

BLUE WATERS

SUSTAINED PETASCALE COMPUTING

2/15/15

Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM
FOR PETASCALE COMPUTATION

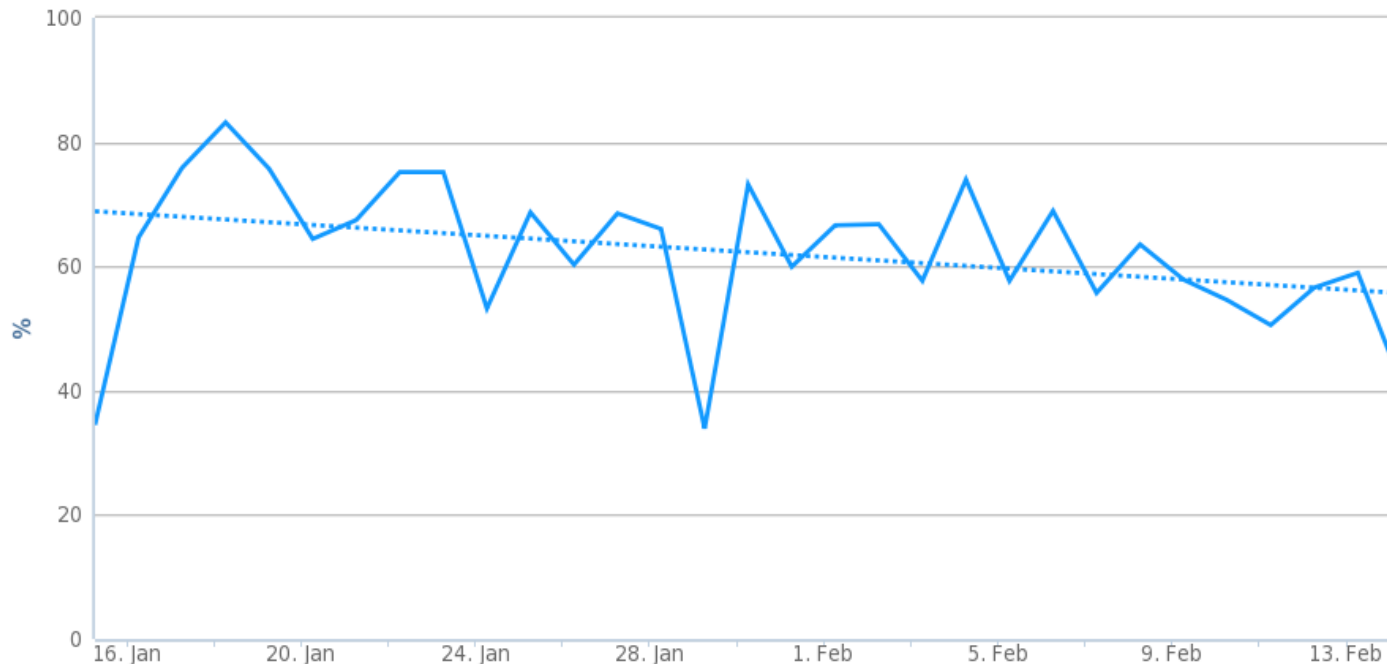
CRAY®

Agenda

- Utilization
- Recent events
- Recent changes
- Upcoming changes
- [Blue Waters Data Sharing](#)
- [2015 Blue Waters Symposium](#)
- [NSF Ebola CFP](#)
- PUBLICATIONS!

System Utilization

- Utilization since last BW User Call (January 20)



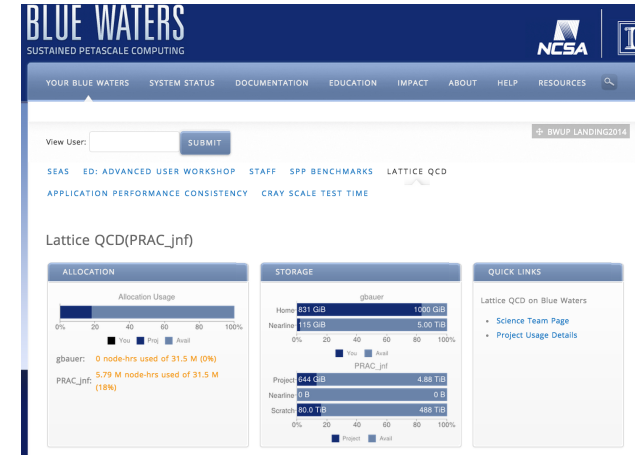
- Utilization trending downward. We are investigating.

Recent Issues

- Login node responsiveness
 - Since CLE 5.2 and Lustre 2.5.1.
 - Tied to modest loads with high IO.
 - We are investigating settings and patches.

Recent Changes

- darshan IO profiling
 - Enabled 1/20
 - See [darshan](#) page on the portal.
- Portal User [summary](#) page
 - Multi-project support
 - Storage use and quotas for online and Nearline



Upcoming Changes

- CUDA 6.5 – to be determined
- Modules
 - Cleaning out unused modules and old modules.
 - Removing deprecated modules: old xt-xyz replaced with cray-xyz.

Backfill with TAS

```
> showbf -f xe -p nid11293 # XE nodes available
Partition      Tasks  Nodes      Duration  StartOffset      StartDate  Geometry
-----
nid11293        3968   124      22:26:53    00:00:00  19:36:01_01/19  8x1x8
nid11293        3968   124      22:45:32    00:00:00  19:36:01_01/19  8x1x8
nid11293        3968   124      23:35:44    00:00:00  19:36:01_01/19  8x1x8
nid11293        1024    32      INFINITY    00:00:00  19:36:01_01/19  2x2x4
```

- Watch for maintenance notices or draining for large jobs.
- Realtime chart of backfill opportunities

<https://bluewaters.ncsa.illinois.edu/why-isn-t-my-job-running#backfill>

Improve job wall clock accuracy

- Topology aware scheduling should reduce run to run variation two ways
 - Reduces job-job interference
 - Provides finite set of node allocation shapes
- Picking best performance/shape can further reduce run to run variation.
- Setting accurate wall clock times helps the scheduler reserve nodes for jobs in the future.

Blue Waters Data Sharing Service

- Prototype service for data sharing.
- <https://bluewaters.ncsa.illinois.edu/data-sharing>
- Sharing of data sets from on-line or Nearline / projects/sciteam/xyz/share using Globus Online or web services (http).
- Metadata includes contact information, description, website, size and count, DOI*.

2015 Blue Waters Symposium

- May 10-14, 2015
- PI meeting for NSF PRAC teams.
- Sunriver Resort in Sunriver, OR



- Recreational opportunities: hiking, biking, fly fishing, rafting, canoeing, rock climbing, ...


NSF: Computing About the Ebola Virus

- [Dear Colleague Letter](#) announced November 13, 2014
- software development activities
 - [Computational and Data-Enabled Science & Engineering](#)
 - [Software Structure for Sustained Innovation](#)
- Petascale computing on Blue Waters
 - [Petascale Computing Resource Allocations](#)

Blue Waters Internships

- Engage undergraduate students in petascale computing research. The program provides each student a stipend totaling \$5000 and a two-week intensive high-performance computing workshop.
- Select students will travel to The Blue Waters Symposium.
- Applications must be submitted by March 20, 2015
- See <https://bluwaters.ncsa.illinois.edu/internships>

Request for Science Successes

- We need to be current on products that result from time on Blue Waters such as:
 - Publications, Preprints (e.g. [arXiv.org](https://arxiv.org) ), Presentations.
 - Very interested in data product sharing.
- Appreciate updates sooner than annual reports.
 - Send to gbauer@illinois.edu
- NSF PRAC teams send information to PoCs.
- See the [Share Results](#) section of the portal as well.
- Be sure to include [proper acknowledgment](#)
 - Blue Waters - National Science Foundation (ACI 1238993)
 - NSF PRAC – OCI award number

Future Topics?

- Please send us your suggestions on topics for future teleconferences / webinars