

# BLUE WATERS

SUSTAINED PETASCALE COMPUTING

9/17/18

## Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM  
FOR PETASCALE COMPUTATION

CRAY®

# Agenda

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

# Recent Announcements

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## Recent Events and Outages

- Nothing to report.

## Recent Changes

- Nothing to report.

## Outstanding Issues

- CUDA 9.1 and GCC 6.3
    - broken `std::tuple` with GCC 6
- <https://devtalk.nvidia.com/default/topic/1028112/cuda-setup-and-installation/nvcc-bug-related-to-gcc-6-lt-tuple-gt-header-/>
- Work-around is to drop to GCC 5.3.
    - bwpy 2.0 pre-release for testing.
  - We are working with Cray and NVIDIA to get fix from CUDA 9.2 back-ported.

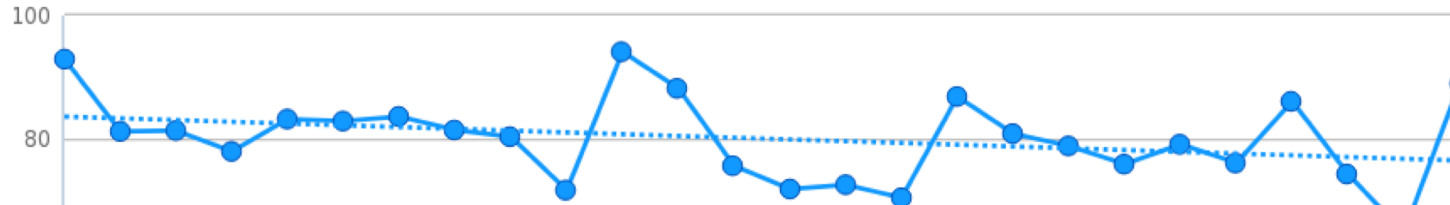
# Upcoming Changes

- Preparing to make PE 18-06 default. See [PE Changes page](#) on the portal.
- For testing ...
  - `module unload PrgEnv-cray; module load PrgEnv/cray-18_06-cuda-9.1`
  - `module unload PrgEnv-gnu; module load PrgEnv/gnu-6.3.0-cuda-9.1`
  - `module unload PrgEnv-intel; module load PrgEnv/intel-18.0.3.222-cuda-9.1`
  - `module unload PrgEnv-pgi; module load PrgEnv/pgi-18.3.0-cuda-9.1`
- Add as needed
  - OpenACC
    - `module add craype-accel-nvidia35`
  - CUDA
    - `module add cudatoolkit/9.1.85_3.10-1.0502.df1cc54.3.1`
  - HDF5
    - `module add cray-hdf5/1.10.2.0`
    - `module add cray-hdf5-parallel/1.10.2.0`

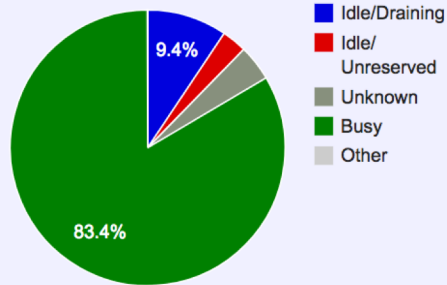
# Usage, Utilization and other Items

- Overall Utilization last 30 days

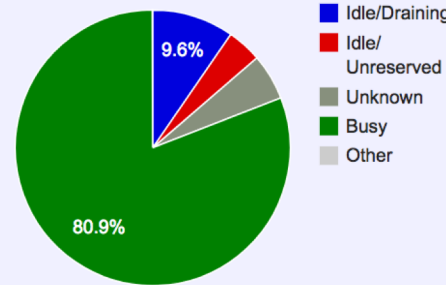
BlueWaters Utilization (%)



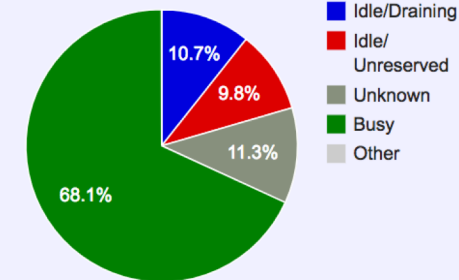
XE Utilization for this Period



Full System Utilization for this Period



XK Utilization for this Period



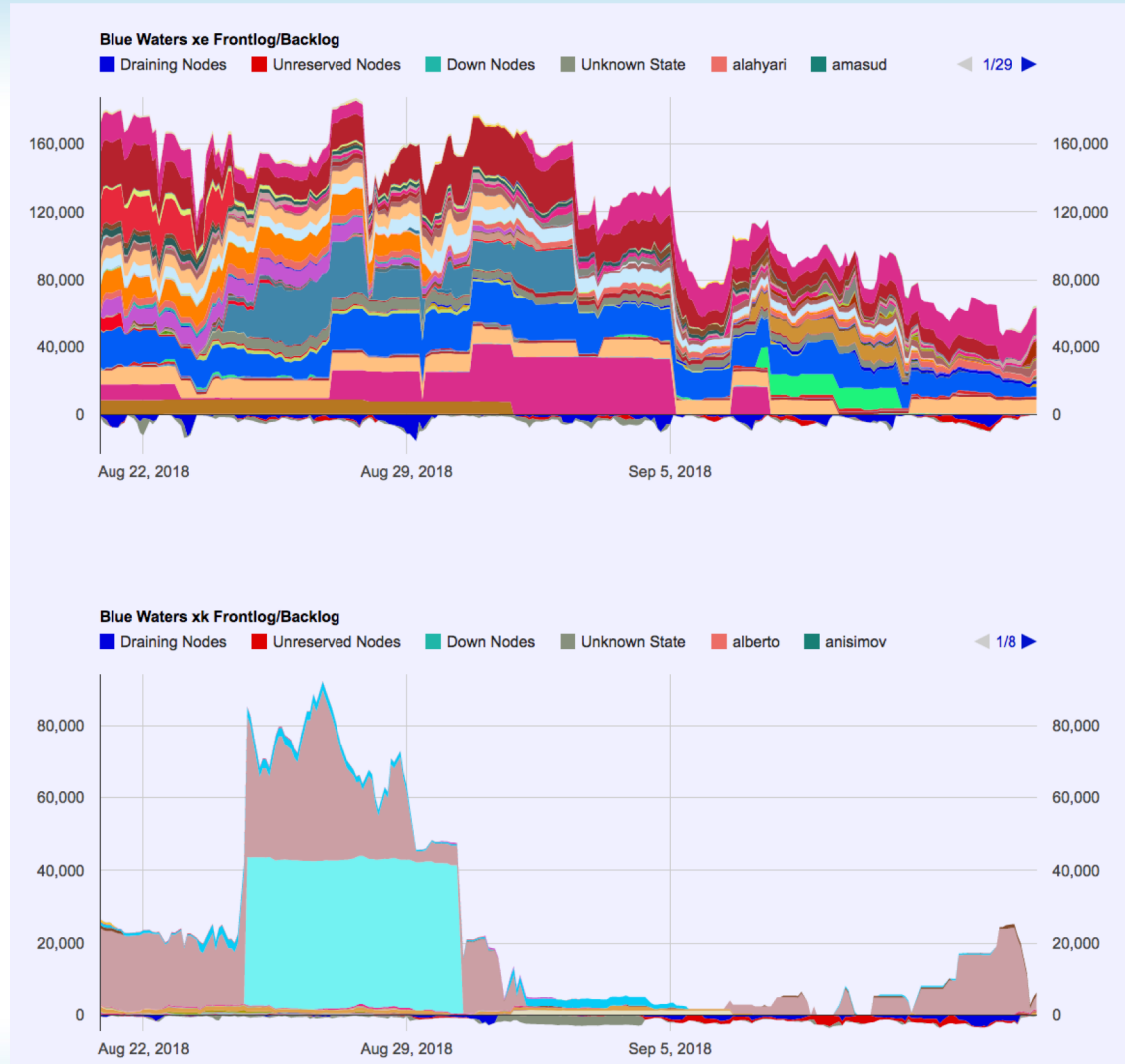
0 22. Aug 26. Aug 30. Aug 3. Sep 7. Sep 11. Sep

—●— BlueWaters ..... Trend Line:  $(-0.29x + 83.48)$ , R-Squared=0.096218

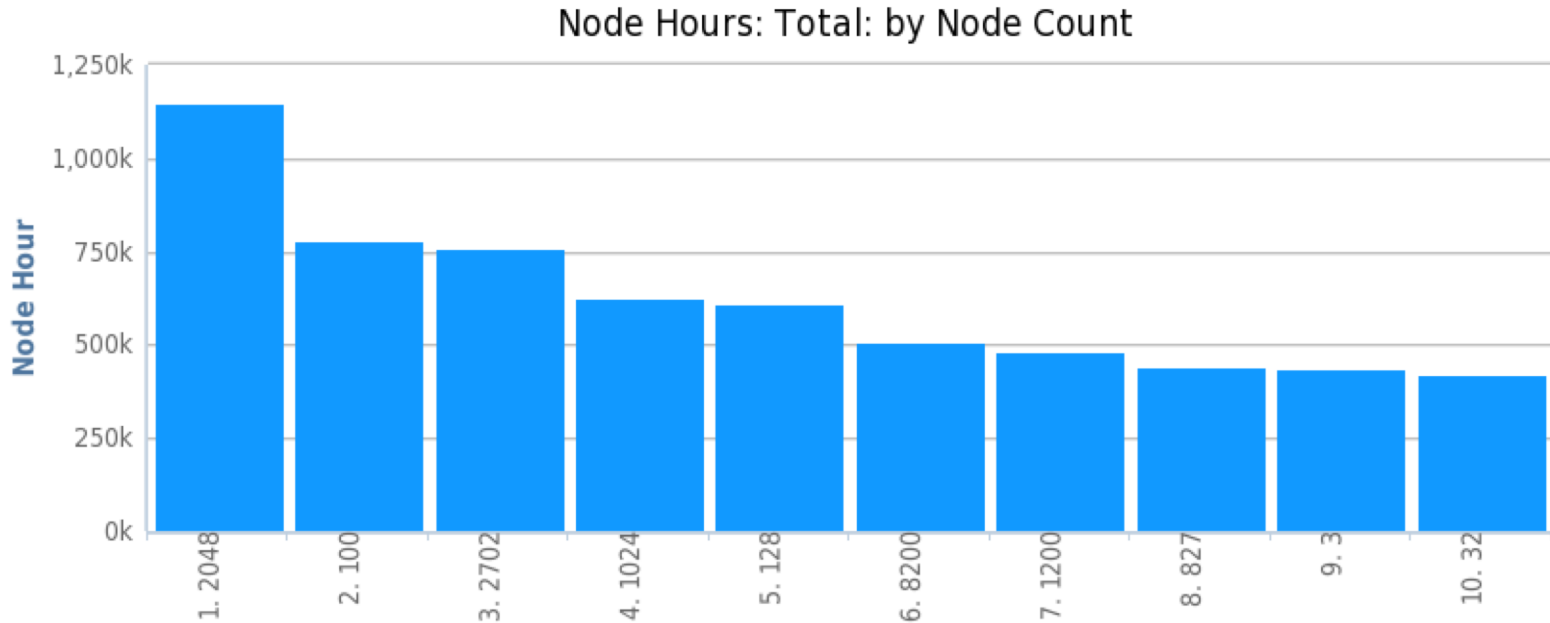


## Backlog

- 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.
- Next batch of allocations expire end of August.

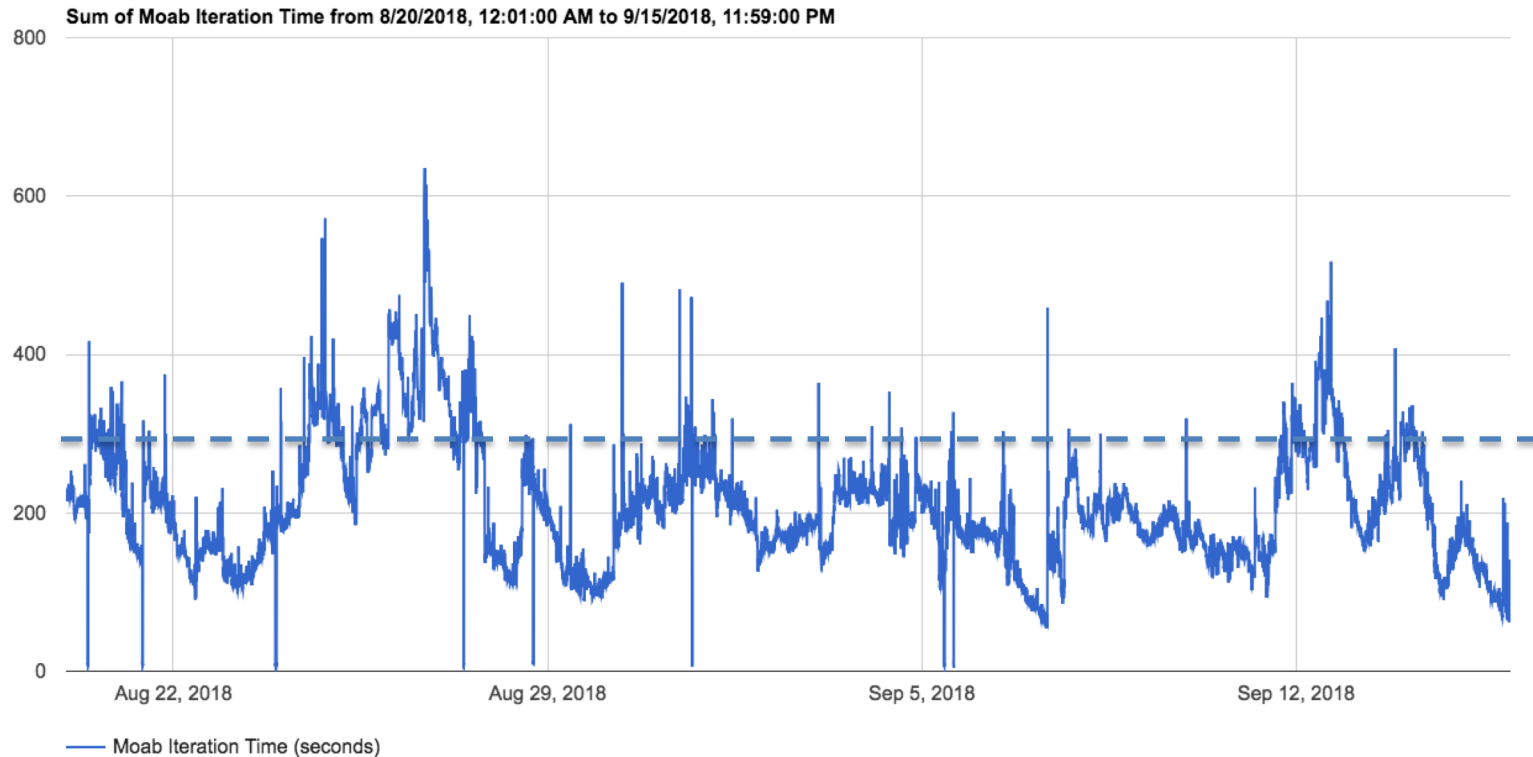


# Workload Details



- Again, large contribution from 1K to 8K XE jobs.
- Data combines XE and XK jobs.
- Last 30 days.

# Job scheduler iteration time




## Blue Waters Weekly Webinar Series

- No webinars for remaining weeks of July or August.
- Webinars are at 10 AM Central Time.
- 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](#).
- Make sure to [RSVP on Facebook](#) and on the [Blue Waters Portal](#)
- We welcome suggestions for topics that will benefit the petascale community. Send your suggestions to [bw-eot@ncsa.illinois.edu](mailto:bw-eot@ncsa.illinois.edu).

## XSEDE Training Events

- <https://portal.xsede.org/course-calendar>
  - Big Data Sept 5-6

## 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