OSG Production Support

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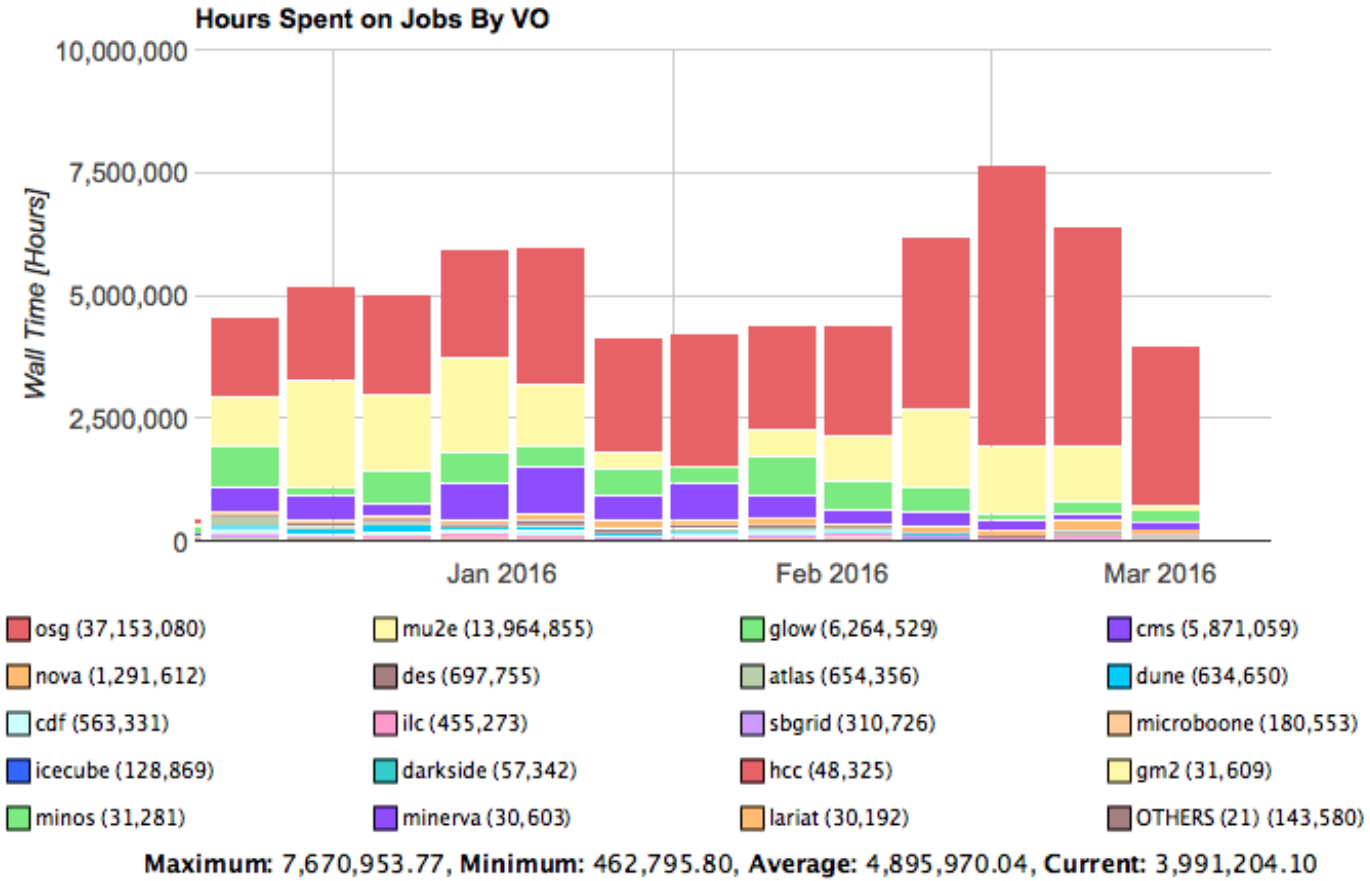
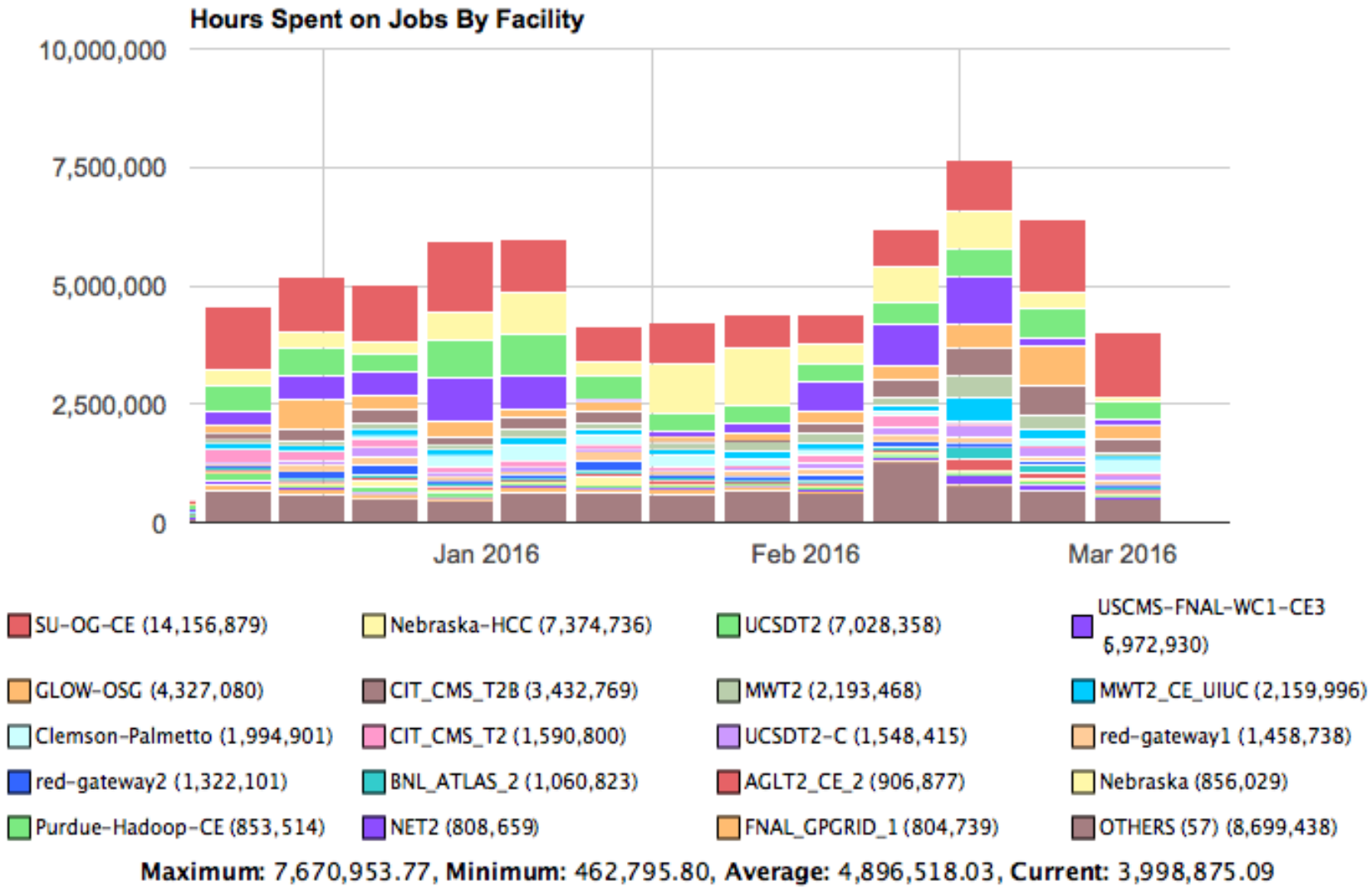
OSG Area Coordinators Call
March 23, 2016

Opportunistic: past 3 months



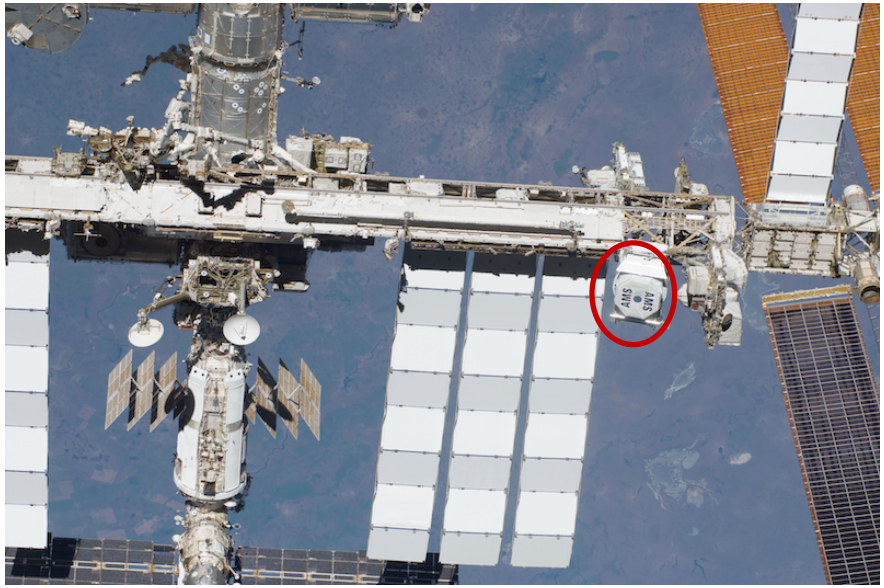
- 69M hours (up from 57M previous quarter)
- Biggest jump in OSG VO (LIGO+AMS), decrease of mu2e by 1M hours

Top opportunistic sites



New: AMS+MIT Campus Computing

- Alpha Magnetic Spectrometer
  - Particle detector on the ISS
- Sam Ting contacts Christoph Paus in mid-February about need for CPU
  - Pitched idea of local MIT computing and flocking to OSG
- Started local running at MIT that week
- Registered submit host in OIM and set it up
  - Flocking began the same day
  - Peaked at ~18k running jobs a few days later



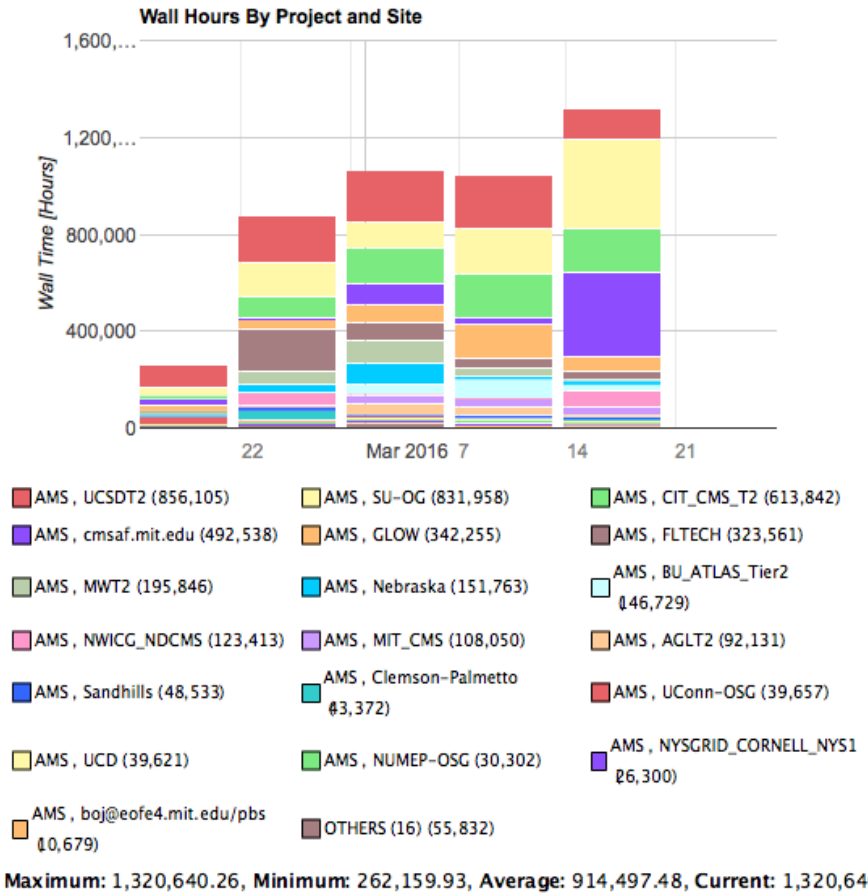
MIT_CMS

This Resource Group Belongs To	
Facility	Massachusetts Institute of Technology
Site	MIT CMS
This Resource Group is Supported By	
Support Center	USCMS_Tier2

VO Owners of This Resource

New: AMS+MIT Campus Computing

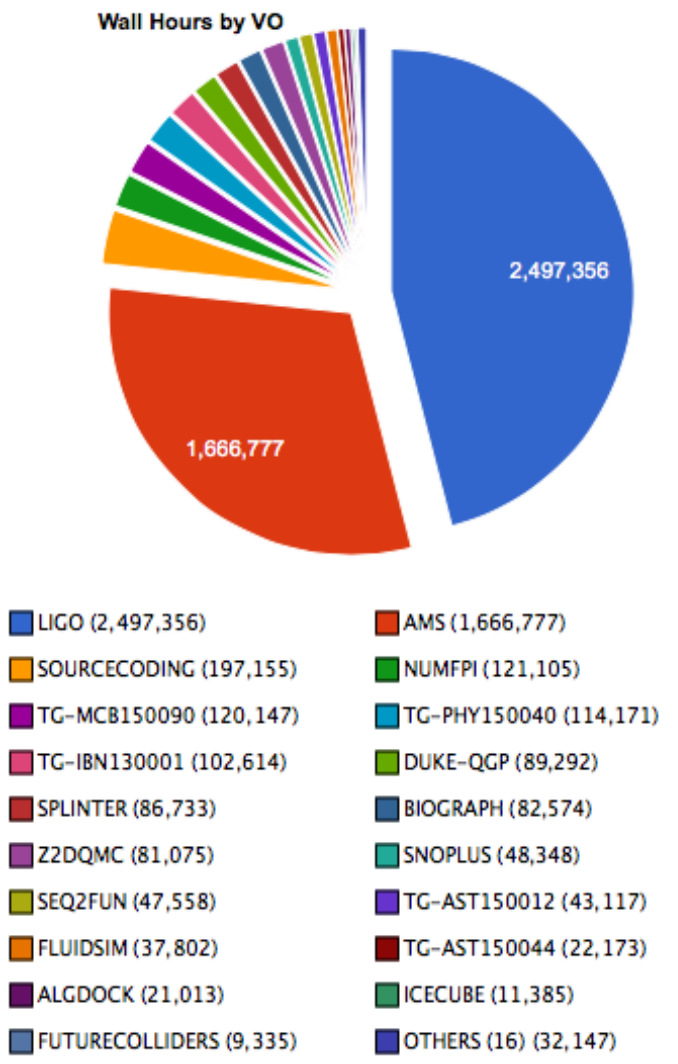
- Earth and Planetary Sciences also operates compute clusters (~15k cores) at MIT
- Connected submit host to one cluster via Bosco
  - Initial testing on a few nodes but seamless from AMS users' perspective
- Plan to extend this to as many clusters at MIT as possible
  - Eventually using BoscoCE to allow OSG jobs to flow in a well
- In total AMS has now used over **4.5M** hours in ~5 weeks
  - 0.5M hours at MIT (primarily at the CMS Tier2)



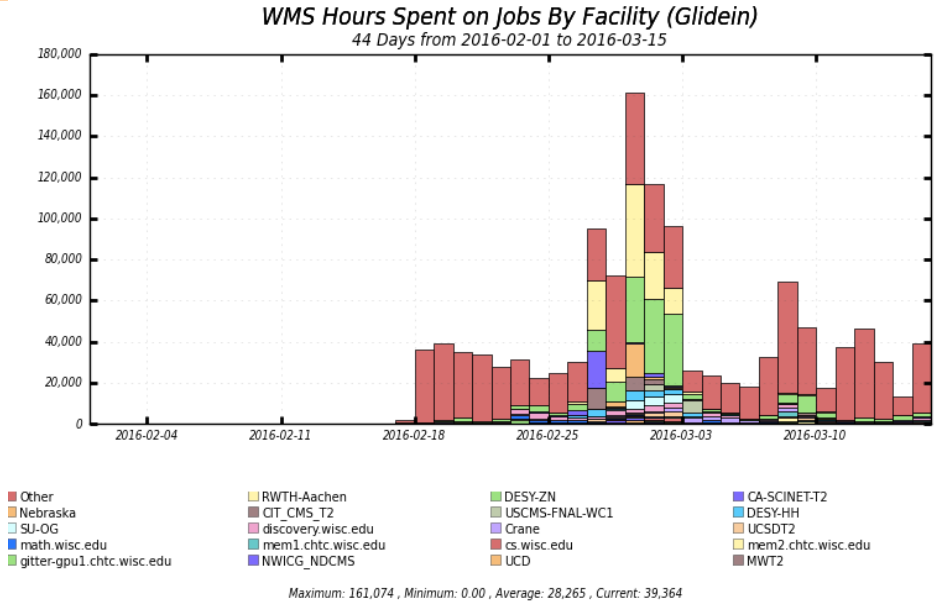
Many thanks to Mats, Edgar, Derek, and Brian

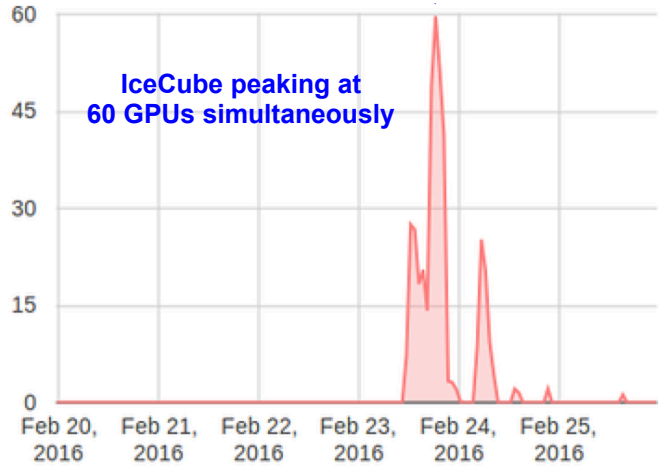
Big Science on the OSG VO

- The OSG VO is now dominated by two ~$1bn experiments, LIGO and AMS
- LIGO currently operates out of a dedicated frontend
  - Pilots compete at equal footing as OSG VO frontend
  - With constant pressure, LIGO gets ~half of available slots
- AMS being given a temporary quota of half of the OSG VO flock
  - This in practice leaves only 1/4 to everyone else
- **Should we operate LIGO out of the same frontend?**
  - We have the knobs to adjust quota



IceCube





- IceCube now running across a range of sites via GLOW frontend
- Also now (only) significant user of GPU on OSG (at HCC)
  - Used ~40k hours of GPU in 2015
  - Plan to add Comet and other XSEDE GPU resources

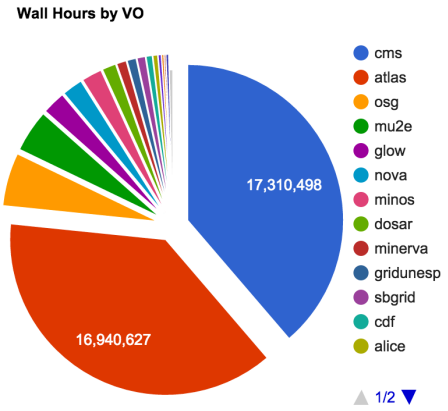
Open Science Grid

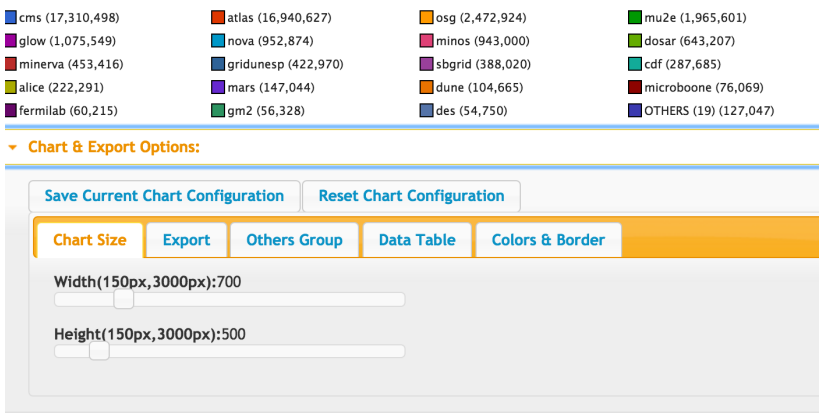
SBGrid

- SBGrid will be the next driver of GPU use
  - Frontend configuration updated to be similar to IceCube's for GPU use
- Plan to use Comet to run a heavily MPI application (Relion) via OSG interface
- Implement a user submission portal based off of OSG-Connect (SBGrid-Connect?)
  - For now will try using OSG-Connect directly while maintaining existing infrastructure in parallel
  - There is also an XD allocation run from SBGrid (TG-MCB140088)
- One further thought on GPUs: chicken-egg problem of past is over and we should more proactively pursue campus resources with GPUs and users/VOs with GPU needs

Accounting

- A version of gratiaweb with google charts available
  - Feedback is still welcome
  - In particular: should these be pushed to production and, if so, should old versions of these plots be retained?
- Accessible at gratiaweb ITB instance
  - http://gratiaweb-itb.grid.iu.edu





Accounting

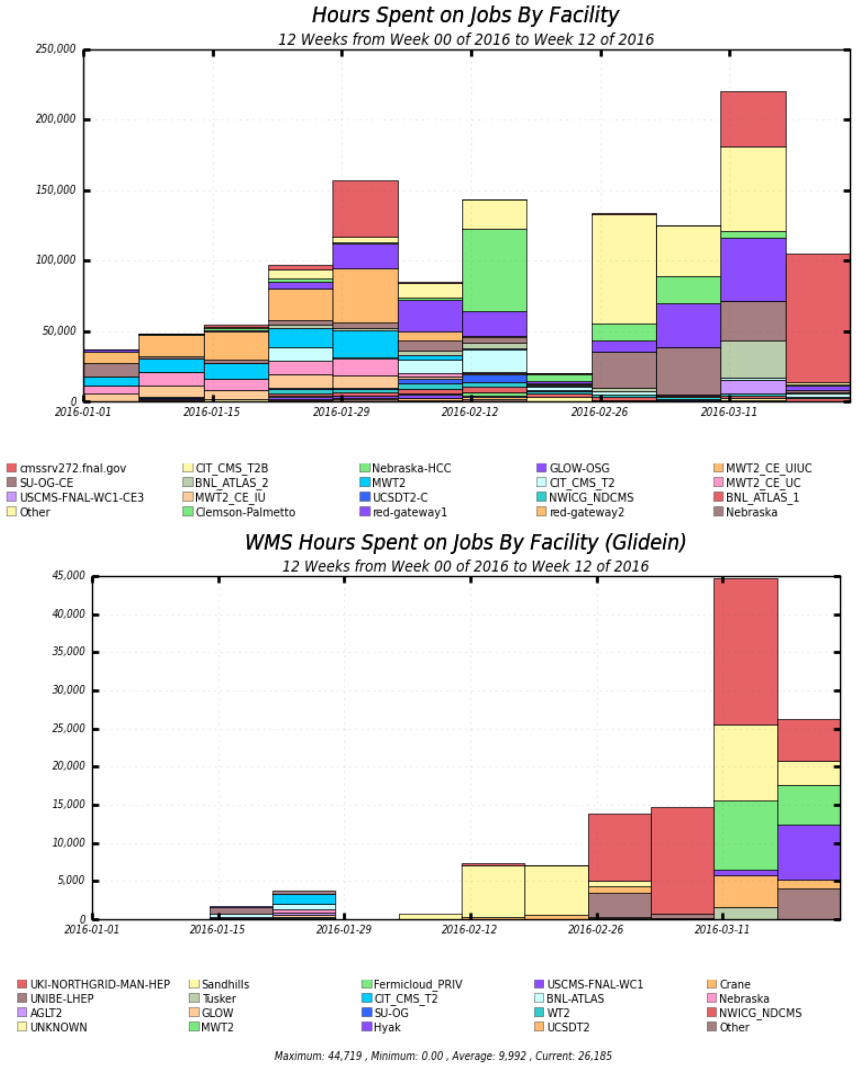
- Accounting blueprint meeting held Feb 23
  - Resulting plan in detail can be found here
- End goal: **retire gratia by year's end**
  - Maintain current (site) probes as is
  - Transfer all historical data to new system
  - Will use messaging bus service (RabbitMQ?) and NoSQL DB (ElasticSearch?)
- Ideally new system will be available for testing by the end of September (3 months testing and validation)
- Most resources will be hosted at GOC
  - Currently using some nodes at Nebraska for development
- Need input from ET: **Who is overseeing this project?**

Other accounting questions

- Non-traditional resources
  - How do we properly account for GPU?
- What is “an OSG resources”?
  - There are jobs submitted from non-OSG resources that land on OSG sites (e.g., ATLAS and CMS)
  - There are jobs submitted from OSG resources that land on non-OSG sites (e.g., IceCube jobs running in Europe)
  - Depending on your (current) accounting view (Batch vs. BatchPilot) you may catch one but not the other
- **Do we need to clearly define the “accounting perspective”?**
  - Any accounting query would have to clearly be defined as documenting jobs run from an OSG submission point or as jobs run on an OSG site

Fermilab experiments

- Not just mu2e anymore
- Nova and uboone making considerable use of non-FNAL CPU
  - Large amounts at sites where they have priority (e.g. FZU for NOvA and Manchester for μBooNE)
  - Effort to push library dependencies onto CVMFS
- Memory still a limiting factor for many workflows
  - In many cases down to close to 2GB but still over
- More accounting: **do we need project accounting for Fermilab VO** (I think yes)



Conclusions (and thinking ahead)

- Opportunistic computing continues to be healthy on the OSG
- As sPHENIX did last year, AMS came in and rapidly became a heavy user
- HMS visit in February was very successful and SBGrid should be able to ramp up more in the near future
- Concrete plan for accounting overhaul (but need a few management decisions)
  - Monitoring blueprint coming soon?
- Thinking ahead (for the Staff retreat and beyond)
  - What is a VO?
  - What counts as an OSG resource for accounting purposes?
  - How do we manage inter-VO/community priorities on the opportunistic pool?