



Charge to Working Groups

Thuc Hoang & Becky Springmeyer

March 22, 2011



Outputs from September 2010 Workshop



1. Specify scope of the working group
 - What specific parts of the software stack is your WG taking responsibility for?
 - What are the dependencies on other WGs?
2. Identify current state-of-the-art: What works reasonably well? What doesn't?
3. Identify Exascale needs
4. Identify technology gaps, by comparing #2 and #3, as follows:
 - *Research needs (don't know the answer but there exist possibilities)*
 - In-house? In academia?
 - *Development needs (explore further known answer(s) for potential deployment)*
 - In-house? As FastForward activities?
5. Propose technology targets to address the gaps in #4 (with respect to 3 time phases: FY11-15, FY16-20, FY21-25)
6. Identify opportunities for co-design and addressing other cross-cutting issues
 - Tools and other needs to facilitate co-design
 - What specific interface issues and interdependencies will be addressed? What will still remain unaddressed?
7. Identify partnerships with others:
 - For technical coordination: academic, ASCR, NSF CISE or OCI, DoD, DARPA, IESP, etc.
 - Other possible co-funding sources?



OutBriefing Template for March 23-24, 2011



Name of Working Group

Names of Lead & WG members



Working Group Description



- Scope (i.e. major sw stack elements responsible for)
- Key dependencies on other working groups



Exascale Challenges



- List 3-5 most important challenges, pertaining to this WG's scope, to achieving exascale



Path Forward



- Proposed technology
- Initial next steps
- Timeline (Phase I, II or III; Evolutionary or Revolutionary)
- Required Funding (\$-\$\$\$\$\$: \$=10M)
- Required Partnership
- Risks

Repeat this slide for each technology proposal - highest priority only & maximum of 5-7 technologies



Recommended Co-Design Strategy



- Critical steps/activities
- Working with vendors
- Role of skeleton/compact apps
- Concerns/suggestions



Big Picture Issues



- Coordination
- Test beds
- Simulators
- Remaining gaps
- Others



Agenda for Tuesday PM & Wednesday AM



TUESDAY (cont'd):

3:00–3:30 Break

3:30–5:00 Breakout session II

Applications : Programming Models (Empire Room)

Solvers, Algorithms, and Libraries : Hardware Architecture (Monterey Room)

Tools : System Software (Cypress Room)

Visualization and Data Analysis : I/O, Networking, and Storage (Chart Room)

WEDNESDAY:

7:30–8:30 a.m. Breakfast (Empire Room)

8:30–10:00 Breakout session III

Applications : Tools (Empire Room)

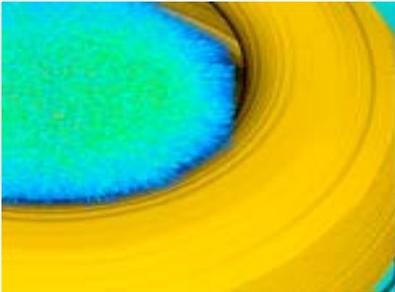
Solvers, Algorithms, and Libraries : Programming Models (Cypress Room)

System Software : Visualization and Data Analysis (Monterey Room)

Hardware Architecture : I/O, Networking, and Storage (Walnut Room)

10:00–12:00 Working Group slide preparation

12:00–1:30 p.m. Lunch break (on your own)



From Petascale to Exascale:

R&D Challenges for HPC Simulation Environments

March 22 - 24, 2011

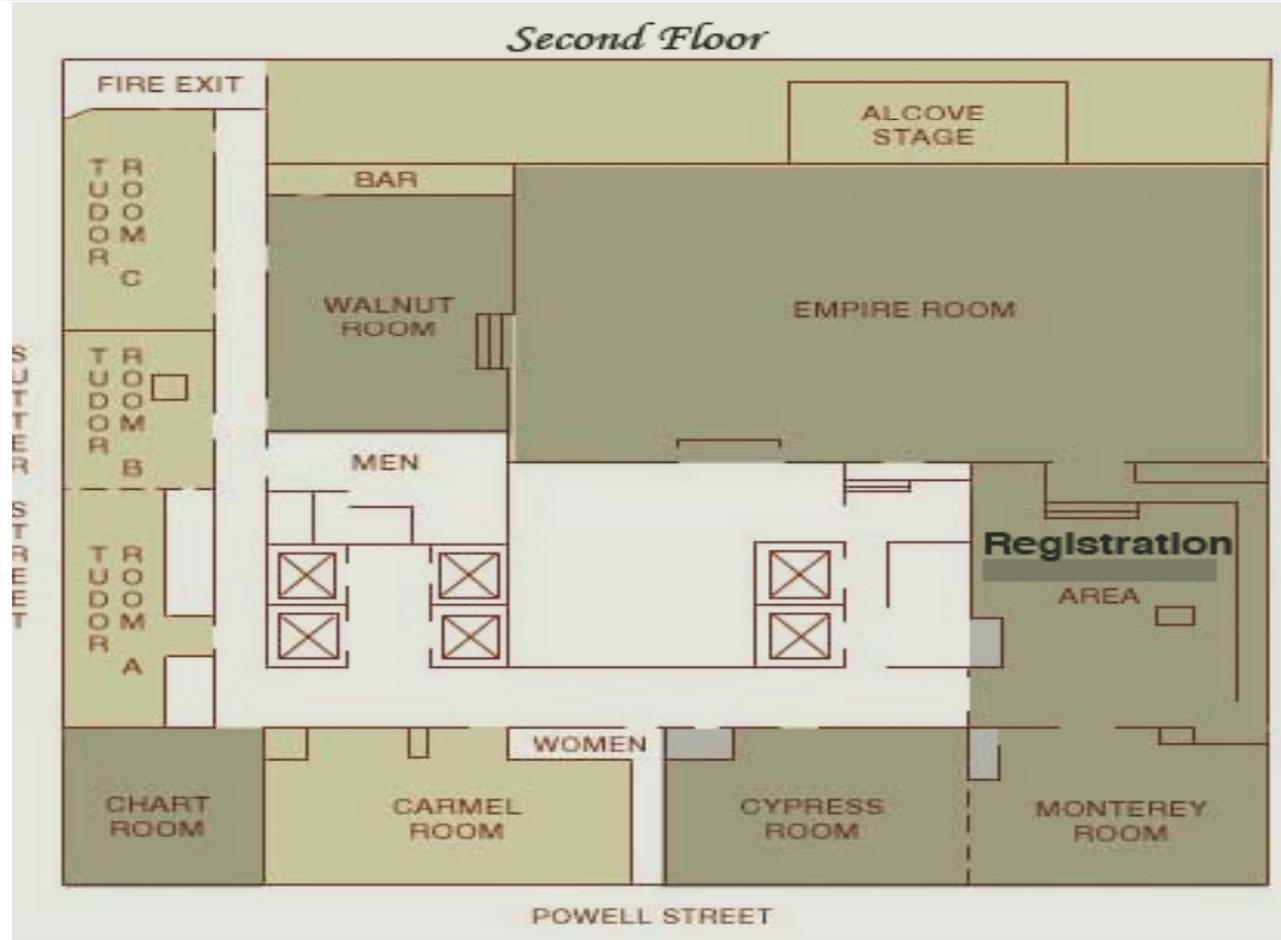
Breakout Rooms:

Chart

Cypress

Monterey

Walnut



<https://asc.llnl.gov/exascale/>