BLUE WATERS

SUSTAINED PETASCALE COMPUTING

Welcome

Greg Bauer

NCSA

GREAT LAKES CONSORTIUM
FOR PETASCALE COMPUTATION

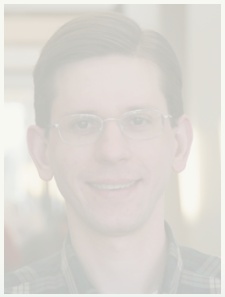
CRAY

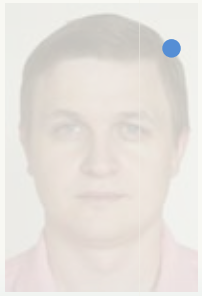
Administrative

- WiFi – Use SSID IllinoisNet_Start or eduroam
  - If needed ports are blocked we will get guest access. Please contact me.
- Training accounts if you don't have a BW acct.
- NPCF Tour Friday? – Sign the sign-up sheet.
- Slides will be posted to the workshop page on the portal.

Blue Waters
Science and Engineering Application Support

- Basic and Advanced Application Support on Blue Waters.
- Work with projects on or moving to Blue Waters.





- Domain Specialists
  - CFD / Solvers
  - Chemistry
  - Numerical Methods
  - BioInfo
  - HPC Generalists
- Interests
  - Performance and Scaling
  - Workflows

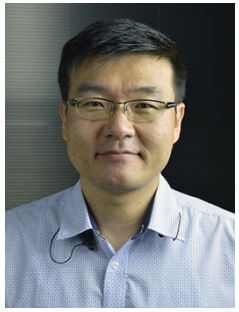
Victor Anisimov

Tom Cortese

Jing Li

Craig Steffen

Robert Brunner



JaeHyuk Kwack

Galen Arnold

Greg Bauer

Ryan Mokos

Colin MacLean

Andriy Kot

Schedule

Wednesday

8:30 - 9:00	Welcome & Introduction to Blue Waters
9:00 - 10:00	Debugging with Allinea DDT, Beau Paisley
10:00-10:30	Break
10:30 - 12:30	Performance with Allinea MAP, Beau Paisley
12:30 - 1:30	Lunch
1:30 - 3:00	Intro to OpenACC with hands-on examples, Robert Crovella - NVIDIA
3:00 - 3:30	Break
3:30 - 5:30	OpenACC basic optimizations with hands-on examples, Robert Crovella - NVIDIA

Schedule

Thursday

09:30	Welcome and goals of workshop
09:45	Cray Programming Environment overview
10:00	CCE overview and recent enhancements
10:30	Break
10:45	OpenACC and OpenMP 4
11:45	Recent MPI enhancements
12:00	Lunch
01:00	CrayPat overview and recent enhancements
01:45	Using Reveal to add OpenMP
02:30	Break
02:45	Overview of libsci / libsci_acc
03:00	Where to find documentation
03:15	PE roadmap
16:30	Questions / Recap
17:00	Adjourn

Schedule

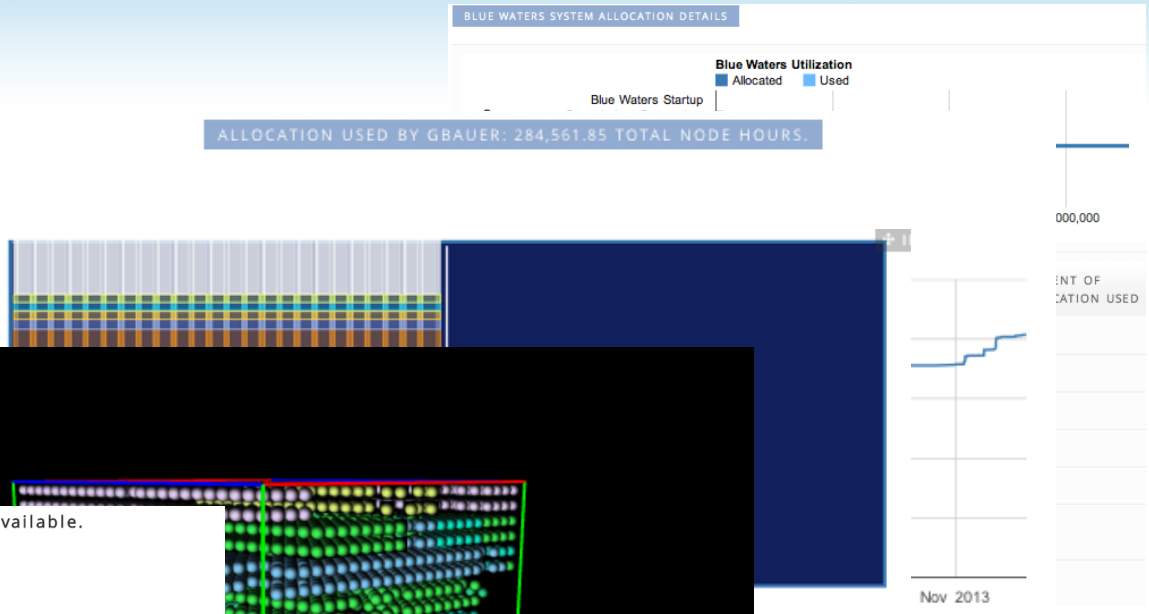
Firday
8:30 - 10:00
HDF - Gerd Heber
1. Problems and Goals
2. Methodology
3. Tools
3.1 Parallel HDF5
10:00-10:30 Break
10:30 - 12:30
3.2 Diagnostic Tools and Instrumentation
3.3 NCSA BW I/O System Characteristics
4. Examples
4.1 CGNS
4.2 VPIC
5. Next Steps
12:30 - 1:30 Lunch
1:30 - 3:00 NCSA presentions by request / Tour of NPCF (Blue Waters) ?
3:00 - 3:30 End of Workshop

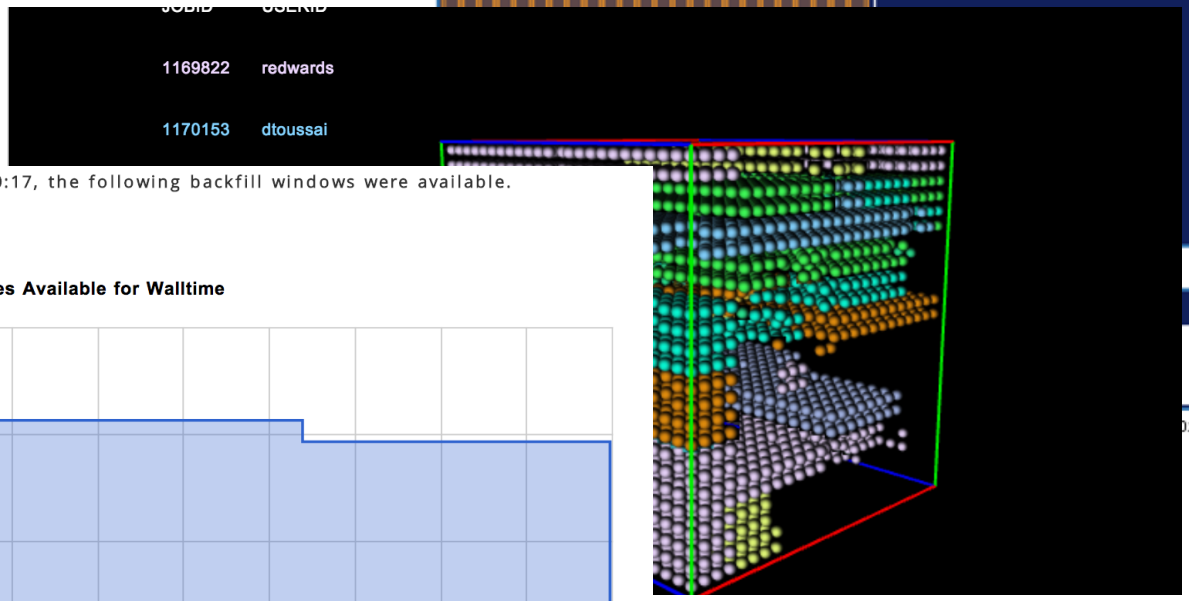
Blue Waters Status

- In production for over 2 years 10 months.
- In the last year
  - Provided ~ 120M XE node-hrs. and 29M XK node-hrs.
  - Over 2M XE jobs and 200K XK jobs executed
  - Average job size (by node-hrs): 1024 XE nodes and 128 XK nodes.

Category	Number of Teams (typical)	Allocation Percentage
NSF PRAC	34	> 80
University of Illinois	28 general 18 exploratory	< 7
GLCPC	10	2

Use the portal





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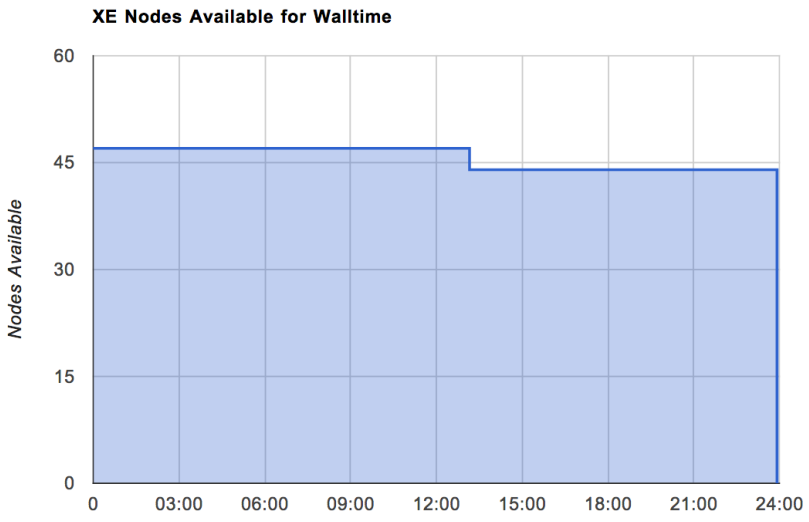

Opportunities

- NCSA/Illinois Enhanced Intellectual Services for Petascale Performance (NEIS-P2)
  - PAID – PRAC advanced services
- Data Sharing Service
  - Currently disabled
  - Looking at community requirements
- Innovative, Data Intensive Challenge
  - Looking at offering spark etc

Keeping Informed

- Bi-annual training opportunities
- XSEDE training
- Virtual School Events
- Monthly Webconferences