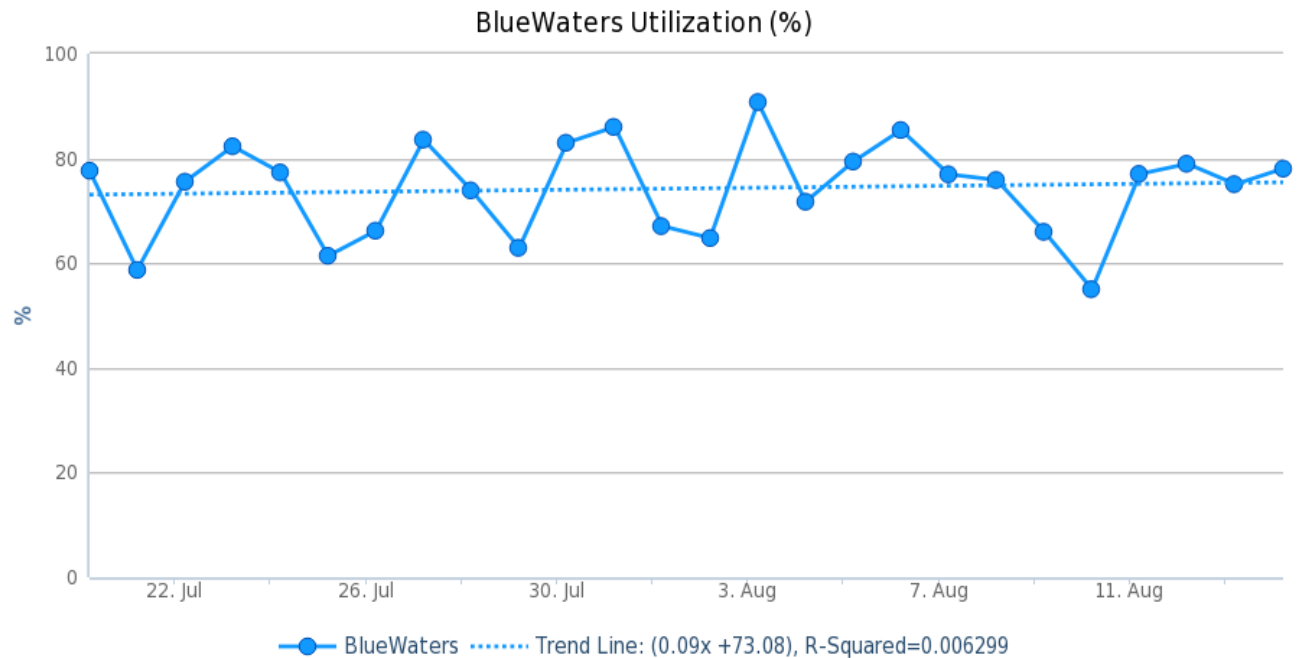8/17/15

Blue Waters User Monthly Teleconference

Agenda

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

System Utilization

- Utilization since last BW User Call (July 20)
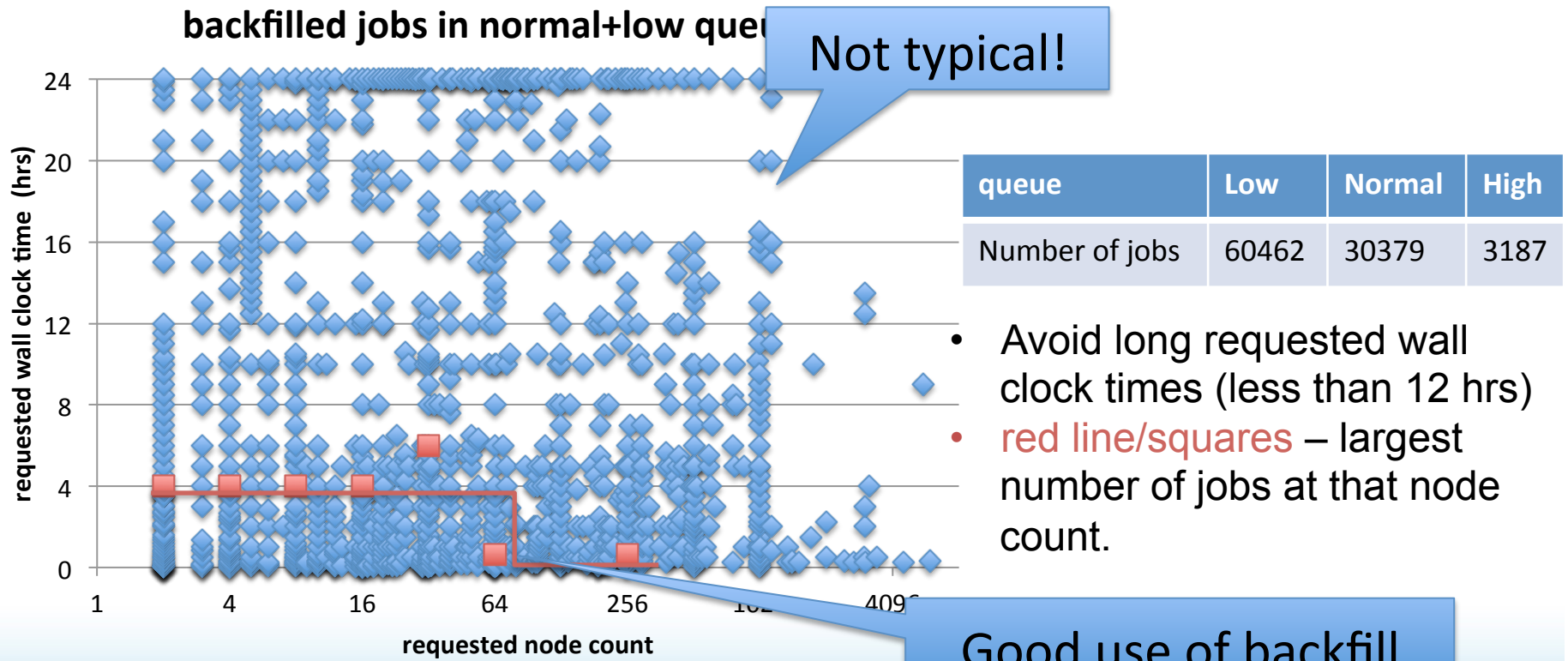

- Utilization improved. Good job backlog.

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

- Most users benefit from backfill

backfilled jobs in normal+low queue

Not typical!

queue	Low	Normal	High
Number of jobs	60462	30379	3187

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

y-axis: requested wall clock time (hrs)

x-axis: requested node count

Good use of backfill

Discount: preemption

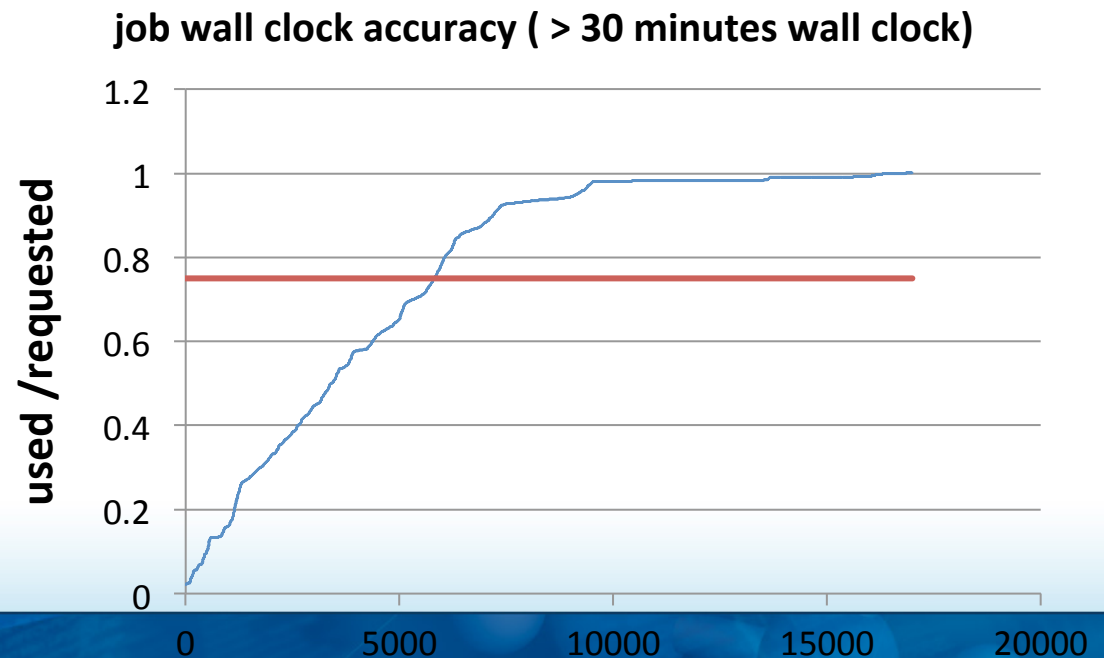| Queue/Number of jobs	preempted
low	78
normal	13

- Only 3 users to date

- 4 hours wall clock before preemption eligible.

- Typical job

  - 5 XE nodes

  - Table shows realized time in hours

average	17:54:44
min	0:30:00
max	24:00:00
median	17:30:00
stddev	5:59:36

- 512 XE jobs preempted shortly after 4 hours.

Discount: minwclimit

- 6 users with more than 1,800 jobs.

- minwclimit of 12 hrs common.

- 30 minutes per extension.
- Extended up to `walltime`

y-axis: elapsed wall clock / minwclimit

x-axis: minwclimit (hrs)

Discount: wall clock accuracy

- Data from the last 14 days.

- Greater than 30 minutes used wall clock time.

- Many jobs and users at less than target of 75%.
  - 44 users
  - 35% of jobs.
  - 78% of node-hrs.

job wall clock accuracy (> 30 minutes wall clock)

Recent Events

- Mostly quiet since last review of events (7/20).
- No reported outages.

Upcoming Changes

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

- Maintenance postponed.

Advanced User Workshop

- At NCSA.

- Save the date: 11/3 - 11/6

- Registration page and agenda will be out in later this week.

  - Cray Performance Tools

  - Parallel IO using MPI-IO

  - HDF

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 HPC Monthly Workshop

- September 3-4, 2015
- Two-day MPI workshop.
- This workshop is intended to give C and Fortran programmers a hands-on introduction to MPI programming. Both days are compact, to accommodate multiple time zones, but packed with useful information and lab exercises. Attendees will leave with a working knowledge of how to write scalable codes using MPI – the standard programming tool of scalable parallel computing.
- https://portal.xsede.org/course-calendar

Join NCSA at SC15!

- NCSA will have an exhibit at the annual Supercomputing Conference in November. If you will be attending SC15, consider giving a demo or talk about your current Blue Waters work in NCSA's booth. The demo space offers an 80-inch HD screen which can be run from a laptop or a USB. We recommend short demos of approximately 15 minutes (followed by Q&A), but demos that require more time are also welcome. Demos can also be repeated at different times. Demos will be promoted on the NCSA website, through social media, and through other channels.

- If you would like to give a demo or talk, please send a brief description, along with any known networking or technical requirements, to Matt Turk at: mjturk@illinois.edu.

- All demo submissions will be reviewed by an NCSA committee before being assigned time in the Demo Theater.

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 😊), 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