SLURM `sbatch` Cheat Sheet

Flags

FLAG	DESCRIPTION
`--ntasks=[t]`	Advises SLURM there will be `[t]` tasks
`--cpus-per-task=[c]`	Requests `[c]` cpus per task (total $t \times c$ cpus)
`--mem-per-cpu=[mc]`	Requests `[mc]` memory per cpu (total $m_c \times c$ memory) in MB
`--array=[indices[%max]]`	Submit an array of jobs on the given `indices`, with `max` at one time
`--partition=[p]`	Requests the job run on partition `[p]`
`--output=[filename]`	Redirects `stdout` to `[filename]`
`--error=[filename]`	Redirects `stderr` to `[filename]`
`-v[v...]`	Increase verbosity. Multiple `v`'s increase information level.
`--mail-type=[type]`	Sends an email at certain conditions, see below.

Array Job Indices

FORMAT

`k,m,n,p,q,...`	A comma-separated list
`low-high`	A range
`seq[%max]`	seq is any combination of comma-separated lists and ranges, with increasing values. `max` (optional) controls the maximum number of simultaneous jobs and must be positive.

EXAMPLES

`0-10`	Run the 1st through 10th jobs, run as many as possible
`0-10%5`	As above, only allow 5 to run at a time
`0,2,10-99%2`	Run the first, third, and 11th through 100th jobs, two at a time

Scripting

MAIL TYPES

`NONE, BEGIN, END, FAIL, REQUEUE, TIME_LIMIT_<%%>, ARRAY_TASKS, ALL`

FILENAME PATTERNS

`%a`	Array ID number
`%j`	Job ID number
`%s`	Step ID number
`%J`	jobid.stepid

PARTITIONS

	Time Limit (hr)	Node Limit	Priority (lower better)	
`express`	2		2	
`short`	12	44	4	
`medium`	50	44	6	
`long`	150	5	8	
`largemem`	50	10	6	768-1024 GB RAM
`pascalnodes`	12		8	GPUs
pascalmedium	50		8	GPUs

Copy-paste the script to the right into a file and save it as `hello.sh`. Make the script executable using the command `chmod u+x hello.sh`. Submit it as a job using the command `sbatch hello.sh`. You should see the following printed at the shell.

```
Hello World!
Hello World!
```

```
#!/bin/bash
#SBATCH ntasks=1
#SBATCH cpus-per-task=1
#SBATCH mem-per-cpu=4G
#SBATCH array=0-1%1
#SBATCH partition=express
#SBATCH output=out_%j_%4a.log
#SBATCH error=err_%j_%4a.log

echo "Hello World!"
```