

DMP Implementation Status of IPP

2024-06-12

uda.ipp.mpg.de access problems

- I discovered I couldn't login to the VM – opened a trouble ticket
- Agata reported that the server was down – opened another, higher priority, ticket
- Apparently a disk was full
 - IPP-IT removed some files so that I could login in
 - I connected to the VM
 - There was a very large log file in /opt/uda/etc (DebugServer.log)
 - Jonathan pointed out that the logging level UDA_LOG_LEVEL should be set to “ERROR” and not “DEBUG” (which is what I had)
 - I removed the file and the server is happy again
 - It would be good if the log files were managed by **logrotate** (<https://github.com/logrotate/logrotate>) or similar

uda.ipp.mpg.de access history

- Since I was looking at the log files, I grabbed the Access.log
 - 895299 accesses as of 2024-06-10 11:20 CEST
 - Multiple accesses per IDS
 - Most from “agata”
- It would be good to have a script to analyse the log file
 - “Final Report on Open Science Use Cases for Fusion Information” from FAIR4fusion (<https://doi.org/10.5281/zenodo.4337222>) has use cases
 - **2.7.12** As a data provider, I would like to know who (by category) has accessed my data.
 - **2.7.13** As a data provider, I would like to know how much data is accessed via the remote access portal.
 - **2.7.14** More generally, as a community of data providers, we would like to build and access statistical analytics about portal usage.

Number of accesses	IP number	User
8	10.160.64.61	dpc
8	10.160.65.81	dpc
2	128.232.224.43	ir-dixo2
1	128.232.224.44	ir-dixo2
76890	130.186.25.51	g2afilip
142565	130.186.25.53	g2afilip
80087	130.186.25.53	g2dpc
564845	130.186.25.54	g2afilip
689	150.254.165.191	root
6109	193.52.216.1	costerd
14201	193.52.216.1	filipca
6051	193.52.216.1	hoeneno
186	193.52.216.1	yildizc
3563	195.216.97.47	root
6	46.205.204.33	root
87	46.205.206.172	root
1	86.173.228.42	user

Continuing development of uda.py (better name?)

```
./uda.py --help  
usage: uda.py [-h] -u URI [-c CASE]
```

Tests UDA access

options:

```
-h, --help          show this help message and exit  
-u URI, --uri URI  URI to be accessed  
-c CASE, --case CASE
```

```
Case parameter: "edge_profiles" for the edge_profiles test case  
                 "summary" for a DMP summary IDS  
                 "core_profiles" for a constructed core_profiles  
                 "equilibrium" for a constructed equilibrium  
                 "list" to list available IDSes (default)
```

Uri's can be found at

<https://wiki.euro-fusion.org/wiki/DMP>

Repository:

<https://gitlab.eufus.psnc.pl/data-access-tools/uda-test>

uda.py: “list” option by default

```
./uda.py -u
```

```
'imas://spcimasdata.epfl.ch:443/uda?path=/data/imas/public/imasdb/tcv/3/68340/123/&backend=mdsplus'
```

Accessing data from

```
imas://spcimasdata.epfl.ch:443/uda?path=/data/imas/public/imasdb/tcv/3/68340/123/&backend=mdsplus
```

```
Available IDses are: ['core_profiles', 'equilibrium', 'pf_active', 'summary']
```

Timing information

```
DBentry = 0.197
```

```
open = 0.083
```

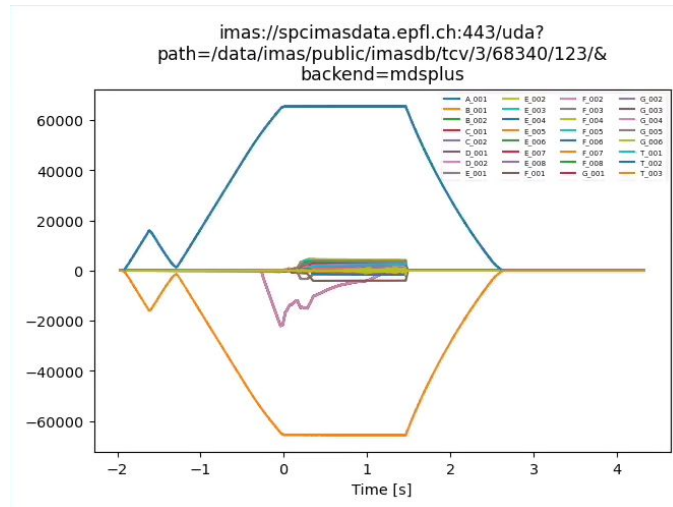
```
get = 4.172
```

```
close = 0.023
```

uda.py: pulling pf_active from SPC

```
./uda.py -u
'imas://spcimasdata.epfl.ch:443/uda?path=/data/imas/public/imasdb/tcv/3/68340/123/&backen
d=mdsplus' --case pf_active
Accessing data from
imas://spcimasdata.epfl.ch:443/uda?path=/data/imas/public/imasdb/tcv/3/68340/123/&backen
d=mdsplus
Time data for IDS pf_active
[]
pf_active.ids_properties.comment: from TCV cocos_in=17 transformed to cocos_out=11
pf_active.ids_properties.homogeneous_time: 0
pf_active.ids_properties.source: TCV shot #68340
pf_active.ids_properties.provider: gdat_git: gdat git hash not found;
tcv_get_ids_pf_active; error_bar option: delta
pf_active.ids_properties.creation_date: 27-Mar-2024
pf_active.ids_properties.version_put.data_dictionary: 3.39.0
pf_active.ids_properties.version_put.access_layer: 5.0.0
pf_active.ids_properties.version_put.access_layer_language: matlab (mex)
pf_active.coil[0].name: A_001
pf_active.coil[0].resistance: 0.014953220263123512
pf_active.coil[0].element[0].turns_with_sign: 143.0
pf_active.coil[0].element[0].geometry.geometry_type: 2
pf_active.coil[0].element[0].geometry.rectangle.r: 0.42250001430511475
pf_active.coil[0].element[0].geometry.rectangle.z: 0.0
pf_active.coil[0].element[0].geometry.rectangle.width: 0.06300000101327896
pf_active.coil[0].element[0].geometry.rectangle.height: 1.5839999914169312
pf_active.coil[0].current.data: shape (62920,) min -21974.798828125 max 1438.68359375
pf_active.coil[0].current.data_error_upper: shape (62920,) min 200.0 max 200.0
pf_active.coil[0].current.time: shape (62920,) min -1.9659998416900635 max
4.325900077819824
```

```
'''
Timing information
DBentry = 0.175
open = 0.075
get = 140.228
close = 0.018
```



uda.py: new option --save

```
./uda.py -u 'imas://uda.ipp.mpg.de:56565/uda?path=/root/public/imasdb/aug/3/17151/3&backend=hdf5'  
--case wall --save "imas:hdf5?path=TEST/"
```

Accessing data from

```
imas://uda.ipp.mpg.de:56565/uda?path=/root/public/imasdb/aug/3/17151/3&backend=hdf5
```

Time data for IDS wall

```
[0.]  
wall.ids_properties.comment: wall taken using the augvessel() function on the shotfiles  
wall.ids_properties.homogeneous_time: 1  
wall.ids_properties.version_put.data_dictionary: 3.39.0  
wall.ids_properties.version_put.access_layer: 4.11.5  
wall.ids_properties.version_put.access_layer_language: python  
wall.description_2d[0].limiter.unit[0].closed: 1  
wall.description_2d[0].limiter.unit[0].outline.r: shape (5,) min 1.94 max 2.23  
wall.description_2d[0].limiter.unit[0].outline.z: shape (5,) min 0.546 max 0.874  
...  
wall.description_2d[0].limiter.unit[28].closed: 1  
wall.description_2d[0].limiter.unit[28].outline.r: shape (8,) min 1.49 max 1.66  
wall.description_2d[0].limiter.unit[28].outline.z: shape (8,) min 1.14 max 1.22  
wall.code.name: aug_eq_new_edition.py  
wall.code.version: 2017-03-26  
wall.time: [0.]
```

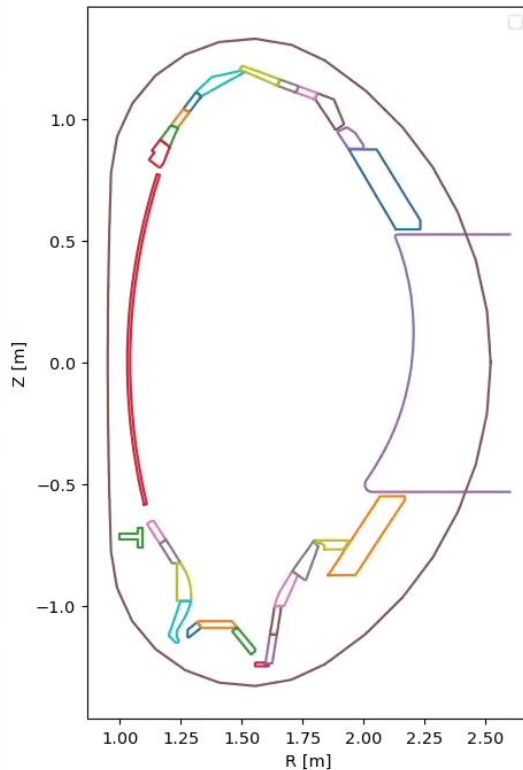
Timing information

```
DBentry = 0.426  
open = 0.118  
get = 2.514  
close = 0.039
```

With "tree TEST" giving

```
TEST/  
├─ master.h5  
└─ wall.h5
```

```
imas://uda.ipp.mpg.de:56565/uda?  
path=/root/public/imasdb/aug/3/17151/3&  
backend=hdf5
```



uda.py: comparing access speeds

Direct access to ITER from ITER

```
./uda.py -u 'imas:mdsplus?path=/work/imas/shared/imasdb/ITER/3/134174/117/' -c summary
```

```
...
```

```
summary.time:  shape (106,)  min 10.3  max 75
```

Timing information

```
DBentry = 0.003
```

```
open = 0.000
```

```
get = 0.318
```

```
close = 0.005
```

Access from ITER to ITER data via UDA

```
./uda.py -u 'imas://uda.iter.org:56565/uda?path=/work/imas/shared/imasdb/ITER/3/134174/117;backend=mdsplus'
```

```
-c summary
```

```
...
```

```
summary.time:  shape (106,)  min 10.3  max 75
```

Timing information

```
DBentry = 0.151
```

```
open = 0.037
```

```
get = 90.408
```

```
close = 0.002
```


uda.py: SSL variables

Since I had been trying to access ITER data from the Gateway (and failing), I had these in my environment. Accessing IPP with SSL environment variables set failed:

```
./uda.py -u
'imas://uda.ipp.mpg.de:56565/uda?path=/root/public/imasdb/aug/3/17151/3&backend=hdf5'
--case magnetics
Accessing data from
imas://uda.ipp.mpg.de:56565/uda?path=/root/public/imasdb/aug/3/17151/3&backend=hdf5
ERROR:root:b'al_begin_dataentry_action: [AException = [startUdaClientSSL]: Error
connecting to the server!; Connection reset by peer\n[reportSSLErrorCode]:
SSL_ERROR_SYSCALL\n]'
ERROR:root:b'al_begin_dataentry_action: [AException = [startUdaClientSSL]: Error
connecting to the server!; Connection reset by peer\n[reportSSLErrorCode]:
SSL_ERROR_SYSCALL\n]'
ERROR:root:b'al_close_pulse: [AException = [startUdaClientSSL]: Error connecting to the
server!; Connection reset by peer\n[reportSSLErrorCode]: SSL_ERROR_SYSCALL\n]'
Time data for IDS magnetics
[]
```

Removing the environment variables worked

- If the SSL information is specific to a particular site, a better way of managing them is needed!

