HPCC Futures

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Question:

How do you make a small fortune in HPCC?
Answer:

Start with a large fortune.
Current State:

- Less and less custom HPCC hardware.
  - SGI (interconnect)
    - Financial trouble
  - Cray (interconnect and vector CPU)
    - Unsure future
  - IBM (interconnect)
    - Moving to commodity interconnect (Infiniband)
  - NEC (interconnect and vector CPU)
Future of commodity CPUs

- Moore's Law
  - Actually said that the number of features on a CPU would double every 18 months (for a while that also implied doubling of compute power)
- More cores
  - Today: 4 cores per chip
  - Near future: 8 cores per chip
  - Further:
    - More cores?
    - More cache?
    - More function units?
Future

- Unclear
- Obstacles
  - Memory performance
  - HEAT
  - Scaling
- Near-term
  - More cores
  - Higher scaling via MPI
  - Hybrid coding techniques (OpenMP + MPI)
- Far-term
  - Very unclear
  - New paradigm
Thank you!

Questions?