

# BLUE WATERS

SUSTAINED PETASCALE COMPUTING

10/16/17

## Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM  
FOR PETASCALE COMPUTATION

CRAY®

# Agenda

- Recent Events, Coming Changes to Blue Waters
- Usage, Utilization and other Items
- Upcoming Opportunities
- Request for publications!

## Recent Events and Outages

- No events of note.
- System-wide uptime in the >100 days.

## Recent Changes

- Newer compilers available (not default)
  - Intel 2017 Update 4
    - The Intel OpenMP monitor thread (i.e. helper thread) is not created.
    - Recommend **KMP\_AFFINITY=disabled** and use **aprun** options to place threads.
    - Tests have shown slight performance gain for some benchmarks.

## System News

Filtered by: [Mandatory](#) | [Best Practices](#) | [Scheduled Outages](#) | [Unscheduled Outages](#) | [System Notices](#) | [Training and Opportunities](#) | [General](#) | [Policy Changes](#) | [Software Updates](#) | [New Functionality](#) | [Public Affairs](#) |

### [Blue Waters User Call: October 16th at 1PM Central \[edit\]](#)

Created by: gbauer 2017-10-13 14:27:12 (Channels: [general](#))

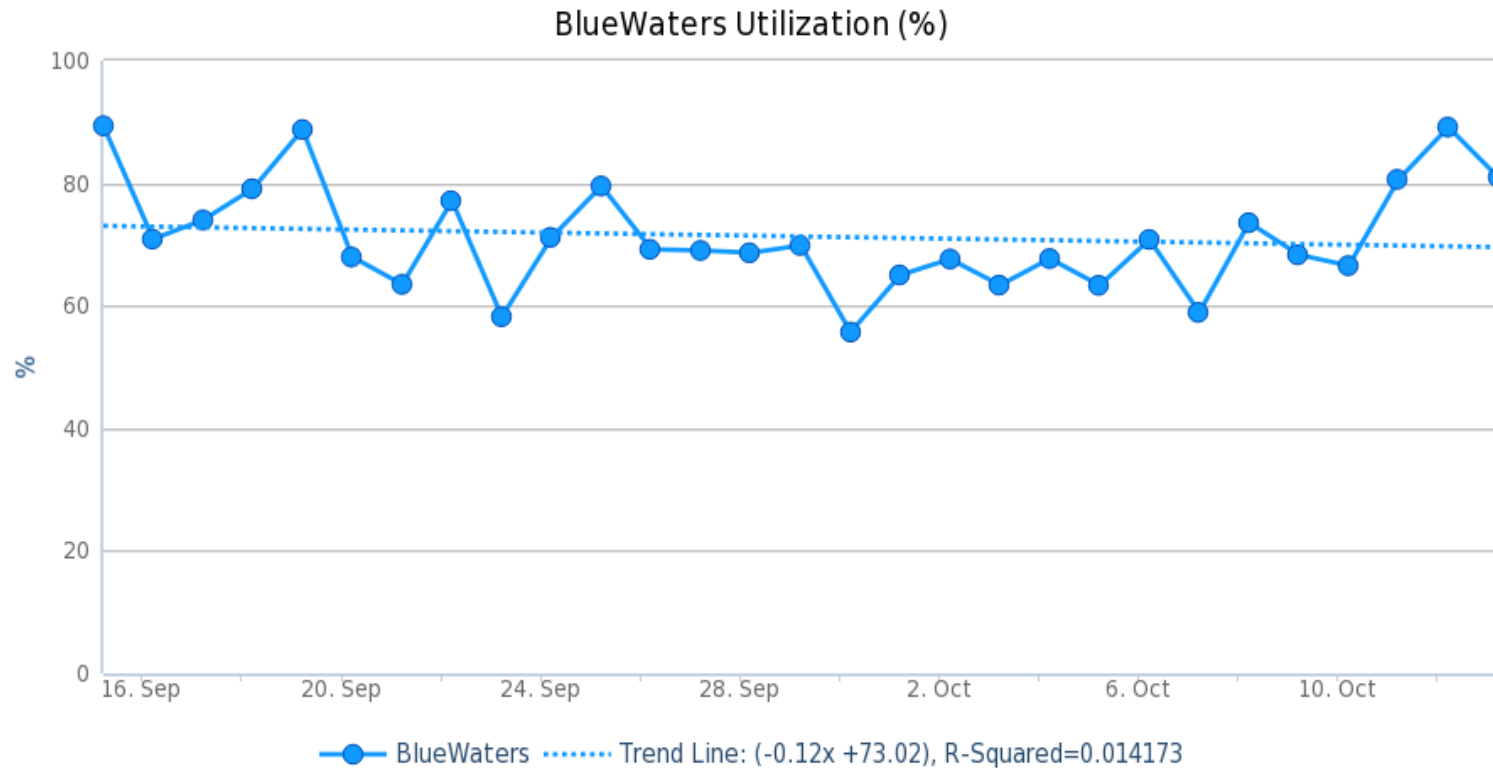
Blue Waters Partners;

Please join us for the next Blue Waters Use...

- Unselect channels. Must subscribe to “Mandatory”
- Notices may appear on new system-blog page
  - <https://bluwaters.ncsa.illinois.edu/system-blog>

# Usage, Utilization and other Items

- Overall Utilization last 30 days

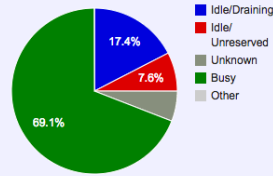


2017-09-15 to 2017-10-13 Src: HPCDB. Powered by XDMoD/Highcharts

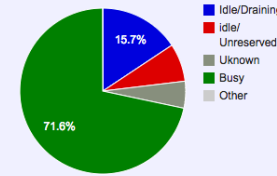
## Backlog

- Last 30 days.
- Vertical axis in units of **nodes**. Colors are different users. Red below the x-axis indicates unreserved nodes. Blue below the x-axis indicates draining.
- Added utilization pie charts showing XE and XK utilization by node state.

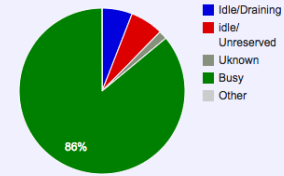
XE Utilization for this Period



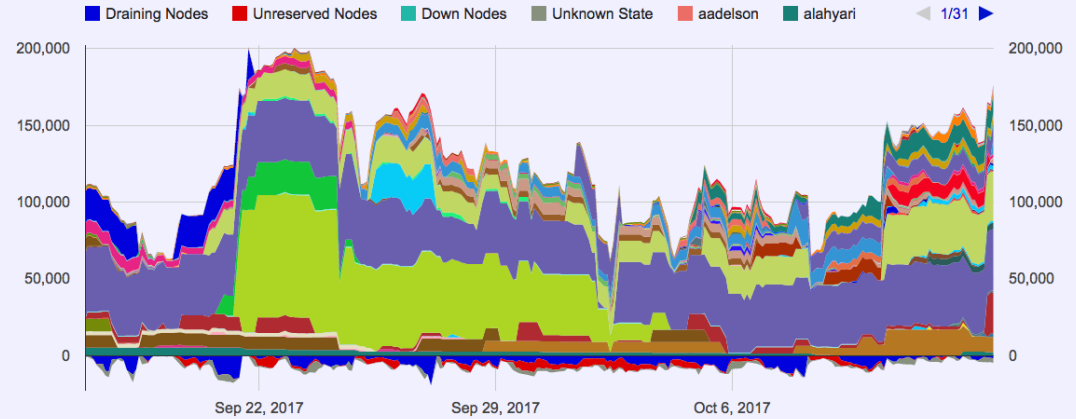
Full System Utilization for this Period



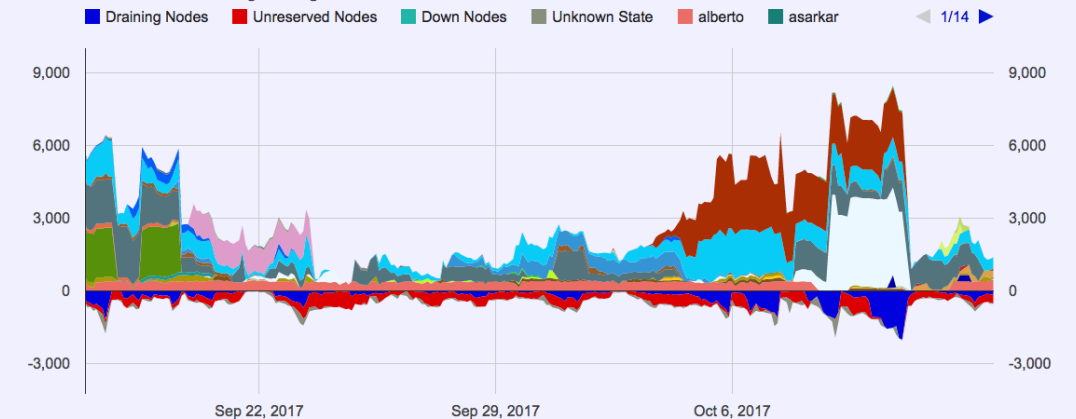
XK Utilization for this Period



Blue Waters xe Frontlog/Backlog

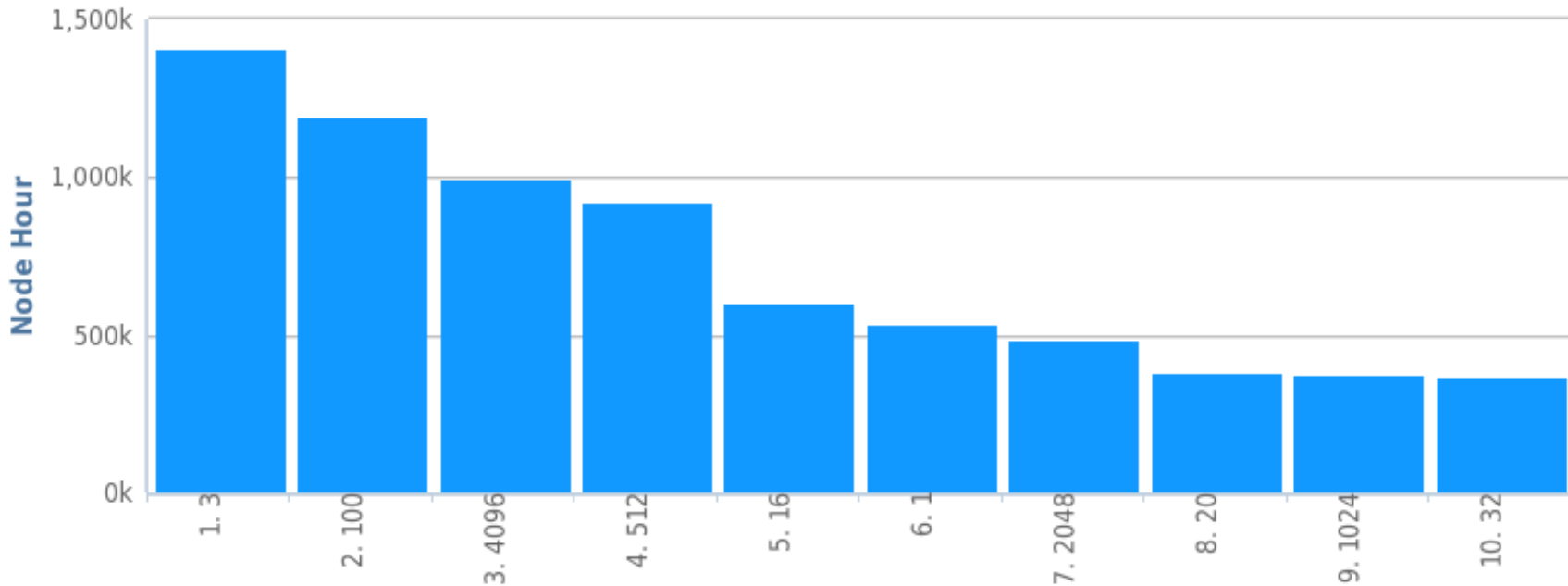


Blue Waters xk Frontlog/Backlog



# Workload Details

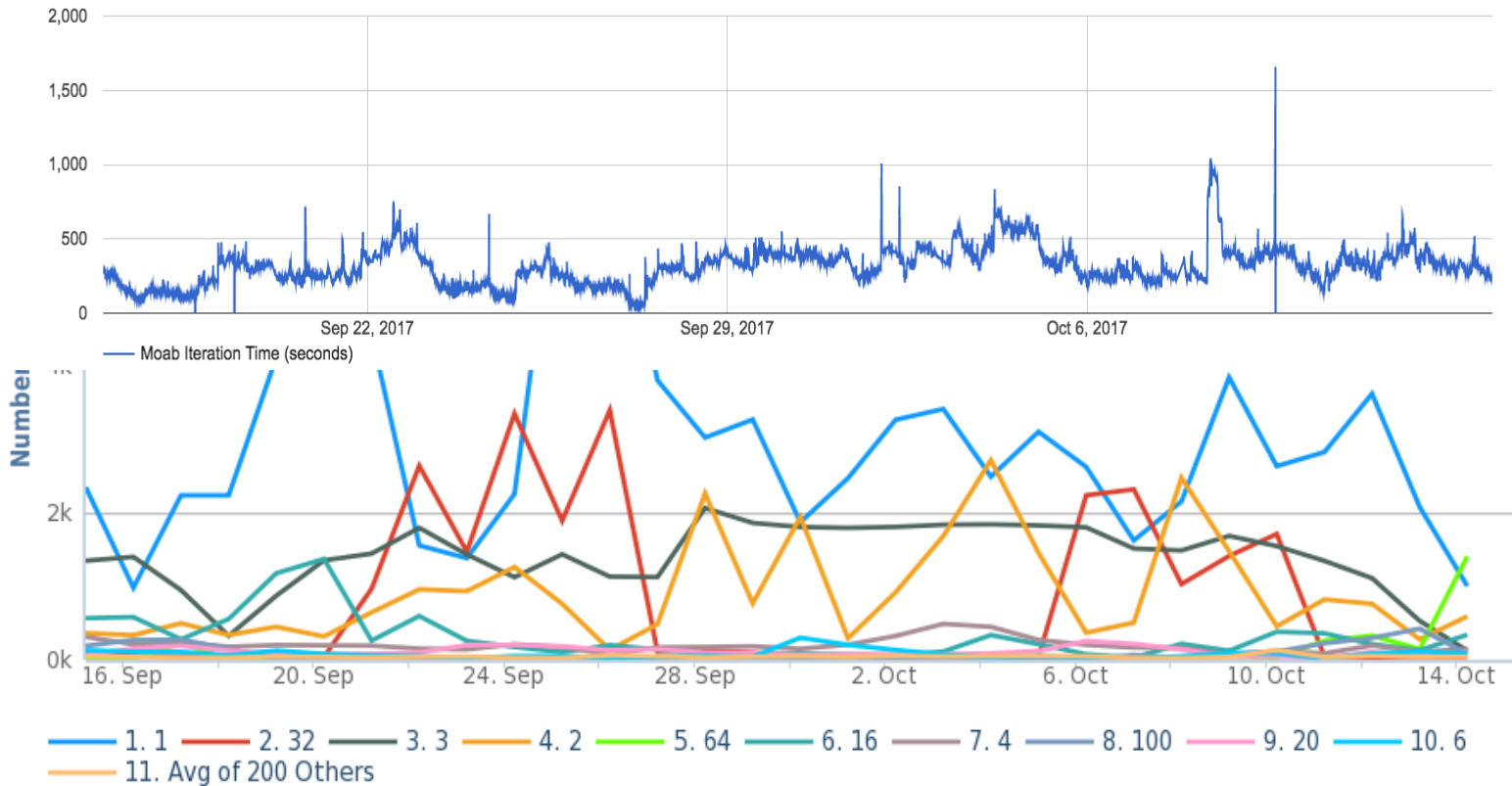
Node Hours: Total: by Node Count



- Data combines XE and XK jobs.
- Last 30 days.
- Large number of 3 node jobs by 9 users from 1 project!



# Job scheduler iteration time



2017-09-15 to 2017-10-15 Src: HPCDB. Powered by XDMoD/Highcharts


## Is job bundling having desired impact on iteration time?

# Blue Waters Weekly Webinar Series

- For more information about the webinar series, including registration, abstracts, speakers, as well as links to Youtube recordings, please visit the [Blue Waters webinar series webpage](#).

October 18, 2017	Opportunities and Challenges: Diversifying your Workforce	Toni Collis	--	Live	--
October 25, 2017	Scientific Visualization in Houdini	Kalina Borkiewicz, A. J. Christensen	--	Live	Survey
November, 2017					
November 8, 2017	Scientific Software Ecosystems: Why and How	Lois Curfman McInnes, Michael Heroux	--	Live	--

## 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](mailto: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