

PRACE Training & Education in HPC



THE PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE



Training on efficient and productive use of supercomputers

When it comes to making efficient use of supercomputers in research and industry, well-trained experts are just as important as having the right hardware. PRACE promotes expertise by offering comprehensive training and educational programmes with various courses, workshops and on-line resources.



www.prace-ri.eu

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Supercomputers have become an essential tool for scientists and engineers both in academy and industry. However, if the software used to solve complex problems is not programmed properly and optimally, even powerful supercomputers can appear to be slow and valuable resources are wasted. To make productive and sustainable use of High-Performance Computing (HPC), having highly qualified staff train users to write and use software applications efficiently is just as important as having state-of-the-art hardware. With this in mind, PRACE provides world-class training in HPC and in computational science via regular courses and workshops. **PRACE training** is designed to teach supercomputer users how to optimise the software they use, or get it up and running efficiently with new technologies. PRACE training events are generally free of charge and open to participants from both academia and industry from around the world. The goal of PRACE training is to train exceptionally skilled specialists with expertise in HPC systems and HPC applications to enhance science and industry in Europe and to stimulate innovation. Thanks to these continuing training efforts, industrial users can reap the benefits of cutting-edge software and new applications in HPC more quickly and boost competitiveness.

There are **14 PRACE Training Centres** which deliver HPC and related courses in Austria, Belgium, Czechia, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Slovenia, Spain, Sweden and the UK. These centres offer a jointly-coordinated annual programme of top-quality training courses. The courses are generally aimed at Ph.D. students, post-docs, and senior researchers in academia as well as at researchers in industry. The programme covers a wide range of topics in HPC and scientific computing from basic parallel programming to advanced accelerator utilisation, including emerging topics like large-scale data analysis and artificial intelligence as well as domain-specific best practices. The courses enable participants to use efficiently both the supercomputer infrastructure available at the participating institutions as well as the high-end (Tier-0) infrastructure in the largest PRACE computing centres. In addition to this regular programme of training courses We also run various training workshops, including **PRACE Seasonal Schools**, all over Europe.

PRACE is also active in developing international partnerships and collaborations in training. It regularly organises workshops to discuss best practices on HPC training at the annual ISC and SC conferences. Every year, we also organise the International HPC Summer School in collaboration with international partners: the Extreme Science and Engineering Discovery Environment (XSEDE) project in the USA, the RIKEN Center for Computational Science (R-CCS) in Japan, and the SciNet HPC Consortium in Canada. The school has been running since 2010 and attracts some of the top students and speakers from participating countries: Canada, Europe, Japan and the USA. Upcoming events are listed at: <https://training.prace-ri.eu>

The PRACE Training Portal provides a range of information and resources on all things related to HPC training, from upcoming courses, video tutorials and recordings from training events, to training materials (e.g. presentations, exercises). There are also ongoing efforts to further develop remote learning opportunities via Massive Open Online Courses (MOOCs). Our portfolio of MOOCs includes an introduction into supercomputing as well as variety of HPC-related topics. Visit the PRACE Training Portal to find out more! www.training.prace-ri.eu.

In order to inspire and encourage the next generation of HPC users and specialists, PRACE runs the prestigious Summer of HPC (SoHPC) programme which offers internship opportunities for late-stage undergraduate and early-stage postgraduate university students. Every year, 20+ students are selected to spend summer placements at various European HPC centres and complete projects under the supervision of dedicated mentors, improving their skills in different HPC-related fields.

PRACE Training in Numbers

From 2008 to 2019, we have organised **688 TRAINING EVENTS** including courses, schools, and workshops. These have served over **17 000 PARTICIPANTS** representing over **52 500 PERSON-DAYS OF TRAINING**.

We provide **100+ COURSES** every year around Europe via **14 PRACE TRAINING CENTRES**, with over **1 800 PARTICIPANTS** annually.

We organises **3 SEASONAL SCHOOLS** every year as well as workshops in collaboration with other projects.

FIND OUT MORE



Training Portal
www.training.prace-ri.eu



FACTSHEET: PRACE Summer of HPC
<https://prace-ri.eu/wp-content/uploads/Fact-Sheet-PRACE-SoHPC.pdf>



PRACE MOOCs
www.futurelearn.com/partners/prace



FACTSHEET: PRACE Training and Education with MOOCs & CodeVault
<https://prace-ri.eu/wp-content/uploads/Fact-Sheet-PRACE-MOOCs-CodeVault.pdf>



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