

# JAMAL Manual

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## 0.1 Introduction

JAMAL (JAVa MATlab Linking) makes it possible to call Matlab functions from java, passing and returning java primitives and their arrays. JAMAL is based on the remote method invocation (RMI) technology and allows for calling Matlab function on the fly, without saving results to a temporary file.

## 0.2 Installation and usage

1. Compile source files and put them into JAR archive. Ant script `build.xml` is provided to facilitate the compilation process.

2. Add jar file to the Matlab classpath: type in the matlab prompt

```
edit classpath.txt
```

and add the necessary line.

3. Type in the matlab prompt

```
>>com.jamal.server.MatlabServer
```

This starts server-side part of JAMAL. The following message should be normally displayed:

```
>>>MatlabServer is ready
```

4. Add in the classpath of your java program *JAMAL.jar* and *jmi.jar*.
5. Some examples how to make function calls is given in the class *com.jamal.TestMatlabCaller*.  
*MatlabClient.executeMatlabFunction(String matlabFunctionName, Object[] inputArgs, int numberOfOutputArgs)* passes matlab function name, input arguments and number of output arguments. One has to know exactly how many output arguments are there in the matlab function.
6. In order to stop running MatlabServer one has to call *MatlabClient.shutdownServer()* method. In the current implementation of JAMAL it is not possible to do it from the inside of Matlab.

Another option is to call the main method of class *com.jamal.client.Jamal*.  
Calling

```
java -jar JAMAL.jar -h <host> -p <port>
```

from command line sends a signal to stop MatlabServer. Default port is 1099.

```
java -jar JAMAL.jar
```

without program parameters shows GUI interface with the capability of shutting down running MatlabServer.

### 0.3 FAQ

More about linking Java and Matlab, conversion of primitive types and their arrays you can read in Matlab tech docs.

### 0.4 Similar tools

- MatlabJava server by Bowen Hui:  
<http://www.cs.utoronto.ca/~bowen/code/code.html#matjav>
- MatlabControl from Kamin Whitehouse:  
<http://www.cs.virginia.edu/~whitehouse/matlab/JavaMatlab.html>