Welcome

Greg Bauer
Administrative

- WiFi – Use SSID U1publicWiFi
  - 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 Wed. 4PM – Sign the sign-up sheet.
- Wednesday is Petascale day \((10^{15})\).
- Slides will be posted to the workshop page on the portal.
In the room

- Science and Engineering Support (SEAS)
  - Victor Anisimov
  - Ryan Mokos
  - Tom Cortese
  - Kalyana Chadalavada
  - Manisha Gajbe
  - Robert Brunner
  - Jing Li
  - Gengbin Zheng
  - Omar Padrone
  - Galen Arnold
  - Mark Straka
  - Craig Steffen
  - Dahai Guo
Schedule

Day 1
08:45 – 09:00 Welcome - Greg Bauer, NCSA
09:00 – 10:00 Topaware – Bob Fiedler (Cray)
10:00 – 10:20 Break
10:20 – 10:30 Overview of Cray PE topics for the day - Heidi Poxon and Luix DeRose (Cray)
10:30 – 11:15 CrayPat refresher
11:15 – 12:00 lab (CrayPat-lite, loop statistics, Rank reorder)
12:00 – 13:00 Lunch
13:00 – 14:00 Reveal
14:00 – 14:30 CCE and OpenACC update
14:30 – 15:00 lab with Reveal
15:00 – 15:20 Break
15:20 – 16:00 CCDB
16:00 – 17:00 find a bug using CCDB, general lab time
Schedule

Day 2
Morning: (8:30 – noon) Robert Crovella (NVIDIA)
1. CUDA 101 – basic CUDA concepts and syntax – enough to write a correct CUDA program (60 minutes)
2. hands-on 1 – familiarization with basic concepts (30 minutes)
10:00 Break (15 minutes)
3. CUDA Basic optimizations – memory utilization and execution configuration (60 minutes)
4. Hands-on 2 – grid example sequence (45 minutes)
Noon – 1:00 Lunch
1:00 – 3:00 DDT debugging at scale Beau Paisley (Allinea)
3:00 – 3:30 Break
3:30 – 5:00 DDT debugging on the GPU
Schedule

Day 3
Morning: (8:30 – noon) Robert Crovella (NVIDIA)
1. OpenACC intro (60 minutes)
2. Hands on 3 – OpenACC Laplace example sequence (45 minutes)
10:00 Break (15 minutes)
3. Intro to CUDA libraries (CUBLAS/CUSPARSE) (30 minutes)
4. Hands on 4 – CG porting walkthrough (60 minutes)
Noon - lunch
Afternoon:
1:1 consulting
Hands on time with Allinea and NVIDIA staff
Afternoon:
1 - 3: HDF: Intro and Advanced Topics – Quincey Koziol (The HDF Group)
3:00 Break (15 minutes)
Wrap up
4:00 NPCF / Blue Waters Tour on PETASCALE Day (10^15)
Blue Waters Status

- In full production for over 15 months.
- For 1st year of full production (7/1/2013 to 6/30/2014)
  - Provided 128M XE node-hrs. and 24M XK node-hrs.
  - Over 380K XE jobs and 64K XK jobs executed.
  - Average job size (by node-hrs): 2048 XE nodes and 400 XK nodes.

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Teams (as of 10/1/2014)</th>
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<tbody>
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<td>NSF PRAC</td>
<td>32 : 18 continuing, 6 new, 8 renewed</td>
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<tr>
<td>University of Illinois</td>
<td>15 general, 15 exploratory</td>
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<td>GLCPC</td>
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<tr>
<td>Education</td>
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Use the portal

At 2014-10-12 17:40:17, the following backfill windows were available.
Looking forward

• NCSA/Illinois Enhanced Intellectual Services for Petascale Performance (NEIS-P2).
• Data Sharing Service – next week or two
• Software Upgrade – mid November
• Innovative, Data Intensive Challenge – mid November
Keep Informed

- Bi-annual training opportunities
- XSEDE and Blue Waters Extreme Scalability Workshop
- Virtual School Events
- Monthly Webconferences