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EXERCISES:
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1. Start a Grid Session:
    o   Generate a proxy
    o   Store the proxy to Myproxy server
    o   Delegate your credentials to the WMS

2. ───

    Stop a Grid Session:

    o   Destroy the proxy on Myproxy
    o   Destroy the local proxy

3. ───

    Start a new session with the <StartGridSession.sh> script

    o   From the UI (or course VM) execute: **StartGridSession.sh tutor**
    o   Inspect the information in your local proxy. *Remember*: to submit jobs to the WMS resource broker you must have a valid proxy including the VOMS extensions. Check the the VOMS extensions with the <voms-proxy-info -all> command.
    o   Inspect the proxy information stored on Myproxy

4. ───

    Job Submission:

    o   Submit the simple hostname job to the Grid. The JDL code is given in Lecture 14:
        ▪   Prepare the jdl
        ▪   Find out were your job could possibly run by using the <glite-wms-job-list-match> command
        ▪   Submit the job
        ▪   Track the status both from command line and your browser
        ▪   When the job is DONE, retrieve the results locally to your VM. Check the stderr/stdout files.
    o   Repeat the example with other system commands available on the Worker Nodes. To do this, modify the Executable and Argument requirements in your existing jdl:
        ▪   Submit a job that prints "Hello Grid":
            ▪   Executable = "/bin/echo";
            ▪   Arguments = "Hello Grid!";
        ▪   Submit a job that lists the files in the Worker Node current directory:
            ▪   Executable = "/bin/ls";
            ▪   Arguments = "-l";
        ▪   Submit a job that prints the Worker Node environment:
            ▪   Executable = "/bin/env";

5. ───

    Grid Toolkit:

    o   The Grid Information System can be used as an easy way of checking the status of current Grid nodes. Find which CEs are available to your VO (tutor), their submission queues and if they have running jobs at the moment.

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Note: If you encounter difficulties in the job submission procedure, go through the Quick Start Guide (Lecture 16), repeat the steps as they come and return here to continue with the exercises.

<u>Solutions:</u>

```
[mooc@grid-mooc 1_MyFirstJob]$ cat echo.jdl
// specify the jobtype
Type = "Job";
JobType = "Normal";
// specify the executable
Executable = "/bin/echo";
// specify the arguments
Arguments = "Hello Grid!";
// specify the names for the standard output and error
StdOutput = "simple.out";
StdError = "simple.err";
// specify the output sandbox contents
OutputSandbox = {"simple.out","simple.err"};
// number of retries
ShallowRetryCount = 3;

[mooc@grid-mooc 1_MyFirstJob]$ cat ls.jdl
// specify the jobtype
Type = "Job";
JobType = "Normal";
// specify the executable
Executable = "/bin/ls";
// specify the arguments
Arguments = "-l";
// specify the names for the standard output and error
StdOutput = "simple.out";
StdError = "simple.err";
// specify the output sandbox contents
OutputSandbox = {"simple.out","simple.err"};
// number of retries
ShallowRetryCount = 3;

[mooc@grid-mooc 1_MyFirstJob]$ cat env.jdl
// specify the jobtype Type = "Job";
JobType = "Normal";
// specify the executable
Executable = "/bin/env";
// specify the names for the standard output and error
StdOutput = "simple.out";
StdError = "simple.err";
// specify the output sandbox contents
OutputSandbox = {"simple.out","simple.err"};
// number of retries
ShallowRetryCount = 3;
```