

Recommendations for private MC production (ATLAS)

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DESY

Private MC Production

A lot of ATLAS resources (CPU and storage) are used for AtfastII production.

The work flow is:

generation

- run user script on batch system
- write output to `/scratch`

simulation/reconstruction

- run user script on batch system
- read input from `/scratch`
- write output to `/scratch`

- This is a prime use case for the GRID!
- Output fills up precious Lustre space (`/scratch`).

Improvements

Lustre (`/scratch`) is for high IO performance (many reads) and not long term storage!

CPU time is less expensive than storage.

Better use of available resources:

- write to local disk and copy to `/scratch` at end of job
- don't save unnecessary files, e.g. HITS, RDO, ESD
- move input files to dCache after processing (`dq2-put`)
- copy files from dCache to Lustre (`dq2-get`)
- AtIfastII is a standard production step, use AthenaMC module from ganga to run either on batch system or Grid
- ganga can write output directly to dCache and register files into dq2

Conclusions

Once data will arrive the NAF resources will be limited. Use them with care, e. g. run jobs on the Grid and use dCache instead of Lustre.

Recommendations:

- dCache is cheaper than Lustre.
Move data to dCache with dq2 tools as soon as possible or write them directly to dCache
- CPU is cheaper than storage.
Write out less information and consider reprocessing.