

Migration from LSF to SLURM



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Important SLURM commands:

LSF command	SLURM command
<code>bsub < jobscript</code>	<code>sbatch jobscript</code> (No "<" required.)
<code>bjobs</code>	<code>squeue</code>
<code>cbjobs</code>	<code>sjobs</code>
<code>bpeek</code>	Not required. Output file is written continuously.
<code>bkill <JobID></code>	<code>scancel <JobID></code>
<code>bkill 0</code>	<code>scancel -u <TU-ID></code>

All SLURM batch scripts should begin with a so-called shebang, e.g.:

```
#!/bin/bash
```

This was not required in LSF batch scripts. Sample batch scripts can be found on our website.

Parameters for batch scripts can be found on the next page.

This is what a batch script could look like:

```
1  #!/bin/bash
2
3  #SBATCH -J my_job
4  #SBATCH --mail-user=mail@institute.tu-darmstadt.de
5  #SBATCH --mail-type=ALL
6  #SBATCH -e /some/path/my_job.err.%j
7  #SBATCH -o /some/path/my_job.out.%j
8  #SBATCH --mem-per-cpu=250
9  #SBATCH -t 00:05:00
10 #SBATCH -n 4
11
12 echo "This is Job $SLURM_JOB_ID"
13
14 module load gcc openmpi/gcc
15
16 mpirun hostname
```

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Parameters for batch scripts:

LSF batch command	SLURM batch command
#BSUB -n <num_cores>	#SBATCH -n <num_tasks> (num_cores and num_tasks might be different, e.g. for OpenMP (see below).)
#BSUB -W <hh:mm> <mm>	#SBATCH -t <hh:mm:ss> <mm> Note: <hh:mm> does not exist and will be interpreted as <mm:ss>.
#BSUB -M <memory_per_job>	#SBATCH --mem-per-cpu=<memory_per_core> (Remember that memory_per_job ≠ memory_per_core)
#BSUB -o /some/path/Job_Name.out.%J	#SBATCH -o /some/path/Job_Name.out.%j
#BSUB -e /some/path/Job_Name.err.%J	#SBATCH -e /some/path/Job_Name.err.%j
#BSUB -J <job_name>	#SBATCH -J <job_name>
#BSUB -u <email>	#SBATCH --mail-user=<email>
#BSUB -B	#SBATCH --mail-type=BEGIN
#BSUB -N	#SBATCH --mail-type=END
#BSUB -B -N	#SBATCH --mail-type=ALL
#BSUB -cwd <path>	#SBATCH -D <path>
#BSUB -R <resources> e.g. #BSUB -R "select[nvd]"	#SBATCH -C <features> e.g. #SBATCH -C nvd
#BSUB -x	#SBATCH --exclusive
#BSUB -w <dependency>	#SBATCH -d <dependency> (See man sbatch for syntax.)
#BSUB -a openmp	#SBATCH -n 1 #SBATCH -c <num_openmp_threads>
#BSUB -a openmpi	(not required)
#BSUB -a intelmpi	(not required)
\$LSB_JOBID (environment variable)	\$SLURM_JOB_ID (environment variable)

Special parameters for array jobs:

LSF batch command	SLURM batch command
#BSUB -J <job_name>[1-k]	#SBATCH -J <job_name> #SBATCH -a 1-k
#BSUB -J <job_name>[1-k]%p	#SBATCH -J <job_name> #SBATCH -a 1-k%p
#BSUB -o /some/path/Job_Name.out.%J_%I	#SBATCH -o /some/path/Job_Name.out.%A_%a
#BSUB -e /some/path/Job_Name.err.%J_%I	#SBATCH -e /some/path/Job_Name.err.%A_%a
\$LSB_JOBID (environment variable)	\$SLURM_ARRAY_JOB_ID (environment variable)
\$LSB_JOBINDEX (environment variable)	\$SLURM_ARRAY_TASK_ID (environment variable)