

ACCRE
Advanced Computing Center
for Research & Education

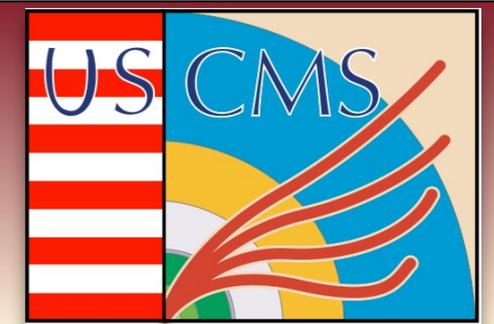


Vanderbilt University Site Report 2015 OSG All Hands Meeting

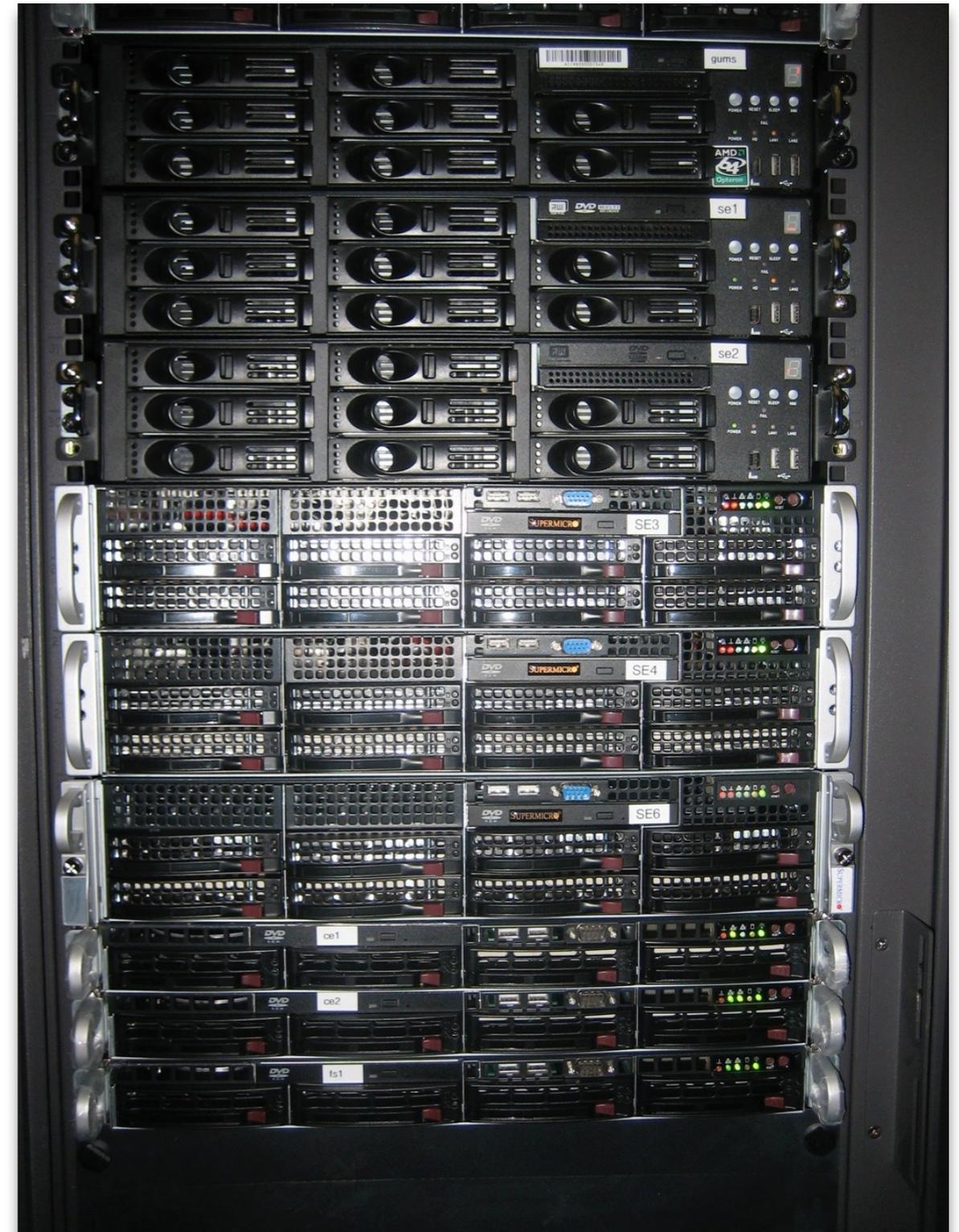
Kevin Buterbaugh / Sean Johnson
for the Vanderbilt Team
March 23rd, 2015

- The ACCRE cluster is a shared resource used by more than 700 researchers from 30 campus departments and four schools.
- The cluster currently has approximately 700 nodes and 6,600 processor cores.
- Each node has between 3 and 12 GB of RAM per core.
- Home directories and scratch space are stored on filesystems utilizing IBM's GPFS with a total usable capacity of 587 TB and a peak bandwidth of 13 GB/second.
- ACCRE Technical Staff include 10 support personnel with more than 60 years of combined experience.
- ACCRE is staffed Monday - Friday from 7:30 AM - 6 PM Central with evening / weekend support for critical issues.

Review of Grid Infrastructure



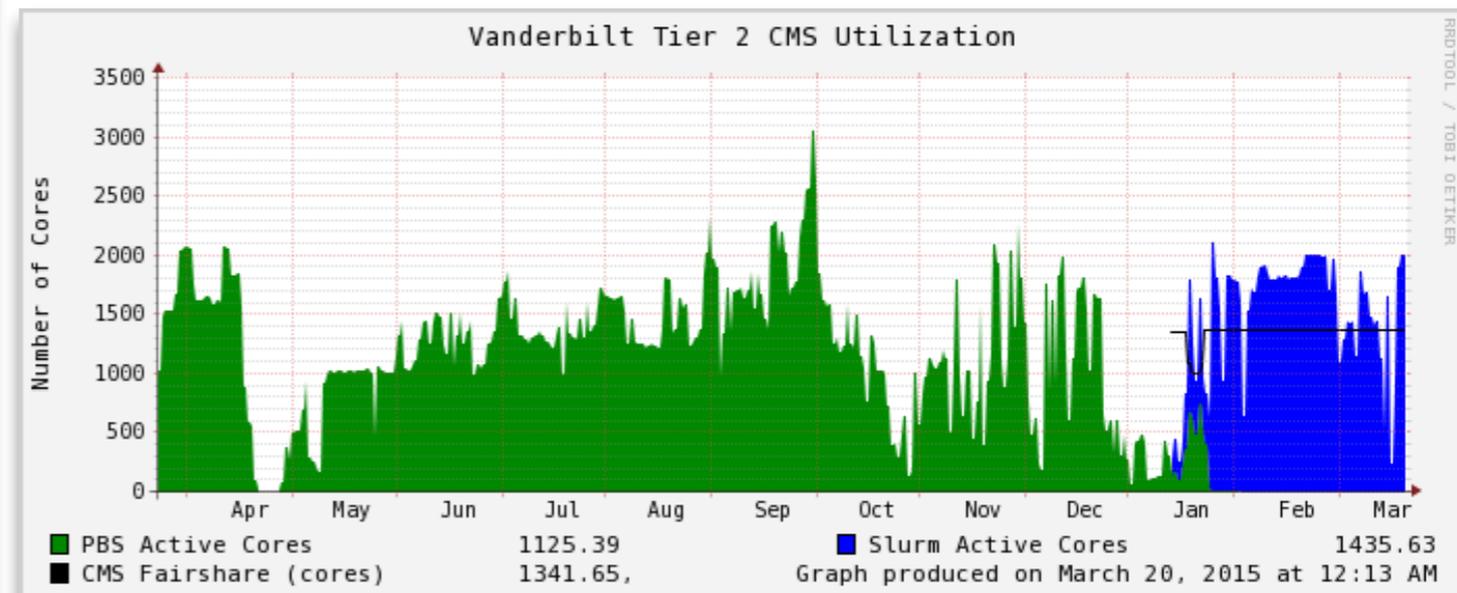
- Two Compute Elements
- One Storage Element
- Six GridFTP Servers
- One GUMS Server
- Two Frontier / Squid Servers
- 44 Storage Depots with 2.1 PB usable space for CMS data
- Nagios is used to monitor our status on the OSG RSV Tests and the CERN SAM tests, as well as our PhEDEx transfer rates

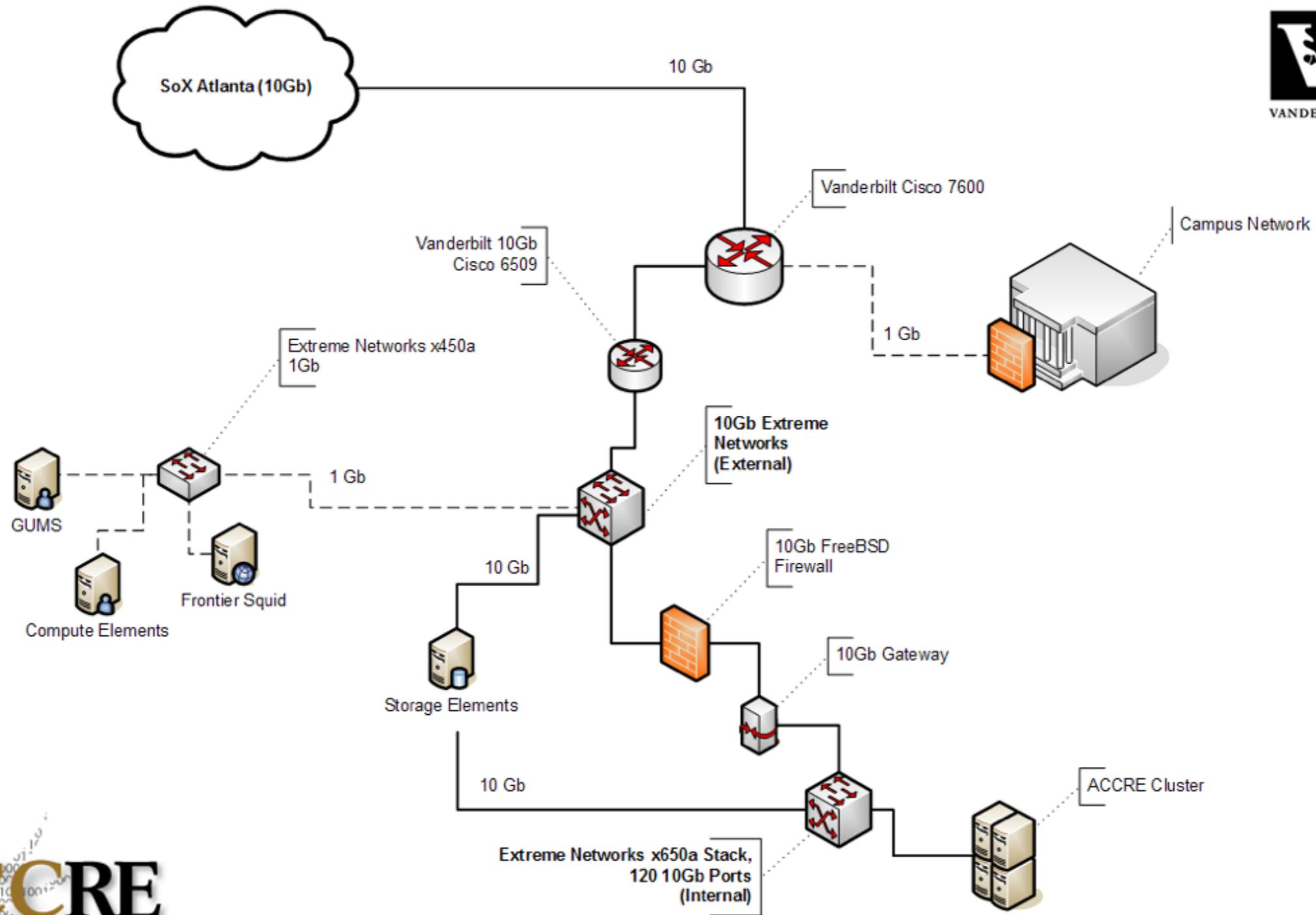


Review of Compute Nodes

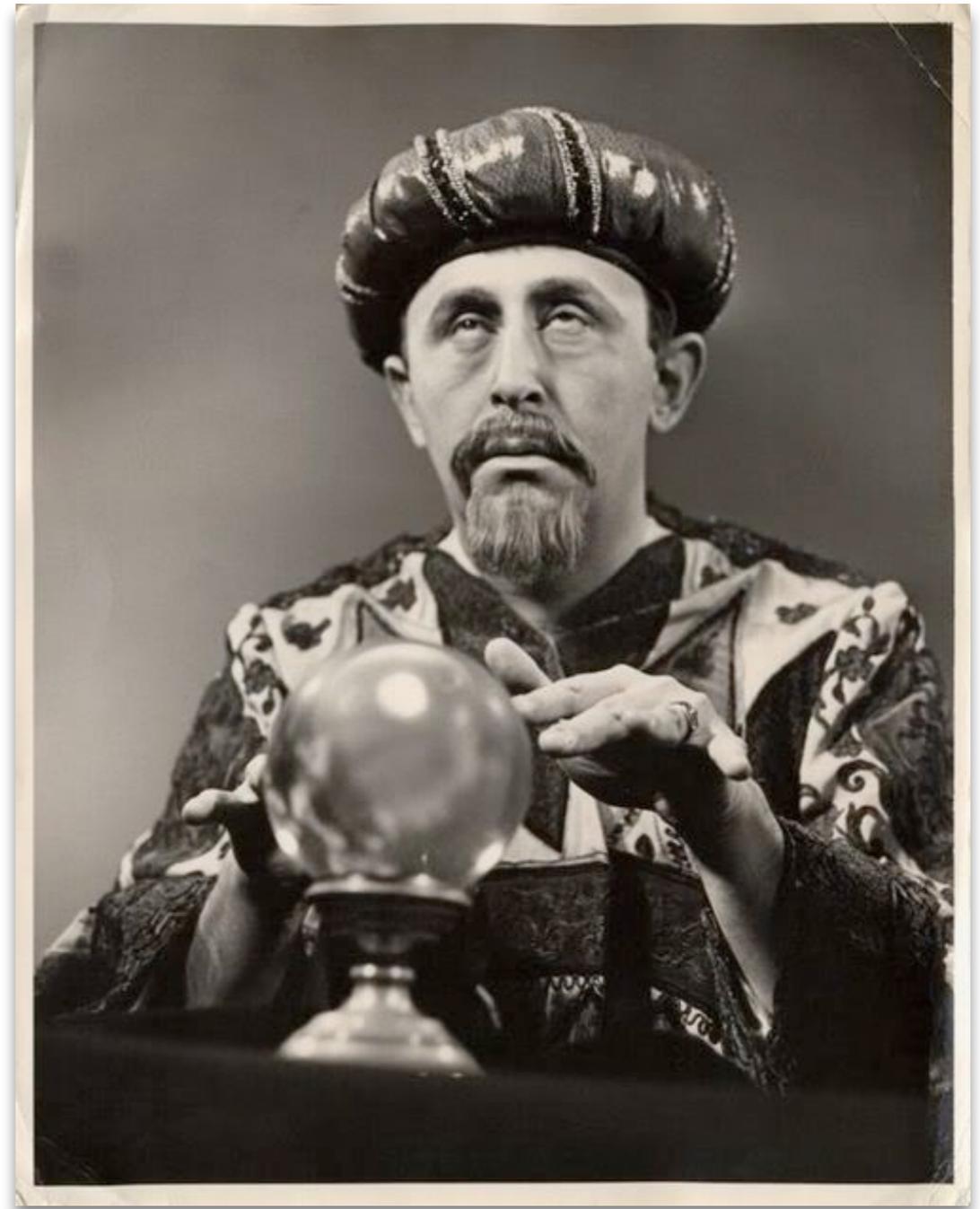


- ACCRE cluster contains ~6,600 cores.
- 1368 cores purchased by / for CMS Heavy Ion (20% of the current cluster).
- CMS can currently “burst” up to 2,000 cores.

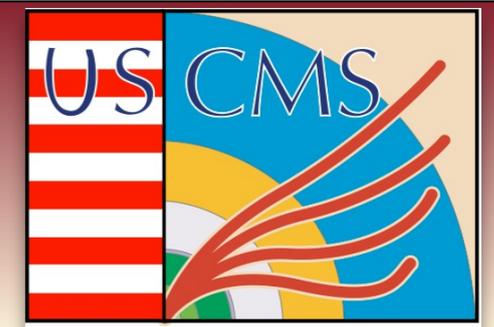




- On to our main focus ...
how are we preparing for
the future?
- "Prediction is difficult,
especially about the
future."
- A quote attributed to
everyone from Neils Bohr
to Yogi Berra!

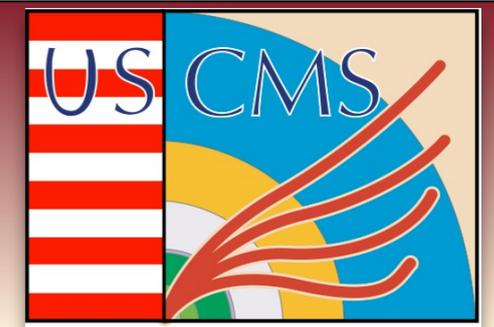


But seriously, about this whole prediction thing...

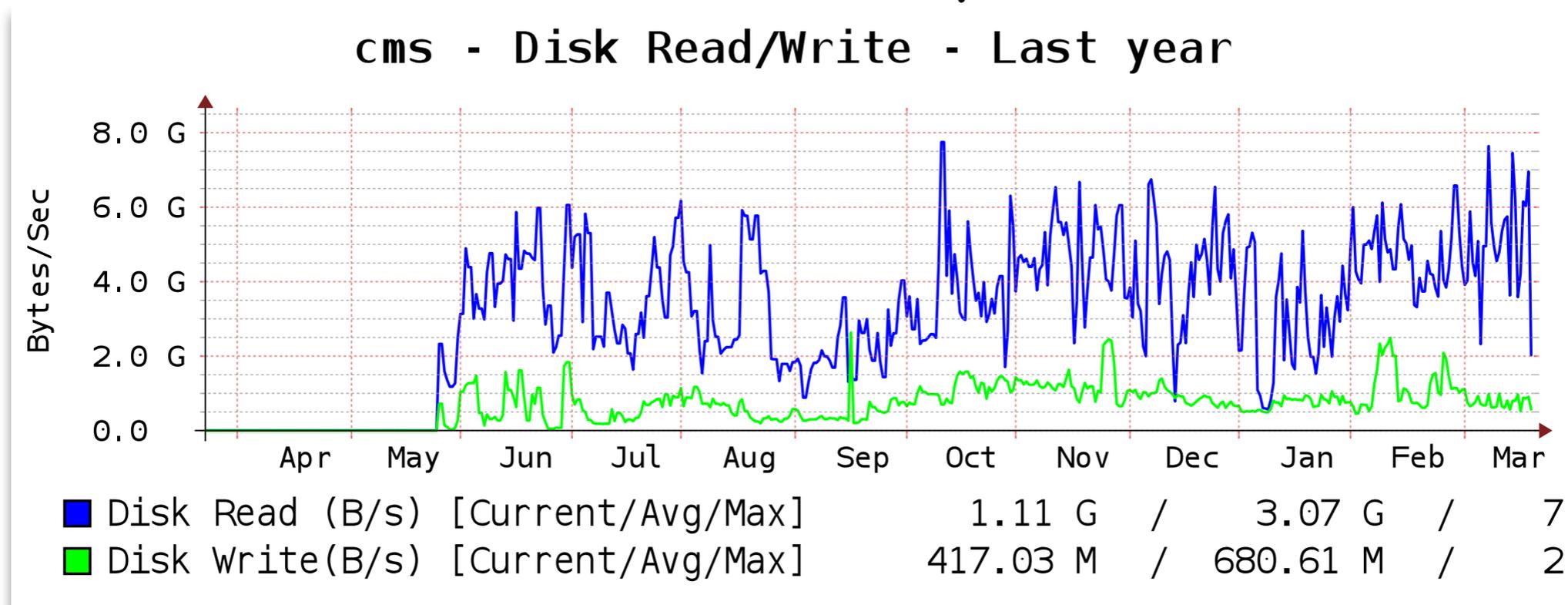


- 📌 James asked each of us to address our upgrade plans and visions for the future.
- 📌 However, at last years' OSG meeting:
 - 📌 We implied that we were close to getting a 40 or 100 Gb link (and we really thought we were) ... the reality is that a 100 Gb link is still more than a year away (more on that later).
 - 📌 We didn't say a word about changing the job scheduler for the cluster ... but in January and February of this year we transitioned from PBS/Moab to SLURM.
- 📌 If I was good at predictions I would've bought enough Apple stock 15 years ago that someone else would be giving this talk!

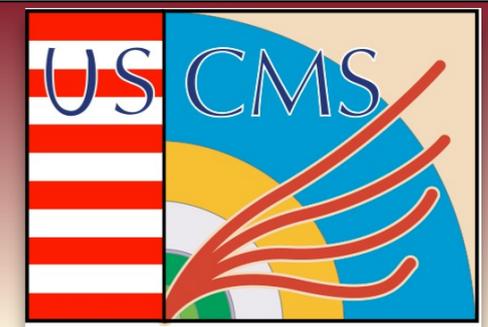
We are planning to purchase hardware



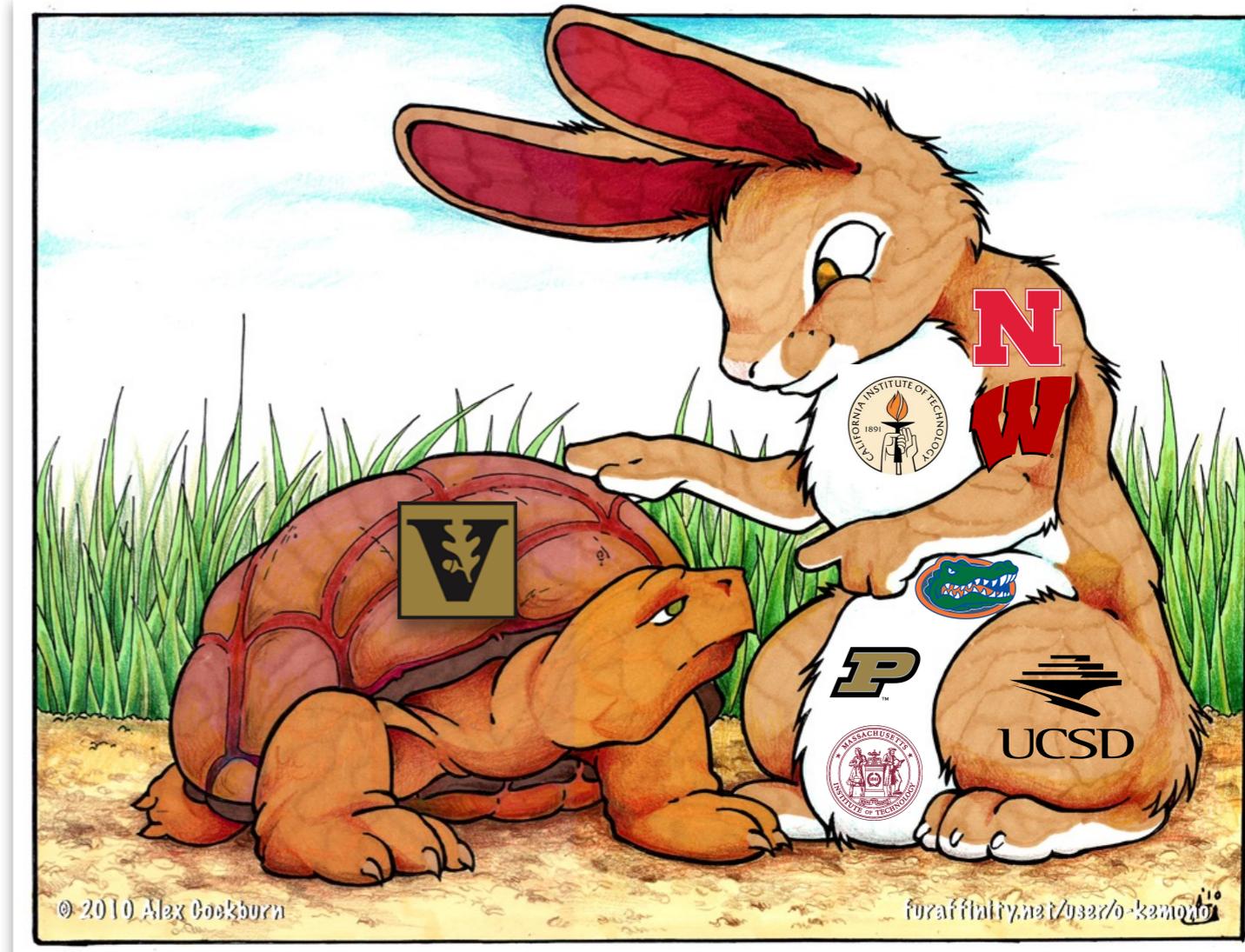
- 📌 24 compute nodes on order... Dell R430's with:
- 📌 2 hex-core processors, 128 GB RAM, 1 TB local disk
- 📌 1 storage depot purchased; plan to order 10 more:
- 📌 7 of the 11 depots are to replace older hardware, 4 are expansion.
- 📌 Total of 384 TB of additional usable storage space being added to the 2.1 PB we already have.



Now about that 100 Gbps link...



- Everything we said last year was true at the time.
- However, Vanderbilt has a new vice-chancellor for IT and he had different priorities.
- We are working on a proposal with the University for a 100 Gbps link.
- However, it won't be in place before summer 2016 even if it's approved.



Are we ready for the start of Run II?



Questions?

