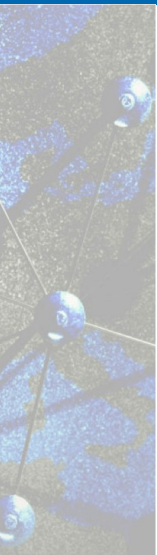


Building an OpenNebula Cloud Compliant with EGI FedCloud

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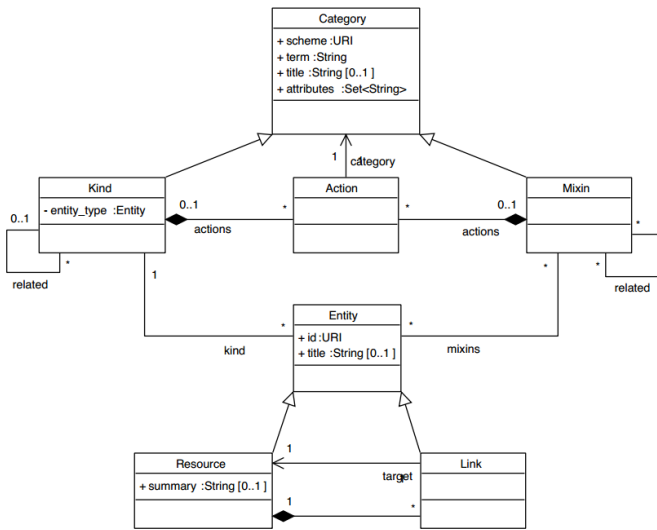


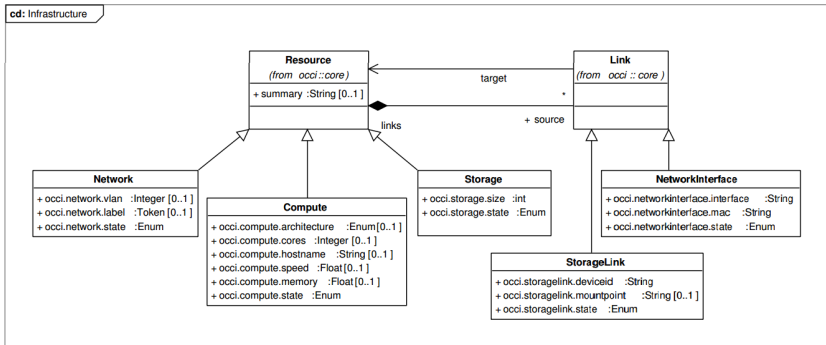
- OpenNebula in the EGI Federated Cloud
- Introduction into OCCI
- The rOCCI framework and its components
- Hands-on part
 - Installation & configuration of rOCCI-server
 - Installation & configuration of rOCCI-cli
 - Basic VM life-cycle management tasks
- Q & A



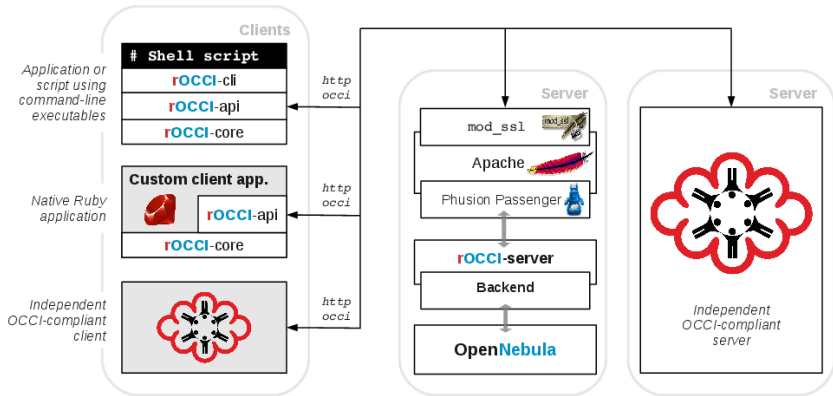
- OCCI → Open Cloud Computing Interface
- OGF standard; Core, Infrastructure and HTTP rendering (GFD.183 - 185)
- text-based protocol and API focusing on interoperability in the cloud
- designed with IaaS clouds in mind
- extensible; used for PaaS, SaaS, Brokering, ...







1. Creating VMs
2. Querying VMs
3. Destroying VMs
4. Triggering basic actions on VMs
5. Creating block storage
6. Destroying block storage
7. Attaching block storage to VMs
8. Detaching block storage from VMs
9. Attaching network interfaces to VMs
10. Detaching network interfaces from VMs
11. Using contextualization to modify VMs on boot






```
~# EPEL=http://dl.fedoraproject.org/pub/epel
~# rpm -ivh $EPEL/6/x86_64/epel-release-6-8.noarch.rpm
~# yum install -y gcc-c++ curl-devel httpd \
    httpd-devel apr-devel apr-util-devel mod_ssl \
    policycoreutils-python mod_security memcached \
    openssl-devel zlib-devel git

~# APPDB=http://repository.egi.eu/community/software/rocci.server
~# wget $APPDB/1.0.x/releases/repofiles/sl-6-x86_64.repo \
    -O /etc/yum.repos.d/rocci-server-sl-6-x86_64.repo

~# APPDB=http://repository.egi.eu/community/software/rocci.cli
~# wget $APPDB/4.2.x/releases/repofiles/sl-6-x86_64.repo \
    -O /etc/yum.repos.d/rocci-cli-sl-6-x86_64.repo
```

```
~# yum install -y occi-server

~# /opt/occi-server/embedded/bin/passenger-install-apache2-module \
  --auto --languages ruby
~# /opt/occi-server/embedded/bin/passenger-install-apache2-module \
  --snippet > /etc/httpd/conf.d/passenger.conf

~# echo "Listen 11443" >> /etc/httpd/conf/httpd.conf

~# sed -i 's/SELINUX\s*=\s*enforcing/SELINUX=permissive/' \
  /etc/selinux/config
~# setenforce 0
```

```
~# su - oneadmin
~$ oneuser create rocci '<actual_password_edited_out>' \
  --driver server_cipher
~$ oneuser chgrp rocci oneadmin
~$ exit
```

```
~# vim /etc/httpd/conf.d/occi-ssl
```

Remove SSL directives, change protocol to **http**, authentication method to **basic**, hostname to **localhost**, and the backend to **opennebula**. Fill in the authentication information for ONE.

```
~# service httpd restart
```

```
# configuration for rOCCI-server
## common
SetEnv ROCCI_SERVER_LOG_DIR /var/log/occi-server
SetEnv ROCCI_SERVER_ETC_DIR /etc/occi-server

SetEnv ROCCI_SERVER_PROTOCOL http
SetEnv ROCCI_SERVER_HOSTNAME localhost
SetEnv ROCCI_SERVER_PORT 11443
SetEnv ROCCI_SERVER_AUTHN_STRATEGIES "basic"
SetEnv ROCCI_SERVER_HOOKS dummy
SetEnv ROCCI_SERVER_BACKEND opennebula
SetEnv ROCCI_SERVER_LOG_LEVEL debug
SetEnv ROCCI_SERVER_LOG_REQUESTS_IN_DEBUG yes
SetEnv ROCCI_SERVER_TMP /tmp/occi_server
SetEnv ROCCI_SERVER_MEMCACHES localhost:11211

## ONE backend
SetEnv ROCCI_SERVER_ONE_XMLRPC http://localhost:2633/RPC2
SetEnv ROCCI_SERVER_ONE_USER rocci
SetEnv ROCCI_SERVER_ONE_PASSWD herebedragonsandasupersecretpassword;)
```

```
~# yum install occi-cli  
~# /opt/occi-cli/bin/occi -d -v  
~# ln -sf /opt/occi-cli/bin/occi /usr/bin/occi
```

If you have **RVM** installed, disable it before running packaged
rOCCI-cli!

Using the **onetest-admin** user account as a placeholder.
Insert a valid username & password as needed!

```
~# occi --endpoint http://localhost:11443/ --action list \  
  --resource os_tpl --auth basic --username onetest-admin \  
  --password onetest-admin  
~# occi --endpoint http://localhost:11443/ --action list \  
  --resource resource_tpl --auth basic --username onetest-admin \  
  --password onetest-admin  
~# occi --endpoint http://localhost:11443/ --action create \  
  --resource compute --mixin os_tpl#uuid_ttylinux_0 \  
  --attribute occi.core.title="My rOCCI VM" \  
  --auth basic --username onetest-admin \  
  --password onetest-admin  
  
~# occi ... --action describe --resource /compute/0 ...  
~# occi ... --action delete --resource /compute/0 ...
```

- OCCI
<http://occi-wg.org/>
- rOCCI-cli
<https://github.com/EGI-FCTF/rOCCI-cli>
- rOCCI-server
<https://github.com/EGI-FCTF/rOCCI-server>
- rOCCI-cli packages
<https://appdb.egi.eu/store/software/rocci.cli>
- rOCCI-server packages
<https://appdb.egi.eu/store/software/rocci.server>

- EGI FedCloud
<https://wiki.egi.eu/wiki/Fedcloud-tf>
- rOCCI-cli with VOMS
https://wiki.egi.eu/wiki/Fedcloud-tf:CLI_Environment

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