

Offline Monitoring Report

January 28 2015
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Launch from 2015-01-23 (ver09)

- Ran over all data files from last fall run
- Output:
 - detector plugins
 - REST
 - EventStore files
- Goals:
 - Test computing capabilities for processing ~7300 files
 - Provide REST for all files
 - Search for errors

Processing

- Processing very quick (finished most jobs by Sunday night) on new CentOS65 machines
- Using 6 threads/job
- For each node, 32GB of RAM, 1TB of HDD, 42 threads
- Copying evio files from tape to node to cut down on accesses to /lustre disk

Errors

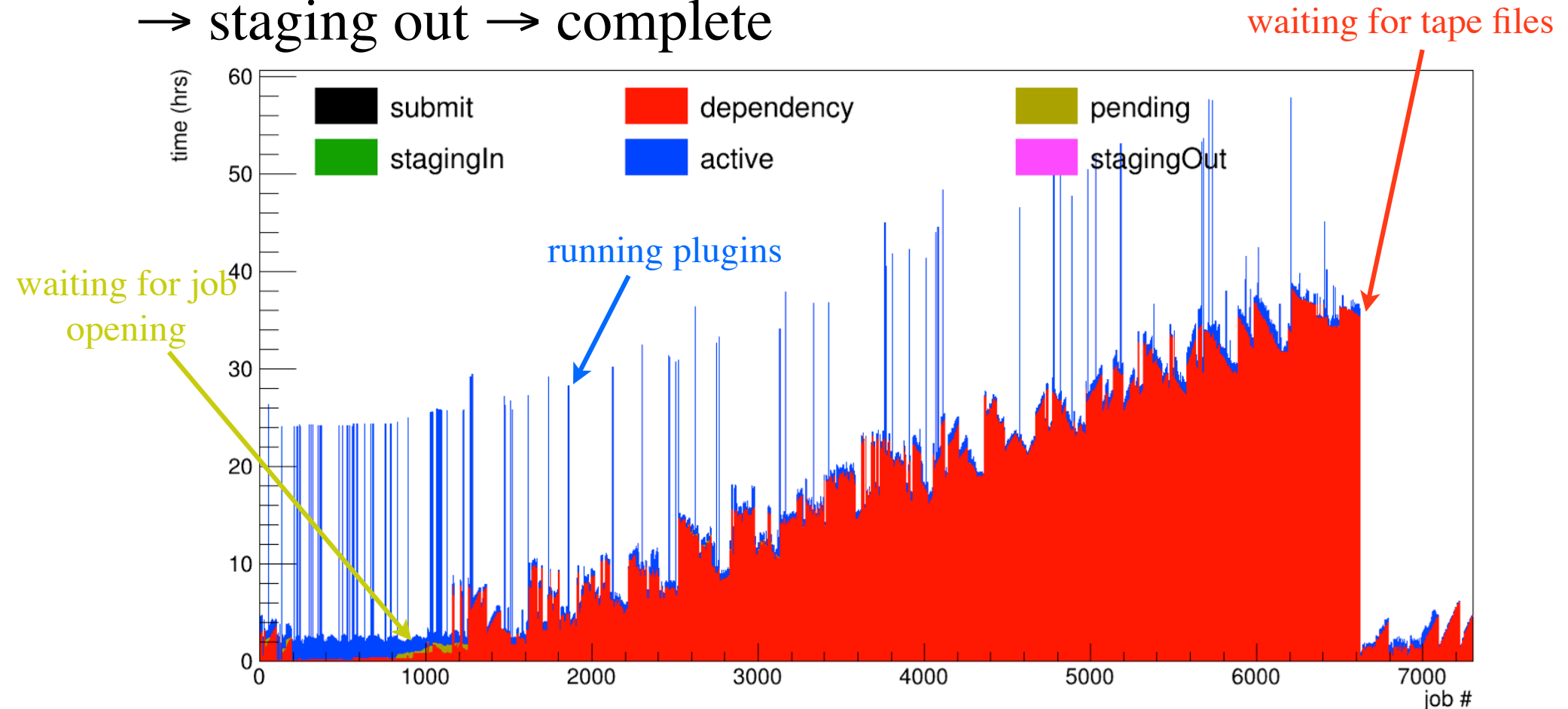
- Half of all files are completely error-free
- Most remaining are EVIO parsing errors

Output

- Detector plugin webpages being updated
- skim, REST files are in subdirs skims, REST of
/volatile/halld/RunPeriod-2014-10/offline_monitoring/ver09/
- Disk usage:
 - plugin ROOT files : 56GB
 - REST : 113GB
 - idxa : 705MB
- Ran EventStore for 2-track, 3-track, 4-track, 5-track,
2-track+ π^0 , 3-track+ π^0 , 4-track+ π^0 , 5-track+ π^0 ,

Statistics of Jobs

- Mark created mysql database from job IDs and info within SciComp's database: contains info on when each job entered which stage
- submit → dependency → pending → staging in → active → staging out → complete



Screenshots

- From <http://scicomp.jlab.org/scicomp/#/>

Saturday 23:30

open slots

used slots

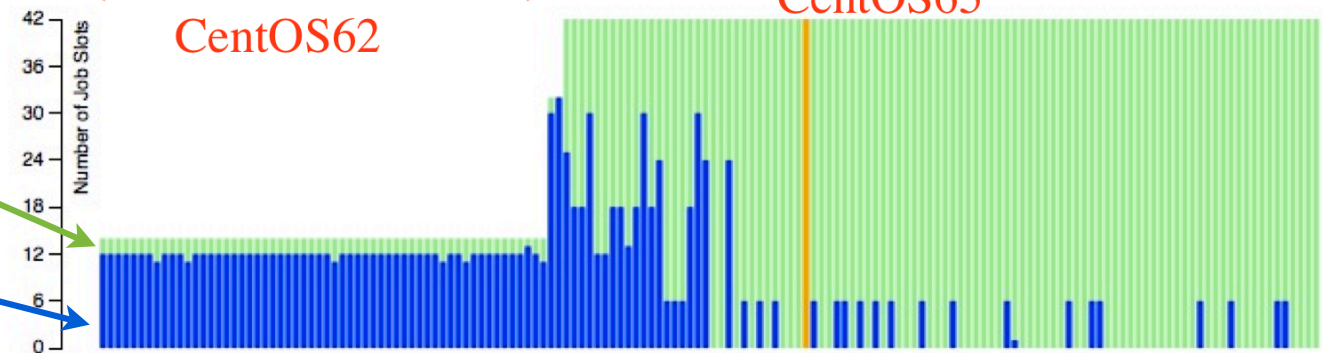
System Status

Current Utilization

Enqueued Job States

Node Status

Free Busy Offline Down Unknown Reserved



Batch Farm Jobs

Additional information is available through [custom queries](#).

Recently Completed Jobs

| User | Success | Failed | Cancelled | Timeout | Over Limit | Total |
|------|---------|--------|-----------|---------|------------|-------|
| all | 14840 | 216 | 5 | 250 | 32 | 15343 |

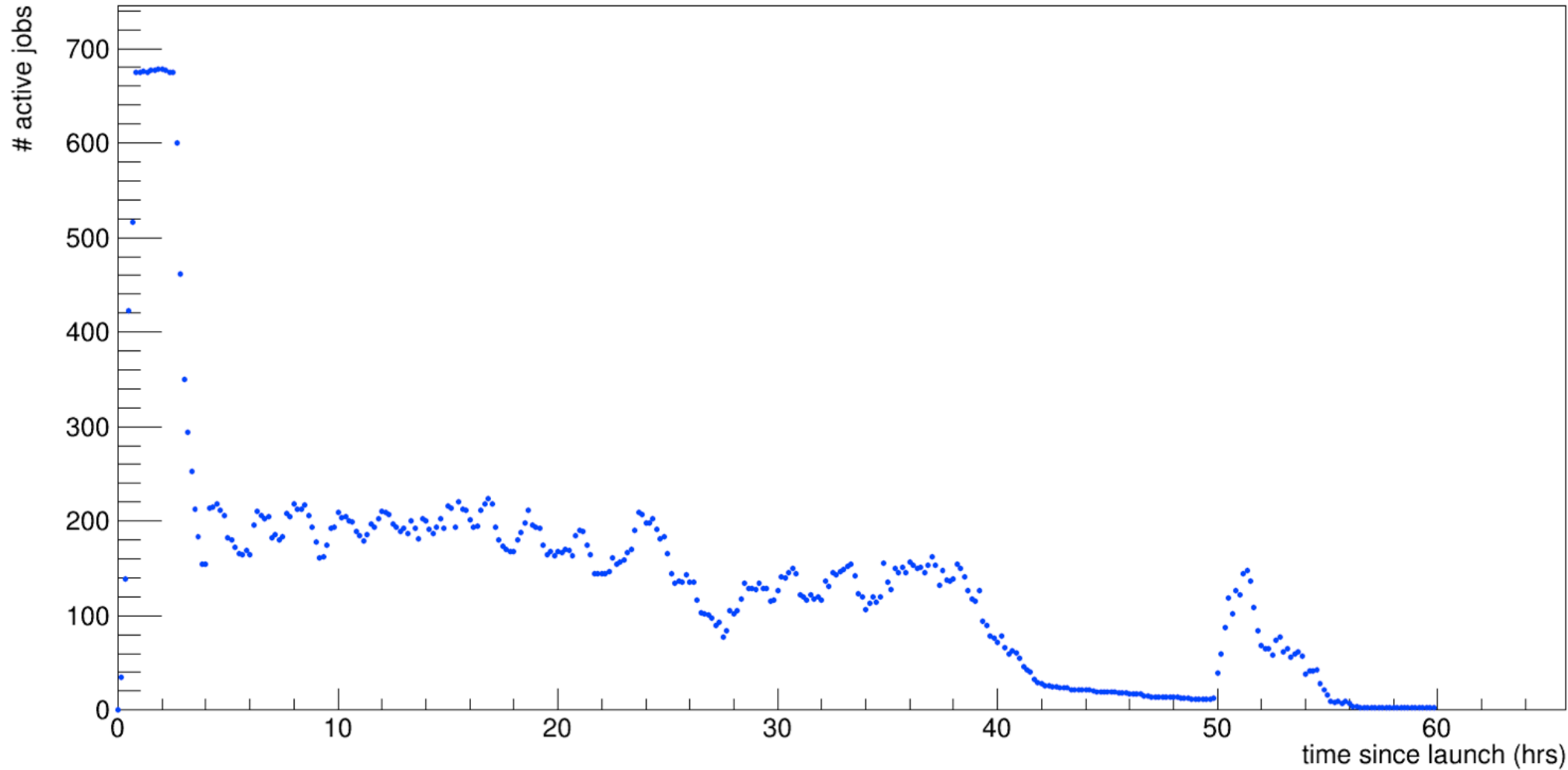
Job Queue

| Search: <input type="text"/> | | | | | | | | |
|------------------------------|---------|--------|---------|---------|---------|--------|-------|--|
| User | Account | Depend | Pending | Staging | Running | Staged | Total | |
| crede | clas | 733 | 67 | 0 | 41 | 0 | 841 | |
| fanguo | halc | 0 | 0 | 0 | 19 | 0 | 19 | |
| gxproj1 | halld | 1830 | 0 | 0 | 84 | 0 | 1914 | |
| igorko | clas | 47 | 0 | 0 | 0 | 0 | 47 | |
| primex | clas | 0 | 0 | 0 | 3 | 0 | 3 | |
| rsholmes | halla | 0 | 0 | 0 | 10 | 0 | 10 | |
| tianye | clas | 0 | 2313 | 0 | 680 | 0 | 2993 | |
| whit | halc | 0 | 0 | 0 | 3 | 0 | 3 | |
| All Users | | 2610 | 2380 | 0 | 840 | 0 | 5830 | |

Showing 1 to 8 of 8 entries

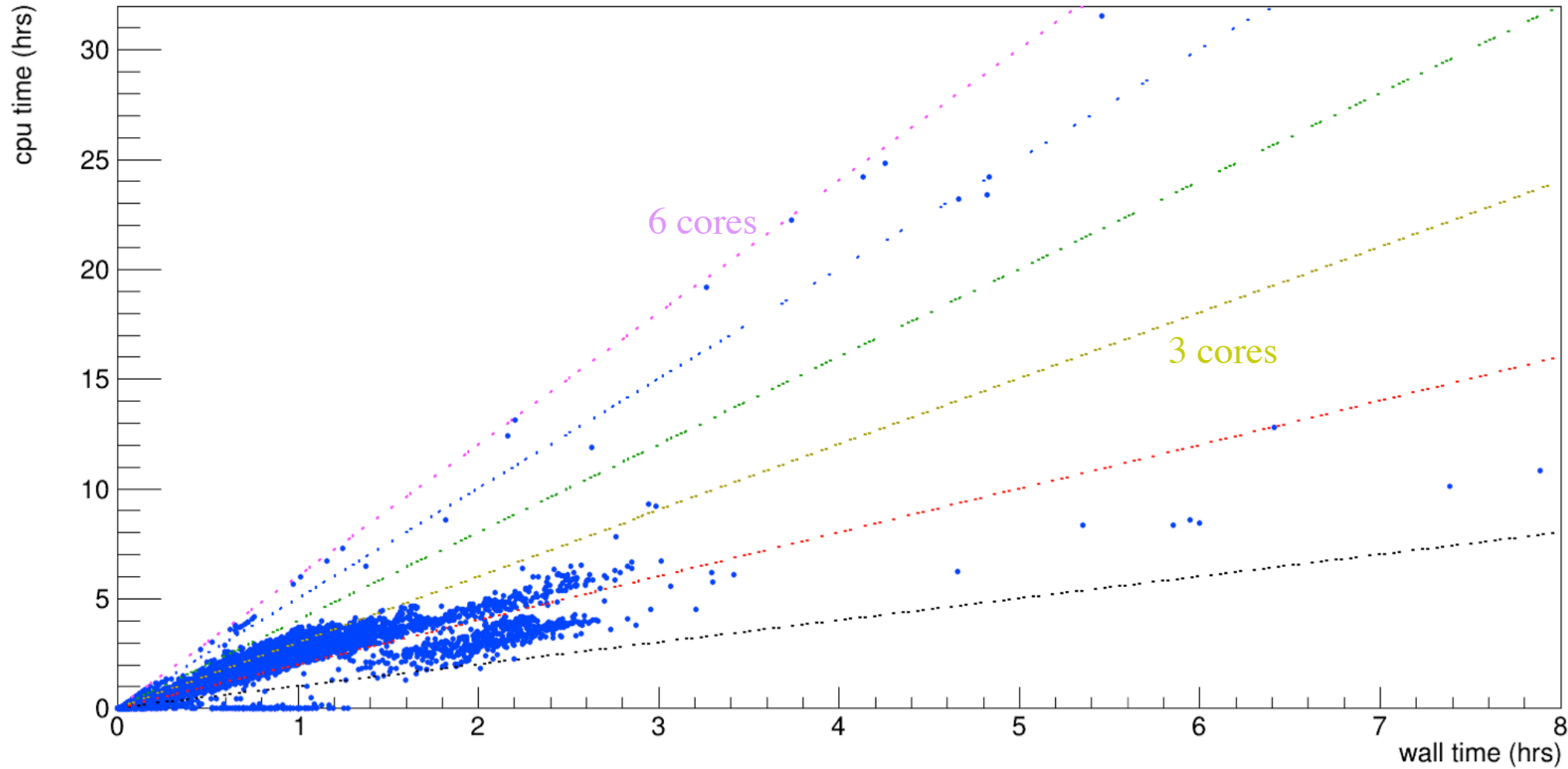
Active Jobs

- # of jobs running at a given time



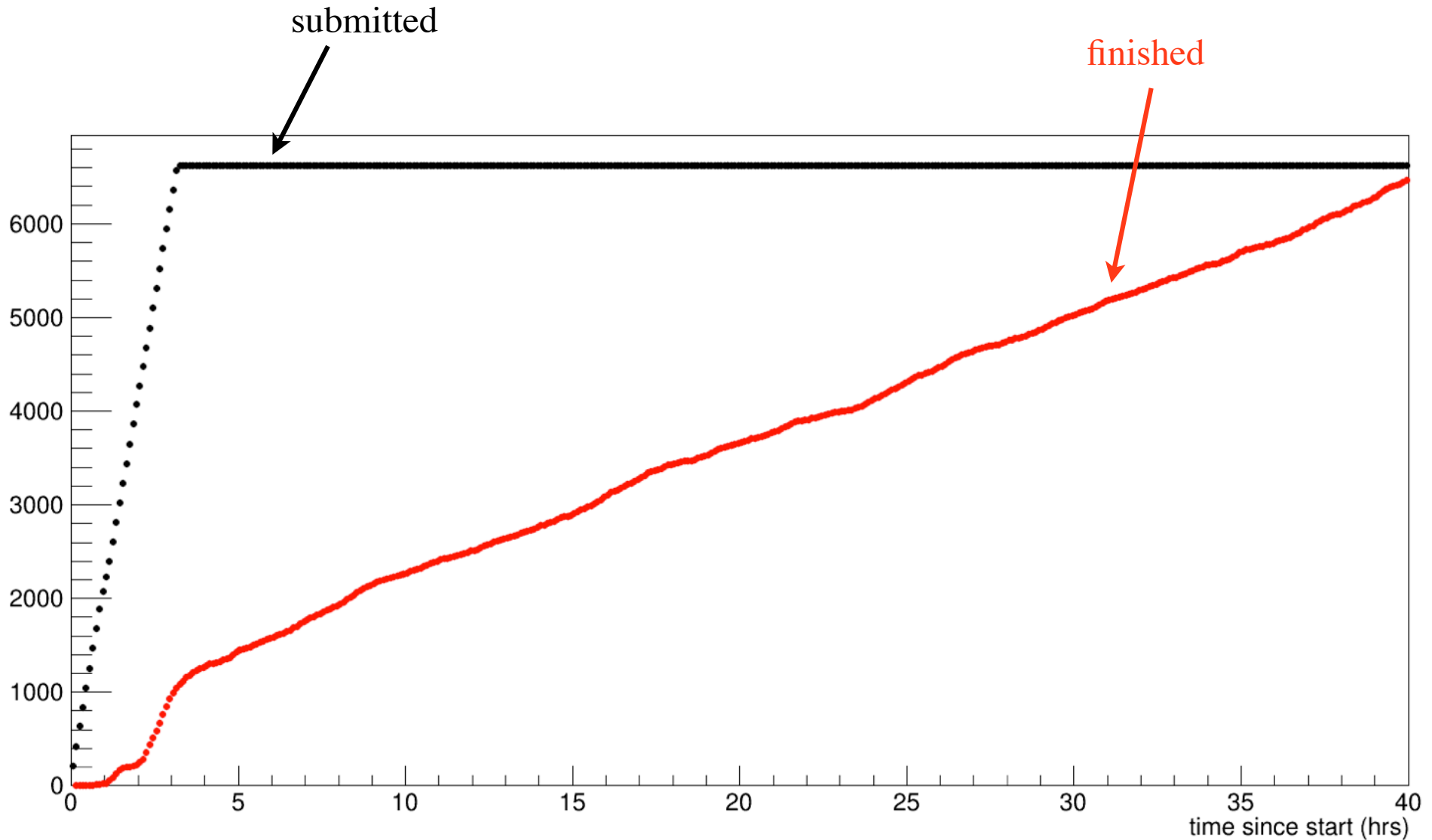
CPU Time vs Wall Time

- Requested 6 cores for each job



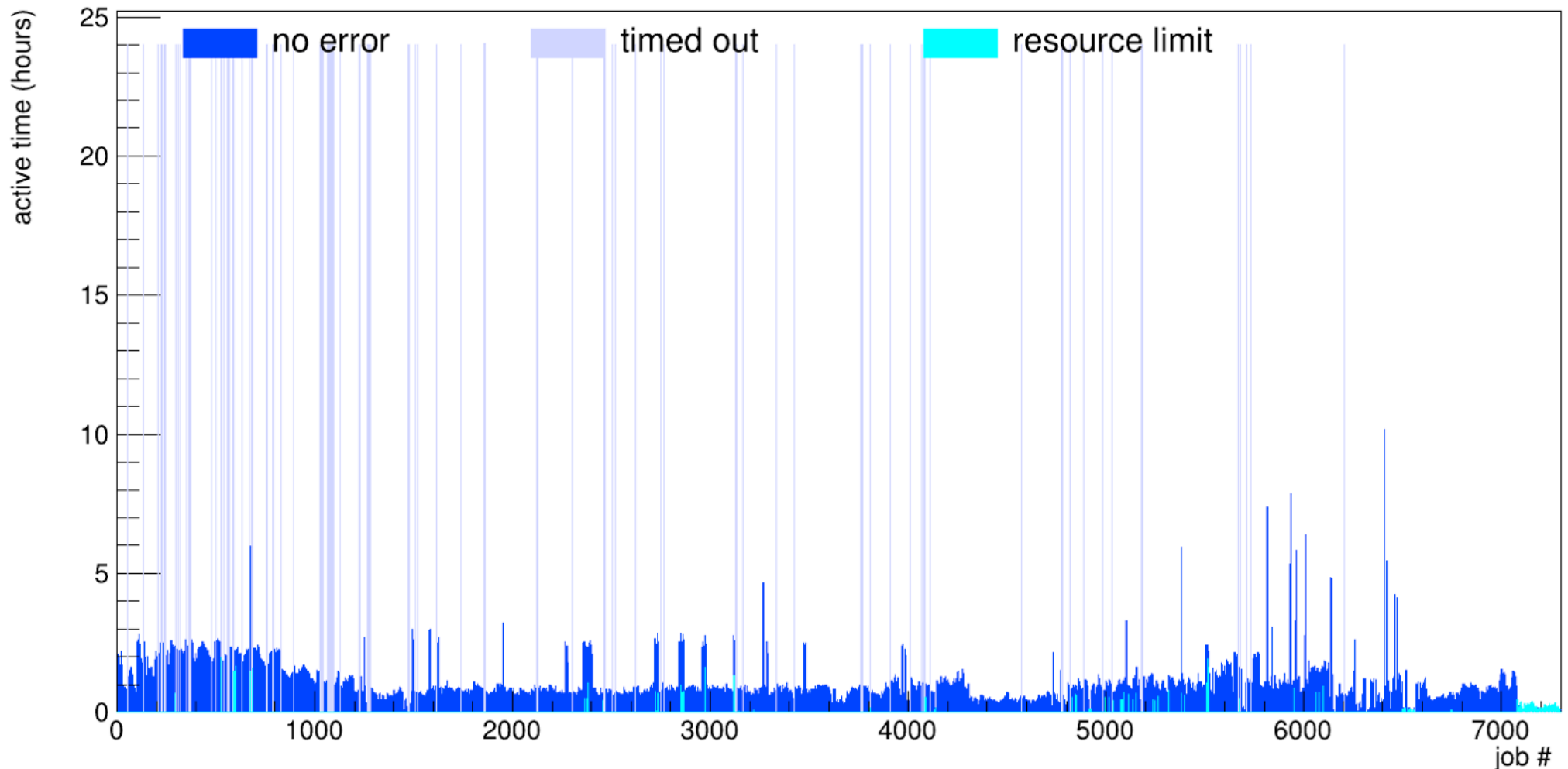
Time Since Start

- Track how many jobs finished since launch

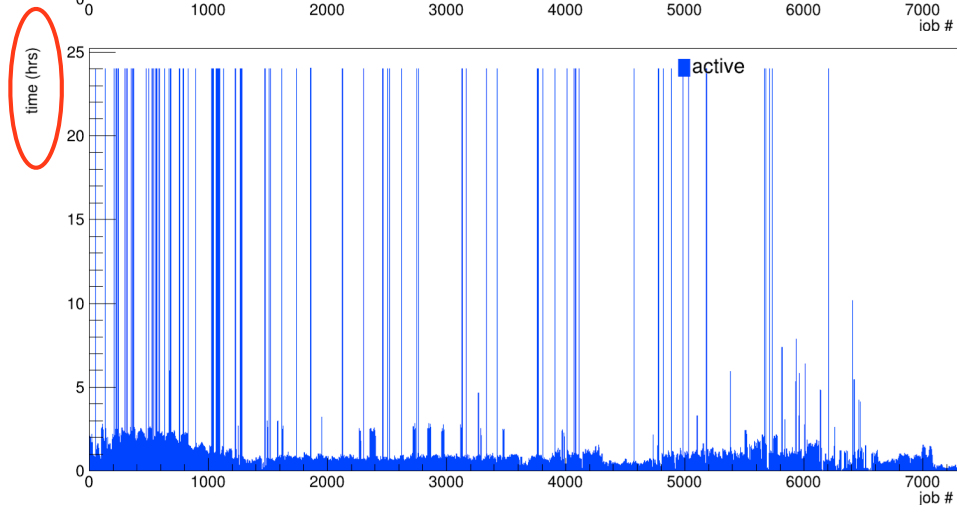
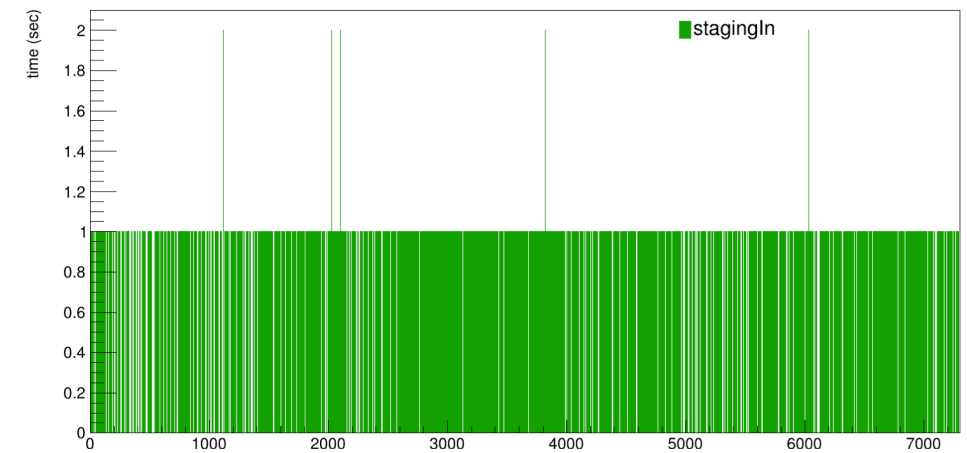
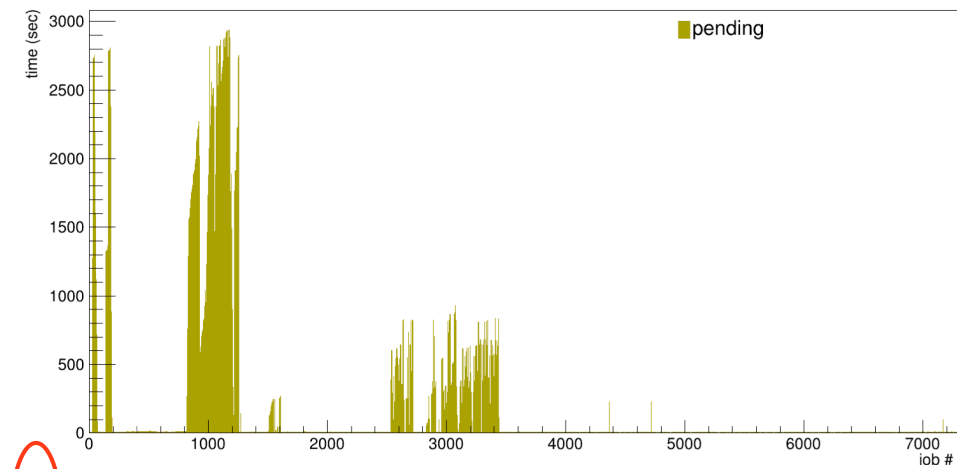
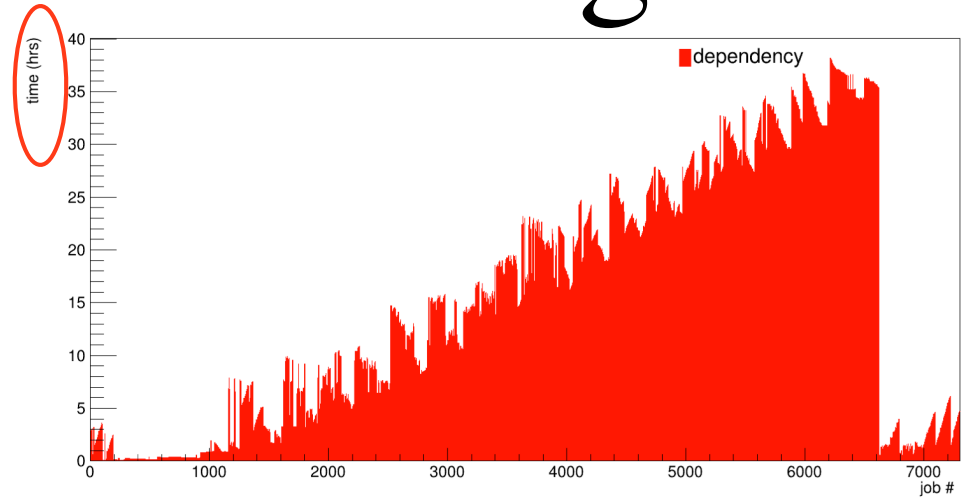
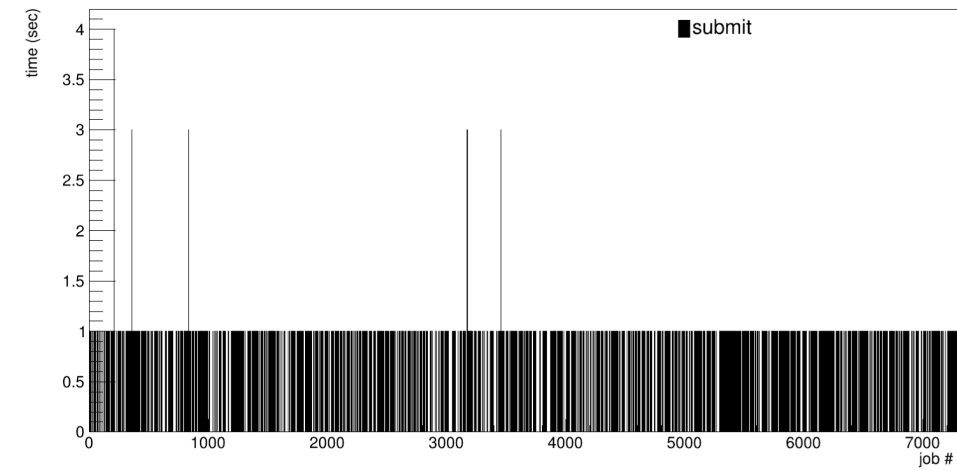


Active Time

- Time to run plugins - usually CPU time is several times this
- Some jobs do not get any CPU time
- Many jobs for run 2439 required more memory

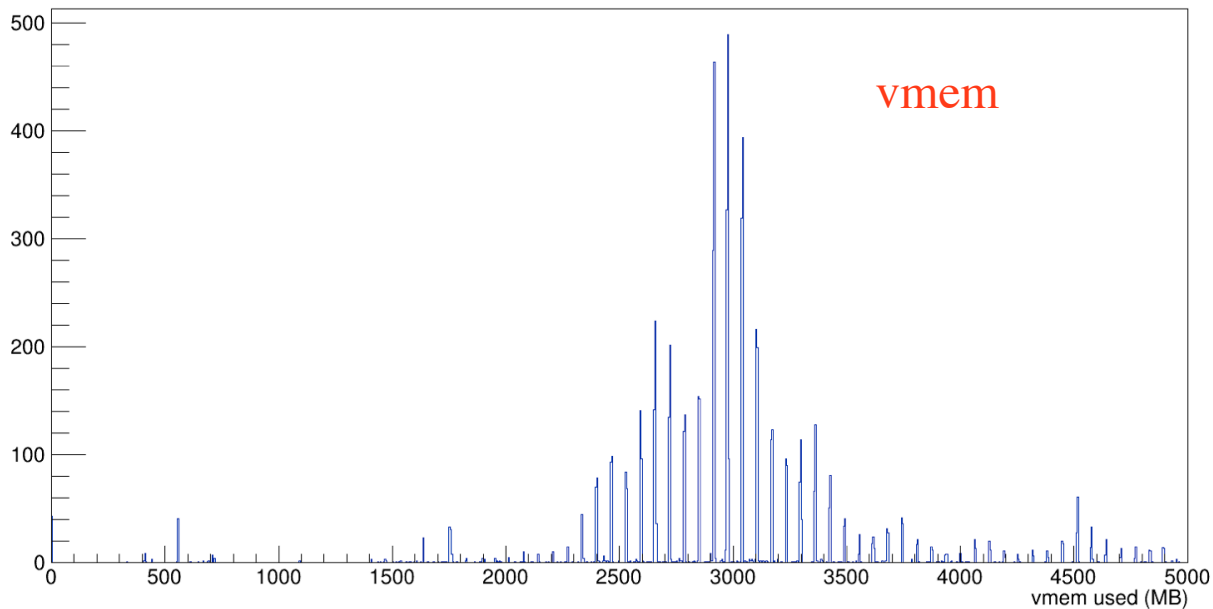
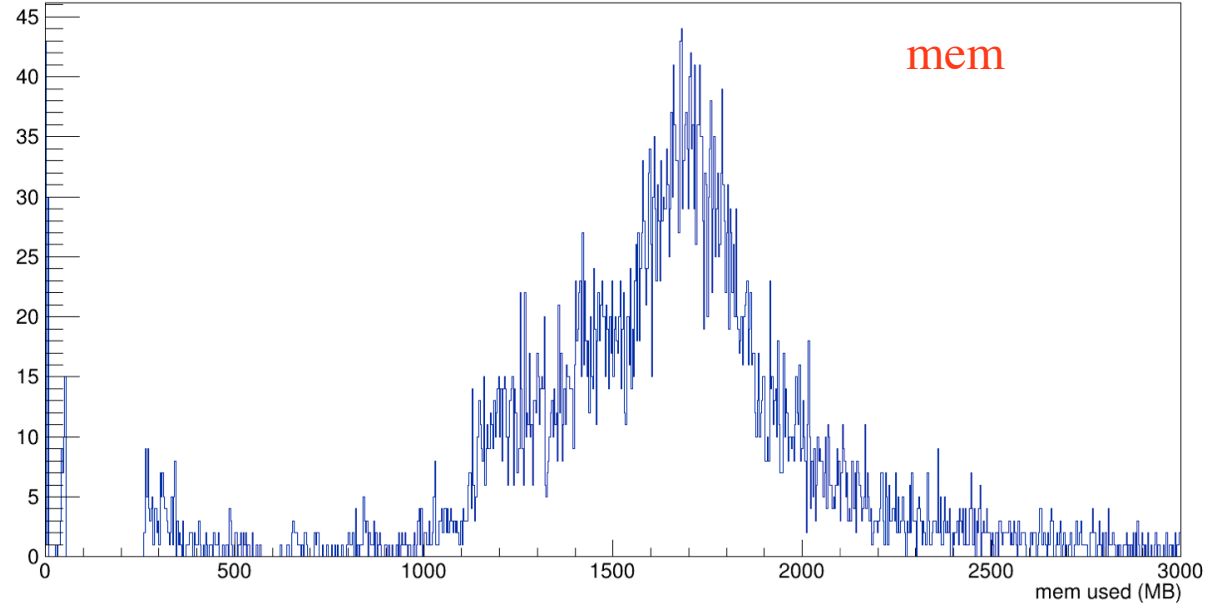


Lengths for Each Stage



Memory Usage

- Requested 4.5 GB for each job
- 265 jobs killed due to lack of resources



To Come

- CPU time per event
- More diagnosis of job failures, bottlenecks
- Set up analysis to run on each launch
- Info on cluster itself (usage %, etc.)