

# BLUE WATERS

SUSTAINED PETASCALE COMPUTING

1/15/18

## Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM  
FOR PETASCALE COMPUTATION

CRAY®

# Agenda

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

## Discount Period Ended

- Charging discounts were
  - 95% off jobs that are at least 4600 XE nodes or 850 XK nodes
  - 50% off all other jobs
- See Utilization slide and Workload Details slide below for impact.

## Recent Events and Outages

- 12/23/2017– Single cabinet communication issue.
- 12/23-12/25/2017 - Nearline performance degraded.
  - Firmware upgrade suspected.
- 12/24/2017 – Single cabinet powered off (thermal).
- 1/4/2018 - Home filesystem unavailable.
  - 3 HDDs failed in same OSS (drawer) within minutes.
  - No files lost (if completely written).

# Recent Changes

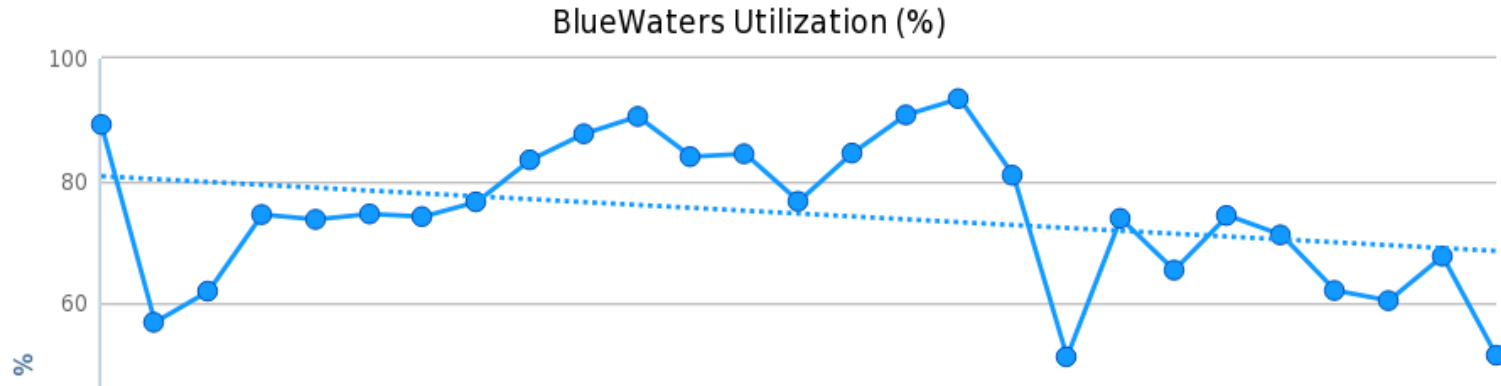
## Upcoming Changes

- Planning to make newer compilers default in first quarter of next year.
  - Cray - cce/8.5.8
  - Intel - intel/17.0.4.196 (Improved OpenMP affinity)
  - PGI - pgi/17.5.0

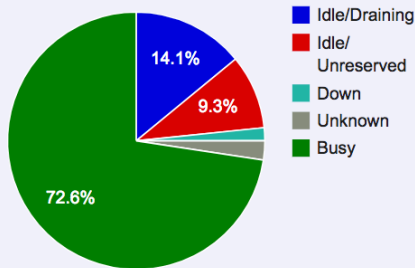


# Usage, Utilization and other Items

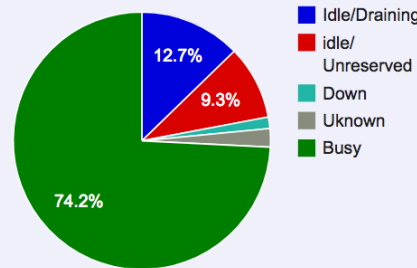
- Overall Utilization last 30 days



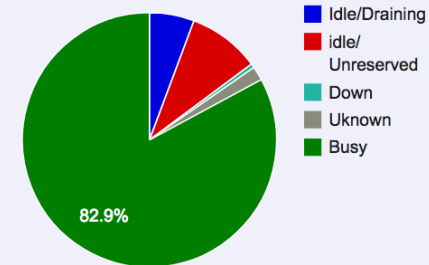
XE Utilization for this Period



Full System Utilization for this Period



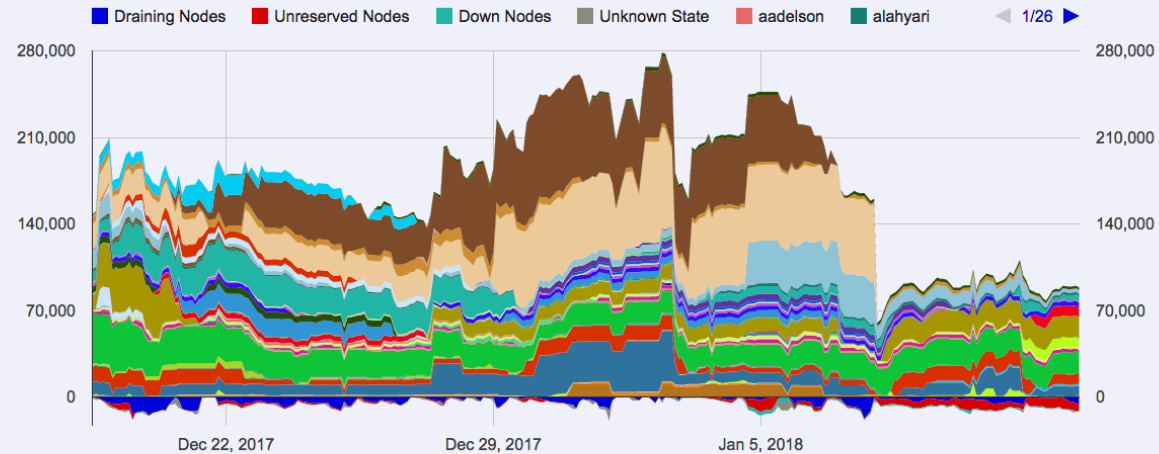
XK Utilization for this Period



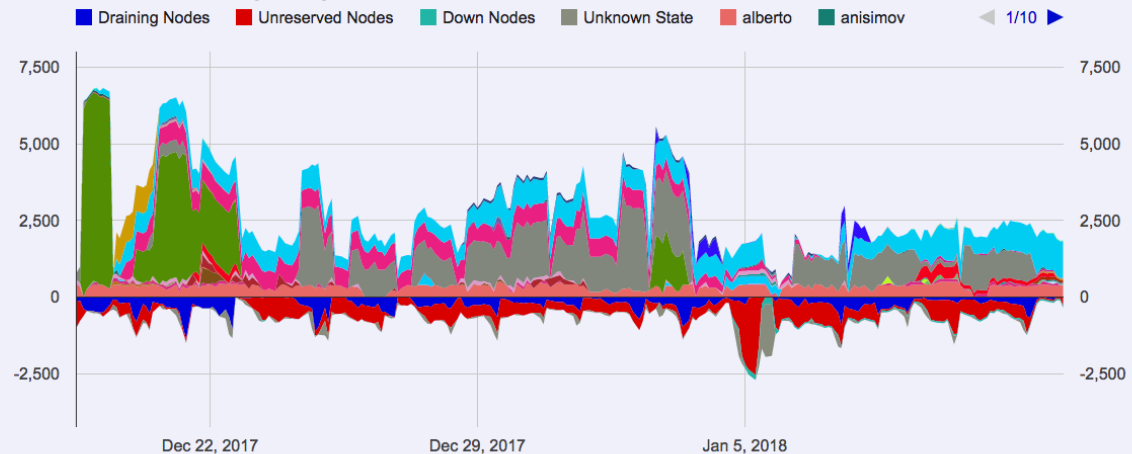
## Backlog

- 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.

Blue Waters xe Frontlog/Backlog

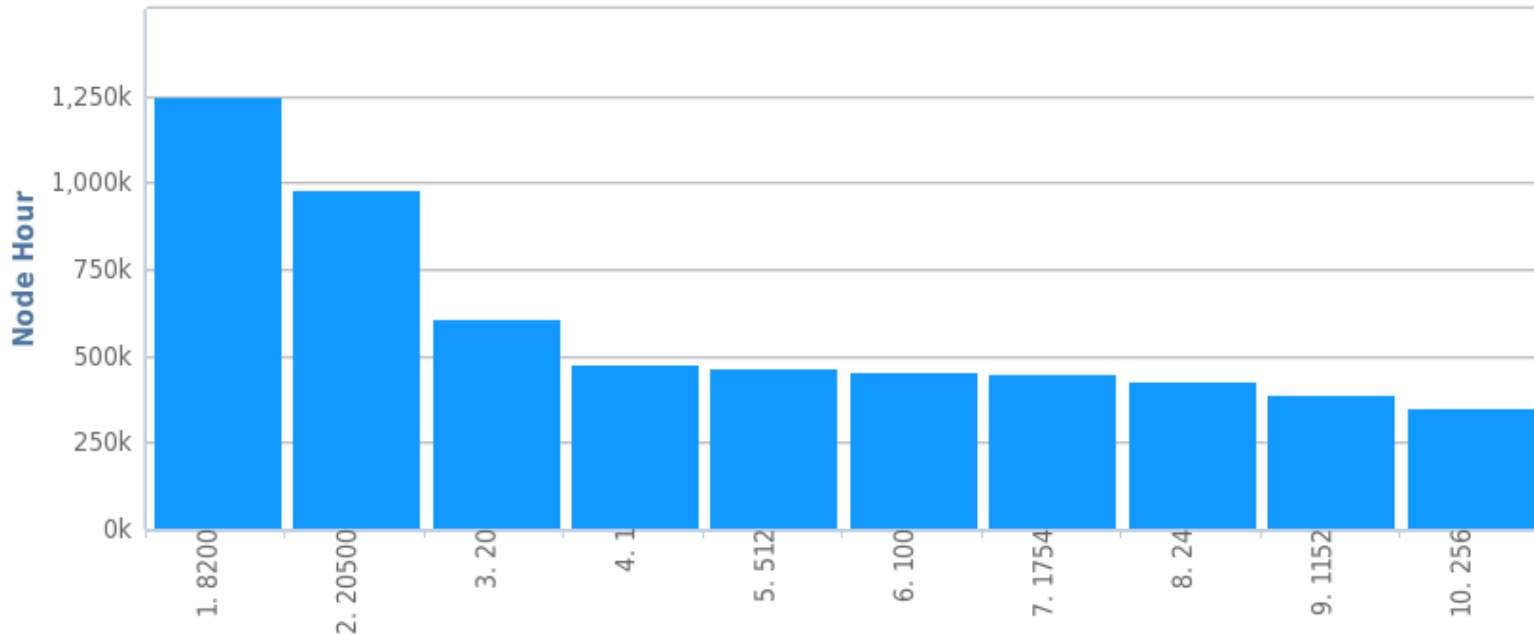


Blue Waters xk Frontlog/Backlog



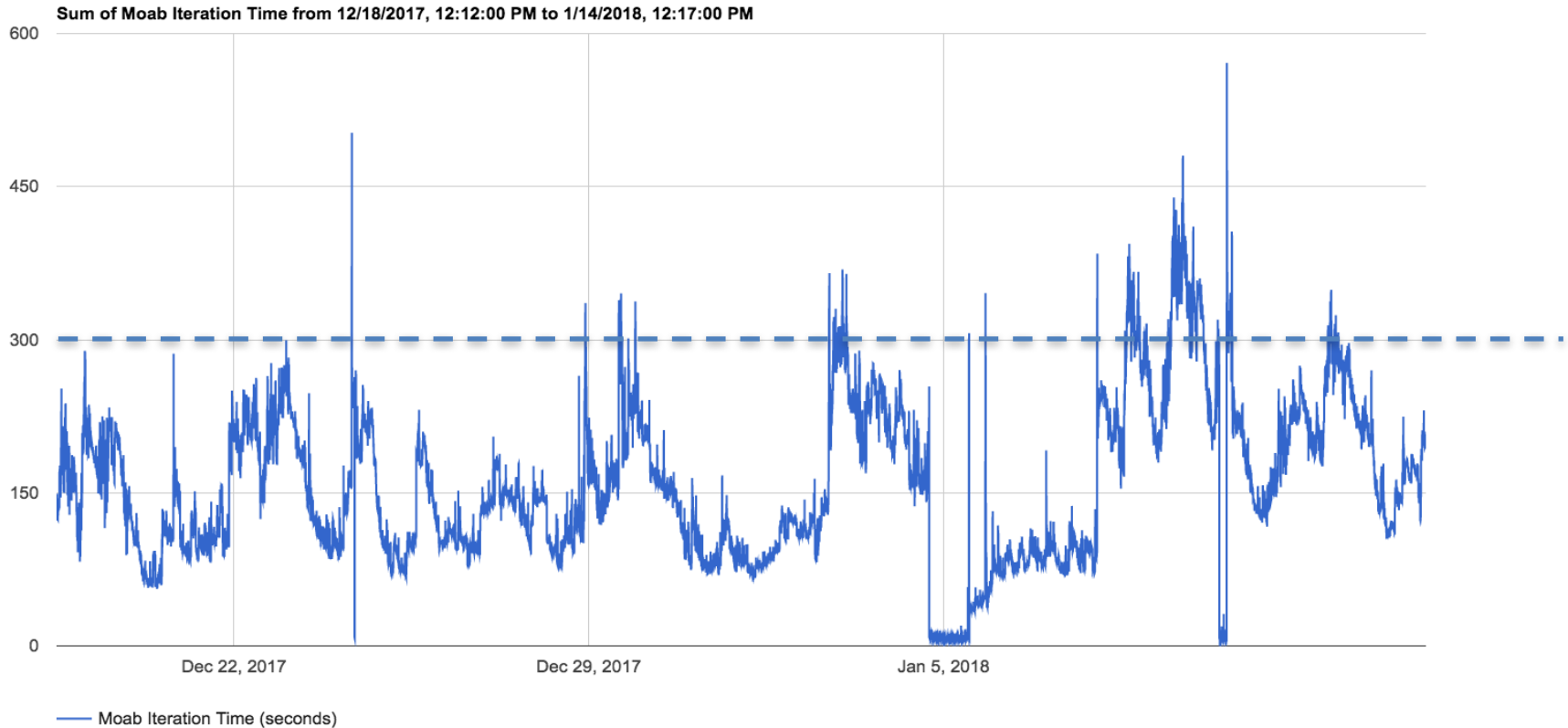


## Workload Details



- Two large node counts dominate!
- Data combines XE and XK jobs.
- Last 30 days.

# Job scheduler iteration time



- Working to keep iteration time  $< 300$  seconds.


## 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](#).
- 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

- February 7-8 – Big Data
- Series will run from 11AM-5PM Eastern Time each day.
- NCSA hosting local site for Illinois partners.

## 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