

## PAX-HPC Training Discussion Notes

22 April 2024, Lancaster

### 1. Potential topics for future PAX-HPC training events after June:

- Specialised training event/hackathon for GPUs (as different hardware now available), e.g. AMD GPU, Intel GPU + oneAPI, HIP, etc. (Initial survey may be needed to confirm the interests and groups).
- General training event on memory/cache optimisation for GPUs and CPUs
- General training event (introductory level) on ML, such as how to efficiently use PyTorch on multi-GPUs

### 2. Requirements for general training event on 10-13 June in Edinburgh:

Draft agenda (TBC):

- 13:30 – 17:00 Monday 10<sup>th</sup> June: Training on Linaro Forge
- 09:30 – 17:00 Tuesday 11<sup>th</sup> June: Training on HPE tools including CrayPat etc
- 09:30 – 17:00 Wednesday 12<sup>th</sup> June: Hackathon
- 09:30 – 16:00 Thursday 13<sup>th</sup> June: Hackathon
  - 15:00 – 16:00: Wrap-up with next training planning and requirements discussion

1) Registration has opened (<https://forms.office.com/e/arZ7CSbb8s?origin=lprLink>) and the registration deadline is 10 May. Early registration and travel arrangement is strongly recommended as Edinburgh will be busy in summer and may limit the choices of accommodations.

2)Q: Would it be possible to swap Day 1 and Day 2 for the Linaro and HPE tools training?

A: This will be confirmed after checking with the tutors' availability and training materials.

**(- Update on 6 May: The swap has been confirmed, i.e. training on Linaro Forge will be on Day 2 and training on HPE tools will be on Day 1.)**

3) Attendees' main programming languages will be asked/added in the registration form. Hands-on practical materials will try to include templates using different programming language(s) preferred by the attendees where possible.

### 3. Other questions & Comments:

1) Q: Will training events provide by EPCC be in-person or online, onsite or at EPCC only?

A: The training events provided by EPCC can be in-person and/or online as needed, but one of the purposes for the PAX-HPC training events is for team building when the RSEs can meet and work together, so in-person would be preferred. Onsite trainings could also be possible subject to the number of local attendees and the availability of the EPCC/external tutors.

2) Q: How can we have better communications for the training events planning and info sharing?

A: PAX-all mailing list will still be used. Xu has recently joined the fortnight PAX meeting chaired by Alastair (attended by PAX colleagues from Durham, Manchester etc) and hopefully this will

improve the communications for the training events planning and info sharing, and avoid any potential overlap/clash in the future.

3) Q: RSEs would like to give back what has learned from the PAX-HPC training to the wider community. Can they provide trainings based on the attended PAX-HPC training events?

A: We need to double check about the copyright for the training contents and materials used. A joint training event (with helps from the PAX-HPC RSEs) may be a good starting point to consider.

4) Documents/papers on the following topics would be of interest, and it would be good to have some suggestions if possible:

- Unified memory
- Optimisation for ARM
- Mixed precision programming

5) Intermediate Fortran course may also be of interest, as discussed at the meeting break.