

BLUE WATERS

SUSTAINED PETASCALE COMPUTING

12/19/16

Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM
FOR PETASCALE COMPUTATION

CRAY®

Agenda

- Future Maintenance (none scheduled)
- Current Issues
- Changes and Recent Events
- Utilization and Usage
- Opportunities
- PUBLICATIONS!
- Special Presentation on Topology Mapping

Current Issues

- Login node instability
 - Symptoms
 - High loads but system responsive
 - Large number of open files
 - Processes hang.
 - Unable to examine /prod/pid/cmdline for a particular process. (might be related to [RH176543](#))

Recent Maintenance

- On 12/05
 - Blue Waters Core switch upgraded (not HSN).
 - Sonexion Lustre Server software update.
 - Firmware upgrades on switch and storage hardware.

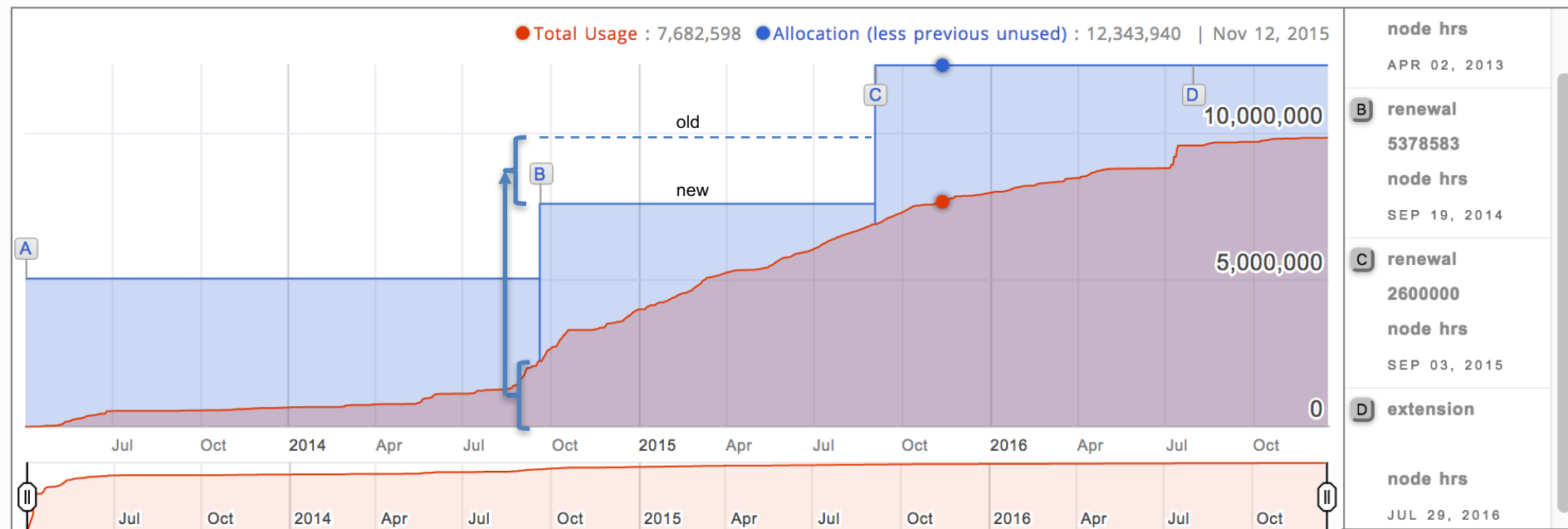
Recent Changes

- Login node monitoring
 - Adjusted parameters of our process watchers to contain excessive, impactful login node usage.
 - Process termination criteria:
 - Any process using more than 25% memory.
 - Targeted processes 1 hour wall clock time.
 - Other processes 4 hour CPU time 20% CPU utilization.
 - All processes terminated after 100 hours CPU time.
 - Email sent on process termination.
- Enabled XALT logging of aprun.

Portal Changes

HISTORICAL CHARGED USAGE OVER TIME

(255 DAYS UNTIL EXPIRATION)



- Historical allocated time line now accounts for unused amount for multi-year awards.
- Accurately portrays each period.

Not So Recent Changes to Blue Waters

- [Shifter](#) (now available)
 - Docker-like container allowing user-defined images.
 - Improved security model.
 - Now available.
 - Email help+bw@ncsa.illinois.edu to get started.

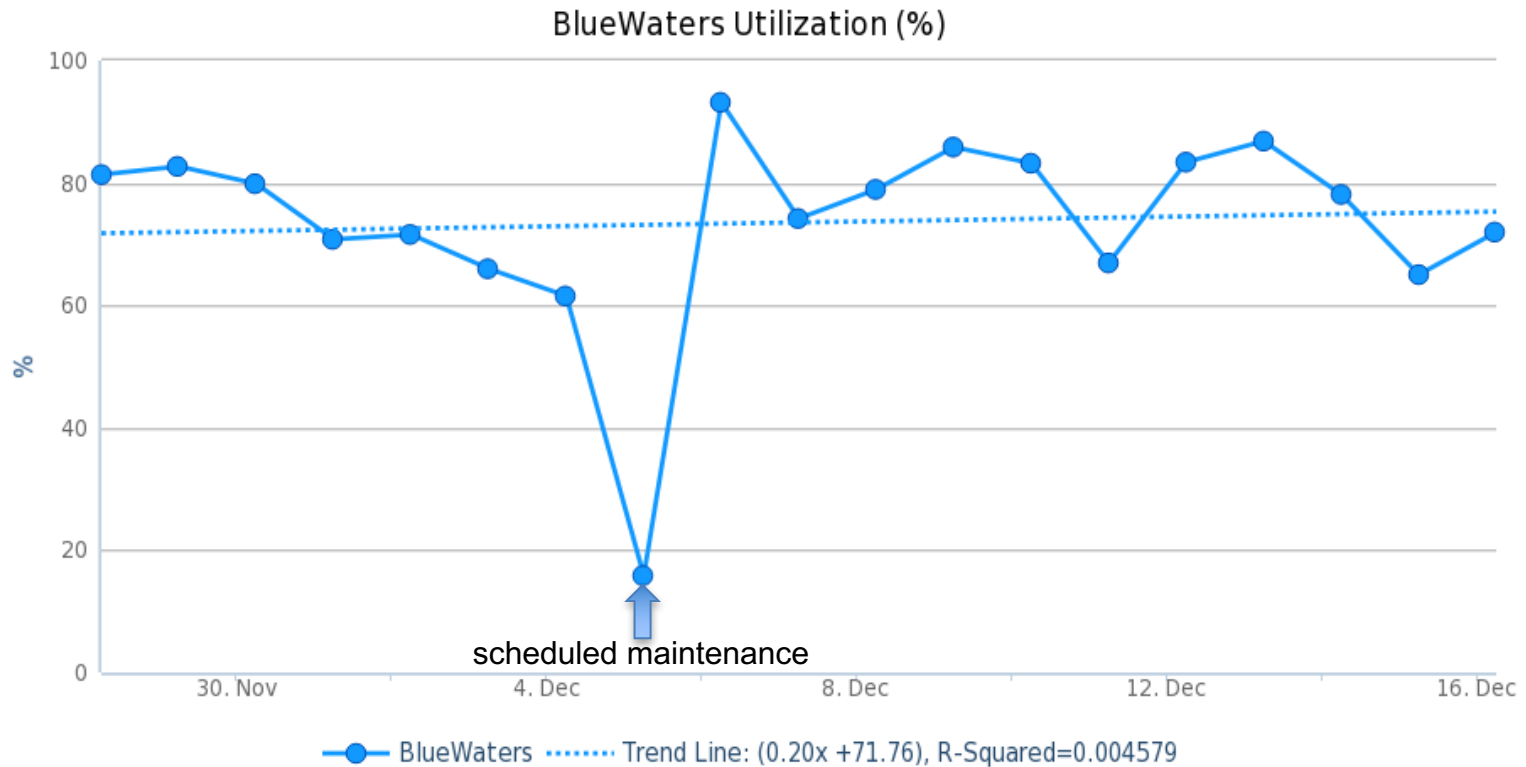


Recent Events (since last User call)

- 12/08 – cabinet emergency power off (EPO).

Usage, Utilization and other Items

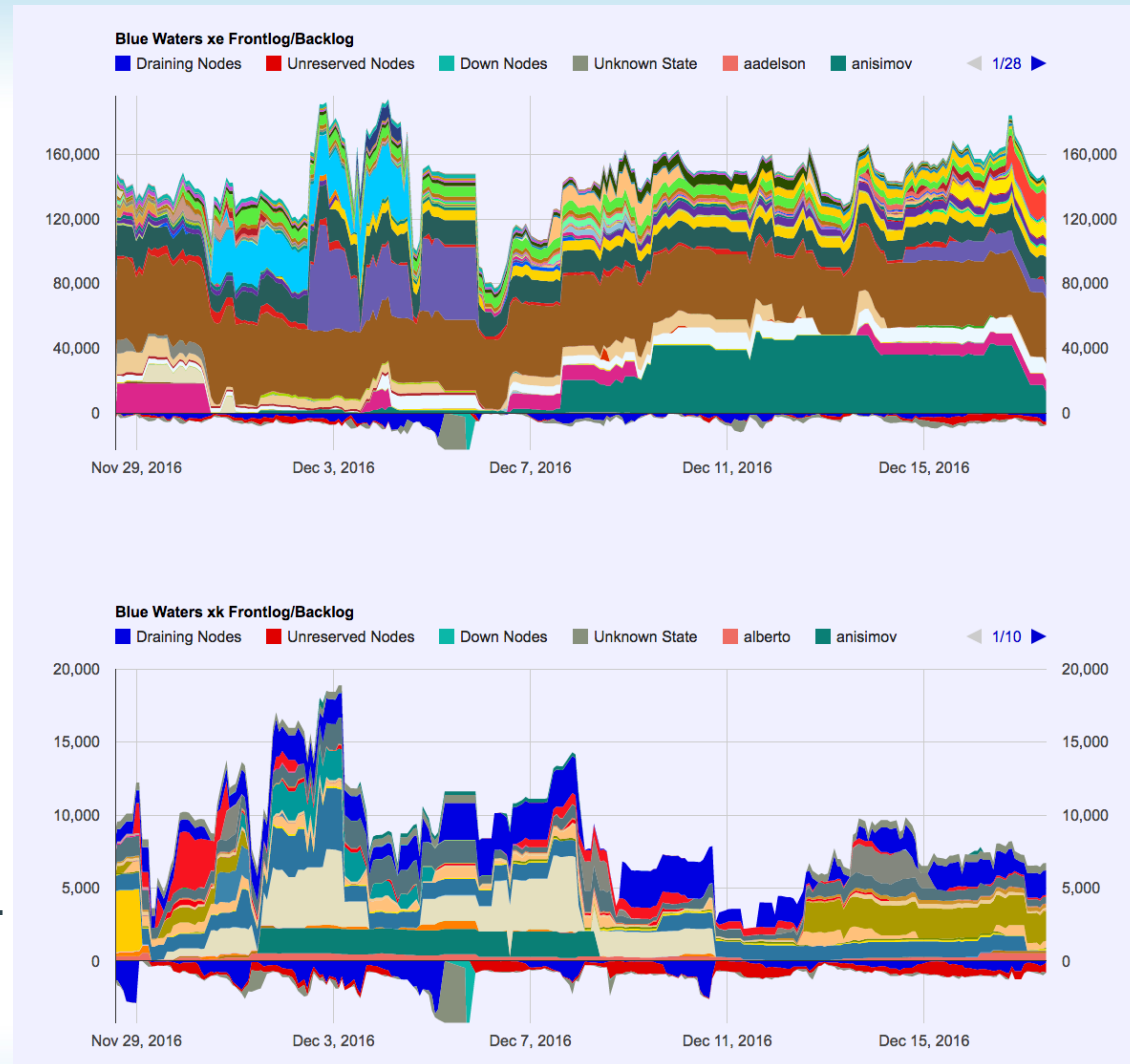
- Utilization since last BW User Call (Nov 28)



2016-11-28 to 2016-12-16 Src: HPCDB. Powered by XDMoD/Highcharts

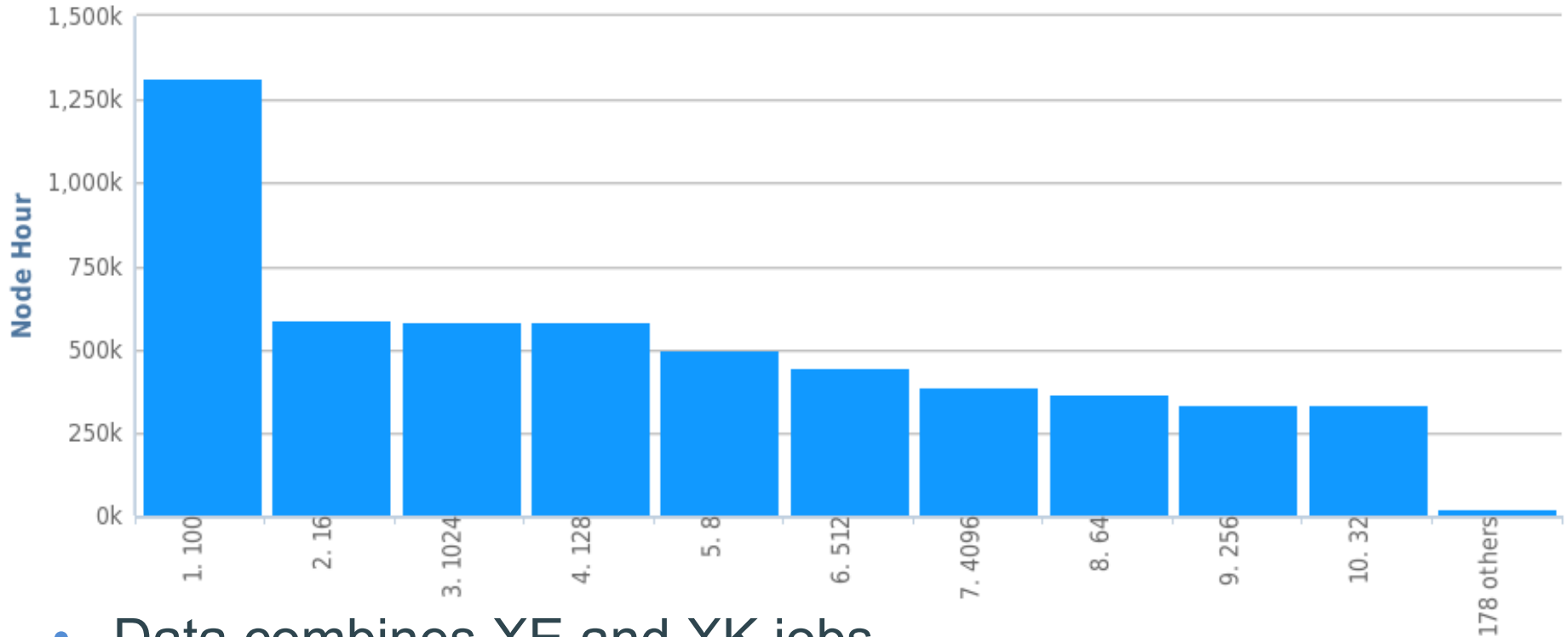
Backlog

- Since BW User Call 11/28
- Vertical axis in units of **nodes**. Colors are different users.
- Mix of jobs and 3 – 4 x machine node count to get good sustained utilization.
- Red below the x-axis indicates unreserved nodes.
- Blue below the x-axis indicates draining.
- Dec 5th backlog not sizeable.



Workload Details

Node Hours: Total: by Node Count




- Data combines XE and XK jobs.
- Since last BW User Call (Nov 28)
- Note difference in distribution of node-hours.

Upcoming Opportunities

- Applications are now being accepted for Blue Waters Fellowships. Applications are due **February 3, 2017**. More information is available at: <https://bluwaters.ncsa.illinois.edu/fellowships>
- Applications are now being accepted for Blue Waters undergraduate internships. Applications are due **February 3, 2017**. More information is available at: <https://bluwaters.ncsa.illinois.edu/internships>
- Spring 2017 PRAC call is expected to be due March-April. Watch NSF website or Blue Waters portal.

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