

BLUE WATERS

SUSTAINED PETASCALE COMPUTING

7/19/15

Blue Waters User Monthly Teleconference



GREAT LAKES CONSORTIUM
FOR PETASCALE COMPUTATION

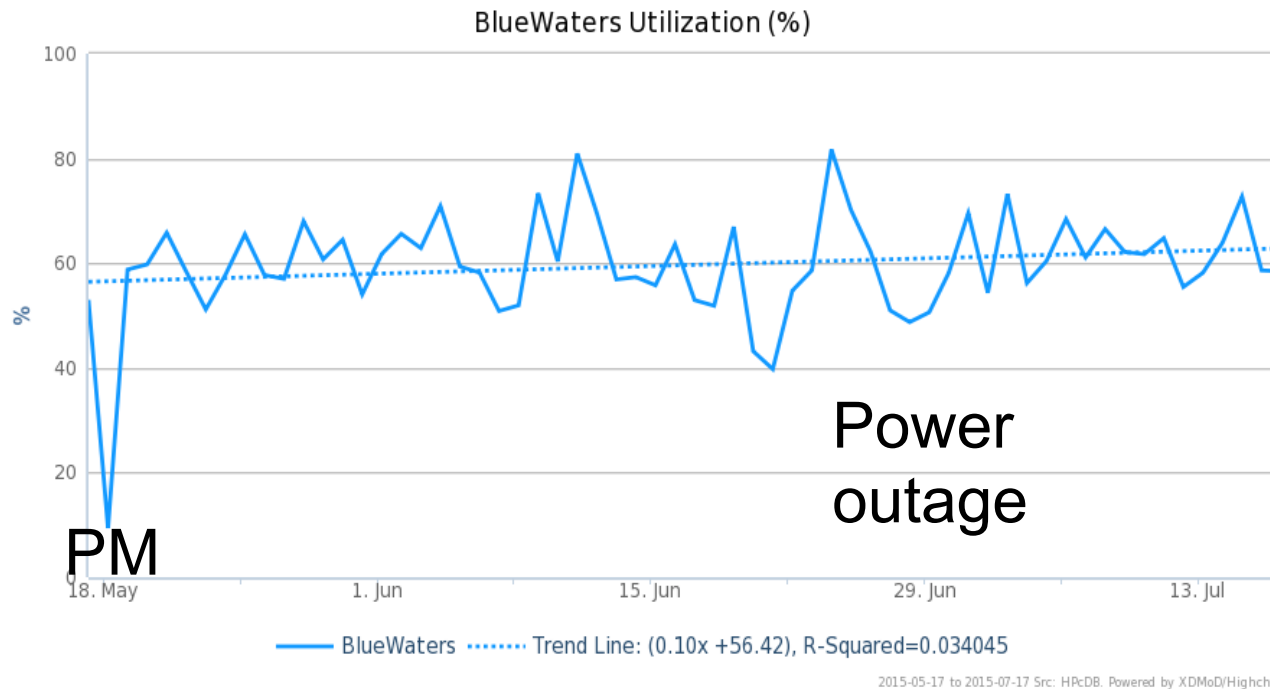
CRAY®

Agenda

- Utilization
- Discount Charging
- Recent Events
- Upcoming Maintenance
- Upcoming Opportunities
- PUBLICATIONS!

System Utilization

- Utilization since last BW User Call (May 18)



- Utilization flat. We are still investigating.

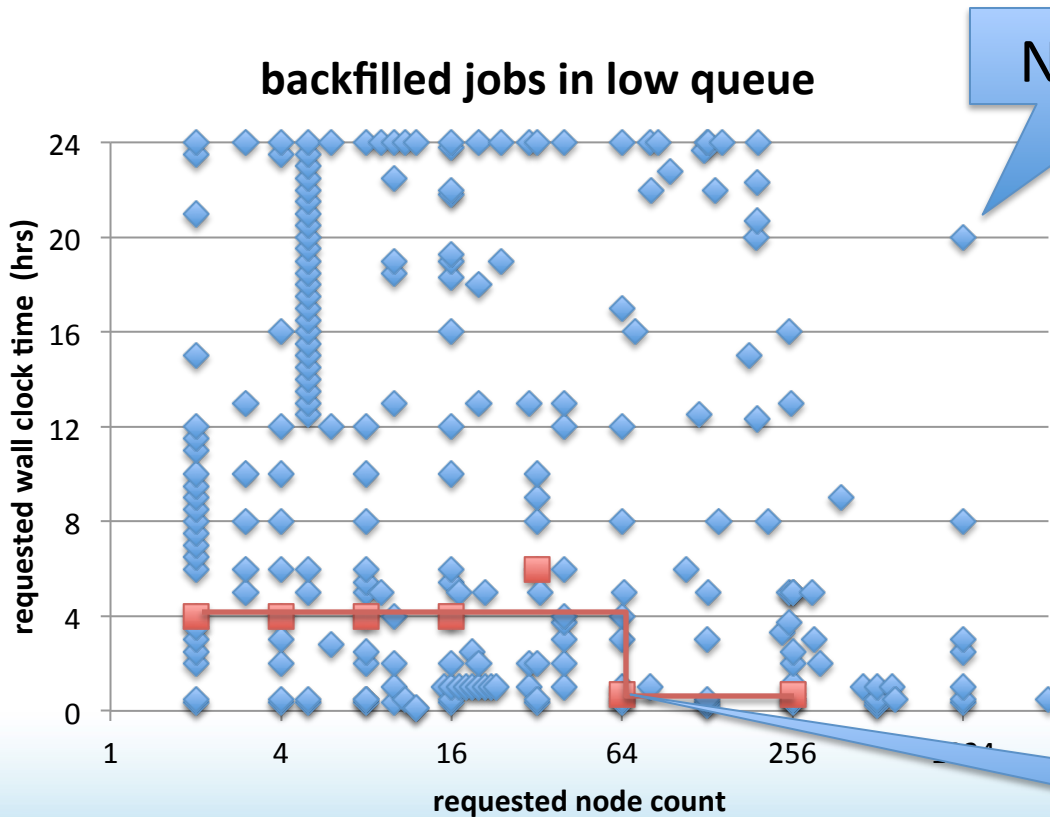
Discount charging

Charge factors for completed jobs that meet one or more of the following criteria below are discounted by 25% for each of the following opportunities with a resulting maximum discount of 69% when compounded.

1. job backfills available nodes
 2. submit preemptible job
 3. use flexible wall clock time
 4. job wall clock accuracy of 75% or better
- For more information see the [July 9th blog entry Charge Factor Discounts for jobs on Blue Waters.](#)

Discount: backfill

- 197 users, more than 1.8 M node-hours



Not typical!

queue	Low	Normal	High
Number of jobs	38261	13895	27

- Avoid long requested wall clock times (less than 12 hrs)
- **red line/squares** – largest number of jobs at that node count.

Good use of backfill

Discount: preemption

Queue/Number of jobs	requested	preempted
low	342	70
normal	24	8

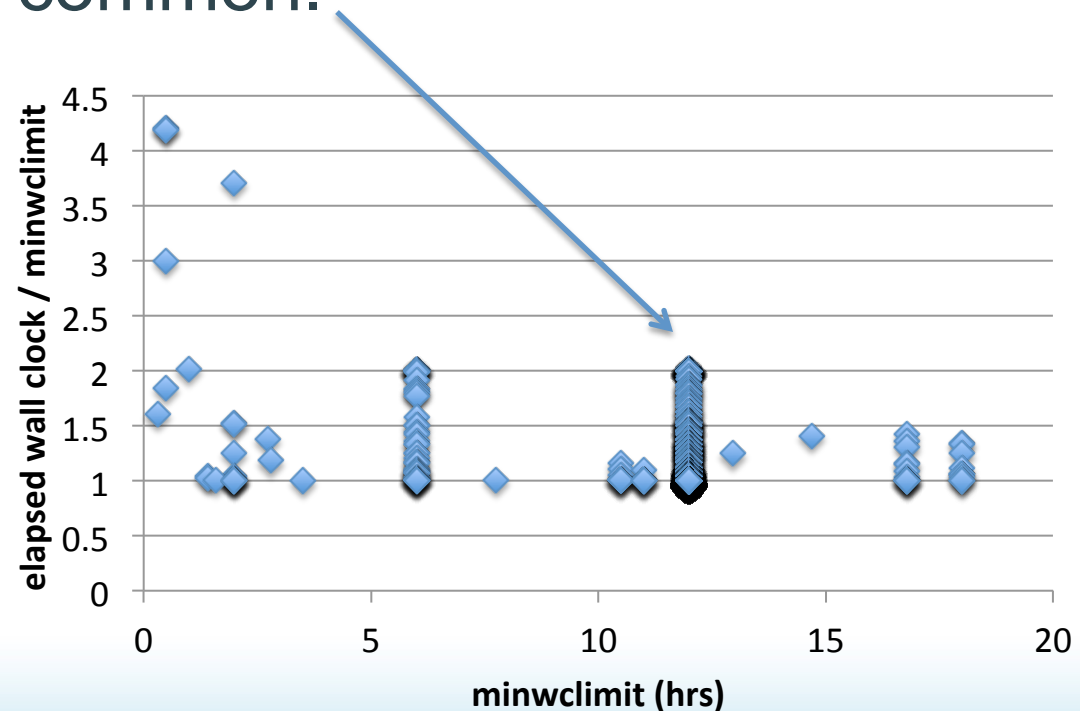
- Only 4 users to date
- 4 hours wall clock before preemption eligible.
- Typical job
 - 5 XE nodes
 - Table shows realized time in hours

average	12:47:16
min	4:03:11
max	23:27:39
median	13:23:06
stddev	6:30:33

- 512 XE jobs preempted shortly after 4 hours.

Discount: minwclimit

- 6 users with more than 1,500 jobs.
- minwclimit of 12 hrs common.
- 30 minutes per extension.
- Extended up to `walltime`



Discount: wall clock accuracy

- Data from the last 7 days.
- Many users less than target of 75%.
 - 72% of jobs.
 - 33% of node-hrs.



Recent Events

- Mostly quiet since last review of events (5/18).
- 6/25 – power feed disruption required compute resources reboot.
- 6/29 – cabinet fan failure (fallout from power disruption) temporarily removed **one** cabinet from service.

Upcoming Changes

- Preventative Maintenance 7/27
 - 6AM – 9PM
 - File system patches
 - Resiliency patches

PAID Program

- Information about the PAID program and the IMEs is available on the Blue Waters portal at <https://bluewaters.ncsa.illinois.edu/paid-ime> and <https://bluewaters.ncsa.illinois.edu/paid-program-lightning-presentations>.
- All Science and Engineering teams are eligible to participate in the PAID program with an IME but only PRAC Science and Engineering teams that have a Blue Waters allocation that extends past September of 2016 are eligible to receive financial support of approximately \$75,000 to facilitate successful participation. Teams are encouraged to work with more than a single IME but funding is capped at the set amount, regardless of the number of partnerships. Teams that do not meet the financial support criteria are eligible to receive Blue Waters time as part of their collaboration with an IME team or teams. Qualifying teams will be initially allocated Blue Waters time of 50,000 node-hours per IME+team pairing (up to a maximum of three) for the development and testing of the new methods without impacting a team's Science and Engineering allocations.
- Contact the IME to discuss how your Blue Waters project could benefit from the IME's offering(s). More information about eligibility for funding and the IMEs' contact information can be found from URLs above.
- Submit a proposal to the Blue Waters Project Office using the guidelines and the template provided here: <https://bluewaters.ncsa.illinois.edu/paid-ime-submissions>.
- A letter of support from each IME you are proposing to work with should accompany each proposal.
- Proposals and letters of support are due Tuesday, **July 21, 2015**.
- Proposals and any related questions should be sent to help+bwpaid@ncsa.illinois.edu.

Advanced User Workshop

- At NCSA.
- Save the date: 11/3 - 11/6
- An agenda will be out in a few weeks.

VSCSE Events

- [Supercomputing for Everyone Series: Performance Tuning Summer School 8/17- 8/21](#)
 - If you are new to HPC this is a good opportunity to learn more about application performance tuning
- Science Visualization 8/24 – 8/25
 - Focus on visualization of large volumetric data resulting from simulation and instrumentation.
- NCSA will be hosting a local site for the VSCSE events.
- See <http://www.vscse.org/> for more information.

XSEDE 2015


- St. Louis, MO – July 26-30
- Tutorials
- BOFs
- Technical Program
- Visual Showcase

From NCSA/Blue Waters

- Galen Arnold
- Mike Showerman
- Trish Barker



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