IVOA Interoperability meeting

Authentication, data access, computing interoperability of IVOA based cloud services

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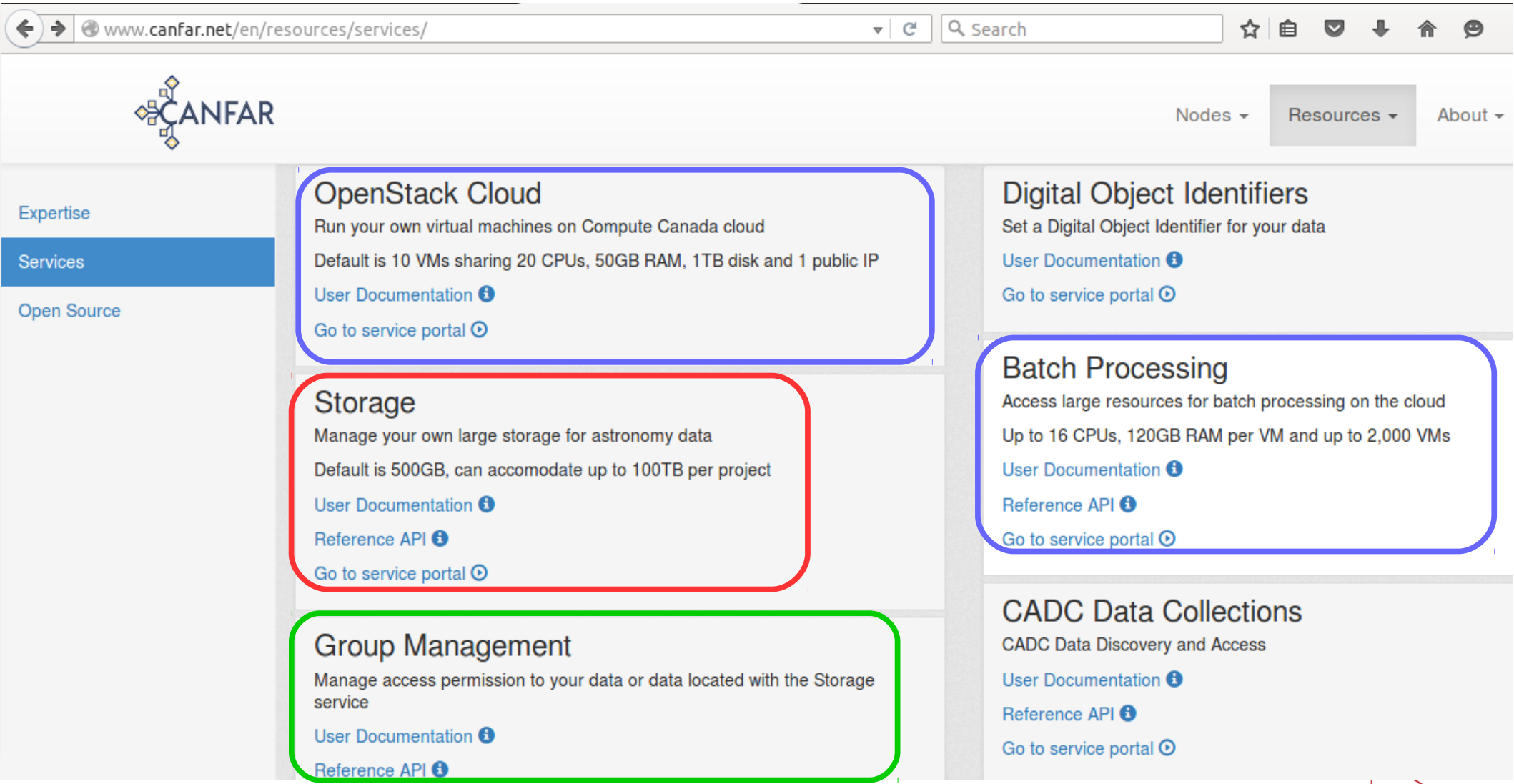
FRAMEWORK

Joint project:

- Canadian Advanced Network for Astronomical Research (CANFAR)
- INAF-Osservatorio Astronomico di Trieste (OATs)

CANFAR/CADC Infrastructure

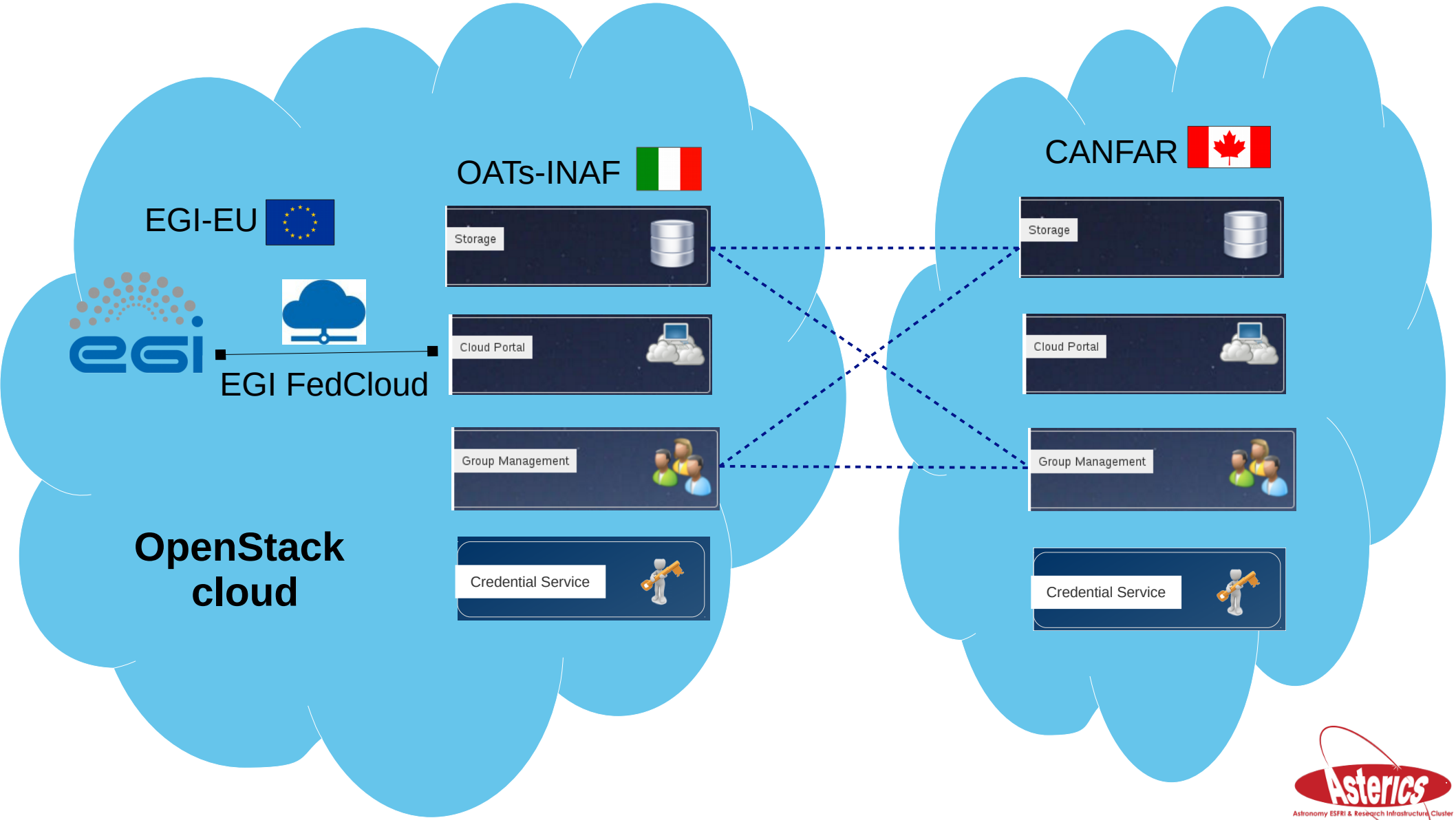


CADC Software

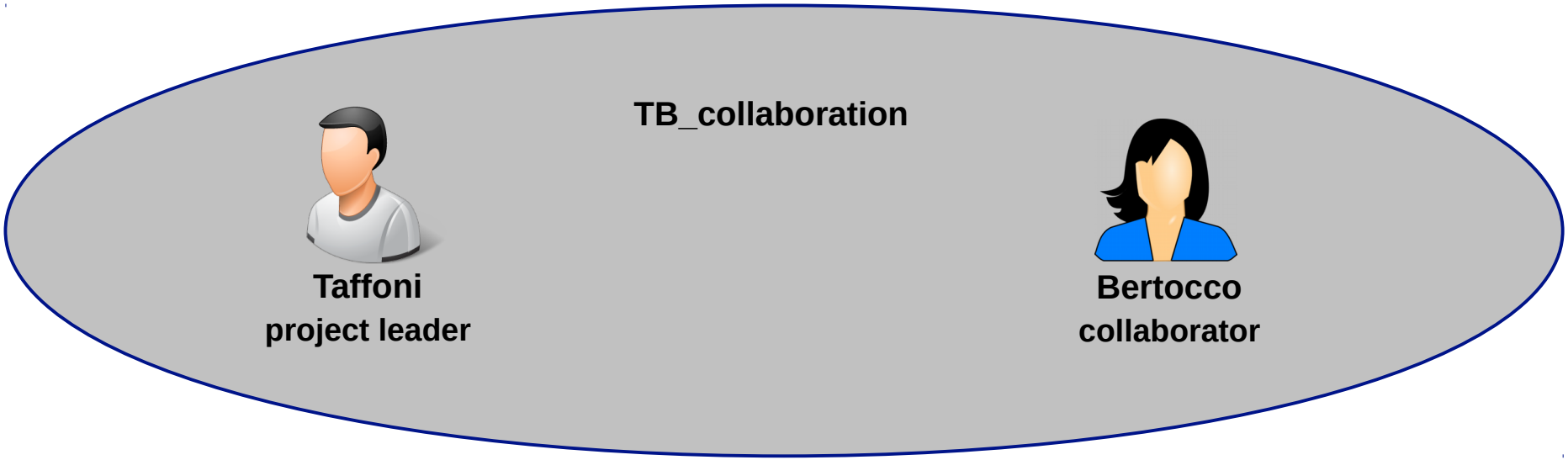
- https://github.com/opencadc

  Modules:
  - ac Access Control (including GMS)
  - cdp Credential Delegation Protocol implementation
  - vos VOSpace standard implementation
  - reg registry interface implementation
  - uws Universal Worker Service Pattern implementation
  - core core utilities and logging
- Virtual Observatory (VO) implementation
- IVOA Standards based (http://ivoa.net/)

Integration status



Data management environment description



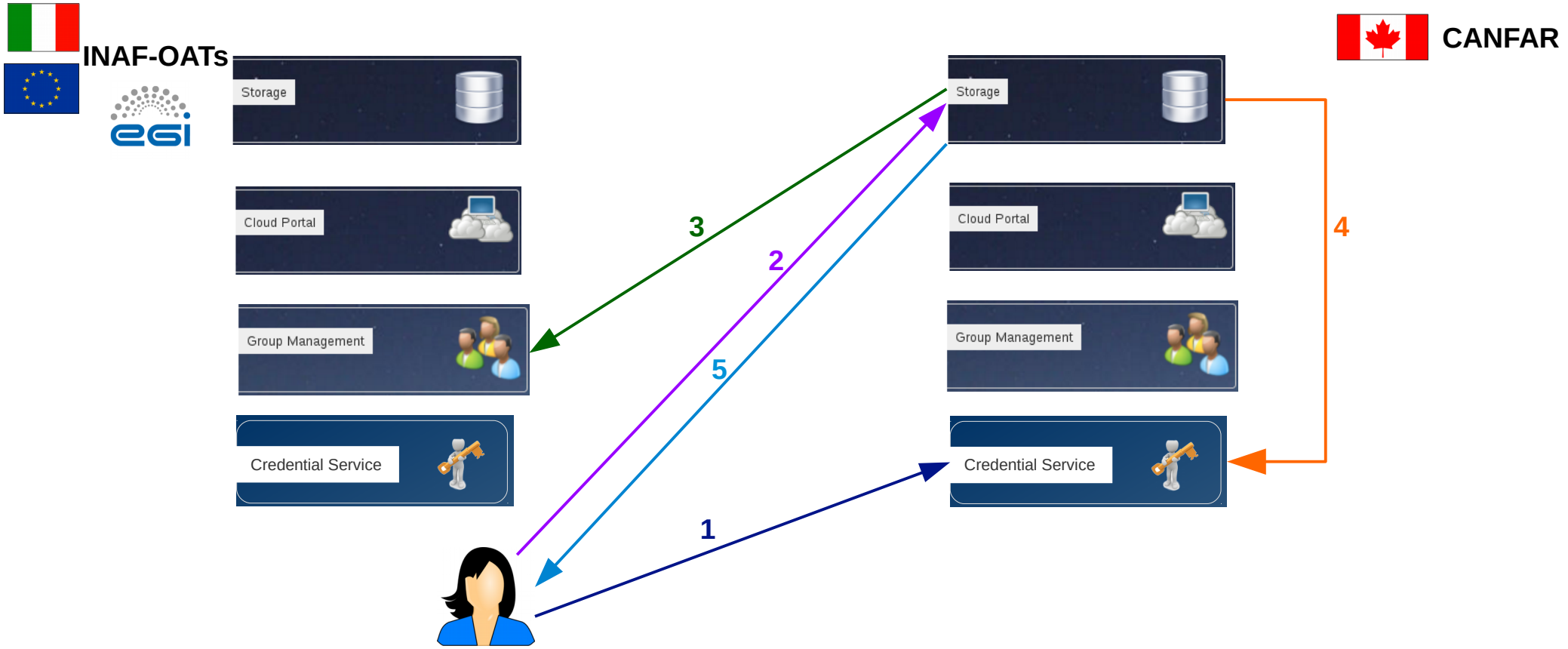
CANFAR User Access and Groups Management

- Taffoni has access
- Taffoni creates a collaboration folder in his CANFAR vospace area
- Taffoni adds to the group ivo://oats.inaf.it/gms#TB_collaboration the group-write permissions to his CANFAR folder "collaboration"

INAF OATs User Access and Groups Management

- Bertocco has access
- Taffoni has access
- Taffoni creates TB_collaboration group
- Taffoni adds Bertocco to TB_collaboration group

Use case Description



1) INAF-OATs user Bertocco delegates her x509 credentials to CANFAR Credential Service

2) user Bertocco asks for data of her INAF-OATs group to CANFAR storage service

3) CANFAR storage service checks the group affiliation of the user in the INAF-OATs group management service

4) CANFAR storage service gets the user's delegated credentials from the CANFAR Credential Delegation Service to be able to make calls to each other service on behalf of the initial user

5) CANFAR storage service returns data to the INAF-OATs user Bertocco

Client interfaces

- Java client
- Python client
- RestFul interface
- Web GUI

Data access

- Create a proxy

```
voms-proxy-init -voms planck  --hours 2100 -rfc
```

- Delegate credentials

```
java ca.nrc.cadc.cred.client.Main --resourceID=ivo://cadc.nrc.ca/cred
--delegate --daysValid=31 --cert=$X509_USER_PROXY -d
```

- Download data

```
java ca.nrc.cadc.vos.client.Main --copy

--src=vos://cadc.nrc.ca\!vospace/taffoni/TB_share_folder/testfile.txt
--dest=test1.txt --cert=$X509_USER_PROXY  -d
```

- Upload data

```
java ca.nrc.cadc.vos.client.Main --copy

--dest=vos://cadc.nrc.ca\!
vospace/taffoni/TB_share_folder/testfile1.txt --src=test1.txt
--cert=$X509_USER_PROXY  -d
```

Computation interop

- Using a voms proxy

```
voms-proxy-init -voms planck  --hours 2100 -rfc
```

- Get an authentication token

curl --cert $X509_USER_PROXY
-d '{"auth":{"voms": true, "tenantName": "planck"}}'
-H "Content-type: application/json" https://cloud.oats.inaf.it:5000/v2.0/tokens | python -m json.tool

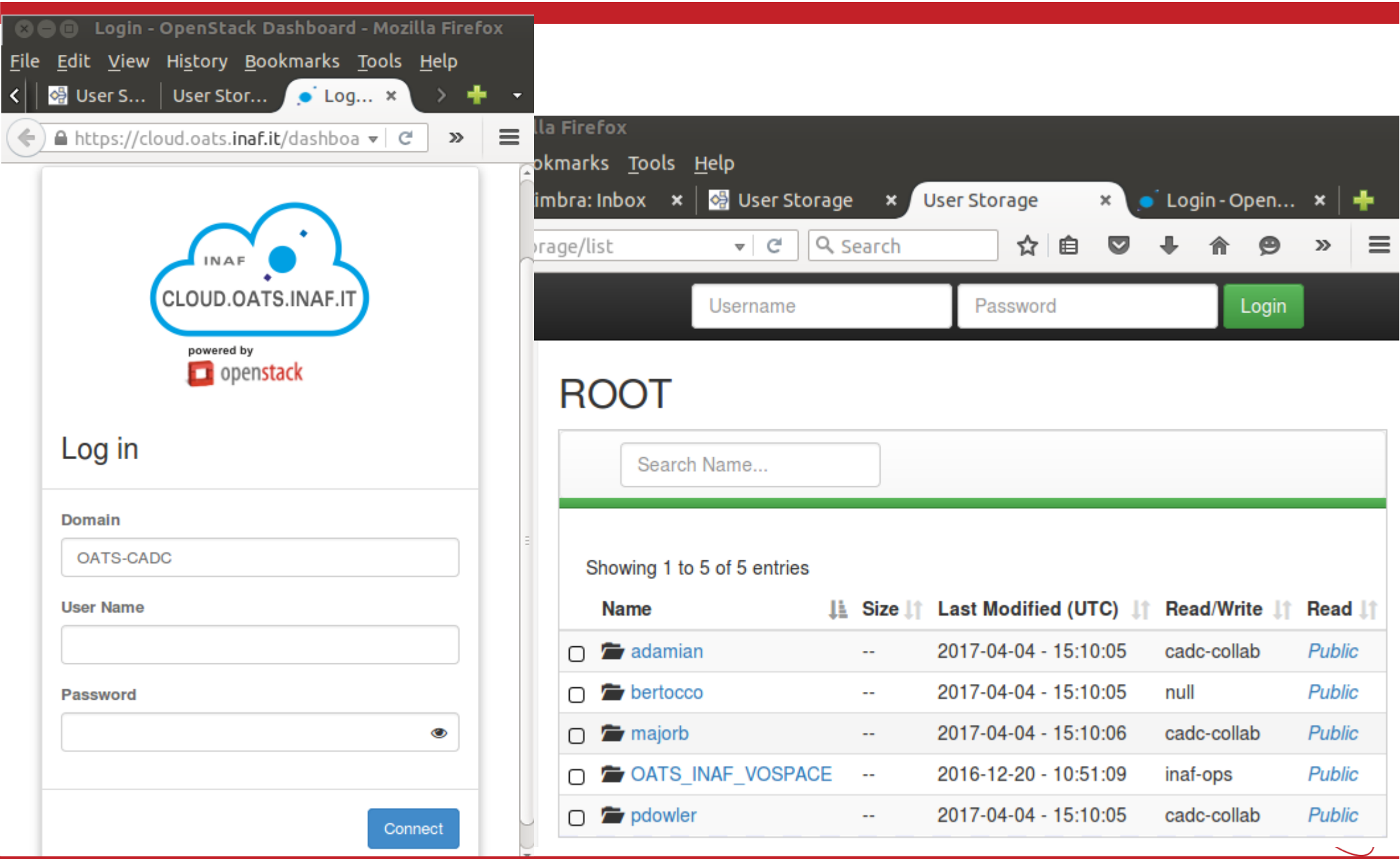
- Connect to OpenStack console using the token

openstack --os-auth-type token --os-auth-url https://cloud.oats.inaf.it:5000/v2.0 --os-project-name planck --os-token bf2428676db34a4c81c6dbdcbe36e61d

- Create a Virtual Machine

server create --flavor m1.medium --image "canfarfprod" --nic net-id=4b7e33c7-af8a-48a9-9e2d-29225cc15f47 --security-group default --user-data mydata.cfg canfar-prod

Computation interop



Thanks!