

Software

# What SW can provide:

- Plans, architecture, and status of current applied R&D plan for delivered components
- Clear explanations for why something is very hard (you won't get it)

# SW: Want from Apps

- More, more, more
- Evolve App Inventory:
  - Not just ascii text about app, but Real Code
  - Compact / Skeleton apps with instructions
  - Expected performance model for code
  - Quantify some of the questions from the Inventory
  - Taxonomy of main algorithms
  - Programming Models
    - How is performance monitored?
    - How will failures be handled?
    - How will reproducibility and correctness be handled?

# SW: Want from Hardware

- Fault model, detection, probabilities
- Power effects (what can we do to change usage?)
- How do we manage parallelism?
- Cost of context switching?
- Resource management knobs
  - Bandwidth
  - Scheduling
  - Power
- Model for heterogeneity: SW and HW
- Solid state plans
  - Size, parameters, etc

# Continuing Software Installation Surveys

- Goal: Better understanding based on data instead of anecdotes
- Usage, not just installation
- Focus on Extreme Scale
- Do automated collection ? With scale info?
- Types of systems: compute, data, analysis
- Improved schema

We agree, so now a plan to do it!