



Academic Computer Centre
CYFRONET AGH



Partnership for Advanced Computing in Europe Research Infrastructure – resources and opportunities

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Computing

- 5+ PTFLOPS
- 130 000+ cores



Storage

- 60+ PB
- dedicated types of storage



Computational Cloud

- PaaS based on OpenStack



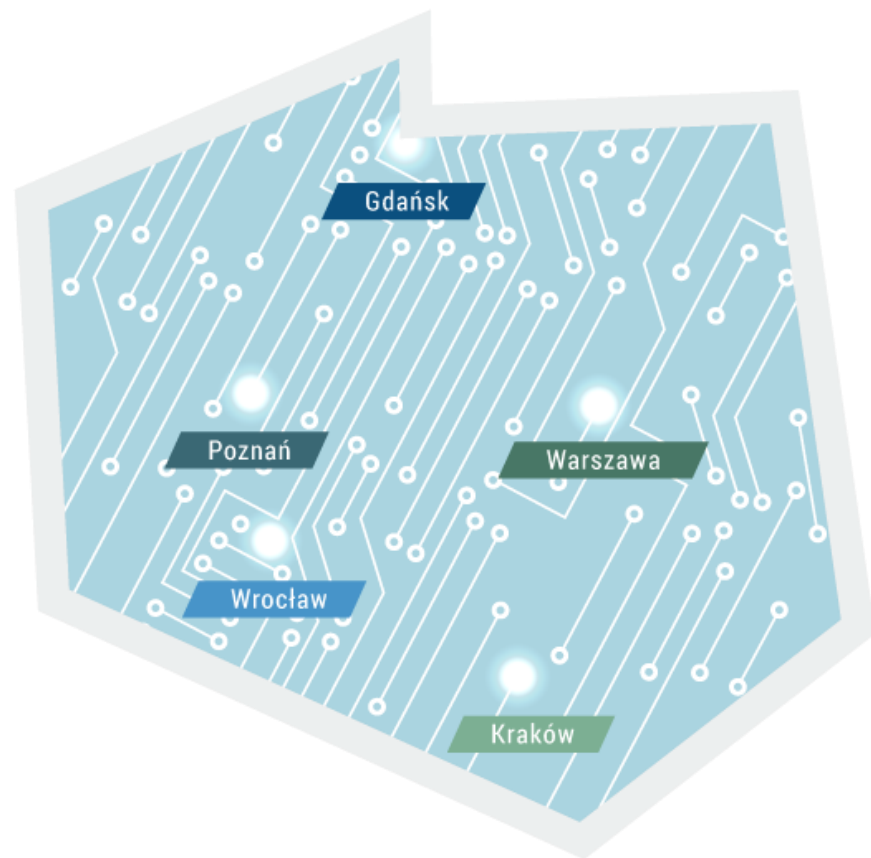
Scientific software

- 800+ apps, tools, libraries
- apps.plgrid.pl



Team work utilities

- JIRA, Git, Confluence, teleconferencing



PRACE | what we do

- ▶ Open access to world-class HPC systems to EU scientists and researchers
- ▶ Variety of architectures to support the different scientific communities
- ▶ High standards in computational science and engineering
- ▶ Peer Review at European level to foster scientific excellence
- ▶ Robust and persistent funding scheme for HPC supported by national governments and European Commission (EC)
- ▶ Support the development of intellectual property rights (IPR) in Europe by working with industry and public services
- ▶ Collaborate with European HPC industrial users and suppliers

PRACE | what we do

- ▶ 600+ scientific projects enabled
- ▶ 18 000 000 000+ (thousand million) core hours awarded since 2010
- ▶ Of which 60%+ led by another PI nationality than the HM
- ▶ R&D access to industrial users with 50+ companies supported
- ▶ 10 000+ people trained through PRACE Training
- ▶ 120+ Petaflops of peak performance on 6 world-class systems
- ▶ 25 PRACE members, including 5 Hosting Members
(France, Germany, Italy, Spain and Switzerland)

PRACE | members

Hosting Members

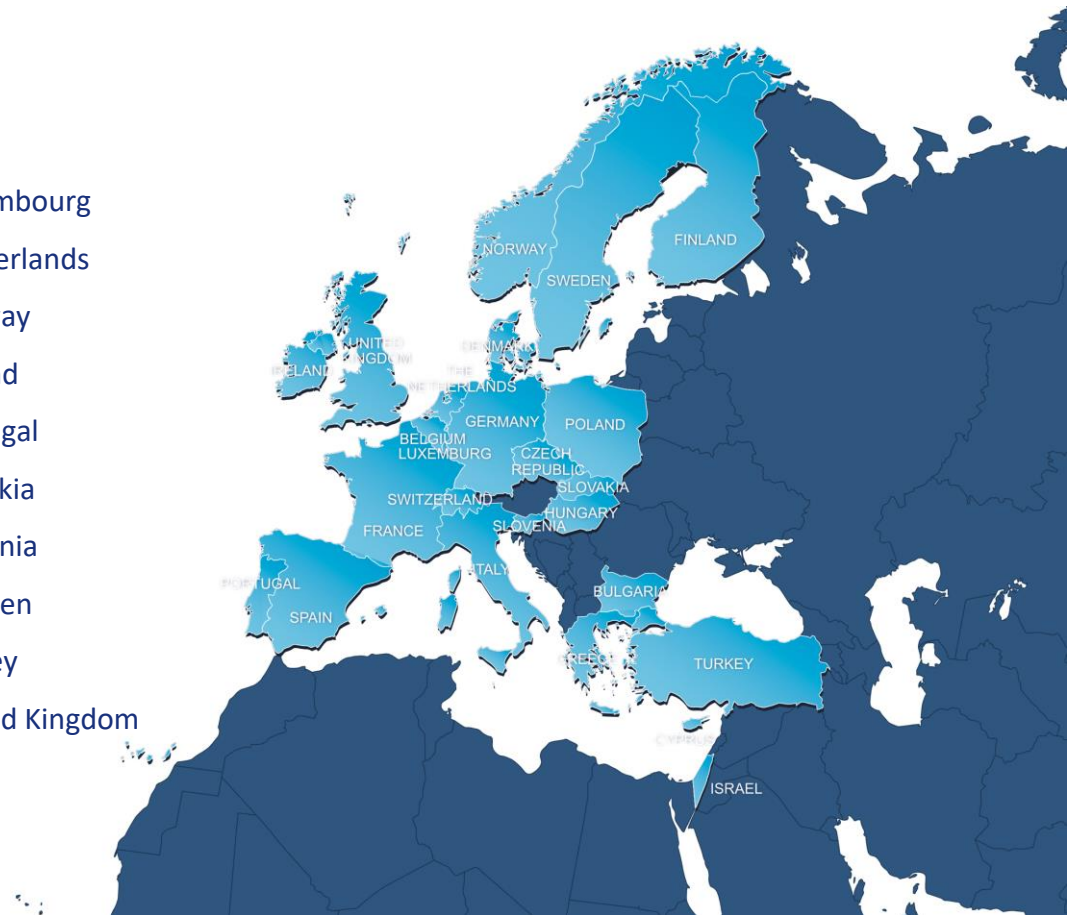
- ▶ France
- ▶ Germany
- ▶ Italy
- ▶ Spain
- ▶ Switzerland

General Partners (PRACE 2)

- ▶ 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



PRACE | Tier-0 Systems

Upgraded



MareNostrum: IBM
BSC, Barcelona, Spain
#25 Top 500



Piz Daint: Cray XC50
CSCS, Lugano, Switzerland
#5 Top 500

New



SuperMUC-NG: Lenovo ThinkSystem
GAUSS @ LRZ, Garching, Germany
#8 Top 500

New



Joliot Curie: BULL Sequana X1000
GENCI/CEA, Bruyères-le-Châtel, France
#16 Top 500



MARCONI: Lenovo
CINECA, Bologna, Italy
#19 Top 500

New



JUWELS: BULL Sequana X1000
GAUSS @ FZJ, Jülich, Germany
#26 Top 500

PRACE | Tier-1 Systems



ARCHER: Cray XC30
EPCC, Edinburgh, UK
#186 Top 500



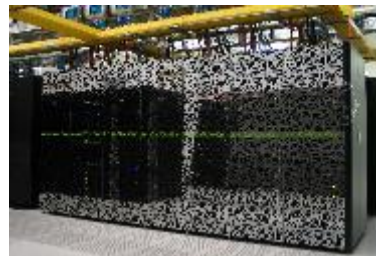
Prometheus: HPE Apollo 8000
ACC Cyfronet AGH-UST, Krakow, Poland
#131 Top 500



Beskow: Cray XC40
KTH, Stockholm, Sweden
#111 Top 500



Salomon: SGI ICE X
IT4I, Ostrava, Czech Republic
#214 Top 500



Cartesius: Bull Bullx B720/B710
SURFSara, Amsterdam, The Netherlands
#360 Top 500

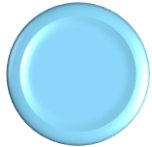


Sisu: Cray X40
CSC, Espoo, Finland
#267 Top 500

PRACE | project access



Free-of-charge required to **publish results** at the end of the award period



Preparatory Access (2 to 6 months)



Project Access (12, 24 or 36 months)



SHAPE Programme (2 to 6 months)



Distributed European Computing Initiative (Tier-1 12 months)

Criterion:
Scientific Excellence
Assessed by an
improved review
process

www.prace-ri.eu/call-announcements/



PRACE | project access

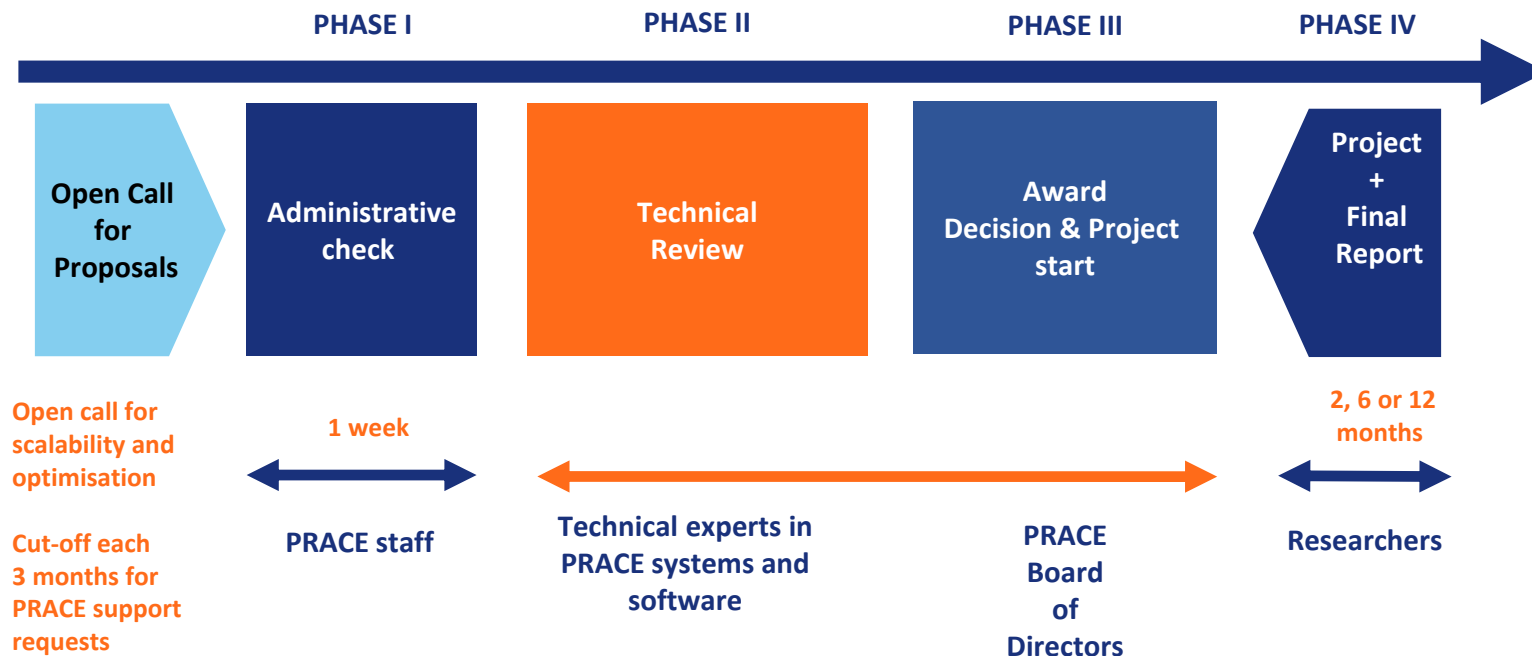


www.prace-ri.eu/prace-project-access/

PRACE | project access

- ▶ **19th Call for Proposals for Project Access**
 - ▶ Opening of the call: 5 March 2019
 - ▶ Closing of the call: 30 April 2019, 10:00 CET
 - ▶ Allocation period for awarded proposals: October 2019 – September 2020
 - ▶ Type of Access: Project Access and Multi-Year Project Access
- ▶ Applications for Project Access must use codes that have been previously **tested** and
 - ▶ demonstrate **high scalability and optimisation** to multi-core architectures
 - ▶ demonstrate a requirement for ensemble simulations that need a **very large amount of CPU/GPU**

PRACE | preparatory access



www.prace-ri.eu/prace-preparatory-access/

PRACE | Distributed European Computing Initiative

- ▶ **15th Call for Proposals for DECI (Tier-1)**
 - ▶ Opening of the call: 15 January 2019
 - ▶ Closing of the call: 28 February 2019, 17:00 UTC
 - ▶ Allocation period for awarded proposals: June 2019 – May 2020
 - ▶ Type of Access: DECI (Tier-1)
- ▶ Applications for DECI:
 - ▶ projects requiring access to Tier-1 resources that are not currently available in PI's own country or for international collaborations
 - ▶ individual projects limited to around 5 million machine hours (2.5 million machine hours in average)

PRACE | Training and Outreach activities

provide a sustained, high-quality training and education service for the European HPC community



6 PRACE Advanced Training Centres (PATCs) and 4 Training Centres (PTCs)



PRACE training events: Seasonal Schools, International HPC Summer School, On-demand training events



Summer of HPC (programme for undergraduate and postgraduate students)



PRACE Training and Events portal



CodeVault, Massive Open Online Courses (MOOCs)

Training topics

Different levels of training

- ▶ Basic, intermediate, advance

High performance computing

- ▶ Parallel programming
- ▶ Accelerators
- ▶ Performance optimization

Domain-specific topics

- ▶ Simulation software
- ▶ Visualization
- ▶ Data intensive computing

www.training.prace-ri.eu



PRACE | Training and Events Portal

- ▶ www.training.prace-ri.eu
- ▶ Single hub for the PRACE training events, training material and tutorials
- ▶ PATC Programme 2018-2019
 - ▶ 79 courses, 215 training days
 - ▶ New courses on forward-looking topics
 - ▶ New hardware and programming paradigms
 - ▶ Data science
 - ▶ Collaboration with CoEs on several courses
- ▶ Seasonal Schools

PRACE | Summer of HPC

- ▶ Summer practices at HPC centres across Europe
- ▶ Program for late stage undergraduates and/or master students
- ▶ Participants apply for participation in one of proposed HPC software or scientific project
- ▶ Timeline
 - ▶ Call for Applications - Jan-Feb
 - ▶ Offers for Selected Students – late March
 - ▶ Training Week – 1st week of June
 - ▶ Practices – June - August
- ▶ <https://summerofhpc.prace-ri.eu/>



Summer of HPC



Ministry of Science
and Higher Education
Republic of Poland

"Prace realizowane przy wsparciu Ministerstwa Nauki i Szkolnictwa Wyższego,
decyzja nr DIR/WK/2016/18"

