Hessisches Kompetenzzentrum für Hochleistungsrechnen

Marc2 | quick reference |

Philipps Universität Marburg

File Systems on Marc2

`/home`	Network file system, accessible from all nodes, backed up regularly. Slow (compared to `/scratch`), writing lots of IO or massively parallel IO to `/home` should be avoided.
`/scratch`	Network file system, accessible from all nodes, no backup. Faster than `/home`, should be used for jobs that generate high amounts of IO.
`/local`	Local file systems on the compute node. Only accessible for processes on the same node. May be used for temporary files. Please remove your files or your job script from `/local` at the end of your program or when you finished your calculation.

Parameter limits — Marc2

`h_rt`	Mandatory, max. 10 days (864000s), no default.
`h_vmem`	RAM per core, max. for 64 cores on single node: 4000M, default 1000M.
`-pe`	Mandatory for multicore, recommended: use `smp*` for multithreaded jobs (max. 64 cores) and `orte*` for multiprocess jobs.

qstat — Displaying queued jobs

`-u <user>`	Displays queued jobs for <user>.
`-u "*"`	Display all queued jobs.
`-j <jobID>`	Display detailed info for a job.
`-j <jobID> -explain E`	Explain why this job is in error state.

qalter — Changing script parameters

`qalter [options] <jobID>`	Use to change or add any `qsub` parameters like `-pe` or `-l h_rt`. If a job is not allowed to start due to wrong parameters, it will run after setting them with `qalter`.
`qalter -w v <jobID>`	Display queueing information for this job. Should display "verification: found suitable queue(s)," otherwise it is likely that the job's qsub parameters contain errors.

Other useful commands

`qdel <jobID>1`	Delete a queued or running job.
`qmod -cj <jobID>`	Clear error state of a job.
`qmod -cj "*"`	Clear error state for all of your jobs.
`dos2unix <file>`	Convert a text file from DOS/Windows to UNIX formatting.

Module — Setting program environments

Syntax	`module <command> <modulename>`
`avail`	Display all available modules.
`list`	Display all loaded modules.
`load <module>`	Load a module.
`unload <module>`	Unload a module.
`switch <module1> <module2>`	Unload module1, load module2.
`purge`	Unload all currently loaded modules.
`. /etc/profile.d/modules.sh`	Needed to use the `module` commands in job scripts.

Possible job states in qstat

`q`	Queued
`w`	Waiting
`h`	On hold
`r`	Running
`d`	Deleted
`e`	Error

qsub — Submitting job scripts

Syntax	`qsub [options] jobscript [script options]`
`-cwd`	Use current directory as working directory for a job.
`-o <path>`	Name and path to the output file.
`-e <path>`	Name and path to the error file.
`-j`	Merge output and error streams into one file.
`-l <resource=value>`	resource-reservation, e.g. `h_rt=<max runtime>`, `h_vmem=<max memory>`.
`-pe <pe> <n_cores>`	Choose the parallel environment `<pe>` and `<n_cores>` to be used, e.g. `-pe orte* 16` for OpenMPI jobs with 16 cores. Omit this parameter for single core jobs.
`-q <queue>`	Specify the queue for job execution. Choose from `debug`, `regular` or `long` with different runtime limits (cf. Parameter limits, `h_rt`).
`-V`	Export calling environment to job.
`-N <name>`	Set job name.
`-t n[-m[:s]]`	Submit a task array with either amount of tasks n, index range n-m or range and step size n-m:s (ex. `-t 2-10:2` →2,4,6,8,10).

Contact, Further Information — HPC Hessen

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Detailed Information — Marc2

URL: http://marc2-doc.hrz.uni-marburg.de/trac