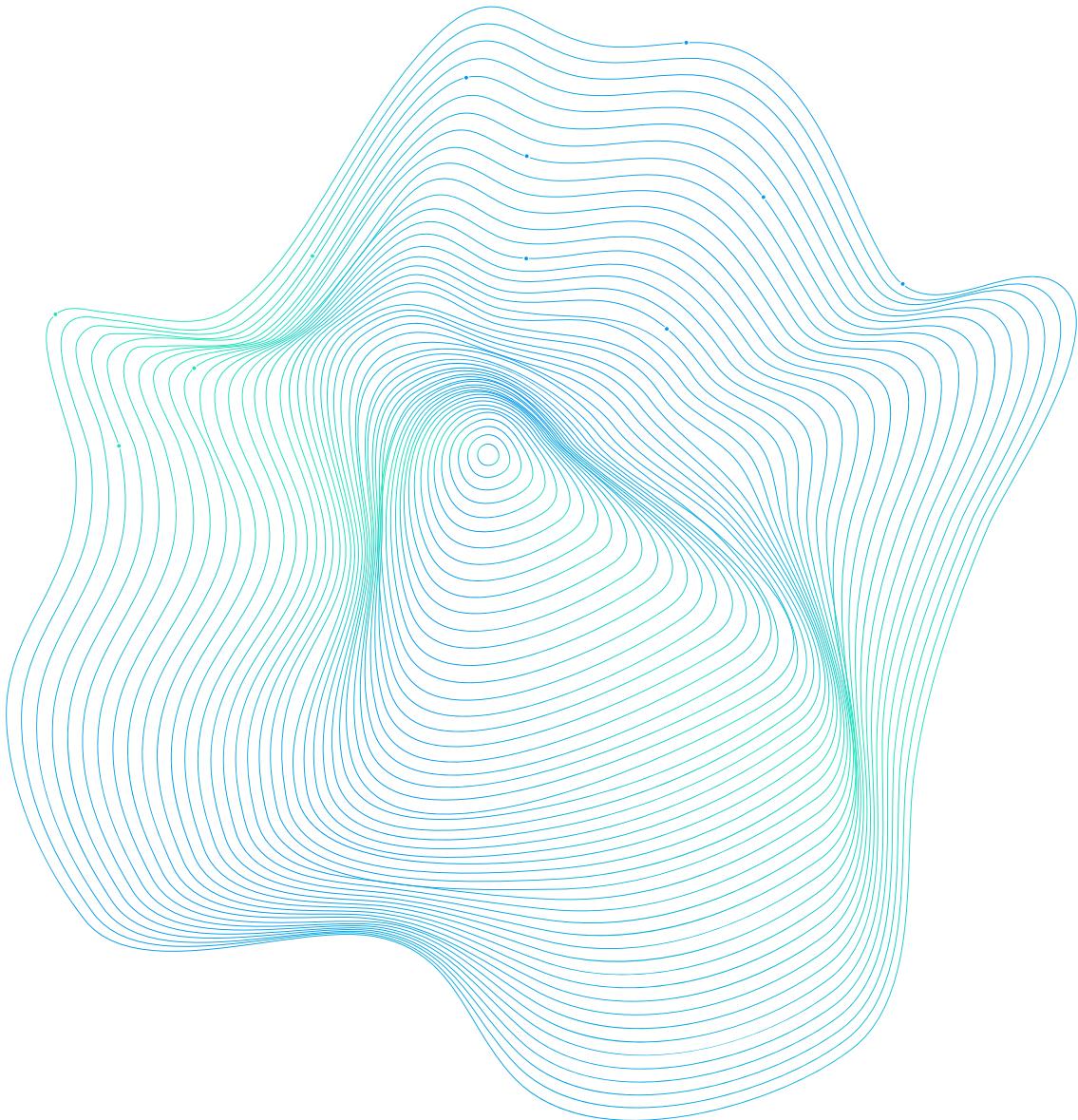




# EPICURE

Unlocking European-level HPC Support

## High-level Specialised Application Support Service in High-Performance Computing

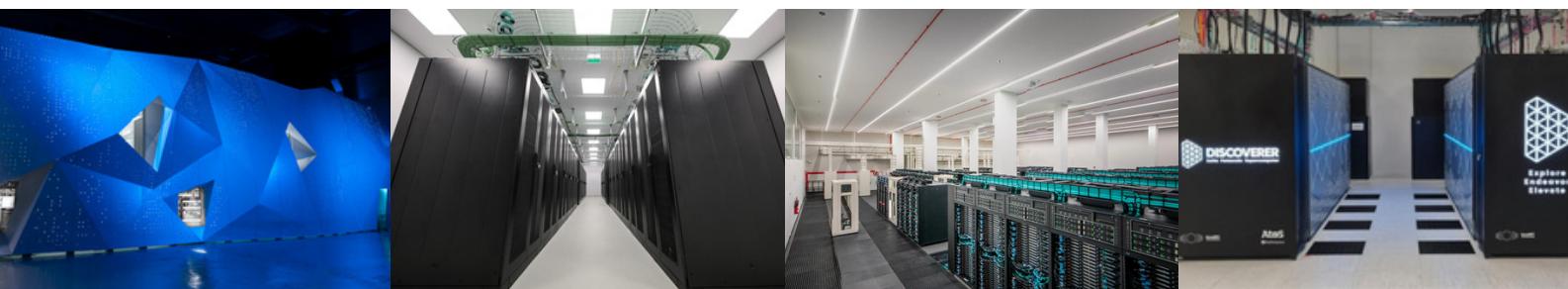


Co-funded by  
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EuroHPC  
Joint Undertaking

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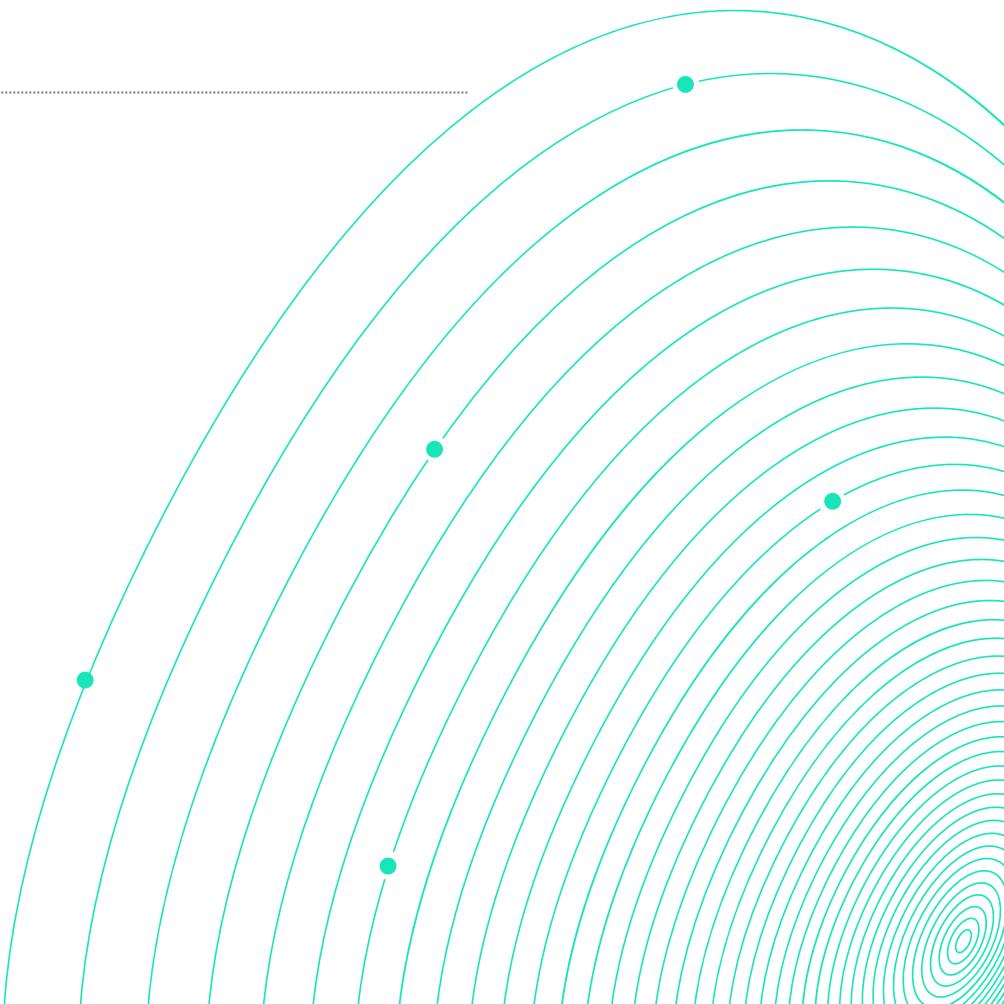
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## A MESSAGE FROM OUR COORDINATOR

**Janne Ignatius**  
Program Director  
CSC - IT Center for Science

EPICURE has a central role in the European high-performance computing ecosystem. With the help of Application Support Teams, users of EuroHPC supercomputers are able to get better results in their groundbreaking research, thanks to the improved simulation software.

This support has significant positive impact and is available to all computing projects that have been allocated by EuroHPC. In addition, the pan-European training program provided by EPICURE is very beneficial to the community.

# MISSION

EPICURE will establish a four-year operation of a distributed European-wide high-performance computing application support service bringing together Application Support Teams (ASTs) set up in all current and future EuroHPC Hosting Entities, operating its supercomputers.

# OBJECTIVES

- Provide support services to users that have access to the EuroHPC supercomputers;
- Deliver the valuable support solutions based on all partners' long experience in HPC operations and support;
- Focus on Level 2 and 3 application support in the area of application porting and optimisation for selected applications/user groups with short to medium term support (3-6 months).

Development of a European HPC Application Support portal, acting as a single point of contact for European HPC users to retrieve information on the systems offered by the EuroHPC Joint Undertaking.



# SUPPORT SERVICES

EPICURE offers comprehensive support services to enhance the performance and scalability of applications on EuroHPC systems, focusing on Level 2 and 3 support in application porting and optimisation for selected applications and user groups.

This includes short to medium-term support (3-6 months) in areas such as code enabling and scaling, performance analysis, benchmarking, code refactoring, and code optimisation.



## Code Enabling and Scaling

The service specialises in porting and enabling codes for various EuroHPC systems. It includes also the study of applications to understand their scalability, identifying necessary improvements for efficient utilisation across larger node counts.

## Performance Analysis

Our service conducts performance analysis of applications to identify bottlenecks and potential enhancements in node and multi-node performance (such as vectorisation, utilisation of suitable mathematical libraries, I/O optimisation, MPI, etc.).

## Benchmarking

The benchmarking service aims to standardise benchmarks for classifying machine performance. These benchmarks will provide valuable insights into categorising architectures, helping to determine the most suitable architecture for typical problems and tasks.

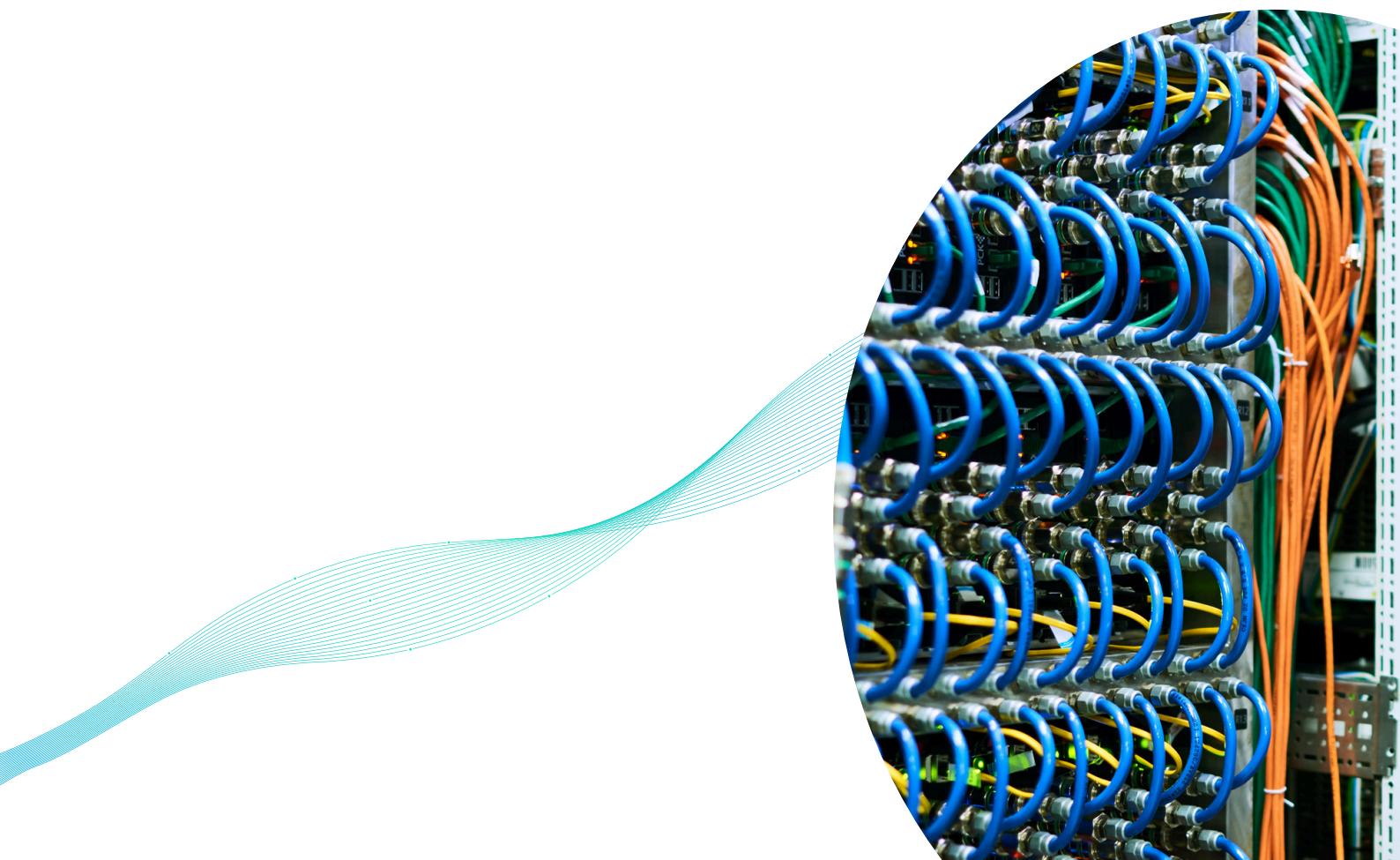
# SUPPORT SERVICES

## Code Refactoring

This service involves restructuring or rewriting parts of an application code to improve maintainability and ease modification, but without changing its function. Refactoring usually involves code changes to make the source and structure more conformant to typical programming styles and standards and is usually a first step before major modifications are made (e.g. porting to GPUs).

## Code Optimisation

The aim of the code optimisation service is to improve the efficiency and performance of the software, but without changing its functionality. The procedure will draw on the results of other EPICURE services (e.g. performance and scaling analysis) to implement software changes which will consume fewer resources on EuroHPC systems (time, memory, CPU, disk space, etc.).



# HOW TO ACCESS EPICURE SUPPORT SERVICES

## Who's Eligible?

Having a EuroHPC JU allocation project is **required**.

Don't have one yet?  
**We can help** you apply!



## Duration

From 3 to 12 months for sustained improvements.

## Ready to Optimise?

**Request support:** You can request EPICURE support.



Do you **need a EuroHPC allocation**? Check the EuroHPC Access Calls!



Check our website for more details



# EUROPEAN HPC APPLICATION SUPPORT PORTAL

A strategic platform designed to support European researchers and facilitate access to EPICURE services and EuroHPC resources.

- Guidance for **accessing EuroHPC JU systems** and navigating application procedures;
- Simplified form to **request EPICURE's technical support** via the portal;
- **Training for HPC users**, including hands-on workshops, webinars, hackathons and wide range of supporting materials;
- **Technical knowledge base** with best practice guidelines and how-to guides to improve EuroHPC application performance;
- **Git repository** with code examples, tools, and projects related to EuroHPC systems.



Discover the portal  
<https://eurohpcsupport.eu/>



# EVENTS AND TRAINING OPPORTUNITIES

One of EPICURE's focuses is the training of students and industry professionals. As such, the project, through its network of partners and connections, intends to organize multiple events aimed at training users to ensure the correct and easy use of the EuroHPC network computational resources. These events will address issues such as ensuring the transition between different architectures, developing and improving the performance of their applications, stability and efficiency.

There will be a two-pronged approach to the events. Firstly, these initiatives are designed to enable a quick start in HPC environments for new and emerging user communities, as well as specialized and domain-specific tools - which will enable their use on the various EuroHPC computer architectures. At the same time, techniques will be shared that aim to enable a better understanding of the hardware, optimize memory, reduce communication overhead, and parallelise code effectively.

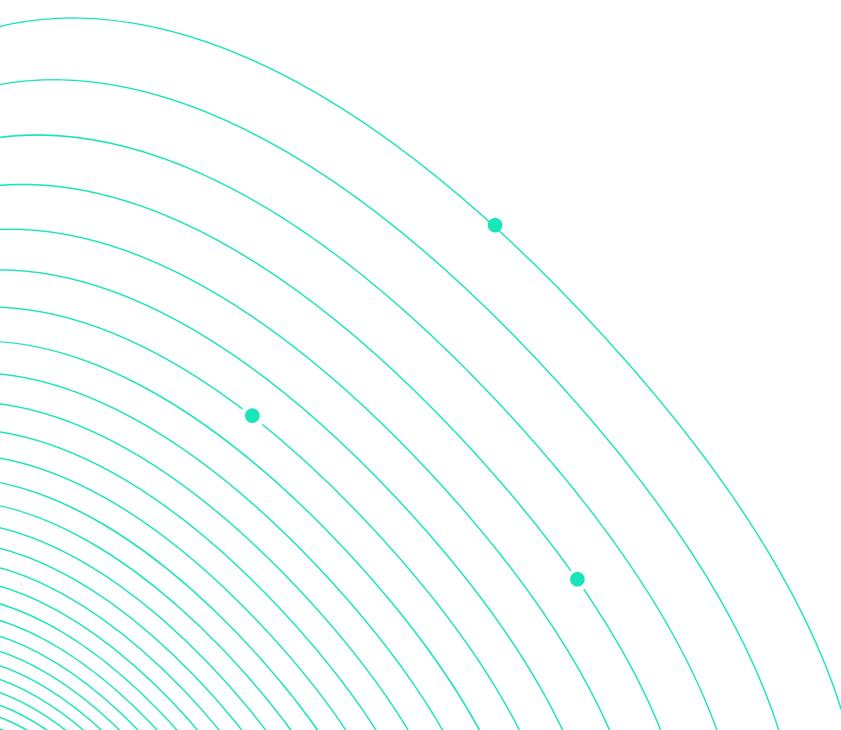
If you're using HPC systems or want to learn more about them, join our events!



Check our events



Check our training materials



# PARTNERS



CSC  
Finland



BSC CNS  
Spain



CINECA  
Italy



IT4I@VSB  
Czech Republic



IZUM  
Slovenia



JSI  
Slovenia



LUXPROVIDE  
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KTH  
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CYFRONET  
Poland



DTU  
Denmark



FZJ  
Germany



GENCI  
France



CINES  
France

# CONTACTS

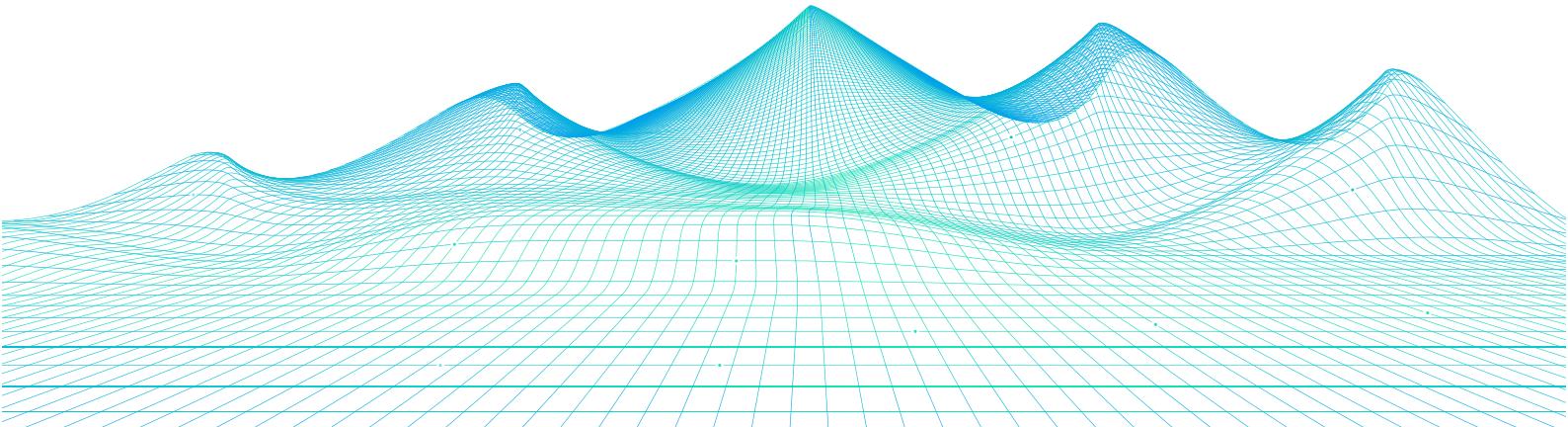
## Project's Coordination

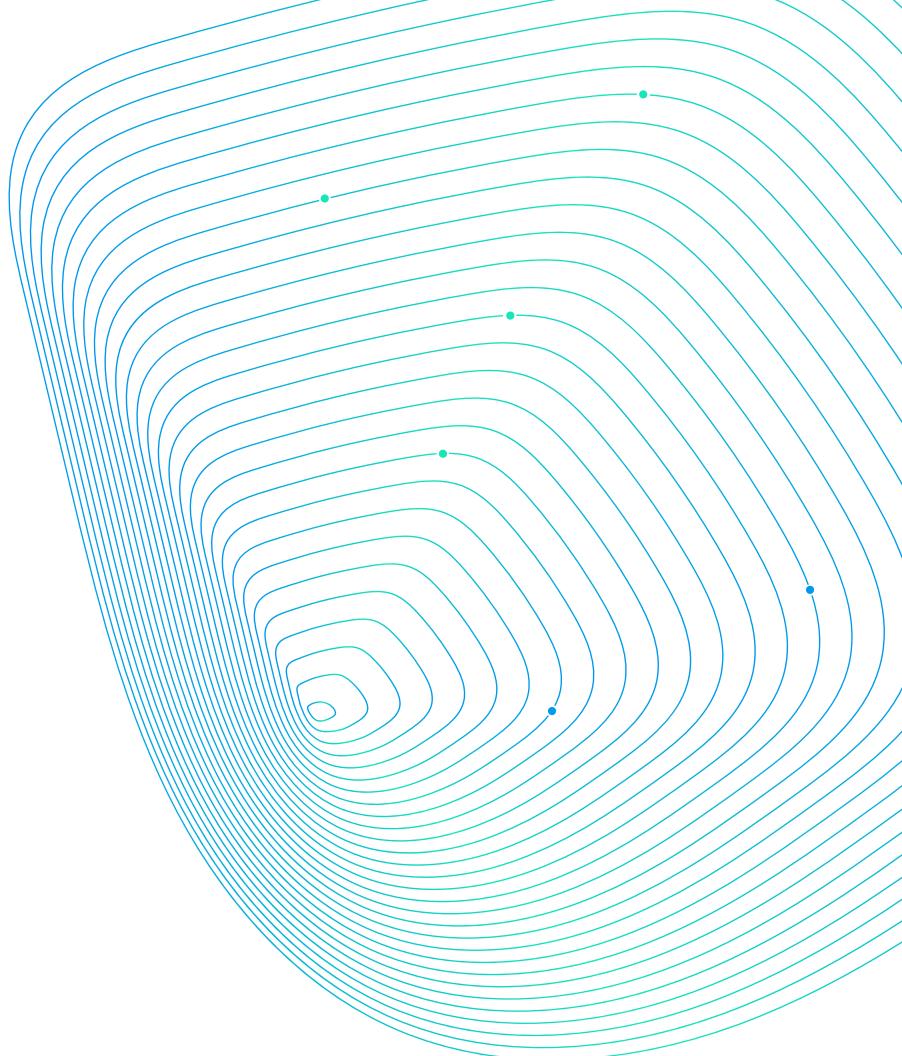


EPICURE Project Management Office  
[pmo-epicure@postit.csc.fi](mailto:pmo-epicure@postit.csc.fi)

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**FOLLOW US**





# EPICURE is your gateway to fully leveraging EuroHPC resources.



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