EuroCC@Greece

The National Competence Center is the single point of contact and coordination on a national level for HPC. Its missions are to analyse, implement and coordinate all necessary activities and offer services to end users to cover their needs: from access to resources and technological consultancy to the provision of training courses for academia, public administrations and industry.

EuroCC@Greece is one of the 33 HPC Competence Centres, built in the framework of the European High Performance Computing Joint Undertaking (EuroHPC JU).

Consortium

The Greek National Competence Center "EuroCC@Greece", is run by a consortium of 5 institutions, namely

- GRNET – National Infrastructures for Research and Technology **(coordinator),**
- National Center for Scientific Research "Demokritos",
- Foundation for Research and Technology – Hellas (FORTH),
- Institute of Communication and Computer Systems of NTUA
- Aristotle University of Thessaloniki.

The project has received funding from the European High-Performance computing Joint Undertaking (JU) under grant agreement No 951732 and the Greek Secretariat for Research and Technology.

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The National Euro Competence Center for High Performance Computing

ΓΓΕΤ ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΕΡΕΥΝΑΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ

Steering group

EuroHPC Joint Undertaking

PRACE

CoE European Excellence in HPC Applications

EURO

CASTIEL

Other NCCs

Management office

Dissemination office

Dissemination Activities

General Public

National infra

Pool of trainers

paneuropean infra

Competence map

Training & skills development center

grnet FORTH DEMOKRITOS ΕΠΙΣΕΥ ICCS ARISTOTLE UNIVERSITY OF THESSALONIKI

Technology transfer/ industry hub

praxi help-forward network LEFKIPPOS TECC DEMOKRITOS ahedd.

independent infra

Pool of experts

Unique contact point per partner of national EUROCC

SMEs

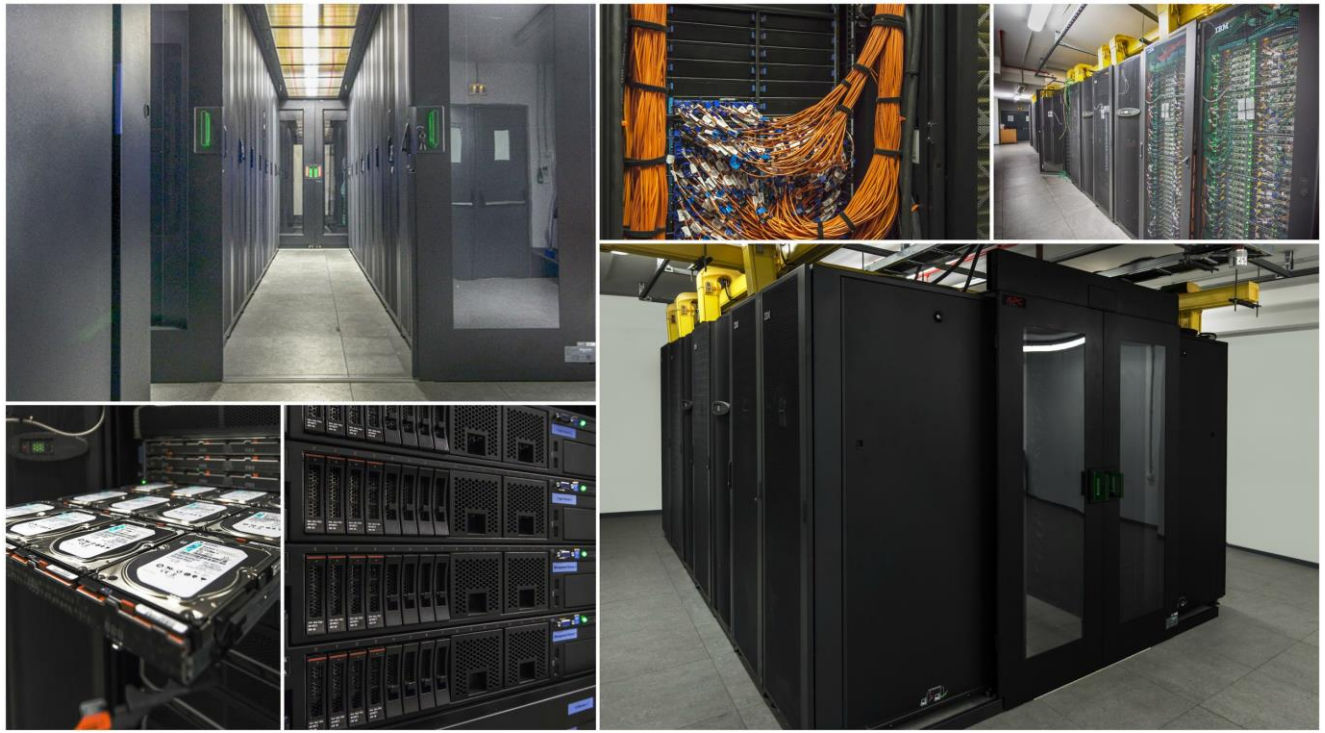
Academy - science

Public sector

Other collaborations

TASKS

- Training and skills development
- Business development/ technology transfer
- Collaboration with Industry
- Mapping of HPC/Big Data/AI Technical Competences
- Facilitation of access to scientific and technical expertise and knowledge pools
- Awareness Creation and Collaboration



13th-Call-HPC

June 15, 2022 News

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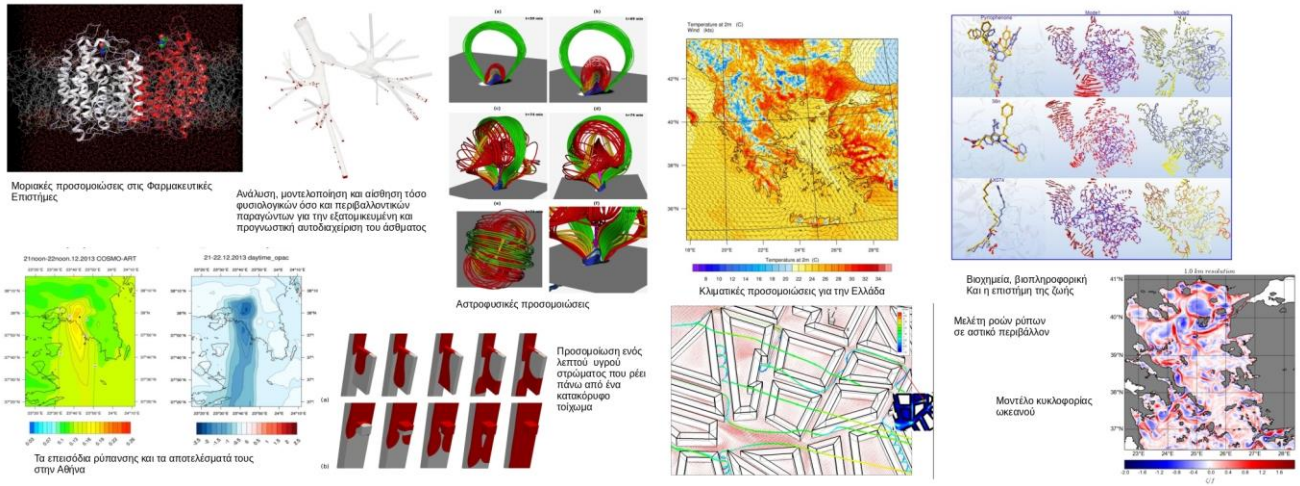
GRNET – National Infrastructures for Research and Technology announced the thirteenth (13th) "Call for Proposals for Production Projects" for access to ARIS national High Performance Computing system (https://hpc.grnet.gr).
Details about the 13th Open Call, objectives, selection criteria, eligibility, HPC – ARIS computer system, available resources and the application process, are available here.
Submission Deadline for proposals: 22 July 2022

HPCHPC ARIS



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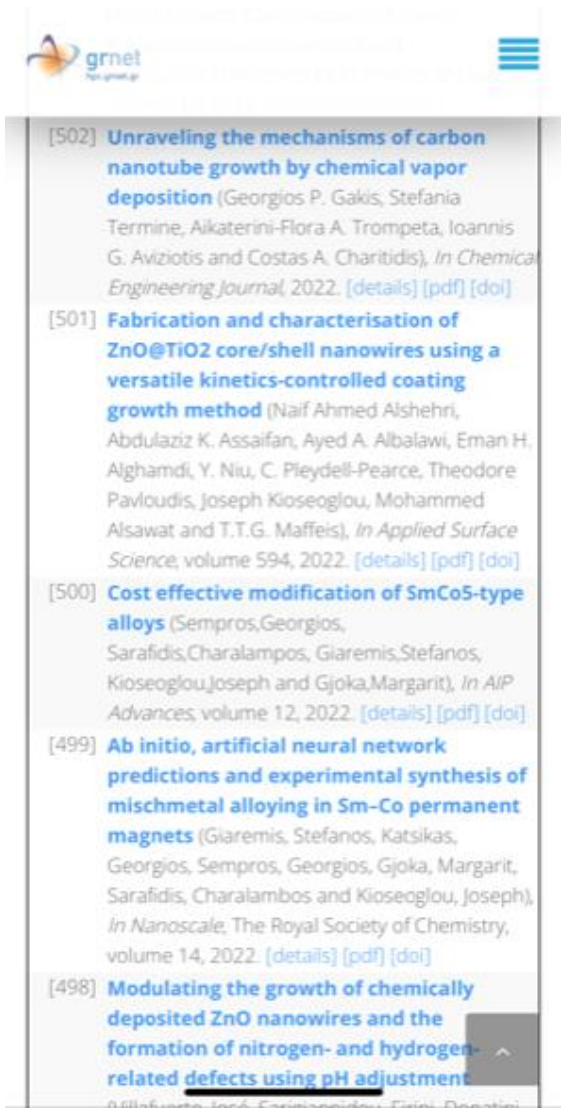
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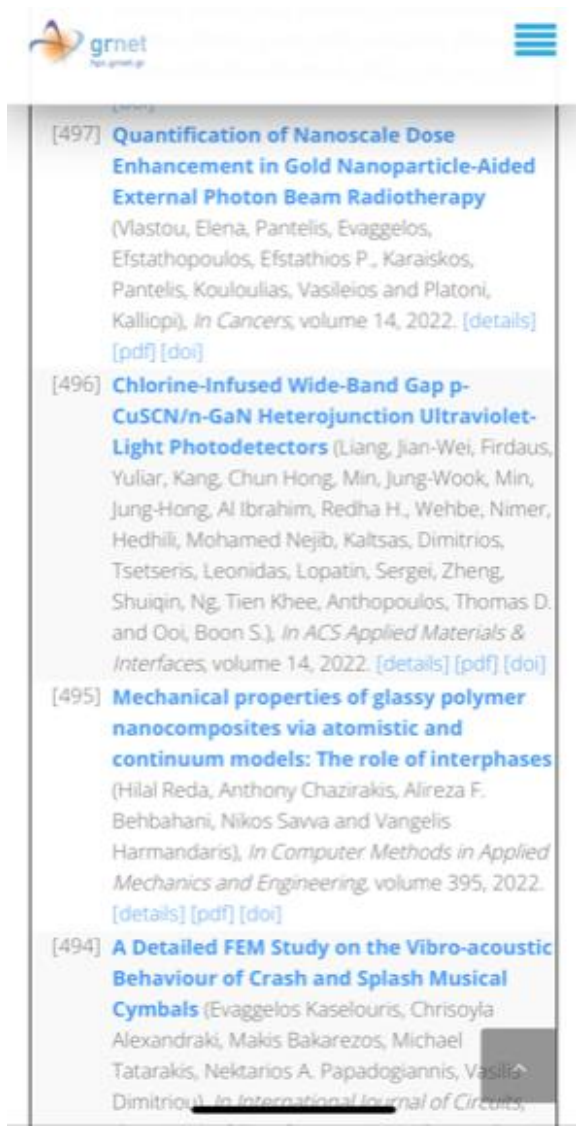
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- ☑ to lift their business to **Industry 4.0** and gain new know-
- ☑ to **gain new insights** by collaborating with experts from HPC/HPDA/AI domain

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Key details

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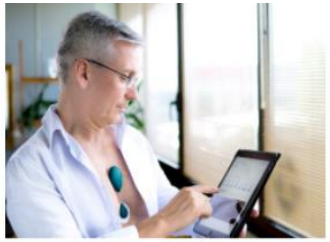

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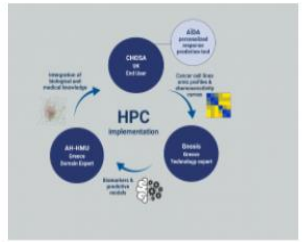

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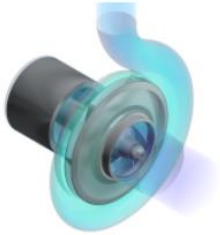

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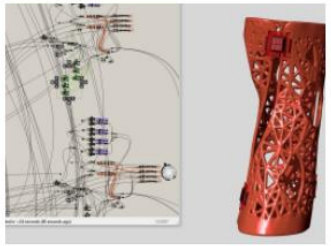

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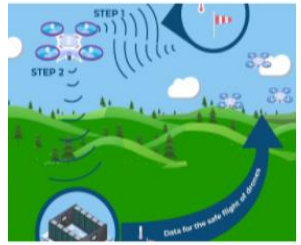

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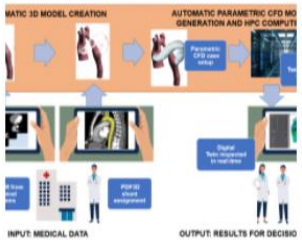

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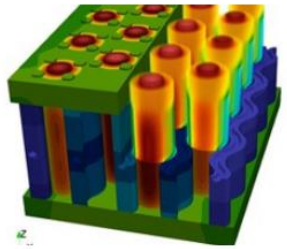

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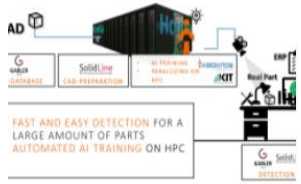

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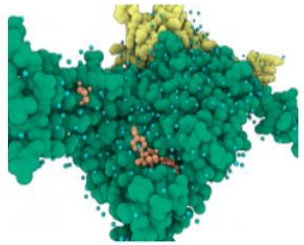

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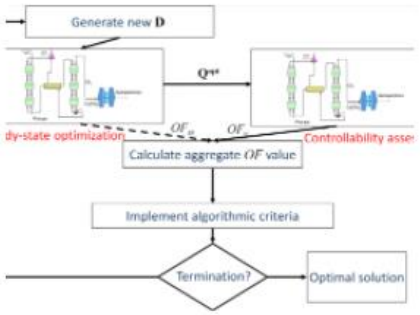

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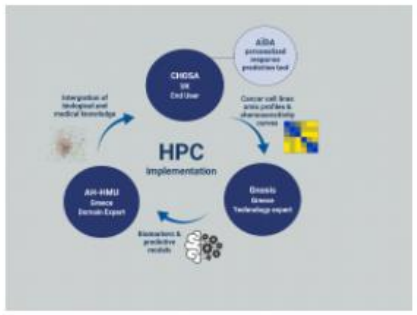

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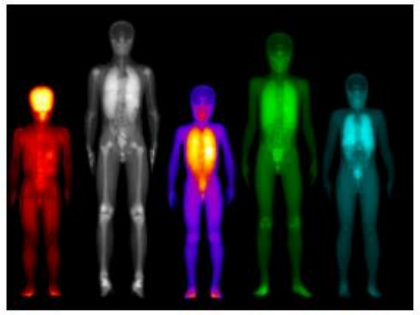

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Industry service portfolio

- *Consultation on access to HPC infrastructure*
- *Access to expertise (experts, service providers, tools)*
- *Training on HPC, AI and HPDA technologies*
- *Facilitation of industrial collaborations/ tech transfer*
- *Consultation on access to funding*

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Introduction to Parallel Programming

Seminar/Webinar GRNET Athens

The focus is to understand the basics of parallel programming with the message-passing interface (MPI) and OpenMP parallel programming paradigms. MPI is the dominant parallelization paradigm in high performance computing and enables one to write programs that run on distributed memory machines...

HPC Intermediate (HPC Developer)

Efficient Use of HPC Systems

Seminar/Webinar GRNET Athens

The purpose of this course is to present to existing and potential users of PRACE HPC systems an introduction on how to efficiently use these systems,their typical tools, software environment, compilers, libraries, MPI/OpenMP, batch system, etc. The trainees will learn what the HPC systems offer

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Lawrence Livermore National Laboratory

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High Performance Data Analysis

Handbook for Getting Started with HPC

Objectives of this Handbook

Computer-based simulations have become standard tools for industry and academia. While the power of standard PCs or workstations with multiprocessors/cores is tremendous nowadays, they still often don't fulfill the requirements for raw computational speed, storage and main memory that repeated detailed simulations may pose. Here, **High- Performance Computing (HPC) can come to the rescue.**
Supercomputer Centres operate large installations of HPC systems and have acquired considerable expertise about HPC Technologies. They offer services ranging from compute time over HPC software development to HPC technology consulting.
This handbook will explain the ***economic benefits*** of using HPC for people at managerial positions and will provide a path for attaining these benefits. Apart from the purely economic reasons we consider the ***improvements in innovation and marketing*** and the competitive advantages stemming from the use of HPC to provide justification for taking the managerial decision to explore the use of HPC.
Furthermore, the technical aspects of HPC are explained in a simplified way, oriented towards newcomers in this field, offering a first introduction of common technical terms and formal aspects in HPC as well as a short *practical examples of how to connect to and start an application* on one of the European HPC centers.
At the end, the reader will find some representative industrial use cases.

Origin of this document

The idea and main parts of this document come from the SESAME Net European project. It has then been elaborated by the Greek National Competence Center team.

What is HPC?

The term HPC is occasionally used as a synonym for supercomputing, although usually *only the fastest HPC systems currently operated world-wide are referred to as Supercomputers*. The term High Performance Computing (HPC) usually refers to the application of state-of-the-art computing systems for efficiently running advanced applications such as computer simulations, often for engineering or natural sciences purposes.
While in the past the term was mostly used for the work with very specialized and often highly expensive machines, the evolution of computer and server systems has led to a commoditization of HPC systems and to a mainstreaming of its concepts and technologies. Nowadays desktop computers and workstations potentially offer such high capacities, while at the same time HPC systems have converged so much with off-the-shelf hardware, that the term also includes achieving the most performance on mainstream systems.
The term HPC is used for nearly all aspects of managing and using high-performance systems and the software running on them. Major topics in the area include activities like:

- **Performance** assessment of existing applications,
- **Optimization** of applications for high performance,
- Specialized software **development** for HPC systems, and of course
- **Actual execution** of applications, with eventual automation of workflows or interactive visualization of large result sets.

Why use HPC?

The vast increase of computational power in the last decades has created exciting opportunities. High-Performance Computing (HPC) has become **indispensable tool for industry and academia** to innovate in such domains as **Computer aided engineering, simulations, renewable energy, financial services, satellite, earth observation, advanced image analysis, data science and precision agriculture**. But it does not stop there: **supercomputing can help your business too.** Supercomputing can help spark your business innovations. It can improve design turnaround time for new products, reduce time to market and increase your overall competitiveness.

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The Need for HPC to Support the Energy Transition

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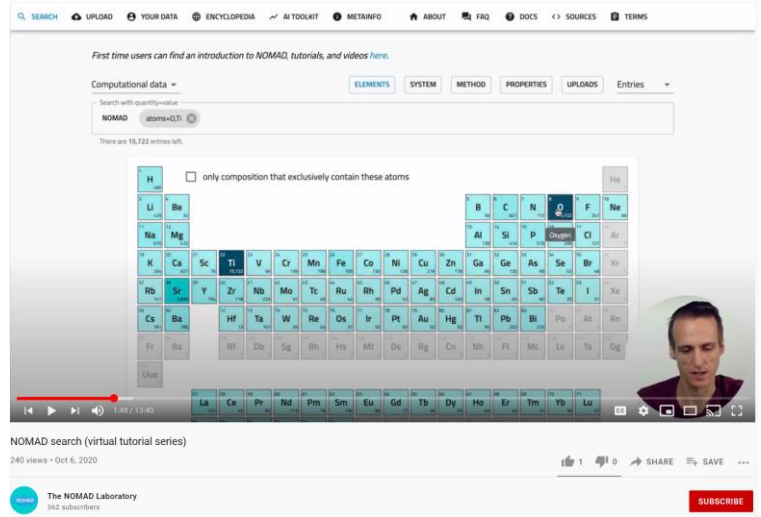

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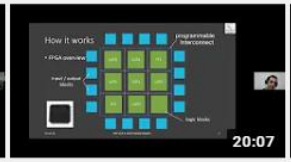

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"FF4Europe 2nd call for proposals for high quality experiments involving innovative SMEs using advanced HPC services" online event

FF4EuroHPC European initiative and EuroCC@Greece invite you to participate in the online event titled: "FF4Europe 2nd call for proposals for high quality experiments involving innovative SMEs using advanced HPC services", on July 15th, at 10:30 CET | 11:30 EEST.

ONLINE PRACE Training Centre course (PTC)

GRNET offers a PRACE Training Centre course: "Introduction to Molecular Modeling and Molecular Dynamics in HPC"

HPC for the Greek Health and Life Sciences Sector

EuroCC@Greece's partners, ICS-FORTH and PRAXI Network are inviting you to attend the "HPC for the Greek Health & Life Sciences Sector" online event, on June 17, at 16:00 PM (GMT+3).

Intermedaite Workshop on OpenACC/CUDA by ENCCS – June 28th

This workshop targets researchers and developers who already know the basics of OpenACC and/or CUDA but would like to expand their knowledge.

ENCCS/Intel OpenMP Hackathon at June 8th

To apply for participation in the hackathon you will need a well-defined project with clearly stated goals, and we recommend you to join a team with at least 2 people

Online introductory lectures on quantum computing by CERN

A series of weekly lectures on the basics of quantum computing by CERN is now available

Training resources

GRNET training resources

Find the GRNET training resources on HPC. GRNET is a PRACE training center.

PRACE Training Portal

Browse, search, explore all upcoming training events and every kind of HPC-related training resources on the PRACE training portal. This includes trainings and resourced created by PRACE training centers and other HPC centers, members of PRACE.

HLRS training material

HLRS Teaching and training material (slides, audio and pointing information) and the PDF files (e.g. for personal notes) from the German HPC center HLRS in Stuttgart

ENCCS training resources

Very useful training resources from the Swedish ENCCS on MPI & OpenMP, GPU programming, AI and Deep Learning, performance engineering etc.

PRACE White Papers

On this page you will find PRACE White Papers related to numerous aspects of High Performance Computing

Εκπαίδευση

8 Ιουν 2021

[ONLINE] Introduction to Molecular Modeling and Molecular Dynamics in HPC @GRNET, 22-23 June 2021

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

17 Μαρ 2021

PRACE Training Centre Course :GPU programming using CUDA @GRNET

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

GPU programming using CUDA @GRNET - Date : 1-2 Apr. 2021

26 Νοε 2020

[ONLINE] Efficient Use of HPC Systems

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

14-15 December 2020 Description The purpose of this course is to guide existing and potential users on how to efficiently...

22 Οκτ 2020

ONLINE – PRACE Training Centre: Introduction to Parallel Programming

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

11 - 13 November 2020 Purpose of the course The focus is to understand the basics of parallel programming with...

17 Ιουν 2020

Introduction to Biomolecular modeling and Molecular dynamics in HPC

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

(Classical and Quantum) Purpose of the course The purpose of this course is to present to existing and potential users...

9 Ιουν 2020

RESCHEDULED, ONLINE – PRACE Training Centre: Machine Learning in HPC, 11-12 June 2020.

IN ΕΚΠΑΙΔΕΥΣΗ, ΝΕΑ ΕΚΔΗΛΩΣΕΙΣ

Machine Learning in HPC RESCHEDULED, ONLINE 11-12 June 2020 Description After the course the participants should be able to understand...

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“HPC Needs & skills” survey

Help us identify HPC related needs and skills and create a reliable Competence Map in Greece

SURVEY

Contact us at

contact@eurocc-greece.gr

Thank you!!

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