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FuncX on Perlmutter experiences

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Installation and running

Start from a conda env

```
pip install funcx funcx-endpoint
```

```
pip list | grep funcx
```

```
funcx                1.0.10
funcx-common         0.0.24
funcx-endpoint       1.0.10
```

Create an endpoint (on remote server)

```
funcx-endpoint start funcxtraining (This will require authentication, see next slide)
```

Running job: <https://github.com/ValHayot/funcXtraining>

```
python training/train.py -i /global/homes/c/chnzhang/comm/FCGChalleng/input/dataset1/
dataset_1_photons_1.hdf5 -o /global/homes/c/chnzhang/comm/FCGChalleng/funcx_output/
dataset/v1 -c /global/homes/c/chnzhang/funcX/funcXtraining/config/config_GANv1.json --
endpoint-id <id, check by `funcx-endpoint list`> --example-run
```

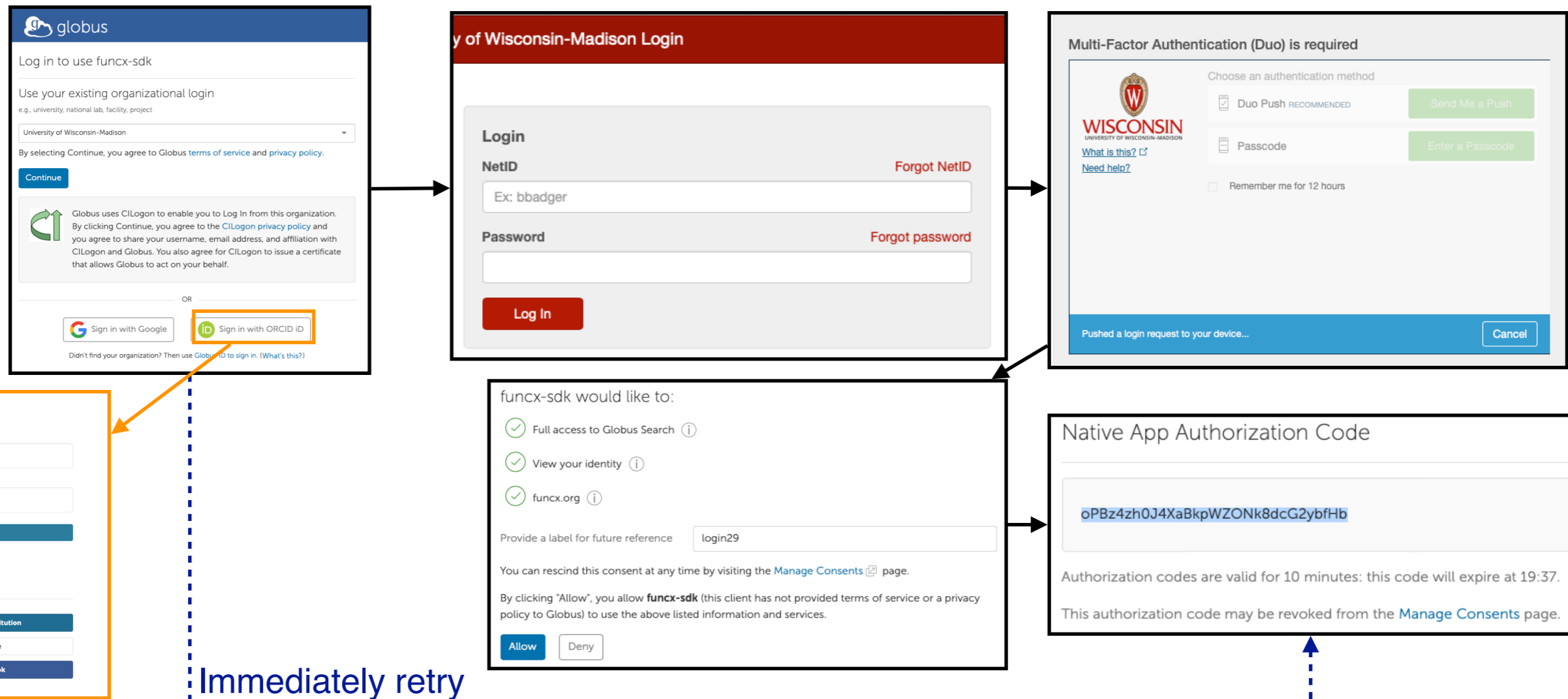
(Command is submitted from login nodes; full path on server; endpoint-id on server.)

Authentication

funcx-endpoint start funcxtraining_saul
Please authenticate with Globus here:

https://auth.globus.org/v2/oauth2/authorize?client_id=4cf29807-cf21-49ec-9443-ff9a3fb9f81c&redirect_uri=https%3A%2F%2Fauth.globus.org%2Fv2%2Fweb%2Fauth-code&scope=https%3A%2F%2Fauth.globus.org%2Fscopes%2Facd7ccc-c5f4-42aa-916b-a0e270e2c2a9%2Fall+openid+urn%3Aglobus%3Aauth%3Ascope%3Asearch.api.globus.org%3Aall&state=_default&response_type=code&code_challenge=YUb5R34934_RmOtyTVL3D_R3XiwGDJRU0LDXhjpdBEO&code_challenge_method=S256&access_type=offline&prefill_named_grant=login29&prompt=login

Enter the resulting Authorization Code here:



Changing user info

On LXPLUS => funcx-endpoint whoami

Username	Name	ID	Email
0000-0002-8265-474x@orcid.org	Rui Zhang	07e82658-fd34-4e2d-9142-d3b574c6c34b	rui.zhang@cern.ch

On HPC => funcx-endpoint whoami

Username	Name	ID	Email
rzhang398@wisc.edu	RUI ZHANG	49e4305c-9a8a-43af-ba7b-2819308533c6	RZHANG398@WISC.EDU

- User info is associated to funcx (multiple endpoints on the same server share the same user account)
- Cannot submit remote jobs under different user accounts
- To change the user information, one needs to recreate the endpoint using the following commands:

```
rm -f ~/.funcx/storage.db  
rm -fr ~/.funcx/funcxtraining_saul
```

```
funcx-endpoint configure funcxtraining_saul  
funcx-endpoint start funcxtraining_saul  
Please authenticate with Globus here: ...
```

Main point

- The authentication step is probably a major blocker for automation
 - Any way to authorise via command line?
 - Any other common account for ATLAS whole community?