Wikiprint Book

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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 GL
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 GLUE2EndpointI
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.g
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-73e4-4639-9c51-70ee83bc5fbe
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-bfbe-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 --
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 creemos :

```
[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 --resourc
```

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

```
[user@ui ~]$ occi --endpoint $ENDPOINT --auth x509 --user-cred $X509_USER_PROXY --voms --action describe --resource ${VM
##############################################################################################################################
[[ http://schemas.ogf.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.ogf.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_I
```