Class mARC.Connector.Connector

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0 OverView

It includes

- a client socket
- an associated object mARCResult to handle results sent from the server

Connecting to a mARC server

The function connect() allows to connect via TCP to a mARC server identified with a port and a IP address:

import mARC.Connector.*;

```
Connector connector = new Connector();
connector.Lock();// low level locking for multithreading
connector.setIp("127.0.0.1");
connector.setPort("1254");
connector.connect() ;
connector.UnLock(); //unlocking
```

One can also use the other constructor

```
Connector connector = new Connector("MyName", "127.0.0.1","1254");
connector.Lock();
connector.setIp("127.0.0.1");
connector.setPort("1254");
connector.UnLock();
```

If connection was successful, the method getIsConnected returns true, false otherwise

Executing a command step by step

provided a connector has been instantiated from one of the above constructor and connected as above, a command may be computed from the general scheme described below:

connector. directExecute = true; // the connector is in 'command-line' mode
connector.**OpenScript** (); // clear internal buffers and allows new script
connector.**push** ("Session.Connect");
connector.**AddFunction** (); // builds the command to send to the server
marc->ExecuteScript (); // send the command to the server and get results

the command '**Session.Connect() ;** ' is computed and sent to the server via TCP.

The method **getToSend()** returns the current command/script. The Method **getReceived()** contains the raw string returned by the server.

If a syntax error or any command error has been detected server-side the method getError() return true, on successful execution, it returns true.

The method getExecutionErrorMsg() returns the error message sent by the server after execution of the command/script sent.

The associated object mARC.Connector.mARCResult contains the encapsulated data returned by the server. At low-level, the server returns a (nxm) matrix of data. This matrix columns may be accessed through the following method:

getDataByName(String name, int idx)

The first argument refers to the name of the variable returned by a given command from the server, the second argument refers to the line number (base 0) of the current script. The default value is -1 indicating we need the result of last line of the script.

You may also retrieve the data from a matrix-line point of view with:

getDataByLine(int row, int idx)

idx refers to the line number (zero base) of the script line
row refers to the line index (zero base) inside the line referenced by idx.

Consider this example:

```
connector.OpenScript ();
        connector.push ("Table.Get");
        connector.push ("Instances");
        connector.addFunction ();
connector.ExecuteScript ();

String[] tbls = connector.getDataByName("tables", -1);
```

the method GetReceived() returns :

3 1 2 1 8 0 tables <6 Eudata/> <8 Eudetail/>;

The API reference tells us that the matrix is 1x2 i.e. one line and two columns. The variable **tables** contains “Eudata” and “Eudetail”.

The line

```
String[] tbls = connector.getDataByName("tables", -1);
```

allows to retrieve the data contained in the server result.

This line returns an arrays of strings in tbls which contains:

Type	Valeur	Nom
String[]	#333(length=2)	tables
String	"Eudata"	[0]
String	"Eudetail"	[1]

Executing an encapsulated command

All API functions are encapsulated in the connector class itself.

1 line command execution

You can execute a script command by command by using

connector. directExecute = true;

Consider the script, it is executed line by line from the server-side:

```
connector.directExecute = true;
connector.SERVER_GetConnected("1", "-1");
String[] ports = connector.getDataByName("Port", -1);
```

Ports is string array:

Type	Valeur	Nom
String[]	#333(length=5)	ports
String	"0"	[0]
String	"2933"	[1]
String	"2941"	[2]
String	"2995"	[3]
String	"3630"	[4]

```
String[] ips = connector.getDataByName("IP", -1);
```

ips also :

Type	Valeur	Nom
String[]	#333(length=5)	ips
String	""	[0]
String	"127.0.0.1"	[1]
String	"127.0.0.1"	[2]
String	"127.0.0.1"	[3]
String	"127.0.0.1"	[4]

```
connector.SERVER_GetProperties("port");
String[] properties = connector.getDataByName("prop_value", -1);
```

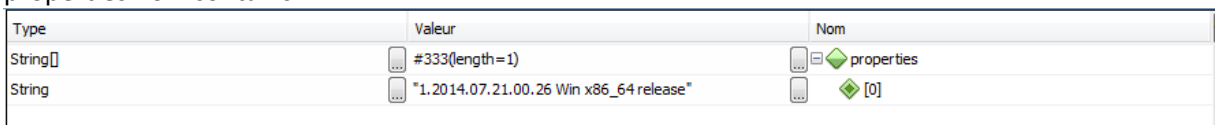
Properties contains:

Type	Valeur	Nom
String[]	#333(length=1)	properties
String	"6666"	[0]

Which is the listening port of the server.

```
connector.SERVER_GetProperties("build");
properties  = connector.getDataByName("prop_value", -1);
```

properties now contains:



Which is the server IP address.

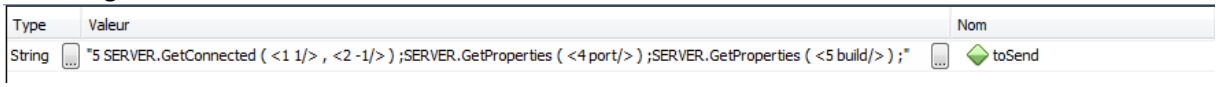
2 Script execution

The above script may also be executed at once on the server side:

```
connector.directExecute = false;
connector.openScript(null);
connector.SERVER_GetConnected("1", "-1");
connector.SERVER_GetProperties("port");
connector.SERVER_GetProperties("build");
String toSend = connector.getToSend();
connector.executeScript(); // execute script server-side at once !!!
String Received = connector. getReceived ();

// retrieve results at once !!!
String[] ports = connector.getDataByName("Port", 0); // retrieve data from line #0
String[] ips = connector.getDataByName("IP", 0); // retrieve data from line #0
String[] propertiesPort = connector.getDataByName("prop_value", 1); // retrieve data from line #1
String[] propertiesBuild = connector.getDataByName("prop_value", 2); // retrieve data from line #2
String[] s = connector.getDataByLine(5, 0); // retrieve line 5 in line#0
```

the string toSend contains:



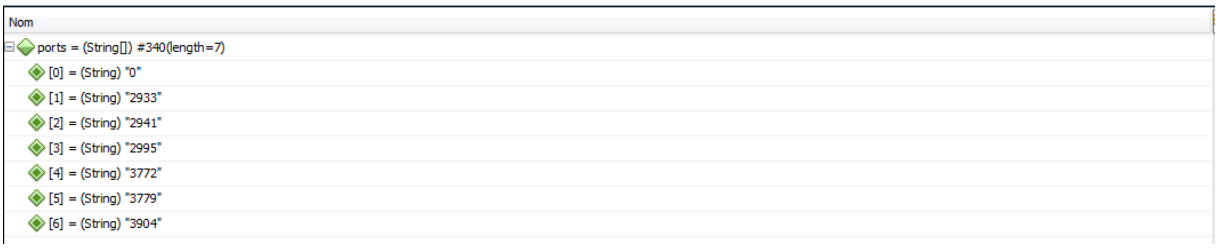
The string Received contains after execution:

Received = (String) "5 1 7 2 8 0 IP 8 0 Port <0 /> <1 0/> <9 127.0.0.1/> <4 2933/> <9 127.0.0.1/> <4 2941/> <9 127.0.0.1/> <4 2995/> <9 127.0.0.1/> <4 3772/> <9 127.0.0.1/> <4 3779/> <9 127.0.0.1/> <4 3904/> ; 1 4 8 0 prop_name 8 0 prop_value 8 0 prop_type 8 0 prop_access <4 port/> <4 6666/> <6 string/> <1 r/> ; 1 4 8 0 prop_name 8 0 prop_value 8 0 prop_type 8 0 prop_access <5 build/> <37 1.2014.07.21.00.26 Win x86_64 release/> <6 string/> <1 r/> ; "

As you can see we received three lines corresponding to the three commands to be executed:

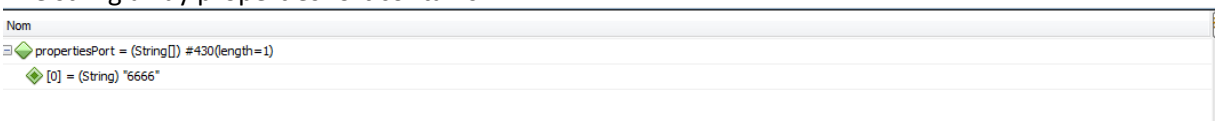
Line #0	7 2 8 0 IP 8 0 Port <0 /> <1 0/> <9 127.0.0.1/> <4 2933/> <9 127.0.0.1/> <4 2941/> <9 127.0.0.1/> <4 2995/> <9 127.0.0.1/> <4 3772/> <9 127.0.0.1/> <4 3779/> <9 127.0.0.1/> <4 3904/>
Line #1	1 4 8 0 prop_name 8 0 prop_value 8 0 prop_type 8 0 prop_access <4 port/> <4 6666/> <6 string/> <1 r/>
Line #2	1 4 8 0 prop_name 8 0 prop_value 8 0 prop_type 8 0 prop_access <5 build/> <37 1.2014.07.21.00.26 Win x86_64 release/> <6 string/> <1 r/>

The array string ports contains:

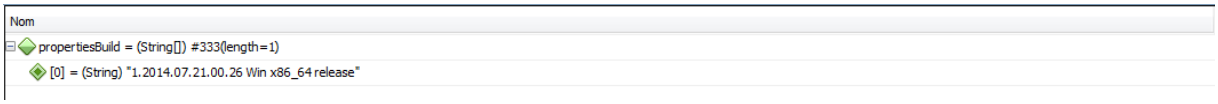


The string array ips contains:

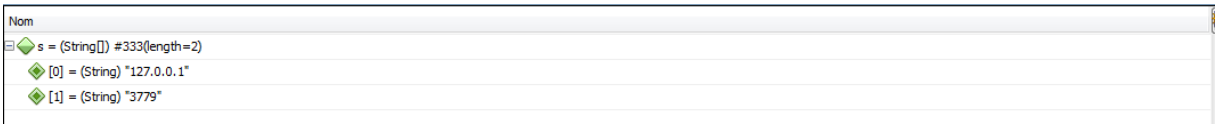
The string array propertiesPort contains:



And the string array propertiesBuild contains:



The line #5 of line script #0 is retrieved by string array s:



All the data are the same as in the preceding section but they were retrieved at once.

Methods references :

```
bool        Lock            (void);
bool        UnLock          (void);
void        Connect  (void);     //connecting
bool        isConnected     (void);
bool        isValid    (void); // socket is valid
void        OpenScript      (void);   // clears command buffers : ready for an new command
void        Push            (GPString s);    //push a string on the command buffer
void        AddFunction     (void);
bool        ExecuteScript   (void);
```

members references :

```
String          ip;         //IP address: defaut 127.0.0.1
String    port;       // Port default: 1254
String    SessionId;  //  id of  session
```