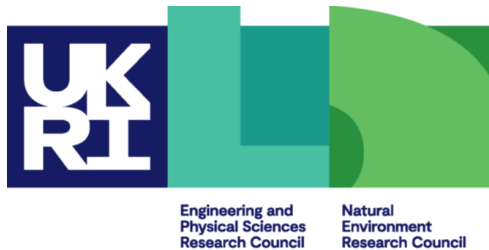


ARCHER2 Training Courses

General Overview



Reusing this material



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- New UK National Supercomputer Service
 - managed by UKRI/EP SRC
 - to be housed, operated and supported by EPCC
 - hardware supplied by Cray
- Training provided by the ARCHER2 Computational Science and Engineering (CSE) support team
 - 60 days per year at various locations
 - free to all academics



Located at EPCC's Advanced Computing Facility (ACF)



ARCHER2@ACF



Cirrus@ACF



What is EPCC?

- UK national supercomputer centre
 - founded in 1990 (originally Edinburgh Parallel Computing Centre)
 - a self-funding Centre of Excellence at The University of Edinburgh
 - running national parallel systems since Cray T3D in 1994
 - over 100 full-time staff
 - a range of academic research and commercial projects
 - postgraduate teaching and HPC training courses
- Get in contact if you want to collaborate
 - many staff are named RAs on research grants
 - joint research proposals
 - European project consortia



Edinburgh



Key ARCHER2 Resources

- Upcoming courses
 - <http://www.archer2.ac.uk/training/>
- Material from past courses
 - <https://www.archer2.ac.uk/training/materials/>
- Virtual tutorials (online)
 - <http://www.archer2.ac.uk/training/>
- Documentation
 - <http://www.archer2.ac.uk/documentation/>

Who am I?

David Henty d.henty@epcc.ed.ac.uk

- In charge of education and training programme at EPCC
 - MSc
 - PRACE Training Centre
 - courses on the ARCHER2 training programme
 - commercial training
 - ...
- Also do HPC research
 - new parallel programming models, accelerators, performance, ...



Other Resources

- Please fill in the feedback form!
 - you will be sent a link at the end of the course
- General enquiries about ARCHER2 go to the helpdesk
 - support@archer2.ac.uk
- EPCC runs one-year taught postgraduate masters courses
 - ***MSc in HPC*** and ***MSc in HPC with Data Science***
 - awarded by the University of Edinburgh since 2001
 - scholarships available
 - <http://www.epcc.ed.ac.uk/msc/>



MSc in HPC / HPC with Data Science



- taught by EPCC staff (plus options in Informatics, Maths, Physics, ...)
- 12 taught courses (8 months); research dissertation (4 months)
- also available fully online for part-time, intermittent study

Supercomputing MOOC

- futurelearn.com/courses/supercomputing

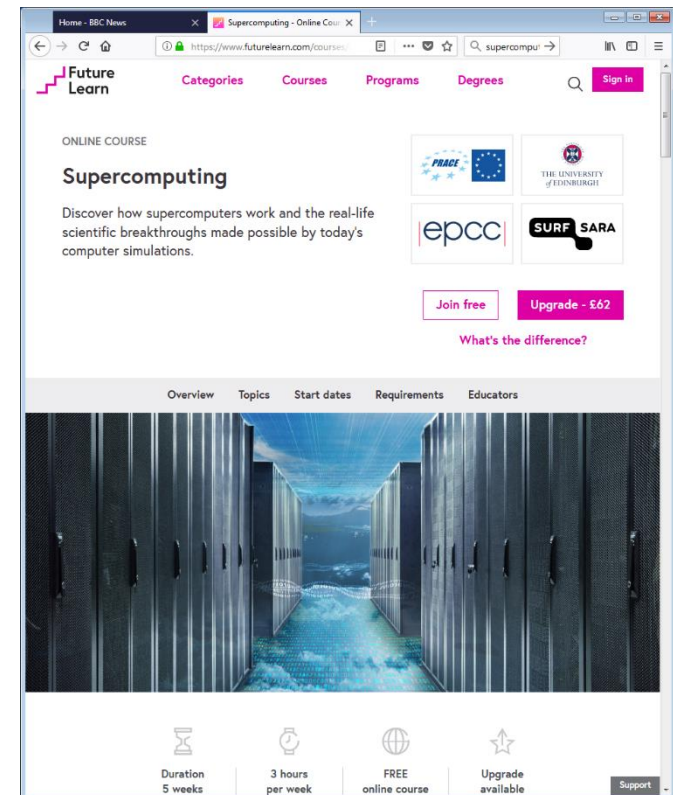
- 5 weeks
- free (with paid “upgrade” option)
- conceptual
- no computer programming required

- Run five times from 2017 - 2019

- typically thousands of “joiners”
- very collaborative
- lots of support from fellow learners

- Available now in “self-study” mode

- no active support from EPCC educators



Access during course

- Personal accounts for duration of course
 - will allow machine access for up to a month afterwards
- Accounts will be closed two weeks after access ends
 - all files etc. will be deleted
 - take copies of all your work beforehand!
- Course materials (slides, exercises etc) will continue to be available from ARCHER2 website
 - archived on ARCHER2 training pages for future reference

Access longer term

- Various ways to apply for time on ARCHER2
 - <https://www.archer2.ac.uk/support-access/access.html>
- All require justification of resources
 - Pump Priming has the lowest barrier to entry
 - designed for exploratory work, e.g. in advance of a full application
- Or take the “ARCHER2 Driving Test”
 - <https://www.archer2.ac.uk/training/driving-test.html>
 - 800 CU for up to 12 months

Security of room

- We cannot guarantee that the training venue is secure!
- We advise that you take your laptops and valuables with you during any breaks, e.g. over lunch time.

Code of Conduct

<https://www.archer2.ac.uk/about/policies/code-of-conduct.html>

- We expect all course trainers and attendees to:
 - Use welcoming and inclusive language
 - Be respectful of different viewpoints and experiences
 - Gracefully accept constructive criticism
 - Focus on what is best for the community
 - Show courtesy and respect towards other community members
- See web page for full details and incident reporting form



Funding calls

- Embedded CSE support
 - Through a series of regular calls, Embedded CSE (eCSE) support provides funding to the ARCHER2 user community to develop software in a sustainable manner to improve research on the ARCHER2 service. The funding allows the employment of a Research Software Engineer (RSE) to carry out software development of ARCHER2 software.
- See <https://www.archer2.ac.uk/ecse/> for details



ARCHER2 hardware / software setup

- 5,860 nodes each with 128 AMD CPU-cores
 - made up of 2x64-Core AMD multicore processors
 - more than 750,000 CPU-cores!
- Batch access via SLURM: sbatch, squeue, ...
- Two file systems – you have two directories:
 - /home/project/project/username
 - /work/project/project/username
- You must run all parallel jobs from /work/
 - I recommend you “cd” straight there every time you log in
- Reserved queues each day for fast turnaround





PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

The Partnership for Advanced Computing in Europe | PRACE

EPCC's PRACE Training Centre



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE | 26 members

(UK represented by EPCC on behalf of UKRI)

Hosting Members

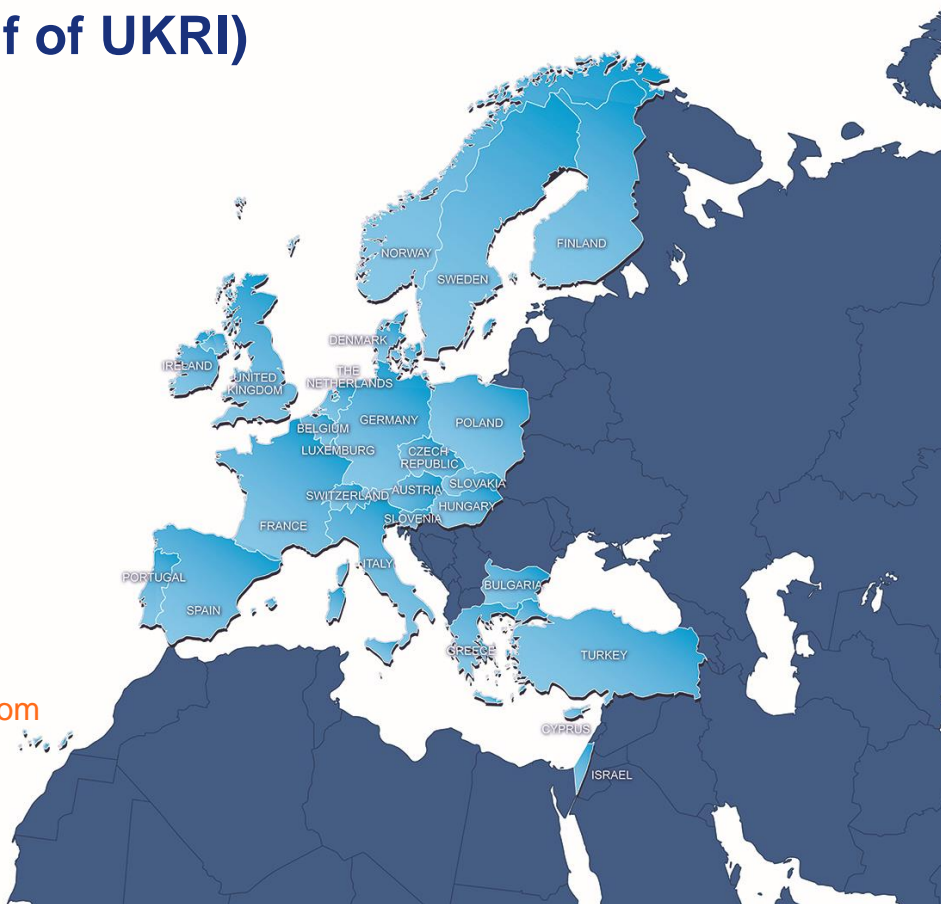
- ▶ France
- ▶ Germany
- ▶ Italy
- ▶ Spain
- ▶ Switzerland

General Partners (PRACE 2)

- ▶ Austria
- ▶ Belgium
- ▶ Bulgaria
- ▶ Cyprus
- ▶ Czech Republic
- ▶ Denmark
- ▶ Finland
- ▶ Greece
- ▶ Hungary
- ▶ Ireland
- ▶ Israel
- ▶ Luxembourg
- ▶ Netherlands
- ▶ Norway
- ▶ Poland
- ▶ Portugal
- ▶ Slovakia
- ▶ Slovenia
- ▶ Sweden
- ▶ Turkey
- ▶ United Kingdom

Observers

- ▶ Croatia
- ▶ Romania





PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE | 10 Training Centres (PTCs)

- ▶ Hubs for world-class HPC training for researchers in Europe: www.training.prace-ri.eu
 - ▶ Barcelona Supercomputing Center (Spain)
 - ▶ CINECA - Consorzio Interuniversitario (Italy)
 - ▶ CSC - IT Center for Science Ltd (Finland)
 - ▶ EPCC at the University of Edinburgh (UK)
 - ▶ Gauss Centre for Supercomputing (Germany)
 - ▶ GRNET (Greece)
 - ▶ ICHEC (Ireland)
 - ▶ IT4I (Czech Republic)
 - ▶ Maison de la Simulation (France)
 - ▶ SURFsara (Netherlands)



PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE | Courses

- ▶ PRACE funds delivery for PTC courses
- ▶ Upcoming courses (at EPCC and throughout Europe)
 - ▶ www.archer2.ac.uk/training/
 - ▶ www.training.prace-ri.eu
- ▶ Please fill in the course feedback form!
 - ▶ linked in from PRACE course page (where you initially registered)
 - ▶ you will also receive reminder emails containing the link

I hope you enjoy the course



- ... and *please ask questions!*