**Notation**

**~** Shows home/Darmstadt/*username*

**$executable** The location of the BoSSS binary on your local machine which you want to execute on CSC-server

**$executationDir** The location which the executables will be deployed on the CSC-server

**$file** The path of a file on your local machine

**$fileDir** The path of a file on the CSC-server

**Necessary Program**

Xming, WinSCP, Putty

**Connect CSC Frankfurt using Putty**

1. In Host Name: hhlr.csc.uni-frankfurt.de
2. In left part, Category/windows/Translation select UTF-8 as “Received data assumed to be in which character set ”
3. In left part, Category/connection/SSH/X11 check “Enable X11 forwarding”
4. In sessions select a name in Saved Sessions and click save
5. Click open
6. Write your CSC-username and password

**Module (in Putty)**

* Modules to load for BoSSS  
  mono/2.8.1  
  openmpi/gcc/64  
  acml/gcc/64  
  gcc
* **module load *Modulname*** (**module add *Modulname***) Load modules

For example: module add mono/2.8.1 acml/gcc openmpi/gcc/ gcc

* **module list** shows a list of all loaded modules
* **module avail** shows a list of all available modules

**Deployment using git-bash**

* bcl deploy-at $executable sftp://username@hhlr.csc.uni-frankfurt.de:~/$executationDir

**Copy a file to CSC**

1. Copy using WinSCP
2. Copy using git-bash:

scp $file *username*@ hhlr.csc.uni-frankfurt.de:~/ $fileDir

This command can be used to copy control file or job file.

**Notes about Control file and Database**

* Control file must be located one directory previous to $executationDir.
* A new Database (using bcl init-db command) and Grid (using grid tools) should be created in your local computer. In this case, Grid Guid and database path must be changed in control file.
* In control file “use ParMETIS2 must be set false.
* The database from local computer should be copied in CSC-Frankfurt in the scratch/Darmstadt/*username* directory.
* The both databases in local and server computer should be synchronized.

**Perform compute jobs on the cluster**

**1. Prepare a job script**

For every new job on the CSC you will need to create a new job. This file “jobfile.job” muss be copied in the executationDir. In the following you can see some commands in Job file:

Example jobfile (2 nodes, 8 processors per node):  
#! /bin/sh -  
# Give the job a name  
#PBS -N "job file Name"  
# The job needs at most 60 hours wall-clock time on 8 cpus  
#PBS -l walltime=00:30:00,nodes=2:ppn=8  
# Send me an email on a=abort, b=begin, e=end  
#PBS -m abe  
# Write the standard output of the job to file 'mpijob.out'  
#PBS -o out.txt  
# Write the standard error of the job to file 'mpijob.err'  
#PBS -e err.txt  
# change to path with your executable ($executationDir)  
cd ~/$executationDir  
mpiexec -n 16 mono execution.exe ../control-example.xml

**2. Submit a job**

**qstat -u username** shows your run Status

**qstat** Shows all jobs Status

**qstat -q**

**qstat -Q**

**qsub jobfile** submit the job

**Other helpful Commands (in Putty)**

**pwd** Shows the Directory which you are in

**ls** Shows the available files in the Directory

**mc** Shows DOS page

**cat jobfile** Shows the job files script

**qdel jobID** Stops the run

**Further Information**

<http://csc.uni-frankfurt.de/csc/index.php?id=52>

<http://modules.sourceforge.net/man/module.html>

<http://doesciencegrid.org/public/pbs/homepage.html>