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FAX end-user Tutorial

Introduction

A step-by-step how-to tutorial for using FAX as an end-user. The tutorial examples can be downloaded [here](#). If something does not work or you have any questions, please contact atlas-adc-fax-operations@cern.ch.

Setup environment

Setting up the FAX environment is done using a package from the `lsetup` (more [here](#)):

```
export ATLAS_LOCAL_ROOT_BASE=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase
source ${ATLAS_LOCAL_ROOT_BASE}/user/atlasLocalSetup.sh
lsetup fax
```

If you will need ROOT, you should set it up directly from `lsetup`:

```
lsetup fax root
```

A FAX access endpoint is automatically setup for you. This is done automatically but a full list of endpoints and their grid sites is available [here](#) FaxRedirectors. You can find it in the environment variable `STORAGEPREFIX`. Create the usual grid proxy:

```
voms-proxy-init -voms atlas
```

Check availability of the dataset or dataset container in FAX

Use `fax-is-dataset-covered`, available upon invoking `lsetup fax`. It takes the dataset or dataset container name as an argument. For each input dataset, it will print number of FAX endpoints containing full and incomplete replicas. Example (`user.ilijav.HCtest.1` is a test dataset that exists at several sites):

```
fax-is-dataset-covered user.ivukotic:user.ilijav.HCtest.1
```

Copy a dataset to a local storage

Use `fax-get` to copy a dataset from FAX to local storage. Command supports multiple streams, retries, partial dataset copy, skipping non-root files, timeouts and more. Example:

```
fax-get user.ivukotic:user.ilijav.HCtest.1
```

Find global logical file names (gLFNs)

Currently there are two conventions for the global logical file namespace used by FAX:

- Use tool `fax-get-gLFNs`:

```
fax-get-gLFNs user.ivukotic:user.ilijav.HCtest.1 > my_list_of_gLFNS.txt
```

Copy a file from FAX to local disk

- With the environment setup above:

```
xrdcp $STORAGEPREFIX/atlas/rucio/user.ivukotic:group.test.hc.NTUP_SMWZ.root /tmp/myLocalCo
```

Open and inspect a file with ROOT

- Open and list the file contents with ROOT.
- Then:

```
root -l
TFile *f = TFile::Open("root://fax.mwt2.org//atlas/rucio/user.ivukotic:group.test.hc.NTUP_SMWZ.root/myLocalCo");
if(f) f->ls();
.q
```

Using FAX from a prun job

Instead of giving the `--inDS myDataset` option, provide it with `--pfnList my_list_of_gLFNS.txt`.

When using SampleHandler one need to use special driver: FAX driver.

Additional examples

- Listing number of events
- Reading-writing a file
- Simple SkimSlim example
- SkimSlim example from T3
- A large SkimSlim example from T3
- Analysis-like example

FAX DO's & DONT's

- Always, always, always use TTreeCache. Without it performance will be very bad. It should be used even if you don't use FAX.
- If using TChain, don't create TFiles and give them to TChain but directly give filenames to TChain. TChain will make sure files can be opened.
- Messages like this

```
Xrd: XrdClientMessage::ReadRaw: Failed to read header
```

can be safely ignored and will be removed in future versions of xrootd.

Major updates:

-- IlijaVukotic - 10 Dec 2013

Responsible: IlijaVukotic

Last reviewed by: **Never reviewed**

This topic: AtlasComputing > UsingFAXforEndUsersTutorial

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