

Tutorial 1 - RMI

1 Hello World in RMI

In the archive file “HelloWorld RMI.zip” you have been given a complete RMI program, with client and server. You must run both of these on localhost and get them communicating, this process is fairly straight forward.

1. Compile the sources, I recommend you use the command line and compile the code using **javac**.

```
$ javac *.java
```

The above command would compile all Java files. \$ means that what follows is a terminal command.

2. Start the RMI Registry, it is possible to start the RMI registry in your code but in this case we will start it from the terminal.

```
$ rmiregistry &
```

& means that the process starts in the background and you may continue to interact with that terminal. You may later kill that process using the PID which is printed after a background process is started. If you do not know the process id and want to stop the process, in UNIX we could use the following

```
$ ps -ef | grep rmi
```

3. Start the server. ***Servers must always be started before their clients.***

```
$ java HelloImpl
```

This class registers itself with the RMI registry under a name which the client will search for.

4. Start the client, in a separate terminal.

```
$ java HelloClient
```

The client should print a message from the server.

2 Starting the registry in code

If we wanted to start the registry from code we could include the following in our RMI classes, specifically HelloImpl in this case.

```
try {
    java.rmi.registry.LocateRegistry.createRegistry(1099);
    System.out.println("RMI registry ready.");
} catch (Exception e) {
    System.out.println("Exception starting RMI registry:");
    e.printStackTrace();
}
```

3 Second Example

In the archive file “Fibonacci RMI.java” you will find a slightly more complex RMI example where the remote service is used to calculate the nth fibonacci number for the client application. This means we must pass parameters from one JVM instance to another. You should get this example running on localhost by repeating the above steps. If the registry is already running then you will get an error when you try to re-run that command, if the registry is still running the new remote fibonacci service can be registered to it.