

SUMMARY

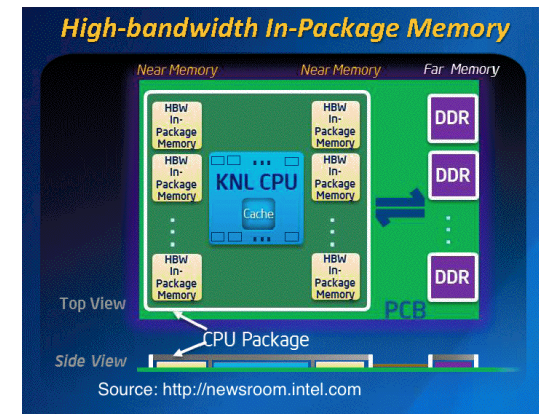
Adrian Jackson
adrianj@epcc.ed.ac.uk

Xeon Phi

- High potential performance
 - Achievable performance lower but can still be x2 a compute node (i.e. 2 x multicore processor)
- GPU'd codes
 - Offloading can match GPU kernels
 - Good performance model
- Porting straightforward
 - Achieving good performance harder
 - Low memory per core also can limit what jobs can be run
- Tools available to help with optimisation
 - Intel vtune and vector advisor
 - Allinea map

KNL – Knights Landing

- Successor to Xeon Phi (Knights Corner)
 - Due to be released later this year
 - ~3 TFLOP/s double precision
 - 72 Airmont cores
 - 2 vector units per core
 - Two cores share 1MB L2 cache form a tile
 - A mesh fabric routes between the tiles
 - On package-DDR4 memory controller support for up to 384 GB main memory
 - Up to 16GB of on-package stacked RAM



Getting access to ARCHER

- Standard research grant
 - Request Technical Assessment using form on ARCHER website
 - Submit completed TA with notional cost in Je-S
 - Apply for time for maximum of 2 years
- ARCHER Resource Allocation Panel (RAP)
 - Request Technical Assessment using form on ARCHER website
 - Submit completed TA with RAP form
 - Every 4 months
- Application for computer time only
 - Instant Access – Pump-Priming Time
 - Request Technical Assessment using form on ARCHER website
 - Submit completed TA with 2 page description of work



Funding calls

- Embedded CSE support
 - Through a series of regular calls, Embedded CSE (eCSE) support provides funding to the ARCHER user community to develop software in a sustainable manner for running on ARCHER. Funding will enable the employment of a researcher or code developer to work specifically on the relevant software to enable new features or improve the performance of the code
 - Apply for funding for development effort
 - Regular calls are every 4 months
 - actively encouraging applications from New Scientific Communities
- See <http://www.archer.ac.uk> for details



Support

- Helpdesk
 - Email support@archer.ac.uk
 - via ARCHER SAFE <http://www.archer.ac.uk/safe>
 - phone: +44 (0)131 650 5000
 - By post, to:
 - ARCHER Helpdesk
 - EPCC
 - James Clerk Maxwell Building
 - Peter Guthrie Tait Road
 - EDINBURGH EH9 3FD
 - <http://www.archer.ac.uk/community/techforum/>

Training opportunities

- ARCHER Training (free to academics):
 - <http://www.archer.ac.uk/training/>
- EPCC MSc in HPC
 - <http://www.epcc.ed.ac.uk/msc/>

Virtual Tutorials

- Live online interactive sessions
 - a forum for users of ARCHER to ask any questions you may have about the ARCHER service.
- Q&A sessions, starting with short lecture on specific topic
 - An opportunity for attendees of ARCHER training courses to discuss any issues related to a course or questions about course material that may have arisen since attending the course.
- Broadcast using Blackboard Collaborate.
- Every second Wednesday of the month
 - <http://www.archer.ac.uk/training/virtual/>.

Feedback and follow-up

- <http://www.archer.ac.uk/training/feedback/>

What now?

- You can attempt the ARCHER driving test
 - www.archer.ac.uk/training/course-material/online/driving_test.php
- On successful completion, eligible users can apply for
 - account on ARCHER
 - 1,200 kAUs of time (80,000 core-hours) over 12 months
- Further information
 - This online material: www.archer.ac.uk/training/course-material/online/.
 - Documentation: <http://www.archer.ac.uk/documentation/>.
 - Helpdesk: support@archer.ac.uk
 - Training: <http://www.archer.ac.uk/training/>.