Cori Phase 2 update

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Cori: A pre-exascale supercomputer for the Office of Science workload

• System will begin to transition the workload to more energy efficient architectures

• Will showcase technologies expected in exascale systems
  – Processors with many ‘slow’ cores and longer vector units
  – Deepening memory and storage hierarchies


System named after Gerty Cori, Biochemist and first American woman to receive the Nobel prize in science.
Cori Configuration –
64 cabinets of Cray XC system

- Over 9,300 Knights Landing compute nodes
- ~1,600 Haswell compute nodes as a data partition
- Aries Interconnect (same as on Edison)
- >5x application performance of Edison system
- Lustre File system
  - 28 PB capacity, >700 GB/sec I/O bandwidth
- NVRAM “Burst Buffer” for I/O acceleration
  - ~1.5PB capacity, > 1.5 TB/sec I/O bandwidth
- Significant Intel and Cray application transition support
- Delivery in two phases, summer 2015 and summer 2016
- Installation in new Facility on Berkeley Lab main campus
Schedule update

• KNL white boxes are on their way to NERSC. Arriving any day now.
  – 8 single node boxes of KNL, final spin of the silicon
  – NERSC Staff and NESAP teams will have access to this early hardware

• We expect delivery of Cori Phase 2 sometime in the July/August timeframe.

• Within a month, we should be able to narrow down that deliver range to weeks
Plan for enabling users

• NESAP teams will be the first to have access to Cori Phase 2 and will get significant time on the system

• We will enable other users in a small partition to port code, work on threading, vectorization and other optimizations

• Before other users will be enabled on full system, they will need to show readiness for Knights Landing.
  – Complete dungeon session worksheet
  – Show results from running on a few nodes
Charging

• There will be no charging on Cori Phase 2 in 2016
• We will renormalize hours in 2017 to a ‘Cori’ hour
  – Stay tuned for more details
  – Cori hour will be 2-3x an Edison hour, depending on real application performance.