	3.3 GB
Created	6 Sep 2021, 17:20:16
Last modified	6 Sep 2021, 17:20:16
Storage class	Coldline
Custom time	—
Public URL ?	Not applicable
Authenticated URL ?	<a href="https://storage.cloud.google.com/img_bucket_1/box-disk001.vmdk">https://storage.cloud.google.com/img_bucket_1/box-disk001.vmdk</a>
gsutil URI ?	gs://img_bucket_1/box-disk001.vmdk

Permission

Public access	Not public
---------------	------------

Protection

Hold status	None
Retention policy	None
Encryption type	Google-managed key

- Compute Engine
  - Sole-tenant nodes
  - Machine images
  - TPUs
  - Committed use discounts
  - Migrate for Compute Engi...
- Storage
  - Disks
  - Snapshots
  - Images**
- Instance groups
  - Instance groups
  - Health checks

### Create an image

Name <sup>?</sup>  
Name is permanent  
jupyterhub-img

Source <sup>?</sup>  
Virtual disk (VMDK, VHD)

Cloud Storage file <sup>?</sup>  
 img\_bucket\_1/box-disk001.vmdk Browse

Operating system on virtual disk  
Ubuntu 18.04 Bionic

Install guest packages  
Allow Compute Engine to install guest packages to ensure that the image will be bootable. [Learn more](#).

Family (Optional) <sup>?</sup>

Description (Optional)

**⚠️ To complete this process, GCP will create temporary resources in your current project. [Learn more about pricing and other details](#)**

**⚠️ Note: The import tool uses Cloud Build API, which must be enabled in your project. In addition, the Cloud Build service account must have permissions to create and manage resources in your project, and to access the source Cloud Storage file.**

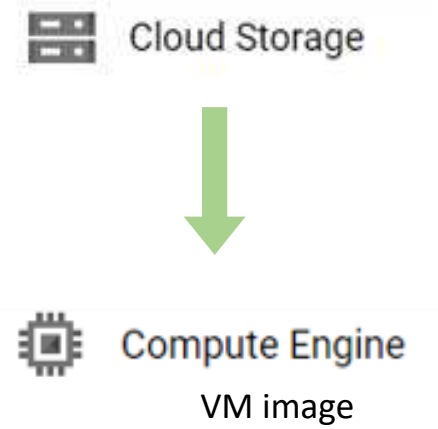
Labels <sup>?</sup> (Optional)

You will be billed for this image. [Compute Engine pricing](#)

Create Cancel

### 3 - Create a VM image from storage space

VMDK  
Final Box



### Compute Engine

- Sole-tenant nodes
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- Migrate for Compute Engi...
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- Instance groups
  - Instance groups
  - Health checks

IMAGES IMAGE IMPORT HISTORY IMAGE EXPORT HISTORY

Filter Enter property name or value ?  Show deprecated images ||

<input type="checkbox"/>	Status	Name	Location	Disk size	Created by	Family	Actions
<input type="checkbox"/>	<span style="color: green;">✔</span>	jupyterhub-img	eu	18 GB	test-gaev-20210906		⋮

**jupyterhub-img**


- Description** Image created by Daisy in workflow "translate" on behalf of root.
- Source disk** disk-w2x2m-1
- Location** eu (European Union)
- Labels** gce-image-import : true
- Creation time** Sep 6, 2021, 5:40:16 pm UTC+02:00
- Encryption type** Google-managed

4 - Create an instance of the VM image



IMAGES IMAGE IMPORT HISTORY IMAGE EXPORT HISTORY

Filter Enter property name or value Show deprecated images

Status	Name	Location	Disk size	Created by	Family	Actions
<input checked="" type="checkbox"/>	jupyterhub-img	eu	18 GB	test-gaev-20210906		 + Create instance - Deprecate



← Create an instance

To create a VM instance, select one of the options:

**New VM instance**  
Create a single VM instance from scratch

**New VM instance from template**  
Create a single VM instance from an existing template

**New VM instance from machine image**  
Create a single VM instance from an existing machine image

**Marketplace**  
Deploy a ready-to-go solution onto a VM instance

**Name** Name is permanent **VM NAME**

**Labels** (Optional)

**Region** Region is permanent **Zone** Zone is permanent **ZONE**

**Machine configuration**

**Machine family**  
 General-purpose **Compute-optimised** Memory-optimised  
 High-performance machine types for compute-intensive workloads

**Series**  
 C2  
 Powered by Intel Cascade Lake CPU platform **MACHINE TYPE**

**Machine type**

	vCPU	Memory	GPUs
	4	16 GB	-

⌵ CPU platform and GPU

**\$135.98 monthly estimate**  
 That's about \$0.186 hourly  
 Pay for what you use: No upfront costs and per second billing

Item	Estimated costs
4 vCPUs + 16 GB memory	\$167.68/month
18 GB balanced persistent disk	\$1.80/month
Sustained-use discount	- \$33.50/month
<b>Total</b>	<b>\$135.98/month</b>

[Compute Engine pricing](#)

⬆ Less

Confidential VM service  
 Enable the Confidential Computing service on this VM instance.

Container  
 Deploy a container image to this VM instance. [Learn more](#)

Boot disk

New 18 GB balanced persistent disk  
Image  
jupyterhub-img

**VMDK  
Final Box**

[Change](#)

Identity and API access

Service account  
Compute Engine default service account

Access scopes

- Allow default access
- Allow full access to all Cloud APIs
- Set access for each API

**API access**

Firewall  
Add tags and firewall rules to allow specific network traffic from the Internet.

- Allow HTTP traffic
- Allow HTTPS traffic

Input/Output  
Traffic for  
Firewall rules

Management Security Disks **Networking** Sole Tenancy

Network tags (Optional)

https-server ✕
http-server ✕

Hostname  
Set a custom hostname for this instance or leave it default. Choice is permanent

jupyterhub-vm.europe-west1-b.c.test-gaev-20210906.internal

Network interfaces  
Network interface is permanent

default default (10.132.0.0/20)
✎

+ Add network interface

**i** To create another network interface you need to have a new network first.

[^](#) Less

Same Tags as  
the firewall  
rules

You will be billed for this instance. [Compute Engine pricing](#)

Create
Cancel

Launch the  
creation

## Compute Engine

Virtual machines ^

VM instances

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Storage ^

Disks

Snapshots

Images

INSTANCES

INSTANCE SCHEDULE

VM instances are highly configurable virtual machines for running workloads on Google infrastructure. [Learn more](#)

Filter Enter property name or value

<input type="checkbox"/>	Status	Name ↑	Zone	Internal IP	External IP	Connect
<input type="checkbox"/>	✓	jupyterhub-vm	europe-west1-b	10.132.0.6 (nic0)	34.78.153.200	SSH

### Related actions

DISMISS

#### View billing report

View and manage your Compute Engine billing

#### Monitor VMs

View outlier VMs across metrics like CPU and network

#### Explore VM logs

View, search, analyse and download VM instance logs

#### Set up firewall rules

Control traffic to and from a VM instance

#### Patch management

Schedule patch updates and view patch compliance on VM instances



Windows 10 Pro / 64bits



Cygwin 3.2.0-1

Vagrant SSH Key



```

vagrant@jupyterhub-vm: ~
$ ssh-add -l
2048 SHA256:3X1QLpIGsJa70FZEbWn3P4+I1x72QMElMJCzFLc0yFA /home/djacob/.ssh/id_rsa (RSA)
2048 SHA256:1M4RzhMyWuFS/86uPY/ce2prh/dVTHW71D2Rhpqu0ZA /cygdrive/c/Users/djaco.GAIA/.vagrant.d/insecure_private_key (RSA)

djacob@GAIA /cygdrive/c/VirtualMach/Vagrant/jupyterhub
$ ssh vagrant@34.78.153.200
The authenticity of host '34.78.153.200 (34.78.153.200)' can't be established.
ED25519 key fingerprint is SHA256:DQtiirmrrod1HPObuD57X+JVjpL11A9E8K/PWLWmMkU.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '34.78.153.200' (ED25519) to the list of known hosts.
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 4.15.0-112-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

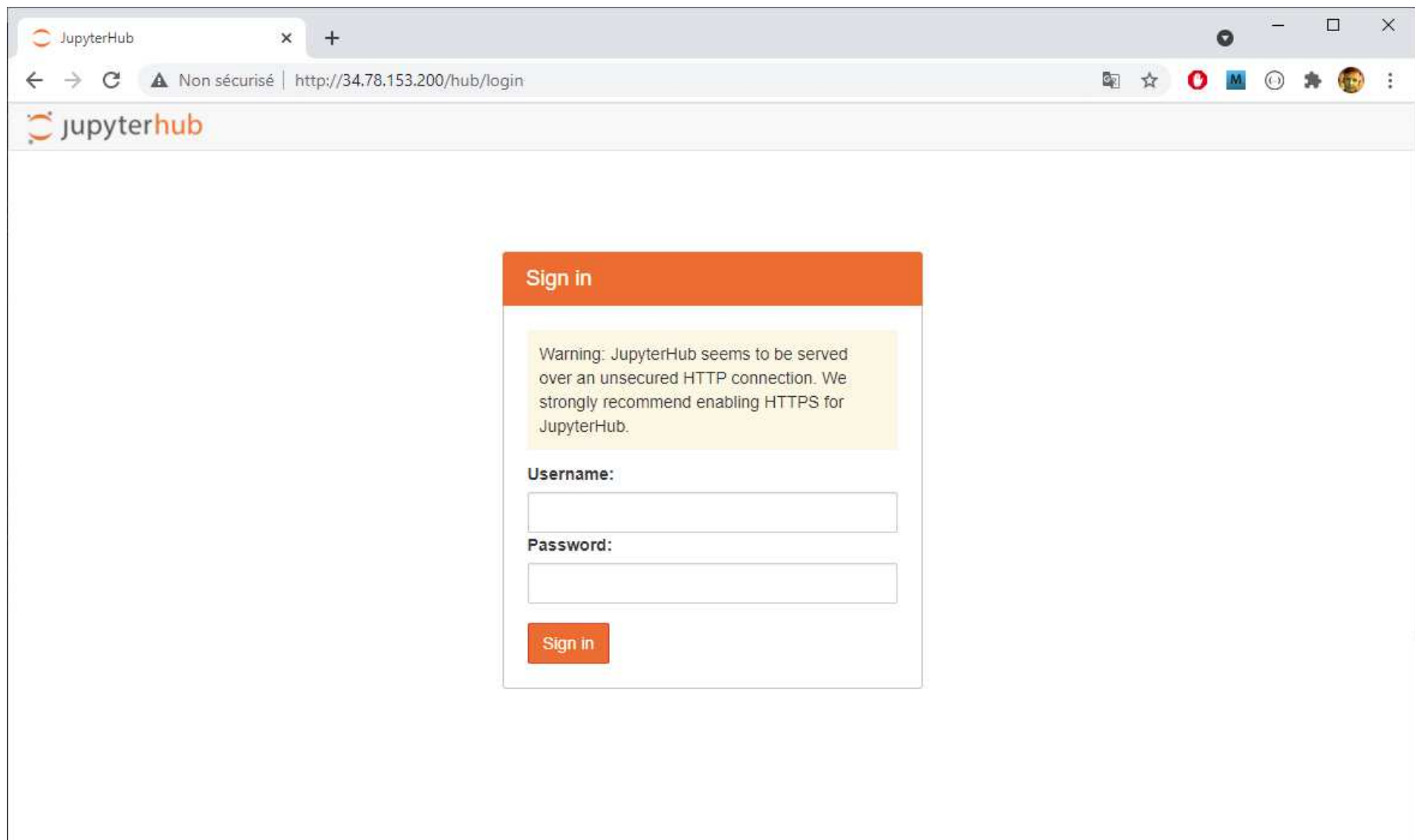
 * Super-optimized for small spaces - read how we shrank the memory
   footprint of MicroK8s to make it the smallest full K8s around.

   https://ubuntu.com/blog/microk8s-memory-optimisation
New release '20.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

vagrant@jupyterhub-vm:~$
vagrant@jupyterhub-vm:~$ /usr/local/bin/get-hostname
10.132.0.6
vagrant@jupyterhub-vm:~$
vagrant@jupyterhub-vm:~$ vi /usr/local/bin/get-hostname
vagrant@jupyterhub-vm:~$
vagrant@jupyterhub-vm:~$ sudo vi /usr/local/bin/get-hostname
vagrant@jupyterhub-vm:~$ /usr/local/bin/get-hostname
34.78.153.200
vagrant@jupyterhub-vm:~$
vagrant@jupyterhub-vm:~$ systemctl restart jupyterhub.service
Failed to restart jupyterhub.service: The name org.freedesktop.PolicyKit1 was not provided by any .service files
See system logs and 'systemctl status jupyterhub.service' for details.
vagrant@jupyterhub-vm:~$ sudo systemctl restart jupyterhub.service
vagrant@jupyterhub-vm:~$

```

Here, a manual intervention is necessary, because the IP address found by default is the internal one whereas we need the external IP address. So we have to modify the get-hostname script for that.  
Modification to be postponed when creating the image.





In [1]: library(Rodan)

Loading required package: RCurl

In [2]: dh <- new('odamws', wsURL='https://pmb-bordeaux.fr/getdata/', dsname='frim1')  
dh\$show()

	levelName	SetID	Identifier	WSEntry
1	plants	1	PlantID	plant
2	--samples	2	SampleID	sample
3	--aliquots	3	AliquotID	aliquot
4	--cellwall_metabo	4	AliquotID	aliquot
5	--cellwall_metaboFW	5	AliquotID	aliquot
6	--activome	6	AliquotID	aliquot
7	--plato_hexosesP	10	AliquotID	aliquot
8	--lipids_AG	11	AliquotID	aliquot
9	--AminoAcid	12	AliquotID	aliquot
10	--pools	7	PoolID	pool
11	--qMS_metabo	8	PoolID	pool
12	--qNMR_metabo	9	PoolID	pool

	Description	Count
1	Plant features	552
2	Sample features	1287
3	Aliquots features	530
4	Cell wall Compound quantifications	75
5	Cell Wall Compound quantifications (FW)	75
6	Activome Features	266
7	Hexoses Phosphate	266
8	Lipids AG	57
9	Amino Acids	69
10	Pools of remaining pools	195
11	MS Compounds quantification	25
12	NMR Compounds quantification	64