Muon g-2 AEM Update

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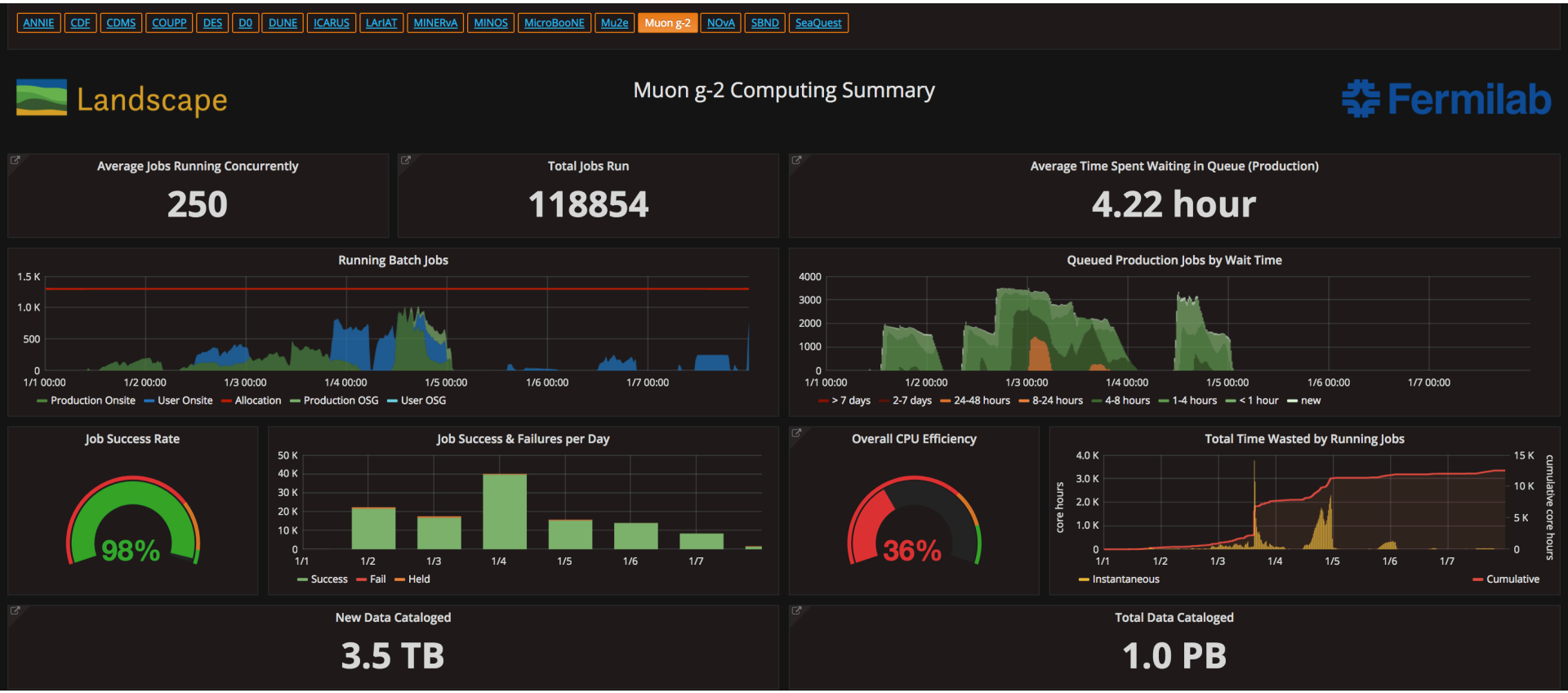
Computing Update



Production of holiday run data.

Onsite 76%, Offsite 2%

Holiday Running

- Successful running from Thursday Dec 21→ Tuesday Jan 2
  - Total of 4 controlled accesses
  - Most systems performed very well overall
  - Most systems had problems at some point during the 2 weeks

  - Good Stability Test
- Lots of studies
  - Fixed a collimator problem → increased stored muons by x1.5
  - Started kicking all 8 bunches
    - Individual timing scan → x1.5 increase
  - Modified inflector cryo controls → removed oscillations from B field

Experiment update week of 12/19→ 1/5

- Networking issues – Good meeting just before Christmas
  - Hardware installed to monitor the network traffic
  - Lots of firewall testing between control room and computer room
- Main magnet and cryogenics
  - Ring was operated stably.
  - (very small) Helium leak identified once the temperatures plumetted. Work to identify and mitigate this over the last few weeks
- Inflector (magnet to inject beam into ring)
  - Mostly stable, Temp/Pressure oscillations caused B field oscillation → tuning cryo controls
- Kicker and Quads (Injection systems to put/keep muons on proper orbit in ring)
  - Kicker plate distorted, wouldn't let trolly pass → vacuum access followed by success
  - Quads worked great until the vacuum work, then lots of conditioning
- Calorimeter (measure decay positrons from muons):
  - Correcting gain drifts from the lasers
  - 24 out of 24 working
- Tracker (measures spatial profile of decay positrons)
  - Nice tracks first half of holiday running.
  - Tracker gas problems when temperatures plummeted → signals went missing.
- Trolley (Maps the magnetic field when the muon beam is off)
  - Reinstalled, all working.

Plan Forward

- Main focus for Week of Jan 8:
  - Address issues from holidays
    - Inflector cooling stabilization
    - Tracker gas testing
    - Cryopump cold shock Wednesday. Waiting on some procurements that did not get through.
  - Preparing Plunging Probe installation (final planned vacuum access)
  - Injection studies at final focus → inflector → kicker → stored muons