

EGI FedCloud BIFI

Para utilizar los recursos EGI FedCloud es necesario un certificado grid. Si ya lo tienes

EGI FedCloud [?guía de usuario](#)

Para el uso de recursos de computación cloud en BIFI EGI utilizaremos la imagen [?EGI Ubuntu 14.04](#). Para ello debemos configurar una serie de variables: ENDPOINT, OS_TPL, RES_TPL. Estas variables se pueden obtener bien desde el apartado **Availability & Usage** de la aplicación indicada o con siguientes comandos:

- Obtenemos la lista de sites disponibles en EGI FedCloud:

```
[user@ui ~]$ ldapsearch -x -H ldap://lcg-bdii.cern.ch:2170 -b GLUE2GroupID=grid,o=glue "GLUE2ServiceType=IaaS" | grep G
CESGA
NCG-INGRID-PT
MK-04-FINKICLOUD
CESNET-MetaCloud
BIFI
BIFI
INFN-PADOVA-STACK
FZJ
CETA-GRID
IFCA-LCG2
IISAS-GPUCloud
UPV-GRyCAP
IISAS-FedCloud
JINR-LCG2
RECAS-BARI
INDIGO-CATANIA-STACK
INFN-CATANIA-NEBULA
INFN-CATANIA-STACK
IN2P3-IRES
UA-BITP
HG-09-Okeanos-Cloud
SCAI
CYFRONET-CLOUD
100IT
```

Obtenemos la variable ENDPOINT :

```
[user@ui ~]$ ldapsearch -x -H ldap://lcg-bdii.cern.ch:2170 -b GLUE2DomainID=BIFI,GLUE2GroupID=grid,o=glue GLUE2Endpoint:
http://server4-epsh.unizar.es:8787
http://server4-eupt.unizar.es:8787
```

- Generamos un proxy válido para poder operar en la infraestructura EGI FedCloud :

```
[user@ui ~]$ voms-proxy-init -voms fedcloud.egi.eu --rfc
Enter GRID pass phrase for this identity:
Contacting voms2.grid.cesnet.cz:15002 [/DC=org/DC=terena/DC=tcs/C=CZ/ST=Hlavni mesto Praha/L=Praha 6/O=CESNET/CN=voms2.
Remote VOMS server contacted succesfully.

Created proxy in /tmp/x509up_u15139.

Your proxy is valid until Wed May 04 22:59:34 CEST 2016
```

Configuramos las variables de entorno ENDPOINT y X509_USER_PROXY :

```
[user@ui ~]$ export ENDPOINT=http://server4-epsh.unizar.es:8787
[user@ui ~]$ export X509_USER_PROXY=/tmp/x509up_u15139
```

- Obtenemos la lista de imágenes disponibles en el site:

```
[user@ui ~]$ occi --endpoint $ENDPOINT --action list --resource os_tpl --auth x509 --user-cred $X509_USER_PROXY --voms
http://schemas.openstack.org/template/os#963b4980-b960-4030-91e1-1348d1c127da
http://schemas.openstack.org/template/os#41088b49-9407-46a4-98e6-4f1cba844708
http://schemas.openstack.org/template/os#347d81ab-5f40-4790-a5d9-e24b1d8d93ff
http://schemas.openstack.org/template/os#c4cf79d6-68b9-4e14-b794-05d6fce40567
http://schemas.openstack.org/template/os#a3718e1d-a93a-4bef-9256-090d5e2d7408
http://schemas.openstack.org/template/os#9aa3aba8-aff5-4f87-a2a0-7d9c7d31f973
http://schemas.openstack.org/template/os#85d71126-7f1f-4e53-9927-988786a9b78e
http://schemas.openstack.org/template/os#37c0680c-44f8-44c3-9a6d-022629a5f125
http://schemas.openstack.org/template/os#db256cbf-b080-46a8-8542-02ef164c03e5
http://schemas.openstack.org/template/os#82070437-c4cf-4f54-a514-1368fc59e2ed
http://schemas.openstack.org/template/os#8775dc9e-73e4-4639-9c51-70ee83bc5f5be
http://schemas.openstack.org/template/os#52dfed57-9a4e-4f4d-b367-8fc9fc9c20b9
http://schemas.openstack.org/template/os#96f79427-3ab0-4f14-90f4-7a7086e8974e
http://schemas.openstack.org/template/os#5d2ffced-437d-4bb1-8a09-8517f33687be
http://schemas.openstack.org/template/os#d9480c35-8b6a-45f7-a611-b79fc2bf3b0d
http://schemas.openstack.org/template/os#337b6584-e1b1-4b60-bf5e-512b03c70b0c
http://schemas.openstack.org/template/os#3fe16db2-f503-485c-915c-033a2c095d48
http://schemas.openstack.org/template/os#3497cb55-99e2-49f3-8e0a-ea7847795384
http://schemas.openstack.org/template/os#fbad50eb-1d90-4c16-8877-7b0d76a11294
http://schemas.openstack.org/template/os#e0c39dc4-3adb-48b9-9b66-002c3b3bdc5c
http://schemas.openstack.org/template/os#d4ac6777-135d-415a-b8d4-07d4b3db848d
http://schemas.openstack.org/template/os#bab4d55b-9c51-4f38-a9bd-525b14e478ec
http://schemas.openstack.org/template/os#59e5f4e3-67b4-42b4-9d76-e6c623d4d146
http://schemas.openstack.org/template/os#5f812ff2-54b5-4b71-bf80-8c73da78ae02
http://schemas.openstack.org/template/os#991c2aa6-e121-411b-b550-6b0c2bbc4b57
http://schemas.openstack.org/template/os#d0962fdb-abe2-43b8-a90e-881422ed9b1d
http://schemas.openstack.org/template/os#9655590c-e1a7-4f43-b0c6-9e405c33324b
http://schemas.openstack.org/template/os#9b637608-7c39-49d8-8cc1-995d63dc32f2
http://schemas.openstack.org/template/os#515f69f9-c809-42de-b9ce-8a6160b5d133
http://schemas.openstack.org/template/os#bd58e06d-76ed-4b13-a6af-5e58dfe4bf00
```

- Obtenemos lista de flavours disponibles en el site :

```
[user@ui ~]$ occi --endpoint $ENDPOINT --action list --resource resource_tpl --auth x509 --user-cred $X509_USER_PROXY --voms
http://schemas.openstack.org/template/resource#m1-haproxy
http://schemas.openstack.org/template/resource#m1-large_noephemeral
http://schemas.openstack.org/template/resource#m1-tiny_ephemeral
http://schemas.openstack.org/template/resource#m1-small_cern
http://schemas.openstack.org/template/resource#m1-xlarge
http://schemas.openstack.org/template/resource#m1-medium
http://schemas.openstack.org/template/resource#hadoop_fedcloud_ephemeral
http://schemas.openstack.org/template/resource#m1-tiny
http://schemas.openstack.org/template/resource#m1-small
http://schemas.openstack.org/template/resource#m1-xlarge_cloudflow
http://schemas.openstack.org/template/resource#m1-large
http://schemas.openstack.org/template/resource#m1-schnell
http://schemas.openstack.org/template/resource#m1-inycom
http://schemas.openstack.org/template/resource#pruebasraid
http://schemas.openstack.org/template/resource#m1-cloudflow
http://schemas.openstack.org/template/resource#m1-small-ephemeral
```

- Configuramos la imagen del Ubuntu 14.04 y seleccionamos un flavour para esa imagen :

```
[user@ui ~]$ export OS_TPL=http://schemas.openstack.org/template/os#b14b85ee-782b-43bf-8616-6bf2f1665949
[user@ui ~]$ export RES_TPL=http://schemas.openstack.org/template/resource#m1-small
```

Una vez configuradas la variables de entorno podemos crear, monitorizar y destruir nuestra VM :

- Creamos un par clave publica-privada para conectarnos a las maquinas virtuales (VM) que creamos :

```
[user@ui ~]$ ssh-keygen -t rsa -b 2048 -f tmpfedcloud
```

Configuramos la VM utilizado [?cloud config](#):

```
[user@ui ~]$ cat > tmpfedcloud.login << EOF
#cloud-config
users:
- name: cloudadm
  shell: /bin/bash
  sudo: ALL=(ALL) NOPASSWD:ALL
  lock-passwd: true
  ssh-import-id: cloudadm
  ssh-authorized-keys:
    - `cat tmpfedcloud.pub`
EOF
```

- Creamos la VM :

```
[user@ui ~]$ VM_ID=$(occi --endpoint $ENDPOINT --auth x509 --user-cred $X509_USER_PROXY --voms --action create --resource $RESOURCE)
```

- Obtenemos información de sus características, como su dirección IP:

```
[user@ui ~]$ occli --endpoint $ENDPOINT --auth x509 --user-cred $X509_USER_PROXY --voms --action describe --resource $RESOURCE
#####
[[ http://schemas.orgf.org/occi/infrastructure#compute ]]
>> location: /compute/1341dce4-8dd5-412c-a2b8-14466dc0ebf4
occi.core.id = 1341dce4-8dd5-412c-a2b8-14466dc0ebf4
occi.compute.architecture = x86
occi.compute.cores = 1
occi.compute.hostname = myfirstvm
occi.compute.memory = 2.0
occi.compute.speed = 0.0
occi.compute.state = inactive
org.openstack.compute.console.vnc = N/A
org.openstack.compute.state = building

Links:

[[ http://schemas.orgf.org/occi/infrastructure#networkinterface ]]
>> location: /network/interface/1341dce4-8dd5-412c-a2b8-14466dc0ebf4_172.35.0.20
occi.networkinterface.gateway = 172.35.0.1
occi.networkinterface.mac = fa:16:3e:d5:60:0e
occi.networkinterface.interface = eth0
occi.networkinterface.state = active
occi.networkinterface.allocation = static
occi.networkinterface.address = 172.35.0.20
occi.core.source = /compute/1341dce4-8dd5-412c-a2b8-14466dc0ebf4
occi.core.target = /network/admin
occi.core.id = /network/interface/1341dce4-8dd5-412c-a2b8-14466dc0ebf4_172.35.0.20

Mixins:

[[ http://schemas.openstack.org/compute/instance#os_vms ]]
title:
term:      os_vms
location:  /os_vms/

[[ http://schemas.openstack.org/template/os#b14b85ee-782b-43bf-8616-6bf2f1665949 ]]
```

```
title:      Image: FEDCLOUD Image for EGI Ubuntu 14.04 [Ubuntu/14.04/VirtualBox]
term:      b14b85ee-782b-43bf-8616-6bf2f1665949
location:  /b14b85ee-782b-43bf-8616-6bf2f1665949/
```

- Como la IP no es pública, es necesario ejecutar el siguiente comando :

```
[user@ui ~]$ occi --endpoint $ENDPOINT --auth x509 --user-cred $X509_USER_PROXY --voms --action link --resource ${VM_ID}
http://server4-epsh.unizar.es:8787/network/interface/1341dce4-8dd5-412c-a2b8-14466dc0ebf4_155.210.198.164
```

Nos conectamos a la VM por medio de ssh haciendo uso de la clave privada que hemos generado con anterioridad:

```
[user@ui ~]$ ssh -i tmpfedcloud cloudadm@155.210.198.164
```

- Finalmente una vez utilizada la VM la destruimos :

```
[user@ui ~]$ occi --endpoint $ENDPOINT --auth x509 --user-cred $X509_USER_PROXY --voms --action delete --resource ${VM_ID}
```