

Use of SAM at BNL RACF

BV

[2014-07-01 Tue 09:12]

1 Client Installation.

Try to install the "samweb" command.

1.1 Eyeball MINOS instructions

There is no obvious SAM "home page" but MINOS and D0 come up in Google with some info. Following Getting Data offsite using SAM from MINOS, download is from:

```
ftp://ftp.fnal.gov/products/sam_web_services_client/v0_9_2/NULL/
```

These files are from 2005....

Get the tarball. This contains the source (including CVS subdirs and compiled .pyc files) with a `bin/` and `lib/` areas holding links into `src/`. It spews all its files to the current working directory. It has some `sam_setup.*` scripts which interact with UPS.

There is nothing called "samweb" in this distribution....

Google ="samweb" site:fnal.gov= brings up lots of mention in presentations but no useful resources.

1.2 Eyeball FNAL environment

```
local> ssh bv@lbnegpvm01.fnal.gov
fnal> source /nusoft/app/externals/setup
fnal> ups list -aK+ | grep sam
"sam_web_client" "v1_2" "NULL" "" ""
"sam_web_client" "v1_3" "NULL" "" "current"
ERROR: No instance matches were made between the
version file (/nusoft/app/externals/cppunit/v1_12_1.version) and the
table file (cppunit.table) for flavor (Linux64bit+2.6-2.5) and qualifiers (gcc45)
ERROR: Possible UPS database (/nusoft/app/externals) corruption in product 'cppunit'.
```

```

ERROR: No instance matches were made between the
version file (/nusoft/app/externals/postgresql/v9_1_3.version) and the
table file (postgresql.table) for flavor (Linux64bit+2.6-2.5) and qualifiers (gcc46)
ERROR: Possible UPS database (/nusoft/app/externals) corruption in product 'postgresql

```

Presumably those ERRORS mean UPS is working extra hard to make my life more complicated than it needs to be.

Anyways,

```

fnal> setup sam_web_client
fnal> echo $PYTHONPATH
/nusoft/app/externals/sam_web_client/v1_3/NULL/python
fnal> ls /nusoft/app/externals/sam_web_client/v1_3/NULL/python
samweb_client samweb_cli.py samweb_cli.pyc simplejson_209
fnal> ls /nusoft/app/externals/sam_web_client/v1_3/NULL/bin
samweb

```

Attempt to reproduce Robert Illingworth's example which is:

```

$ samweb -e lbne get-file-access-url --schema=root 35T_singleparticle_pizero_30_0.root
root://fndca1.fnal.gov:1094/pnfs/fnal.gov/usr/lbne/mc/lbne/simulated/001/35T_singlepar

```

Now my turn:

```

samweb -e lbne get-file-access-url --schema=root 35T_singleparticle_pizero_30_0.root
Unknown command get-file-access-url
usage: samweb [base options] <command> [command options] ...

```

We are not off to a good start here, folks.

Eyeballing some NoVA SAM tutorial presentation (why tf is there no established web info on all this???) and reading through their layers of setup scripts I see that they use:

```

$ setup sam_web_client v1_5 -z /grid/fermiapp/products/common/db

```

That UPS area has `sam_web_client` up to version 1.7. This UPS area has an installation pattern I've not seen before. The actual installed files are in `"../prd/"`.

That 1.5 version also doesn't do it for me. This does:

```

fnal> unsetup sam_web_client
fnal> setup sam_web_client v1_7 -z /grid/fermiapp/products/common/db
fnal> samweb -e lbne get-file-access-url --schema=root 35T_singleparticle_pizero_30_0.
root://fndca1.fnal.gov:1094/pnfs/fnal.gov/usr/lbne/mc/lbne/simulated/001/35T_singlepar

```

What a mess.

1.3 Eyeballing Redmine

Oh, look, SAM has a huge presence in FNAL Redmine. I wonder why Google fails to find this. I suspect `robots.txt` is shunning the crawlers.

Okay, reboot this.

```
$ git clone http://cdcvcs.fnal.gov/projects/sam-web-client
$ ls -l sam-web-client/
total 24
drwxr-xr-x 2 bvlbne lbne 4096 Jul  1 10:14 bin
-rw-r--r-- 1 bvlbne lbne  628 Jul  1 10:14 Makefile
drwxr-xr-x 4 bvlbne lbne 4096 Jul  1 10:14 python
-rwxr-xr-x 1 bvlbne lbne  357 Jul  1 10:14 release.sh
drwxr-xr-x 2 bvlbne lbne 4096 Jul  1 10:14 test
drwxr-xr-x 2 bvlbne lbne 4096 Jul  1 10:14 ups
$ ls -l sam-web-client/python/
total 48
drwxr-xr-x 2 bvlbne lbne  4096 Jul  1 10:14 samweb_client
-rw-r--r-- 1 bvlbne lbne 39091 Jul  1 10:14 samweb_cli.py
drwxr-xr-x 2 bvlbne lbne  4096 Jul  1 10:14 simplejson_209
$ ls -l sam-web-client/bin/
total 4
-rwxr-xr-x 1 bvlbne lbne 324 Jul  1 10:14 samweb
```

And:

```
./sam-web-client/bin/samweb -e lbne get-file-access-url --schema=root 35T_singlepartic
root://fndca1.fnal.gov:1094/pnfs/fnal.gov/usr/lbne/mc/lbne/simulated/001/35T_singlepar
```

Okay, this is much more reasonable!

1.4 Package it

It sure would be nice if this was a Python package.

```
from distutils.core import setup
setup(name = 'sam-web-client',
      version = '1.7',
      description = 'Python client and command line interface to SAM Web',
      author = 'SAM Team',
      author_email = 'sam-users@listserv.fnal.gov',
```

```

url = 'https://cdcvs.fnal.gov/redmine/projects/sam-web-client',
package_dir = {'':'python'},
py_modules = ['samweb_cli'],
packages = ['samweb_client', 'simplejson_209'],
scripts = ['bin/samweb'],
)

$ python setup.py sdist
$ ls -l dist/sam-web-client-1.7.tar.gz
-rw-r--r-- 1 bvlbne lbne 40359 Jul  1 10:42 dist/sam-web-client-1.7.tar.gz
$ virtualenv ~/venv/sam
$ python setup.py install
$ source ~/venv/sam/bin/activate
$ samweb -e lbne get-file-access-url --schema=root 35T_singleparticle_pizero_30_0.root
root://fndca1.fnal.gov:1094/pnfs/fnal.gov/usr/lbne/mc/lbne/simulated/001/35T_singlepar

```

Now we are cooking!

2 Playing with samweb

What kind of trouble can I get into now?

2.1 Help and usage

```

$ samweb -h
[ usage ]
$ samweb
[... list of commands ...]

```

Metadata:

```

$ samweb -e lbne get-metadata 35T_singleparticle_pizero_30_0.root
File Name: 35T_singleparticle_pizero_30_0.root
File Id: 4837
File Type: mc
File Format: root
File Size: 142974667
      Crc: 2012523085 (adler 32 crc type)
Content Status: good
      Group: lbne

```

```

        Data Tier: simulated
        Application: art lar s2013.04.21
        Event Count: 100
        First Event: 1
        Last Event: 100
        Start Time: 2013-04-24T10:15:10
        End Time: 2013-04-24T10:15:10
lbne_MC.detector_type: 35t
        lbne_MC.name: 35T_singleparticle_pizero_30
        Runs: 1 (physics)

```

2.2 Definitions

```

$ samweb -e lbne list-definitions
diesburg-test-project-01
diesburg-test-project-02
genieCRY_20130423_anuflux_nuebarflux_nuebar_g280_Ar40
genieCRY_20130423_anuflux_nueflux_nue_g280_Ar40
genieCRY_20130423_anuflux_numubarflux_nuebar_g280_Ar40
genieCRY_20130423_anuflux_numubarflux_numubar_g280_Ar40
mwm_test_1
qtest1
singleparticle-test

$ samweb -e lbne list-definition-files singleparticle-test
35T_singleparticle_piplus_01.root
35T_singleparticle_proton_01.root

```

2.3 Projects

```

$ samweb -e lbne list-projects
...
diesburg_singleparticle-test_20140109152050
...

$ samweb -e lbne find-project diesburg_singleparticle-test_20140109152050
http://samweb.fnal.gov:8480/sam/lbne/api/projects/lbne/diesburg_singleparticle-test_20140109152050

$ wget http://samweb.fnal.gov:8480/sam/lbne/api/projects/lbne/diesburg_singleparticle-test_20140109152050
--2014-07-01 11:16:35-- http://samweb.fnal.gov:8480/sam/lbne/api/projects/lbne/diesburg_singleparticle-test_20140109152050

```

```
Connecting to 192.168.1.130:3128... connected.  
Proxy request sent, awaiting response... 404 Not Found  
2014-07-01 11:16:35 ERROR 404: Not Found.
```

2.4 Server info

```
$ samweb -e lbne server-info  
SAMWeb API for lbne  
Server version: 1.7.6  
Cherrypy version: 3.2.4  
HTTP User-Agent: SAMWebClient/unknown (samweb) python/2.6.6  
User information:  
  Untrusted identity: bvlbne@lbne0001.rcf.bnl.gov  
  Unauthenticated
```

2.4.1 TODO Need to figure out authentication.

2.5 Admin

```
$ samweb -e lbne list-applications  
art lar dev2013.07.19  
demo demo demo  
art lar s2013.04.21  
demo demo 1  
art lar s2013.10.21  
test test 1  
  
$ samweb -e lbne list-data-disks  
lbndata:/lbne/data  
  
$ samweb -e lbne list-parameters  
lbne_MC.overlay (string)  
lbne_MC.geometry_version (string)  
lbne_MC.miscellaneous (string)  
lbne_MC.mass_hierarchy (string)  
lbne_MC.neutrino_flavors (string)  
lbne_MC.detector_type (string)  
lbne_MC.name (string)  
lbne_MC.trigger-list-version (string)  
lbne_MC.oscillationP (string)  
lbne_MC.generators (string)
```

```
lbne_MC.beam_flux_ID (true_int)
lbne_MC.beam_energy (true_float)
```

```
$ samweb -e lbne list-users
...
bv
...
```

Hey, that's me!

```
$ samweb -e lbne list-values --help-categories
Available database categories:
```

```
data_tiers
    Data tier of a file (raw, simulated, reconstructed, etc)
run_types
    Type of a run
groups
    Work groups
data_streams
    Data stream names
file_formats
    Format of the file
file_types
    Type (ie general purpose) of a file
```

```
$ samweb -e lbne list-values data_tiers
simulated
raw
hit-reconstructed
full-reconstructed
generated
```

```
$ samweb -e lbne list-values run_types
cosmic
test
calibration
physics
special
```

```

$ samweb -e lbne list-values groups
lbne

$ samweb -e lbne list-values data_streams

$ samweb -e lbne list-values file_formats
unknown
root
tar
text

$ samweb -e lbne list-values file_types
mc
test-data
unknown
fastmc
physics-data
calib-data

```

Grand.

2.6 Environment

I see here that one can set `SAM_EXPERIMENT=lbne` to avoid "`-e lbne`" option each time.

3 Certificates

While not strictly related to SAM, to use SAM to actually access files one needs a certificate registered into the LBNE VO. Once this is done one may do:

```

$ source /afs/uscslas.bnl.gov/osg/client/@sys/current/setup.sh
$ voms-proxy-init -voms lbne

```

Note, we piggy back on ATLAS for setting up Grid stuff.

If you see:

```

$ voms-proxy-init -voms lbne
Enter GRID pass phrase:

```



```
Your identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Brett Viren 2
Creating temporary proxy ..... Done
Contacting voms.fnal.gov:15029 [/DC=org/DC=doegrids/OU=Services/CN=http/voms.fnal.gov]
```

Error: lbne: User unknown to this VO.

None of the contacted servers for lbne were capable
of returning a valid AC for the user.

It means you need to register your cert with LBNE VO.
If you see:

```
voms-proxy-init -voms lbne
Enter GRID pass phrase:
Your identity: /DC=com/DC=DigiCert-Grid/O=Open Science Grid/OU=People/CN=Brett Viren 2
Creating temporary proxy .....
Contacting voms.fnal.gov:15029 [/DC=org/DC=doegrids/OU=Services/CN=http/voms.fnal.gov]
Creating proxy ..... Done
```

```
Your proxy is valid until Wed Jul  2 00:57:54 2014
Error: verify failed.
Cannot verify AC signature!
```

It means...