

Breakout session 7

Unlocking research infrastructures to broader communities

Final Ecosystem Meeting
Amsterdam, 15th-16th of July

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ACC Cyfronet AGH



Goal

Discover barriers and opportunities for bringing research infrastructures to the broader communities.

Outline

Existing European HPC infrastructures
Benefits and challenges of accessing HPC
resources for research
Topics for discussion



Existing research infrastructures



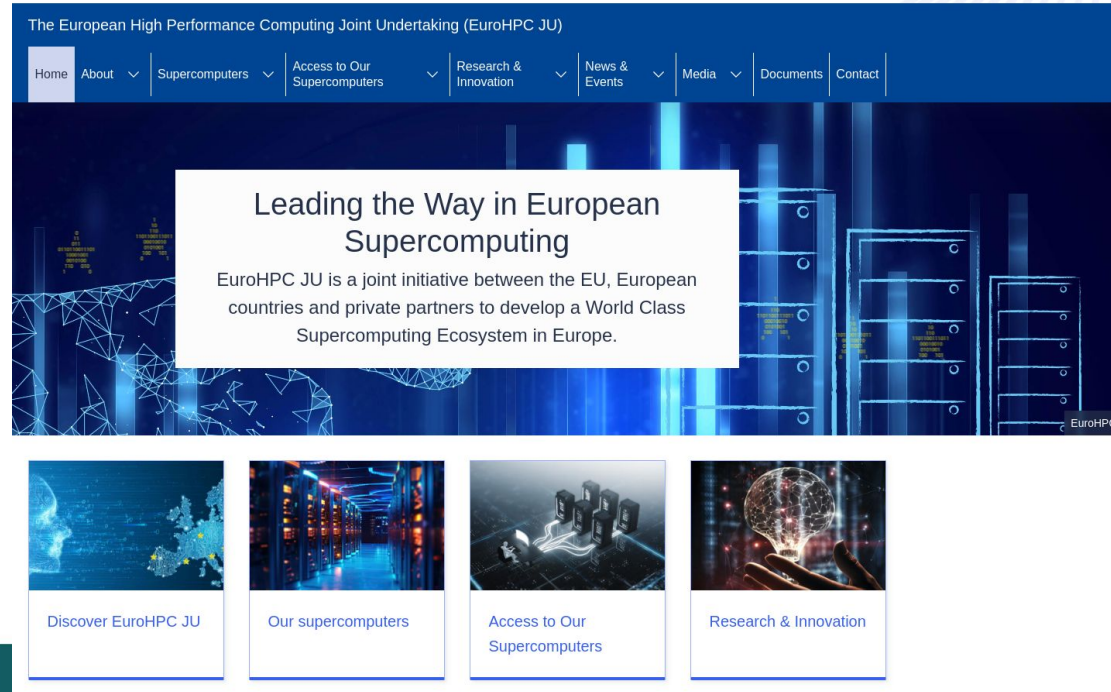
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The European High Performance Computing Joint Undertaking - EuroHPC JU

https://eurohpc-ju.europa.eu/index_en

- develops, deploys, extends and maintains in the EU a world-leading federated, secure service and data infrastructure ecosystem;
- aims to broaden the use of that supercomputing infrastructure to a large number of public and private users and support the development of key HPC skills for European science and industry.



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EuroHPC Supercomputers

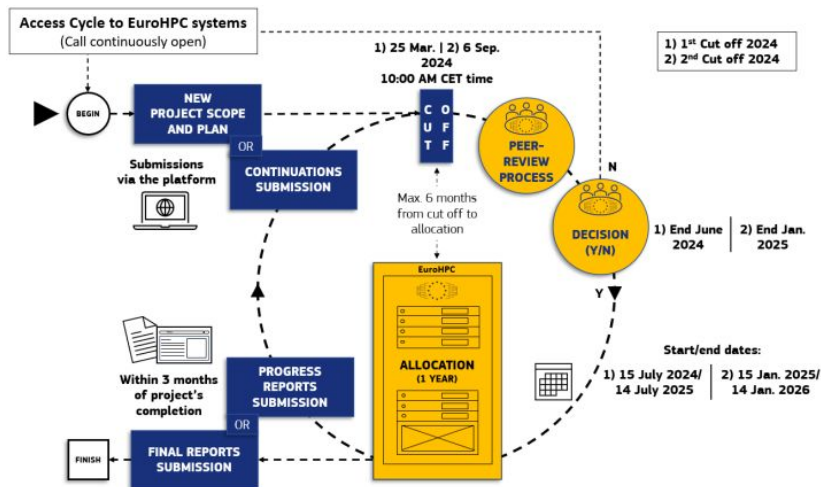
- Lumi - pre-exascale supercomputer located in Kajaani, Finland (539.13 petaflops)
- Leonardo - pre-exascale supercomputer located in Bologna, Italy (315.74 petaflops)
- Mare Nostrum 5 - pre-exascale supercomputer located in Barcelona, Spain (295.81 petaflops)
- Meluxina - supercomputer located in Bissen, Luxembourg (18.29 petaflops)
- Karolina - supercomputer located in Ostrava, Czechia (12.91 petaflops)
- Discoverer - supercomputer located in Sofia, Bulgaria (5.94 petaflops)
- Vega - supercomputer located in Maribor, Slovenia (10.05 petaflops)
- Deucalion - supercomputer located in Guimarães, Portugal (5.01 petaflops)

- Jupiter - supercomputer located at Forschungszentrum Jülich (future; expected 1 exaflop)



How to apply?

Open calls with a dedicated set of resources, scope, time-frame and topic



EuroHPC Access Calls

Filter by

Keywords

Status

Upcoming and open

Opening date

Deadline date

Subject

Search

Clear filters

EuroHPC Access Calls (5)

RSS

Showing results 1 to 5

STATUS Upcoming and open

CALL STATUS: OPEN

[EuroHPC JU Call for Proposals for Regular Access Mode](#)

Reference

EUROHPC JU CALL FOR PROPOSALS FOR REGULAR ACCESS MODE

Opening date

20 February 2024

Deadline model

Multiple cut-off

Deadline dates

25 Mar 2024, 10:00 / 6 Sep 2024, 10:00 (CEST)

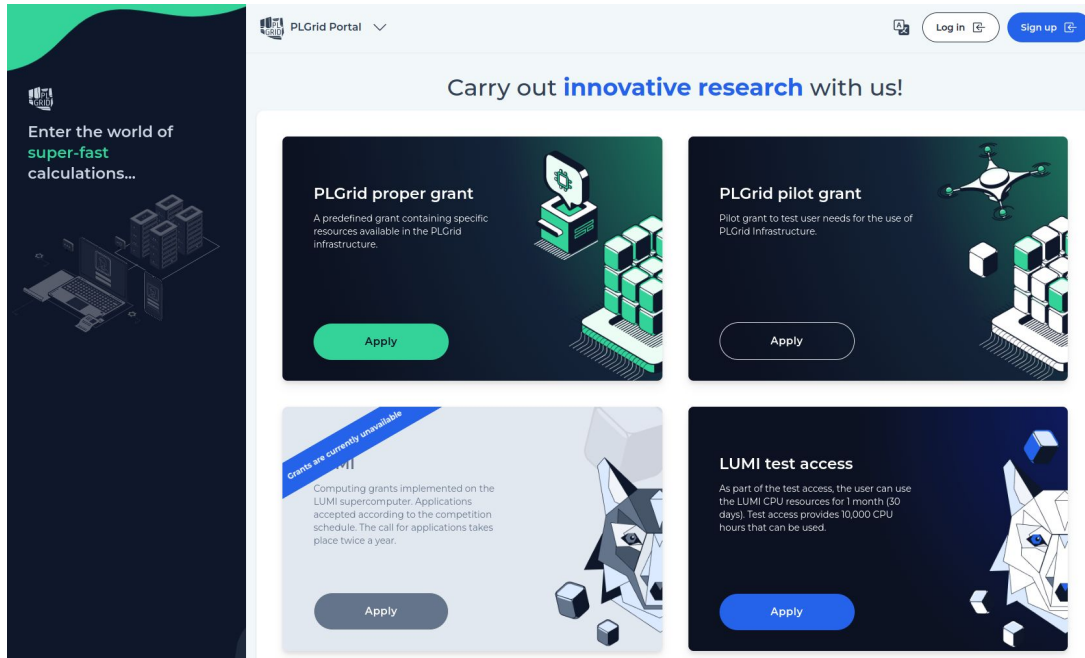


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Lumi: How to apply for country guaranteed resources

Depending on the country, grant negotiations may be done through national infrastructures (e.g. for Poland this is handled by the PLGrid infrastructure)



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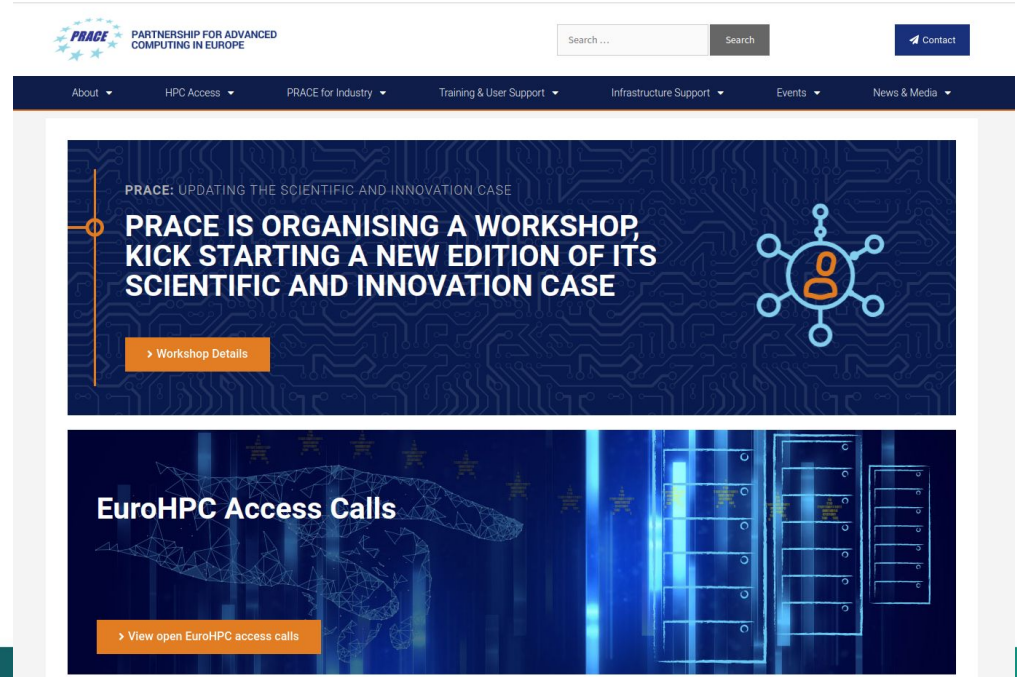
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PRACE - Partnership for advanced computing in Europe

<https://prace-ri.eu/>

PRACE RI has 25 member countries whose representative organisations create a pan-European infrastructure, providing access to resources and services for large-scale scientific and engineering applications

The computer systems accessible through PRACE are provided by 5 PRACE members (BSC representing Spain, CINECA representing Italy, ETH Zurich/CSCS representing Switzerland, GCS representing Germany and GENCI representing France).

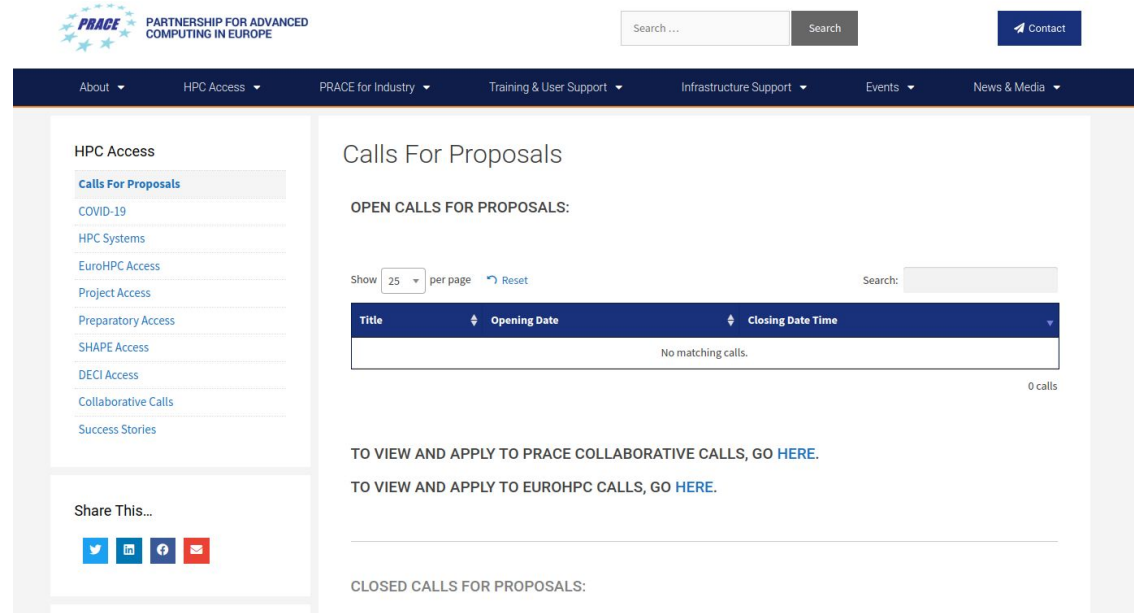


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How to apply?

Open calls - however, the list of open calls may sometimes be empty.



PRACE PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

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- COVID-19
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- EuroHPC Access
- Project Access
- Preparatory Access
- SHAPE Access
- DECI Access
- Collaborative Calls
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Calls For Proposals

OPEN CALLS FOR PROPOSALS:

Show 25 per page Reset Search:

Title	Opening Date	Closing Date Time
No matching calls.		

0 calls

TO VIEW AND APPLY TO PRACE COLLABORATIVE CALLS, GO [HERE](#).

TO VIEW AND APPLY TO EUROHPC CALLS, GO [HERE](#).

CLOSED CALLS FOR PROPOSALS:

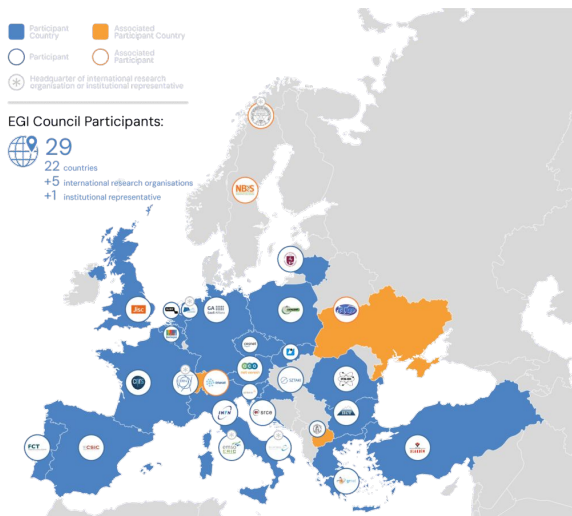


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EGI: Advanced Computing for a Data-Driven Future

<https://www.egi.eu/>



About

Services

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Participate

EGI: Advanced Computing for a Data-Driven Future

We support data-intensive research with a wide range of advanced computing services

Register for EGI2024 in Lecce

Explore the EGI universe

We are the federation of computing and storage resource providers united by a mission of delivering advanced computing and data analytics services for research and innovation.

Our research services include high-throughput and cloud computing, storage and data management, identity and access management, analytics, consultancy and support, training and co-development. We also provide a wide range of internal

Explore our solutions



From advanced computing to data spaces and service hosting, EGI changes the way how researchers and businesses innovate science and operate in a digital world.

[View our solutions](#)



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EGI services

<https://www.egi.eu/>

EGI delivers advanced computing services to support scientists, international projects, research infrastructures and businesses.

EGI Core is a federation and management platform that. EGI Federated Cloud Platform (FedCloud) is a federated cloud infrastructure. EGI High-Throughput Computing Platform (EGI HTC) offers large scale batch processing.

1 Batch computing

Enables researchers, and scientific communities to easily and efficiently run hundreds of thousands of batch computing jobs on the EGI Infrastructure

[Discover more](#)

3 Federated access

Identity and access management solution to increase productivity and secure access to services and resources

[Discover more](#)

5 Data Federation

Unified data access across distributed data providers

[Discover more](#)

2 Interactive computing

Web-based environment to facilitate the sharing and reproducibility of Open Science

[Discover more](#)

4 Data Space

Provisioning of integrated compute and data capacity, data collections, as well as cloud-enabled service offering for scalable data analysis

[Discover more](#)

6 Service hosting

Dedicated and secure servers to deploy and scale-up domain-specific web hosting solutions on the EGI Federated Cloud

[Discover more](#)



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EOSC Association

<https://eosc.eu/> - works to advance Open Science in the service of creating new knowledge, inspiring education, spurring innovation and promoting accessibility and transparency.

The EOSC Association works to advance Open Science in the service of creating new knowledge, inspiring education, spurring innovation and promoting accessibility and transparency.

The screenshot shows the EOSC Association website with a navigation bar containing 'Highlights', 'Members', 'EOSC Partnership', and 'Implementation'. The main content area features three large cards: 1) 'Building the EOSC Federation' with a network diagram and a link to a questionnaire; 2) 'The Federation, Nodes and governance: EOSC-A's 8th General Assembly brings the...' with a collage of photos and a link; 3) 'EOSC Symposium 2024' with a teal header, event details (21-23 October / Berlin, Germany), and a link. The footer includes logos for various partners like nfdi, ZBW, and EOSC-PA.

Quick links

Join an EOSC Opportunity Area Expert Group
[Complete the Expression of Interest form](#)

EOSC-A Newsletter #37
[02 July 2024](#)

EOSC in the countries
[Explore our 35 country pages](#)



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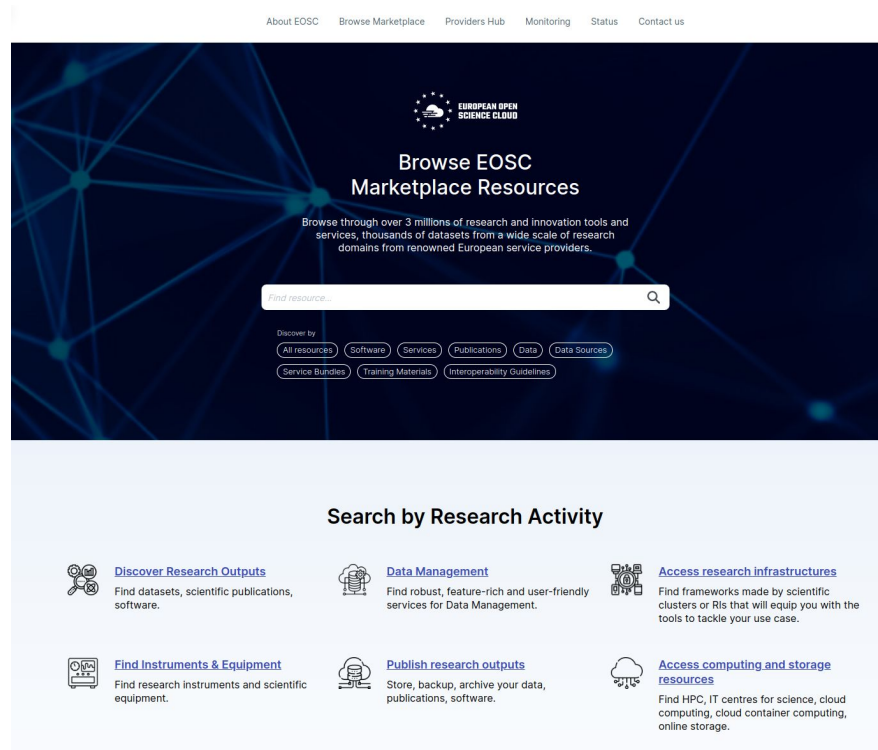
EOSC Marketplace

Easy resources, services, data search

Future marketplace version can be found at:
<https://marketplace.sandbox.eosc-beyond.eu/>

The EOSC EU node offers:

- File sync/sharing
- Interactive notebooks
- Large file transfer
- Virtual machines
- Cloud container platform
- Bulk data transfer facilities




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EOSC: Calls & Grants

Research infrastructures (RIs), including the European Open Science Cloud (EOSC), and technology infrastructures are fundamental enablers of research and technological innovation as well as drivers of multidisciplinary and data-intensive science.

The Research Infrastructures work programme is structured around five destinations, one of which is fully dedicated to the European Open Science Cloud: Destination – Enabling an operational, open and FAIR EOSC ecosystem (INFRAEOSC).



[EOSC](#) ▾[Collaborations](#) ▾[The Association](#) ▾[Activities](#) ▾[EOSC Focus](#) ▾

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Calls & Grants

The overall objective of the Research Infrastructures Programme under Horizon Europe is to empower Europe through world-class and accessible research infrastructures, as part of an integrated European research and technology infrastructure landscape.

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Destination: Enabling an operational, open and FAIR EOSC ecosystem (INFRAEOSC)
Aiming at delivering a “Web of FAIR Data and Services” for Science: a trusted virtual environment supporting Open Science, based on key horizontal core functions, with their corresponding e-infrastructures, and service layers accessible to researchers across disciplines throughout Europe.

Grant

Programme	Horizon Europe Framework Programme (HORIZON)	Deadline model	single-stage	Open
ID	HORIZON-INFRA-2024-EOSC-02-01	Opening date	13, June, 2024 02:00:00	
Types of action	Future Engagement Model for the EOSC Federation	Deadline date	19, September, 2024 19:00:00 Brussels time	

[Read more >](#)

Grant

Programme	Horizon Europe Framework Programme (HORIZON)	Deadline model	single-stage	Open
ID	HORIZON-MISS-2024-CANCER-01-06	Opening date	18, April, 2024 02:00:00	
Types of action	An information portal for the European Cancer Patient Digital Centre	Deadline date	18, September, 2024 19:00:00 Brussels time	

[Read more >](#)



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Elixir

<https://elixir-europe.org/> - life sciences infrastructure, bringing together scientists from 24 countries and over 250 research institutes.



Guidelines

Guidelines and best practices to help you manage life science data, run training courses, develop software and more.



Web portals

Find the right software, training courses, standards and more in our interlinked portals to life science resources.



All resources

Find compute services, databases, and the full list of resources ELIXIR coordinates.



Partnerships with Industry and SMEs

Join events and projects that bring the private and public sectors together.



Opportunities to work together

Join a scientific group in ELIXIR or partner with us to apply for EC funding.



For ELIXIR members

If you work at an institute that is part of ELIXIR, then remember to take advantage of the benefits ELIXIR offers.



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National initiatives, e.g. PLGrid in Poland

<https://plgrid.pl/>

National HPC and data storage federation composed of the leading supercomputing centers which specialize in provisioning resources for researchers.

Available free of charge to national researchers and their foreign collaborators.



ABOUT US OFFER HOW TO START? FAQ DOCUMENTATION NEWS

Use supercomputers to accelerate your research

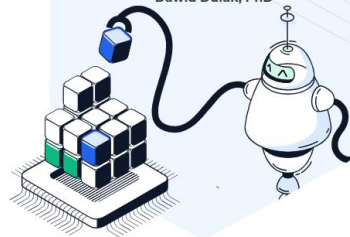
PLGrid is a nationwide computing infrastructure designed to support scientific research and experimental development across a wide range of scientific and economic fields. PLGrid provides access to supercomputers, quantum computers, specialised accelerators for artificial intelligence, cloud computing, disk storage, optimised computing software and assistance from experts from the entire Poland.

Launch your computing in PLGrid

How to start?

“An ordinary personal computer [...] would perform a single simulation for several days, weeks. [...] Only with supercomputers - which are crucial in molecular dynamics simulations - I was able to conduct [...] research.

Dawid Dulak, PhD



Computing infrastructure for Polish science

Thanks to the use of PLGrid infrastructure resources, hundreds of scientific teams from all over Poland have carried out more than 2,000 research projects, resulting in more than 3,500 publications.

Highest-speed supercomputers in Poland

PLGrid provides access to the most powerful computing machines in Poland and European computers developed by the EuroHPC Joint Undertaking, headed by LUMI - the fastest supercomputer in Europe.

Top-level user support

We provide end-to-end support at all stages of computing. We can advise on task optimisation and data management, install new software at user request and help troubleshoot computing software.



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How to apply?

<https://portal.plgrid.pl/> - unique features:

- Support for continuous grant applications
- Holistic affiliations, teams, subordinates, grant managements with delegation of information to HPC, Storage and Cloud systems
- Grant settlement calls for research publications co-authored by PLGrid users, along with suitable acknowledgements

The screenshot displays the PLGrid Portal interface. On the left is a dark sidebar with navigation links: Profile & affiliations, Teams, Grants (selected), Services, Subordinates, and Service admin. The main content area shows the 'Grant' details for 'Wytwarzanie modeli oraz narzędzi umożliwiających konstruk...'. The grant is in the 'Active' stage (3 of 5). The 'Resources' section shows 'ACK Cyfronet Ares' as the allocated resource, with a table indicating 10,000 hours of computation time and 72 hours of maximum job execution time. Below this, a 'GPU - Rejected' section shows a message history where a site admin rejected a request for GPU resources, citing a lack of availability in Athens. A comment box at the bottom allows users to provide feedback.

PLGrid Portal

Grant

Basic Information

Resources

- ✓ CPU - Ares
- ⊖ GPU - Ares
- ✓ GPU-A100 - Athena
- ✓ STORAGE-01 (Ares, Athena) - HPC-Storage

Grant details

Related projects

Declared publications

Grant summary

Settlement

Wytwarzanie modeli oraz narzędzi umożliwiających konstruk...

1 Draft 2 Verification 3 Active 4 Grant settlement 5 Closed

Resources

ACK Cyfronet Ares

State-of-the-art supercomputer with a power of more than 3.5 PetaFlops (CPU) and 500 TFlops (GPU). Technical details of the Ares cluster can be found [here](#). To learn more, navigate to [PLGrid documentation](#).

CPU - Active plgridh2-cpu

Resources available from 2023-10-25 to 2024-10-24

[Renegotiate resources](#)

FOLLOWING RESOURCES HAVE BEEN GRANTED

Computation Time	10 000 h
Maximum Job Execution Time	72 h

GPU - Rejected

Expand message history

Verified → Rejected

MP Site Admin - Maciej Pawlik (plgpawlik)
Zasoby na Athenie.

2023-10-25 16:13

MK Write a comment...

Send



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The upside

- Many initiatives/infrastructures offering:
 - services
 - storage
 - computing infrastructures
 - expertises
 - support for creating and publishing open science
- Support from the EU commission for performing research:
 - grants
 - supporting initiatives such as EuroHPC, EGI, Elixir, etc.



The downside

- Open calls for resources/services can be structured around different schedules than what is required by my my research (there are exceptions - e.g. the Polish PLGrid infrastructure supports continuous grant applications).
- Applying for computational grants can be complicated and time-consuming.
- Computational grants cannot be guaranteed by the EU while applying for EU-funded projects.
- There is no clear funding path for sustainability of services and platforms developed in the course of research projects (especially when such services do not have a commercial potential, and are research-focused).
- HPC infrastructures operate on job submission/queuing mechanisms - there are typically no guarantees that a specific job will be executed within a specific timeframe (the solution is to have dedicated resource reservation options, but this is quite complicated to set up and rarely supported by HPC providers)
- Computing infrastructures are shared among researchers, and sometimes end up overloaded in the run-up to important events (e.g. conferences)
- No unified user identity provider and user rights delegation between infrastructures



Questions for discussion



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EDITH is a coordination and support action funded by the Digital Europe program of the European Commission under grant agreement n° 101083771.



What are the barriers to perform your research on EU funded infrastructures?



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What is your approach to making your project results sustainable on EU funded infrastructures?



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Given that teams involved in VHT research rely on different e-infrastructures, and need to share and integrate their services, to what extent does the issue of interoperability of EU infrastructures pose a problem?



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**How do you handle situations where your
research project calls for
computing/storage/other resources which are
not available to you?**



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**What is your opinion on using commercial
HPC and cloud resources for research
purposes?**



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How are your local storage resources integrated with European infrastructures? Do you make your research data available to broader communities?



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How do you feel about paying for research infrastructures from your research grants? Do you find it easy or difficult to allocate funding for such activities in your research grants?



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Any other challenges?



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