Energy Efficient High Performance Computing Working Group
February 8, 2010 Meeting Report

INTRODUCTION

The EE HPC WG held a meeting on February 8, 2010. This Working Group is composed of members representing major Federal departments and independent agencies, private sector representatives, and members of the academic community. More information can be found at the working group's website, http://eehpcwg.lbl.gov. Documents from the group can be found at https://docs.google.com/leaf?id=0BzyTVVVRdMKpNWVjNTI5YTEtMTllZi00YTA5LTlkMTYtZmY3ZDIyZjJjZmMy&hl=en.

NEXT MEETING April 12, 9:00-10:00AM Pacific Time

Introductions and Announcements: *Dale Sartor*
- The EE HPC WG membership has now reached 135 members, which is about ten more than our last meeting.
- The Linked-in group Energy Efficient HPC now has 23 members, many of which are also on the EE HPC WG list.
- After this working group call, we will have a webinar with Craig Steffen from NCSA speaking about power measurement tools and methodologies.

Conferences Sub-group Update: *Natalie Bates for Marriann Silveira & Anna Maria Bailey*

The Green Grid Technical Forum 2011
March 1-2, 2011. Santa Clara Convention Center in Santa Clara, CA.
http://www.thegreengrid.org/events/tech-forum-2011.aspx

IEEE International Parallel and Distributed Processing Symposium's Workshop on High Performance Power Aware Computing.
May 16, 2011. Anchorage, Alaska.
http://www.ipdps.org/ipdps2011/2011_workshops.html

International Supercomputing Conference.
June 19-23, 2011. Hamburg, Germany.
http://www.supercomp.de/isc11/
Deadlines: Tutorials are due February 15 (Natalie is pulling together an energy efficiency tutorial submission). BOF submissions are due April 11. Steve Hammond is going to moderate a Panel on Sustainability.

Second International Green Computing Conference (IGCC'11)
July 25-28, 2011. Orlando, Florida.
http://www.green-conf.org
Deadlines: Papers are due March 18.

Second International Conference on Energy-Aware HPC Computing.
September 7-9, 2011. Germany.
http://www.ena-hpc.org/

SC'11.
November 12-21, 2011. Seattle, Washington.
http://sc11.supercomputing.org/
Potential EE HPC WG Topics:
Power Management
Liquid Cooling
Getting the Data Center ready for Multi-Petascale and Exascale
HPC System/Rack Power Budget
Free Cooling and Heat Re-use Case Studies
DC Power Demonstrations
Glass House and Regional Strengths and Weaknesses
Storage and Networking Energy Efficiency
EE HPC WG BoF
Deadlines: Panels, Tutorials and Workshops Due: April 8, State of the Practice
Abstracts Due: May 20, BoF and Disruptive Technologies Due: July 22

More information can be found at: http://eehpcwg.lbl.gov/events-and-links

Infrastructure Sub-group Update: *William Tschudi*

The infrastructure sub-group is working on developing guidelines for liquid cooling
infrastructure requirements for use in RFPs. Bill has consolidated their thoughts into a
summary, which will be sent around after the sub-group reaches a consensus on it.

The group has also been maintaining a list of data centers that are incorporating waste-
heat reuse into their operating practice. So far they have about a dozen. The goal of this
exercise is to write a case study of one or more of these data centers, highlighting its
efficiency and potential to save in other data centers. Natalie will post the list of waste
heat reuse data centers to the website.

**Compute System Metrics Sub-group Update: *Natalie Bates for Erich Strohmaier
and John Shalf***
The compute system metrics sub-group is working on power measurement
methodology. They want to create consensus around consistent and improved power
metrics for compute systems. The subgroup is surveying people who submitted
information to the Top500 and Green500 lists of super computers. They will attempt to
document the power measurement methodology of these data centers to help

understand the way in which the most efficient data centers meter. The survey includes questions such as when the measurements were taken, is the measurement infrastructure permanent, can you estimate incremental resources, etc.

Closure: *Natalie Bates*

Natalie is working to add the speakers bureau to the website. It is open for all members to participate. Anyone can sign up, and their information will be generally available on the website.

Software Subgroup
The EE HPC WG will be creating a new subgroup focused on software. If you have interest in this subgroup, please let Natalie know. The first meeting of this sub group will occur before the next general meeting.

PARTICIPANTS

Name	Organization
Henry Coles	LBNL
Greg Pautsch	Cray
Bill Tschudi	LBNL
Natalie Bates	EE HPC WG
Caleb Rockenbaugh	NREL
John Gustafson	Intel
Dale Sartor	LBNL
Larry Seibold	SGI
Marriann Silveira	LLNL
Allison Young	Energetics