



Compute and Storage Hands-on

Corso di formazione per utenti - INFN DataCloud
5 Marzo 2025

Alessandro Pascolini, Daniele Lattanzio
INFN - CNAF

Hands-on



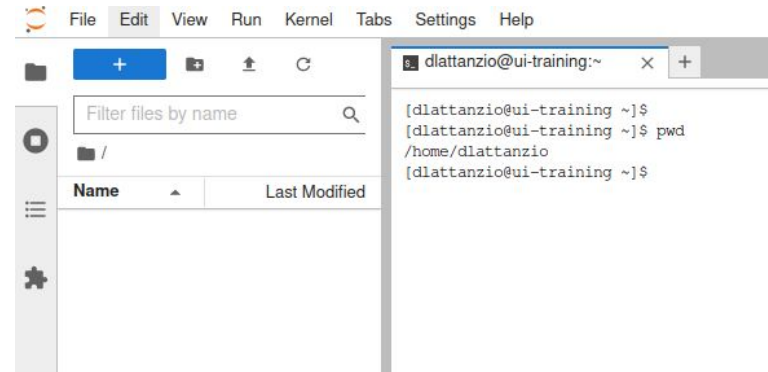
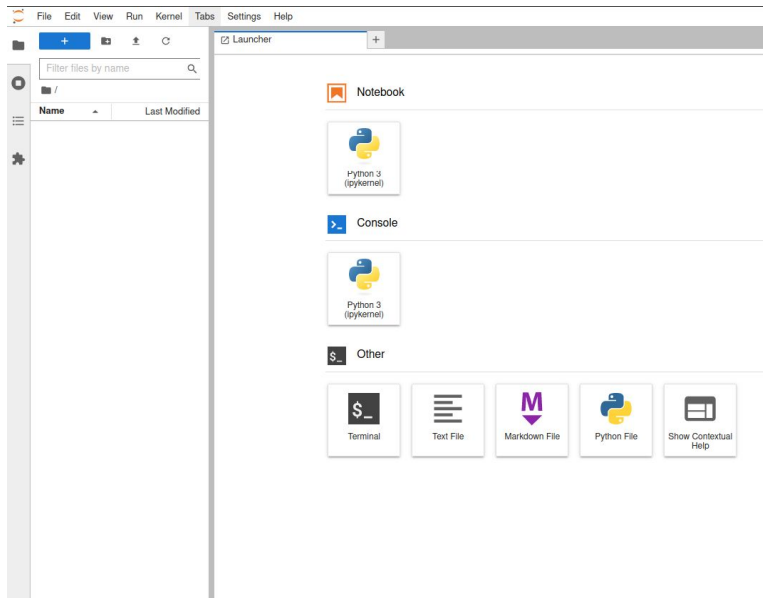
- Connect to the Jupyterhub:
<https://ui-training.cloud.infn.it/>
- You will be redirected to:
<https://iam.cloud.infn.it/login>
- Login via INFN-AAI and authorize the client
- In case you have not done it yet, please register to the **users/training** group from the IAM dashboard

A screenshot of an authorization page. At the top is the INFN CLOUD logo. Below it, the text "Approval Required for training" is displayed. Underneath, there is a "More information" section with "Administrative Contacts" listed as "carmelo.pellegrino@cnaif.infn.it". The main content area is titled "Access to :" and lists permissions: "log in using your identity", "basic profile information", "email address", and "groups". Below this is a "Remember this decision :" section with three radio button options: "remember this decision until I revoke it" (selected), "remember this decision for one hour", and "prompt me again next time". At the bottom, it states "Authorizing will redirect to https://ui-training.cloud.infn.it/hub/oauth_callback" and has two buttons: "Authorize" (green) and "Deny" (red). A footer note says "Created a day ago".

Hands-on



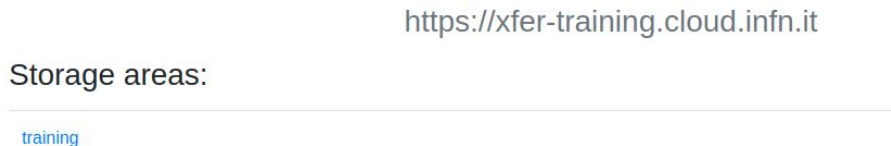
- Once logged in, open a terminal



Hands-on



- Navigate the training SA via browser:
- <https://xfer-training.cloud.infn.it:8443/>
- Do not select a certificate (if you will be asked to)
- From the page shown below, select the Storage area



https://xfer-training.cloud.infn.it

Please login with one of the configured providers:



[Go back to the storage area index page](#)

Hands-on



- Authenticate via IAM:
- Authorize the *training* client:
- Finally you can see the SA content



Welcome to **inf-n-cloud**

Sign in with



Local credentials

Not a member?

Apply for an account



Approval Required for *training*

[More information](#)

Access to :

log in using your identity

basic profile information

Remember this decision :

remember this decision until I revoke it

remember this decision for one hour

prompt me again next time

Authorizing will redirect to
<https://xfer-training.cloud.inf-n.it:8443/login/oauth2/code/iam-cloud>

Authorize

Deny

Created
3 days ago

Hands-on



- Register a Client on IAM-Cloud with oidc-agent

```
$ eval $(oidc-agent-service use)
```

```
$ oidc-gen -w device iam-cloud-handson
```

- Issuer:

<https://iam.cloud.infn.it/>

- Scopes:

```
profile wlcg.groups wlcg compute.create compute.modify compute.read compute.cancel
```

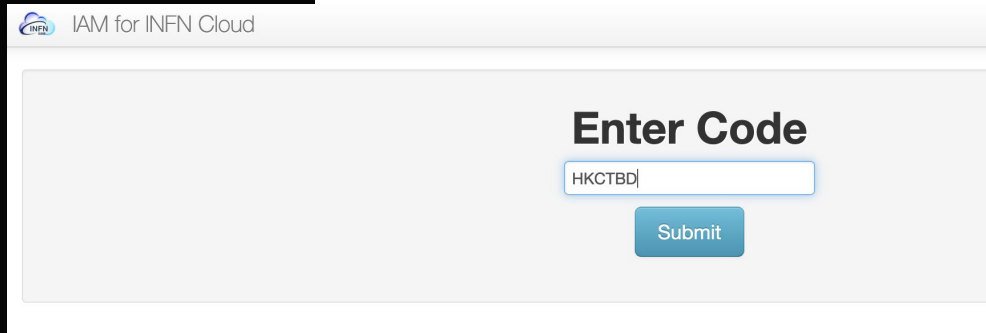
Hands-on

- Register a Client on IAM-Cloud with oidc-agent

```
apascalini@ul-training ~
$ eval `oidc-agent-service use`
26045
apascalini@ul-training ~
$ oidc-gen -w device iam-cloud-handson
[1] https://iam-t1-computing.cloud.cnaf.infn.it/
[2] https://iam.cloud.infn.it/
[3] https://bildungsproxy.aai.dfn.de
[4] https://cilogon.org
[5] https://iam.deep-hybrid-datacloud.eu/
[6] https://aai.egi.eu/auth/realms/egi
[7] https://aai-demo.egi.eu/auth/realms/egi
[8] https://aai-dev.egi.eu/auth/realms/egi
[9] https://login.elixir-czech.org/oidc/
[10] https://b2access.eudat.eu:8443/oauth2
[11] https://iam.extreme-datacloud.eu/
[12] https://fels.scc.kit.edu/oidc/realms/fels
[13] https://accounts.google.com
[14] https://login.helmholtz.de/oauth2
[15] https://login-dev.helmholtz.de/oauth2
[16] https://iam-demo.cloud.cnaf.infn.it/
[17] https://iam-test.indigo-datacloud.eu/
[18] https://oidc.scc.kit.edu/auth/realms/kit
[19] https://auth.didmos.nfdi-aai.de
[20] https://regapp.nfdi-aai.de/oidc/realms/nfdi_demo
[21] https://wlcg.cloud.cnaf.infn.it/
[22] https://alice-auth.web.cern.ch/
[23] https://atlas-auth.web.cern.ch/
[24] https://cms-auth.web.cern.ch/
[25] https://lhcb-auth.web.cern.ch/
Issuer [https://iam-t1-computing.cloud.cnaf.infn.it]: 2
The following scopes are supported: openid profile email address phone offline_access eduperson_scoped_affiliation eduperson_entitlement eduperson_assurance entitlements wlcg wlcg.groups compute.read compute.modify compute.create compute.cancel condor:read condor:write iam
Scopes or 'max' (space separated) [openid profile offline_access]: profile wlcg.groups wlcg compute.create compute.modify compute.read compute.cancel
Registering Client ...
Generating account configuration ...
accepted

Using a browser on any device, visit:
https://iam.cloud.infn.it/device

And enter the code: HKCTBD
Alternatively you can use the following QR code to visit the above listed URL.
```



Hands-on



- Create token with the new client:

```
$ oidc-token iam-cloud-handson
```

- Print info on token:

```
$ oidc-token iam-cloud-handson | jq -R 'split(".") | .[1] | @base64d | fromjson'
```

```
$ oidc-token iam-cloud-handson | jq -R 'split(".") | .[1] | @base64d | fromjson'
{
  "sub": "@039e2956-2e56-44c6-987c-25b240430d89",
  "iss": "https://iam.cloud.infn.it/",
  "preferred_username": "apascolini",
  "client_id": "687de242-d050-4a56-b4f2-6c836cbb5f8f",
  "wlcg.ver": "1.0",
  "aud": "https://wlcg.cern.ch/jwt/v1/any",
  "nbf": 1741170251,
  "scope": "openid compute.create offline_access profile compute.read compute.cancel compute.modify wlcg wlcg.groups",
  "name": "Alessandro Pascolini",
  "exp": 1741173850,
  "iat": 1741170251,
  "jti": "178a1279-b149-4d39-9123-544844d2a39a",
  "wlcg.groups": [
    "/admins",
    "/admins/beta-testers",
    "/admins/catchall",
  ]
}
```


Hands-on



Test HTC

- a disposizione repo pubblica da **baltig**
git clone <https://baltig.infn.it/apascalini/corso-htc.git>
- alcuni esempi di submit file e eseguibili messi a disposizione
- invito a produrre un submit file più articolato:
 - potete usare un eseguibile a vostro piacere (**da copiare prima sulla ui**)
 - integrare workflow più complessi anche partendo dagli esempi nella guida di HTCondor
<https://htcondor.readthedocs.io/en/latest/users-manual/submitting-a-job.html>

Hands-on



HTC cheat sheet

Useful Job Attributes	
<u>ClusterID</u>	ID of a Cluster of jobs
<u>JobID</u>	unique ID of a job [<u>ClusterID.Job_number</u>]
<u>Owner</u>	Local user executing the job
<u>AcctGroup</u>	Queue the owner/job belongs to
<u>JobStatus</u>	Number associated to the status of the job
<u>Odate</u>	Unix timestamp of submission
<u>JobstartDate</u>	Unix timestamp of job start
<u>CompletionDate</u>	Unix timestamp of job completion
<u>(Last)RemoteHost</u>	EP slot where the job was/is running
<u>HoldReason</u>	String indicating the reason the job was put in HOLD state
<u>RemoveReason</u>	String indicating the reason the job was REMOVED

JOB STATUS	
1	IDLE
2	RUNNING
3	REMOVED
4	COMPLETED
5	HELD

These Job Attributes may note be all defined at the same time!!

Hands-on



- Check the storage area permissions with *getfacl*:

```
[dlattanzio@ui-training ~]$ ll /storage/training/
total 0
drwxr-x---+ 2 storm storm 18 Jul 15 14:16 ciao
[dlattanzio@ui-training ~]$
[dlattanzio@ui-training ~]$
[dlattanzio@ui-training ~]$ getfacl /storage/training/ciao/test
getfacl: Removing leading '/' from absolute path names
# file: storage/training/ciao/test
# owner: storm
# group: storm
user::rw-
group::r-x          #effective:r--
group:griduser:r-x  #effective:r--
mask::r--
other::---
```

```
[dlattanzio@ui-training ~]$
[dlattanzio@ui-training ~]$ █
```

Hands-on



- **Listing directory:**

```
gfal-ls https://xfer-training.cloud.infn.it:8443/training
```

- **Upload:**

```
gfal-copy file_local.txt https://xfer-training.cloud.infn.it:8443/training/file.txt
```

- **Download:**

```
gfal-copy https://xfer-training.cloud.infn.it:8443/training/file.txt file_local.txt
```

- **Removing a file:**

```
gfal-rm https://xfer-training.cloud.infn.it:8443/training/file.txt
```