

Hands-on (I)

Use of AMGA service using the mdclient utility

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Lyon Convention Center

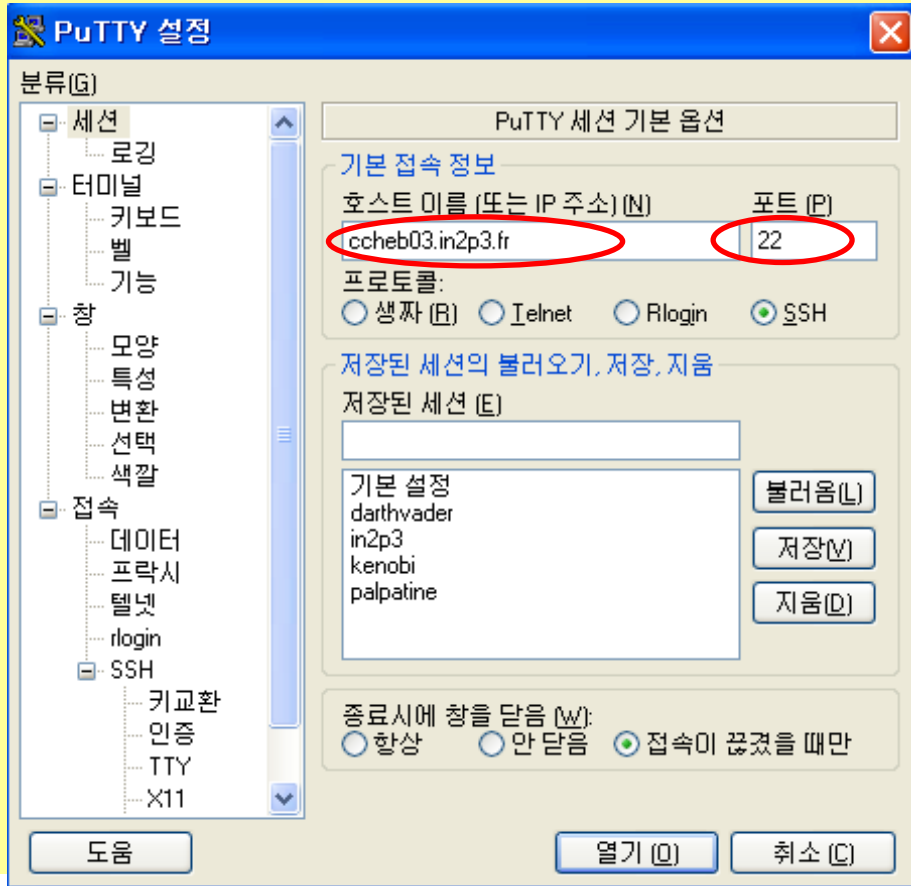
Before getting your hands dirty (1)

- AMGA server set up in CC-IN2P3
 - ccheb03.in2p3.fr
- Linux Account to access the AMGA server
 - Id: amgaXX (e.g., [amga01](#))
 - Password: XXpwdamga (e.g., [01pwdamga](#))

Before getting your hands dirty (2)

- AMGA account
 - Id: managerXX (e.g., manager01)
 - Password: manager0901XX (e.g., **manager090101**)
- Putty
 - A Free Telnet/SSH Client
 - <http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html>
 - <http://goo.gl/dch65>

Login onto AMGA server using Putty



| | |
|-----------|------------------|
| Host name | ccheb03.in2p3.fr |
| port | 22 |
| Protocol | SSH |

Login onto AMGA server using Putty



```
ccheb03.in2p3.fr - PuTTY
login as: amga01
amga01@ccheb03.in2p3.fr's password: █
```

| | |
|------------|-----------|
| Login name | amgaXX |
| Password | XXpwdamga |



Login onto AMGA server through SSH

```
$ ssh amga01@ccheb03.in2p3.fr
```

```
....
```

```
Are you sure you want to continue connecting (yes/no)? yes
```

```
amga01@ccheb03.in2p3.fr's password : 01pwdamga
```

```
Last login
```

```
amga01@ccheb03:~  
login as: amga01  
amga01@ccheb03.in2p3.fr's password:  
Last login: Fri Sep 9 08:48:09 2011 from 150.183.225.175  
*****  
##### # ##### ##### # #####  
# # # # # # # # # #  
# # # # # # # # # #  
##### # ##### ## ##### #####  
# # # # # # # # # #  
# # # # # # # # # #  
##### ##### # #####  
*****  
[amga01@ccheb03 ~]$ █
```

AMGA Client Configuration

- **Copy** the /etc/mdclient.config file into your HOME directory
- **Modify** the .mdclient.config file



```
$ cp /etc/mdclient.config ~/.mdclient.config
$ vi .mdclient.config
```

| | |
|-------------------------------|---|
| | |
| Login = managerXX | Fill it according to your UI login id |
| Password = manager0901XX | AMGA server listening port |
| Host=ccheb03.in2p3.fr | we are not using ssl-based authentication |
| Port=8822 | AMGA server listening port |
| UseSSL= no | AMGA server hostname |
| AuthenticateWithCertificate=0 | not using certificate for AMGA authentication |
| UseGridProxy = 0 | not using grid proxy for AMGA authentication |

.mdclient.config file

```
amga01@ccheb03:~  
# BDII Usage  
#BDIIServer = egee-bdii.cnaf.infn.it  
#BDIIServerPort = 2170  
#BDIIBaseDN = mds-vo-name^=INFN-ROMA1,mds-vo-name^=local,o^=grid  
#BDIIFilter = (GlueSEAccessProtocolType^=rfio)  
  
# Connection options  
#Host = localhost  
Host = ccheb03.in2p3.fr  
Port = 8822  
  
# User settings  
Login = manager01  
Password = manager090101  
Home = /  
  
PermissionMask = rwx  
GroupMask = r-x  
#Name=  
  
# Security options  
UseSSL = no # Values: require, try, no. If off, all options below are ignored  
  
AuthenticateWithCertificate = 0 # Use certificate to authenticate  
# Certificates used for authentication: ... either normal certs  
#CertFile=/home/koblitz/.globus/usercert.pem  
#KeyFile=/home/koblitz/.globus/userkey.pem  
# ... or a grid proxy certificate  
UseGridProxy = 0  
# Use password instead of certificate to authenticate  
# Password = secret  
#VerifyServerCert = 1  
#IgnoreCertificateNameMismatch = 0  
# If server certificates are verified, CA certificates need to be loaded:  
".mdclient.config" 35L, 998C  
14,1  
Top
```

Start the AMGA CLI

Mdclient is the AMGA command line client

```
$ mdclient
```

Once successfully logged in, you should get the AMGA command prompt:


```
Connecting to localhost:8822...  
ARDA Metadata Server  
Query> whoami  
>> amga01  
Query>
```



AMGA help

Getting help on mdclient usage

You can have a look at the available commands and get help on one of them with the 'help' command.



```
Query> help
>> >help [topic]<
>> >Displays help on a command or a topic.<
>> >Valid topics are: help metadata metadata-optional directory entry
group acl index schema sequence user view ticket commands<
Query>
```

AMGA help topics

Commands are grouped by topic. You can get the list of valid commands for each topic, typing: help [topic] The list of valid topics is:

- help
- metadata
- metadata-optional
- directory
- replication
- entry
- group
- acl
- index
- schema
- sequence
- user
- view
- ticket
- commands

Try the use of help command with any topic

```
Query> help metadata
```

```
Query> help entry
```



Directory-like structure in AGMA

- basic directory operations in AMGA

```

Query> pwd
>> /
Query> ls
>> /manager01
...
>> /manager40
>> /testuser
Query> cd manager01           # change your home directory
Query> pwd
>> /manager01/
Query> ls
>> /manager01/position
    
```



Directory Manipulation


- Let's create and delete a collection in AMGA

```
Query> pwd
>> /manager01/
Query> createdir testdir
Query> ls
>> /manager01/testdir
>> /manager01/position
Query> cd testdir
Query> pwd
>> /manager01/testdir
Query> cd ..
Query> rmdir testdir
```




Creation of collection and schema

Create a participant_info directory



```
Query> pwd
>> /manager01/
Query> createdir participant_info
Query> cd participant_info
```

Add metadata attributes for the entries in the participant_info directory



```
Query> addattr . First_name varchar(50) Family_name varchar(50)
Salutation varchar(50) E_mail varchar(40) Country varchar(70)
Organization varchar(50) Position varchar(50)
Query> listattr .
```

Valid Datatypes for AMGA

Valid datatypes are summarized by the following table where the corresponding AMGA DB backend datatype is also shown.

| AMGA | PostgreSQL | MySQL | Oracle | SQLite | Python |
|---------------------|----------------------|----------------------|--------------|--------------|-------------------|
| int | integer | int | number(38) | int | int |
| float | double precision | double precision | float | float | float |
| varchar(n) | character varying(n) | character varying(n) | varchar2(n) | varchar(n) | string |
| timestamp | timestamp w/o TZ | datetime | timestamp(6) | unsupported | time(unsupported) |
| text | text | text | long | text | string |
| numeric(p,s) | numeric(p,s) | numeric(p,s) | numeric(p,s) | numeric(p,s) | float |

Population of entries in the collection


Add new entries and set corresponding metadata attributes

```
Query> pwd
>> /manager/participant_info/

Query> addentry Soonwook.Hwang First_name 'Soonwook' Family_name
'Hwang' Salutation 'Mr' E_mail 'hwang@kisti.re.kr' Country 'South
Korea' Organization 'KISTI' Position 'Principal Researcher'

Query> selectattr .:FILE .:First_name .:Family_name .:Salutation .:E_mail
.:Country .:Organization .:Position ' '

>> Soonwook.Hwang
>> Soonwook
>> Hwang
>> Mr
>> hwang@kisti.re.kr
>> South Korea
>> KISTI
>> Principal Researcher
```



Create cities directory and its attributes

- Change directory to /managerXX/position/
- Create cities directory with longitude and latitude as its attributes

```
Query> cd ..  
Query> cd position  
Query> pwd  
>> /manager01/position/  
  
Query> createdir cities  
Query> addattr cities longitude int  
Query> addattr cities latitude int  
Query> listattr cities  
>> longitude  
>> int  
>> latitude  
>> int
```



Populate the cities directory with entries



```
Query> pwd
```

```
>> /manager01/position/
```

```
Query> addentry cities/Lyon latitude 45 longitude 4
```

```
Query> addentry cities/London latitude 51 longitude 0
```

```
Query> addentry cities/Seoul latitude 37 longitude 126
```

```
Query> addentry cities/Beijing latitude 39 longitude 116
```

```
Query> ls -l cities
```

```
>> -rwxr-x manager01
```

Lyon

```
>> -rwxr-x manager01
```

London

```
>> -rwxr-x manager01
```

Seoul

```
>> -rwxr-x manager01
```

Beijing

Create weather directory with city, temp_hi, temp_lo, humidity, timestamp as attributes



```
Query> pwd
```

```
>> /manager01/position/
```

```
Query> createdir weather
```

```
Query> addattr weather city varchar(30) temp_hi float temp_lo float humidity  
float time timestamp
```

```
Query> listattr weather
```

```
>> city
```

```
>> varchar(30)
```

```
>> temp_hi
```

```
>> float
```

```
>> temp_lo
```

```
>> float
```

```
>> humidity
```

```
>> float
```

```
>> time
```

```
>> timestamp
```

Populate the weather directory with entries



```
Query>pwd
```

```
>> /manager01/position/
```

```
Query> addentry weather/lyon01 city 'Lyon' temp_hi 30 temp_lo 23 humidity 65 time '2011-07-28 11:00:06'
```

```
Query> addentry weather/lyon02 city 'Lyon' temp_hi 32 temp_lo 24 humidity 70 time '2011-07-29 11:03:17'
```

```
Query> addentry weather/london01 city 'London' temp_hi 24 temp_lo 20 humidity 61 time '2011-07-27 11:03:17'
```

```
Query> addentry weather/london02 city 'London' temp_hi 17 temp_lo 11 humidity 52 time '2011-07-29 09:03:17'
```

```
Query> addentry weather/seoul01 city 'Seoul' temp_hi 25 temp_lo 21 humidity 68 time '2011-07-28 11:03:17'
```

```
Query> addentry weather/seoul02 city 'Seoul' temp_hi 28 temp_lo 22 humidity 65 time '2011-07-29 12:03:17'
```

```
Query> addentry weather/beijing01 city 'Beijing' temp_hi 32 temp_lo 28 humidity 66 time '2011-07-27 12:03:17'
```

```
Query> addentry weather/beijing02 city 'Beijing' temp_hi 30 temp_lo 24 humidity 65 time '2011-07-27 12:03:17'
```

```
Query> addentry weather/beijing03 city 'Beijing' temp_hi 33 temp_lo 26 humidity 67 time '2011-07-27 12:03:17'
```

Make queries

Which are the cities further north than 40 degrees north, and how high are they?



```
Query> pwd
>> /manager01/position/
```

```
Query> selectattr cities:FILE longitude 'latitude > 40'
>> Lyon
>> 4
>> London
>> 0
```

```
Query> SELECT FILE, longitude FROM ./cities WHERE latitude > 40;
>> FILE
>> longitude
>> Lyon
>> 4
>> London
>> 0
```

Make queries

Which city has low temperatures smaller than 15 degrees?



```
Query> pwd
```

```
>> /manager01/position/
```

```
Query> selectattr weather:city weather:temp_lo 'weather:temp_lo < 15'
```

```
>> London
```

```
>> 11
```

```
Query> SELECT city, temp_lo FROM weather WHERE temp_lo < 15;
```

```
>> city
```

```
>> temp_lo
```

```
>> London
```

```
>> 11
```

Join Operations

Which city has the humidity smaller than 60% and shows its latitude, longitude, temp_lo, temp_hi?



```
Query> pwd
```

```
>> /manager01/position/
```

```
Query> selectattr weather:city cities:longitude cities:latitude weather:temp_hi weather:temp_lo '
cities:FILE=weather:city and weather:humidity < 60 '
```

```
>> London
```

```
>> 0
```

```
>> 51
```

```
>> 17
```

```
>> 11
```

```
Query> SELECT weather.city, cities.longitude, cities.latitude, weather.temp_hi, weather.temp_lo
FROM weather, cities WHERE cities.FILE = weather.city AND weather.humidity < 60;
```

```
>> cities.longitude
```

```
>> cities.latitude
```

```
>> weather.temp_hi
```

```
>> weather.temp_lo
```

```
>> London
```

```
>> 0
```

```
>> 51
```

```
>> 17
```

```
>> 11
```


Preparation for AMGA GUI client Hands-on Exercise

Prerequisite

- **What is it required on your machine to install the AMGA Manager?**
 - Java version : **JRE 1.6 or above**
<http://www.java.com/>
- **Your PC OS ?**
 - Linux(32, 64bits), Windows(32,64bits), Mac OS - **OK**
- **How to Install?**
 - Download the AMGA Manager package :
http://cern.ch/amga/downloads/AMGA_Manager
<http://goo.gl/3tTZj>
 - Unzip the downloaded file to a proper dir
 - Execute the AMGA Manager executable file

Connection to AMGA service using AMGA Manager



New Connection

Create New Connection

root [yoda.kisti.re.kr : 8844]
 manager02 [yoda.kisti.re.kr : 8824]
 manager01 [ccheb03.in2p3.fr : 8822]
 manager01 [150,183,225,212 : 8822]

Host : ccheb03.in2p3.fr
 User : manager01
 Pass :
 Port : 8822
 Access: ID/PASSWORD
 UseSSL
 Save the Login information?

OK Cancel

- Host : ccheb03.in2p3.fr
- User : managerXX
- Pass : manager0901XX
- port : 8822
- Access : ID/PASSWORD
- UseSSL - uncheck
- Save the login info - check

AMGA_Mangaer

Connect Success manager01@ccheb03.in2p3.fr

OK

Appendix

AMGA mdcli tool


mdcli is the AMGA command tool that just run a single AMGA command and exit to the shell.

```
$ mdcli -p 8822 listattr /manager01/position/weather  
city  
varchar(30)  
temp_hi  
float  
temp_lo  
float  
humidity  
float  
time  
timestamp
```



Example of use of mdcli in shell script

Example of mdcli tool usage shows a simple shell script that recursively prints the directories, their attributes and their contents starting from a given directory.



```
$ cp /etc/mdtree.sh ~/mdtree.sh
$ chmod 766 ~/mdtree.sh

$ cat mdtree.sh

$ ./mdtree.sh /manager01/position | less
Afghanistan
Albania
Algeria
American
Andorra
Angola
...
```