



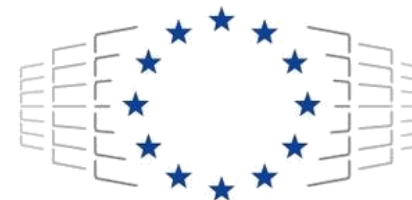
# EuroCC@Greece

<https://eurocc-greece.gr/newsletter/>

<https://www.linkedin.com/company/eurocc-greece>

<https://www.youtube.com/@euroccgreece9501>

[https://x.com/EuroCC\\_Greece](https://x.com/EuroCC_Greece)



**EuroHPC**  
Joint Undertaking

The overall objective of the Greek National Competence Center is to enable the efficient uptake of HPC technologies with the 3-fold goal to:

- advance competitiveness in **research**
- improve the effectiveness of **government** services and
- promote innovation in **industry**

## The Greek Competence Center for High Performance Computing and Artificial Intelligence

Enhancing innovation capacity in Business, Industry and Science  
by utilizing advanced High Performance Computing services



# EuroCC@Greece

## Services

- Technological Support & Consulting
  - High-Performance Computing,
  - Artificial Intelligence, and
  - High-Performance Data Analytics
- Training and Skills Development
- Access to computational resources

<https://eurocc-greece.gr/>

## Fields of Applications

- Artificial Intelligence
- Machine Learning
- Computer Vision
- Large Language Models
- Finite Elements Analyses
- Computational Fluid Dynamics
- Molecular Simulations
- Atmospheric & Oceanic Sciences

## Consortium

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

1. National Infrastructures for Research and Technology (coordinator) - **GRNET**
2. National Center for Scientific Research - **Demokritos**
3. Institute of Communication and Computer Systems - **NTUA**
4. Aristotle University of Thessaloniki - **AUTH**
5. Foundation for Research and Technology Hellas - **FORTH**



# The European High Performance Computing Joint Undertaking (EuroHPC JU)

is a joint initiative between the EU,  
European countries and private partners  
to develop a World Class  
Supercomputing Ecosystem.

[https://eurohpc-ju.europa.eu/index\\_en](https://eurohpc-ju.europa.eu/index_en)







**8 operational systems, all ranking among the world's most powerful supercomputers:**

1. LUMI in Finland #5
2. LEONARDO in Italy #6
3. MARENOSTRUM in Spain
4. VEGA in Slovenia
5. MELUXINA in Luxembourg
6. KAROLINA in Czechia
7. DEUCALION in Portugal
8. DISCOVERER in Bulgaria

**Underway:**

JUPITER in Germany

DAEDALUS in Greece

- 1 **Frontier** - HPE Cray EX235a, AMD Optimized 3rd Generation EPYC 64C 2GHz, AMD Instinct MI250X, Slingshot-11, HPE
- 2 **Aurora** - HPE Cray EX - Intel Exascale Compute Blade, Xeon CPU Max 9470 52C 2.4GHz, Intel Data Center GPU Max, Slingshot-11, Intel
- 3 **Eagle** - Microsoft NDv5, Xeon Platinum 8480C 48C 2GHz, NVIDIA H100, NVIDIA Infiniband NDR, Microsoft
- 4 **Supercomputer Fugaku** - Supercomputer Fugaku, A64FX 48C 2.2GHz, Tofu interconnect D, Fujitsu
- 5 **LUMI** - HPE Cray EX235a, AMD Optimized 3rd Generation EPYC 64C 2GHz, AMD Instinct MI250X, Slingshot-11, HPE
- 6 **Leonardo** - BullSequana XH2000, Xeon Platinum 8358 32C 2.6GHz, NVIDIA A100 SXM4 64 GB, Quad-rail NVIDIA HDR100 Infiniband, EVIDEN
- 7 **Summit** - IBM Power System AC922, IBM POWER9 22C 3.07GHz, NVIDIA Volta GV100, Dual-rail Mellanox EDR Infiniband, IBM



LUMI  
FINLAND



LEONARDO  
ITALY



MELUXINA  
LUXEMBOURG



KAROLINA  
CHECH REPUBLIC



DISCOVERER  
BULGARIA



VEGA  
SLOVENIA



DEUCALIO  
PORTUGAL



MARENOSTRUM 5  
SPAIN



## 1. LUMI (CSC, Finland)

- LUMI-C: 1536 nodes, 128 cores/node, 256-1024 GB RAM/node
- GPU: 2560 nodes, 64 cores/node, 4 GPUs, 128 GB GPU-RAM
- Visualization: 64 nodes, 1 GPU, 48 GB GPU-RAM
- Peak Performance: 550 petaflops
- URL: <https://www.lumi-supercomputer.eu/lumis-full-system-architecture-revealed/>

## 2. Leonardo (Cineca, Italy)

- Booster Module: 3456 nodes, 32 cores/node, 512 GB RAM/node, 4 GPUs, 64 GB GPU-RAM
- Data Centric Module: 1536 nodes, 112 cores/node, 512 GB RAM/node
- Peak Performance: 323.4 petaflops
- URL: <https://leonardo-supercomputer.cineca.eu/hpc-system/>

## 3. MareNostrum 5 (Barcelona Supercomputing Center, Spain)

- General Purpose Partition: 6408 nodes, 112 cores/node, 256 GB RAM/node
- Accelerated Partition: 1120 nodes, 64 cores/node, 512 GB RAM/node, 4 GPUs, 64 GB GPU-RAM
- Peak Performance: 314 petaflops
- URL: <https://www.bsc.es/innovation-and-services/marenostrum/marenostrum-5>



#### 4. MeluXina (LuxProvide, Luxembourg)

- Cluster: 573 nodes, 128 cores/node, 512 GB RAM/node
- Accelerator-GPU: 200 nodes, 64 cores/node, 512 GB RAM/node, 4 GPUs, 40 GB GPU-RAM
- Large memory: 20 nodes, 128 cores/node, 4096 GB RAM/node
- Peak Performance: 18.29 petaflops
- URL: <https://docs.lxp.lu/system/overview/>

#### 5. Karolina (IT4I, Czech Republic)

- CPU: 828 nodes, 128 cores/node, 256-24000 GB RAM/node
- GPU: 72 nodes, 8 GPUs, 40 GB GPU-RAM
- Peak Performance: 15.69 petaflops
- URL: <https://www.it4i.cz/en/infrastructure/karolina>

## 6. Vega (IZUM, Slovenia)

- GPU partition: 60 nodes, 128 cores/node, 512 GB RAM/node, 4 GPUs, 40 GB GPU-RAM
- CPU node Standard: 768 nodes, 128 cores/node, 256 GB RAM/node
- CPU node Large Memory: 192 nodes, 128 cores/node, 1000 GB RAM/node
- Peak Performance: 10.05 petaflops
- URL: <https://doc.vega.izum.si/architecture/>

## 7. Deucalion (Guimarães, Portugal)

- ARM cluster: 1632 nodes, 48 cores/node
- X86 cluster: 500 nodes, 48+ cores/node
- Accelerated partition: 33 nodes
- Peak Performance: 10 petaflops
- URL: <https://macc.fccn.pt/resources#deucalion>

## 8. Discoverer (Sofia Tech Park, Bulgaria)

- CPU: 1128 nodes, 128 cores/node, 256 GB RAM/node
- CPU-Fat: 18 nodes, 128 cores/node, 1000 GB RAM/node
- Peak Performance: 5.94 petaflops
- URL: [https://docs.discoverer.bg/resource\\_overview.html](https://docs.discoverer.bg/resource_overview.html)

# ARIS – HPC Infrastructure in Greece Compute Nodes

The ARIS infrastructure consists of a total of five computing system nodes based on Intel x86 architecture, interconnected into a single InfiniBand FDR14 network offering multiple options and processing architectures. More specifically, the infrastructure consists of:

- **Thin Nodes: 426 IBM NeXtScale nodes**, Intel Xeon E5-2680v2, **8,520 cores**.
- **Fat Nodes: 44 Dell PowerEdge R820, 4 Intel Xeon E5-4650v2, 512 GB memory per node.**
- **GPU Nodes: 44 Dell PowerEdge R730, 2 Intel Xeon E5-2660v3, 64 GB memory, 2 NVIDIA K40 GPUs per node.**
- **Xeon Phi Nodes: 18 Dell PowerEdge R730, 2 Intel Xeon E5-2660v3, 64 GB memory, 2 Xeon Phi 7120P co-processors per node.**
- **ML Node: 1 server, 2 Intel E5-2698v4, 512 GB memory, 8 NVIDIA V100 GPUs.**



- In **fluid dynamics**, HPC powers **deep learning models** for super-resolution imaging and **turbulent flow reconstruction**, along with complex **multi-phase flow simulations**.
- **Materials science** benefits from HPC-driven **machine learning** and **molecular dynamics**, refining interatomic potentials for **pharmaceuticals**, and investigating **polymer mechanics**.
- **Computational chemistry** leverages quantum mechanical calculations for **thermoelectric materials**, **electronic structures**, and **drug binding** studies.
- **Astrophysics** research utilizes HPC for **modeling neutron star** thermoelectric effects and pulsar equations.
- **Atmospheric and oceanic sciences** apply HPC to turbulence modeling in **air pollution studies**, **weather forecasting**, and **sea surface simulations**.
- Additionally, HPC enhances radiation modeling for space applications and **Monte Carlo-based dosimetry** calculations, underscoring its vital role in advancing interdisciplinary research.

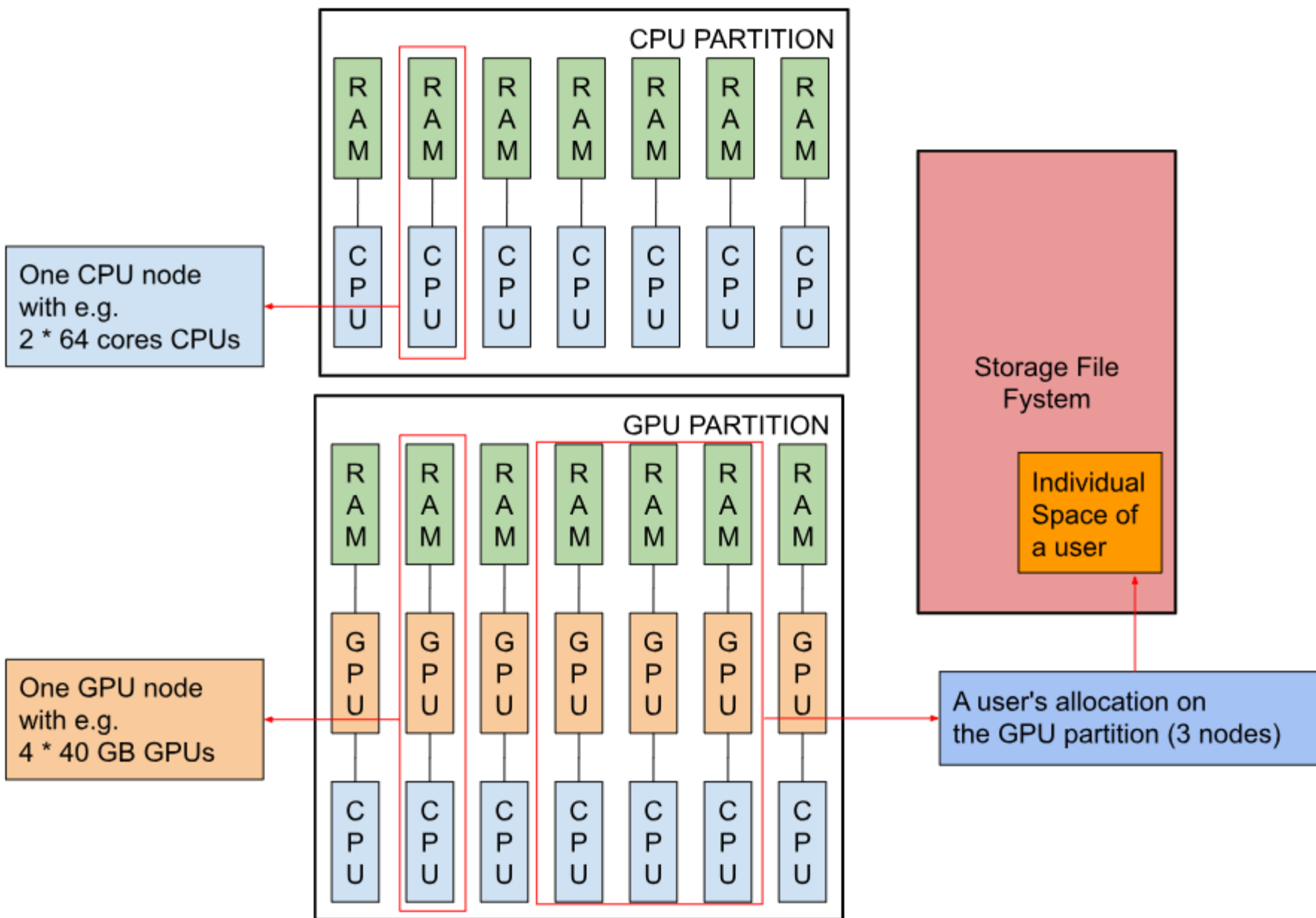


# The way is open to building a EuroHPC world-class supercomputer in Greece

- A hosting agreement has been signed between the **EuroHPC Joint Undertaking** and the National Infrastructures for Research and Technology (**GRNET**) in **Greece**, where **DAEDALUS**, a new **EuroHPC supercomputer**, will be located.
- The DAEDALUS supercomputer, with a total power of **89 PetaFlops**, will be the most powerful computing system in Greece and one of the leading systems in Europe.  
<https://grnet.gr/en/2025/03/26/daedalus-dc-ylopoihs-lavrio/>
- **Lavrion** Technological and Cultural Park (TCPL) [https://eurohpc-ju.europa.eu/way-open-building-eurohpc-world-class-supercomputer-greece-2022-11-28\\_en](https://eurohpc-ju.europa.eu/way-open-building-eurohpc-world-class-supercomputer-greece-2022-11-28_en)



# Example of an HPC cluster





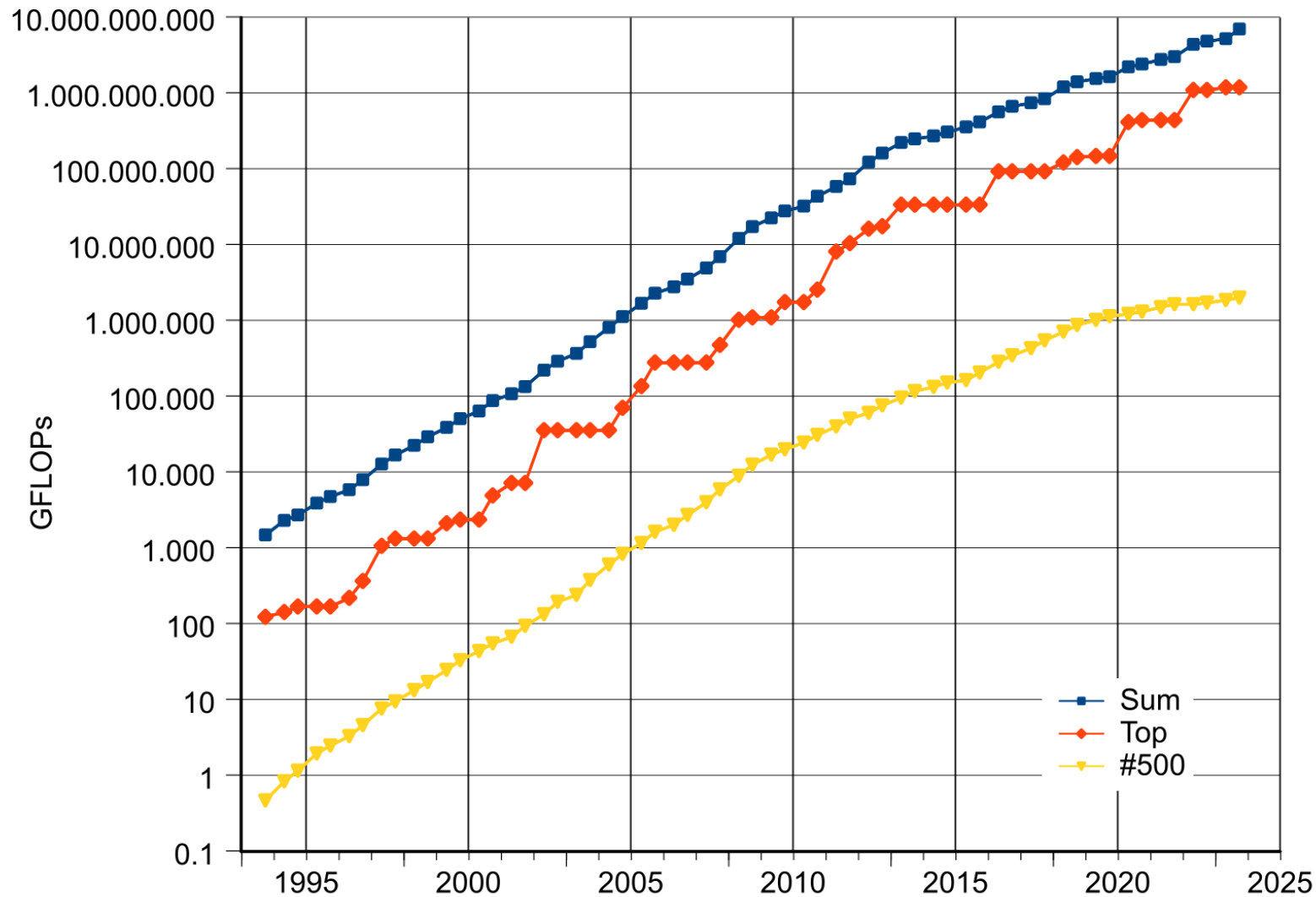
# Threads on 1 node of MeluXina supercomputer

<https://docs.lxp.lu/system/overview/>

```
0[98.1%] 16[96.8%] 32[99.4%] 48[96.8%] 64[83.2%] 80[98.7%] 96[98.7%] 112[100.0%] 128[98.1%] 144[96.2%] 160[98.1%] 176[98.1%] 192[96.2%] 208[96.8%] 224[100.0%] 240[98.1%]
1[98.7%] 17[98.1%] 33[97.4%] 49[96.8%] 65[98.1%] 81[98.1%] 97[98.1%] 113[98.7%] 129[98.1%] 145[96.8%] 161[97.5%] 177[97.4%] 193[100.0%] 209[98.1%] 225[97.4%] 241[96.8%]
2[96.1%] 18[98.1%] 34[100.0%] 50[97.4%] 66[96.2%] 82[97.4%] 98[98.1%] 114[97.4%] 130[97.4%] 146[96.8%] 162[100.0%] 178[98.1%] 194[98.7%] 210[98.1%] 226[98.1%] 242[96.8%]
3[98.7%] 19[98.1%] 35[22.6%] 51[96.2%] 67[98.1%] 83[96.8%] 99[98.7%] 115[98.1%] 131[98.7%] 147[97.4%] 163[98.1%] 179[96.8%] 195[96.8%] 211[97.5%] 227[98.1%] 243[96.8%]
4[97.4%] 20[96.8%] 36[97.4%] 52[96.8%] 68[98.1%] 84[97.4%] 100[98.7%] 116[96.8%] 132[97.4%] 148[96.8%] 164[100.0%] 180[96.8%] 196[98.1%] 212[97.4%] 228[98.1%] 244[98.1%]
5[98.7%] 21[98.7%] 37[94.2%] 53[98.1%] 69[94.9%] 85[97.4%] 101[97.4%] 117[63.5%] 133[98.7%] 149[96.8%] 165[100.0%] 181[96.2%] 197[98.1%] 213[98.1%] 229[98.1%] 245[97.4%]
6[96.8%] 22[96.8%] 38[66.0%] 54[97.4%] 70[97.4%] 86[96.8%] 102[96.2%] 118[96.8%] 134[98.7%] 150[97.5%] 166[98.1%] 182[98.7%] 198[98.1%] 214[98.1%] 230[97.4%] 246[98.7%]
7[97.4%] 23[96.2%] 39[100.0%] 55[97.4%] 71[62.2%] 87[97.4%] 103[98.1%] 119[98.1%] 135[98.7%] 151[97.4%] 167[98.7%] 183[98.7%] 199[98.1%] 215[100.0%] 231[98.7%] 247[97.4%]
8[98.7%] 24[98.7%] 40[87.7%] 56[96.8%] 72[98.1%] 88[97.4%] 104[97.4%] 120[97.4%] 136[98.1%] 152[96.8%] 168[98.7%] 184[96.8%] 200[96.8%] 216[98.1%] 232[96.2%] 248[98.7%]
9[96.8%] 25[98.1%] 41[98.1%] 57[97.4%] 73[97.4%] 89[98.7%] 105[98.1%] 121[98.1%] 137[98.1%] 153[96.8%] 169[96.8%] 185[98.7%] 201[97.4%] 217[98.1%] 233[98.1%] 249[98.1%]
10[98.1%] 26[98.1%] 42[97.4%] 58[97.4%] 74[98.1%] 90[96.8%] 106[98.1%] 122[96.8%] 138[96.8%] 154[96.8%] 170[98.7%] 186[97.4%] 202[96.8%] 218[96.8%] 234[97.4%] 250[97.4%]
11[96.8%] 27[97.4%] 43[98.7%] 59[98.1%] 75[96.2%] 91[96.8%] 107[97.5%] 123[98.1%] 139[98.7%] 155[97.4%] 171[3.8%] 187[98.1%] 203[96.8%] 219[97.4%] 235[98.7%] 251[96.8%]
12[97.4%] 28[98.1%] 44[76.9%] 60[97.4%] 76[96.8%] 92[97.4%] 108[98.1%] 124[98.1%] 140[97.4%] 156[96.8%] 172[98.1%] 188[98.7%] 204[98.1%] 220[96.8%] 236[96.2%] 252[98.1%]
13[97.4%] 29[0.6%] 45[96.2%] 61[97.4%] 77[96.2%] 93[91.7%] 109[98.1%] 125[98.1%] 141[96.8%] 157[98.1%] 173[96.8%] 189[98.7%] 205[96.8%] 221[98.7%] 237[97.4%] 253[98.1%]
14[98.7%] 30[98.7%] 46[98.1%] 62[97.4%] 78[87.8%] 94[96.8%] 110[98.1%] 126[98.7%] 142[97.5%] 158[98.7%] 174[99.4%] 190[97.4%] 206[97.5%] 222[98.1%] 238[0.0%] 254[97.4%]
15[98.1%] 31[97.4%] 47[98.1%] 63[98.7%] 79[97.4%] 95[96.8%] 111[98.7%] 127[97.4%] 143[98.1%] 159[98.1%] 175[98.1%] 191[97.5%] 207[28.8%] 223[96.8%] 239[96.2%] 255[98.7%]
Mem[|||||] 15.9G/503G Tasks: 43, 293 thr, 2911 kthr; 227 running
Swp[|] 0K/0K Load average: 1.97 60.10 121.57
Uptime: 89 days, 01:38:08

[Main] [I/O]
PID USER PRI NI VIRT RES SHR S CPU%MEM% TIME+ Command
7131 u100425 20 0 6754M 244M 8424 R 2430.9 0.0 0:48.33 python __mult_proc_loop__.py
F1Help F2Setup F3Search F4Filter F5Tree F6SortBy F7Nice F8Nice F9Kill F10Quit
```

# Growth of HPC systems



The new **El Capitan** system at the **Lawrence Livermore National Laboratory** in California, U.S.A., has debuted as the most powerful system on the list with an HPL score of 1.742 EFlop/s.  
<https://top500.org/>

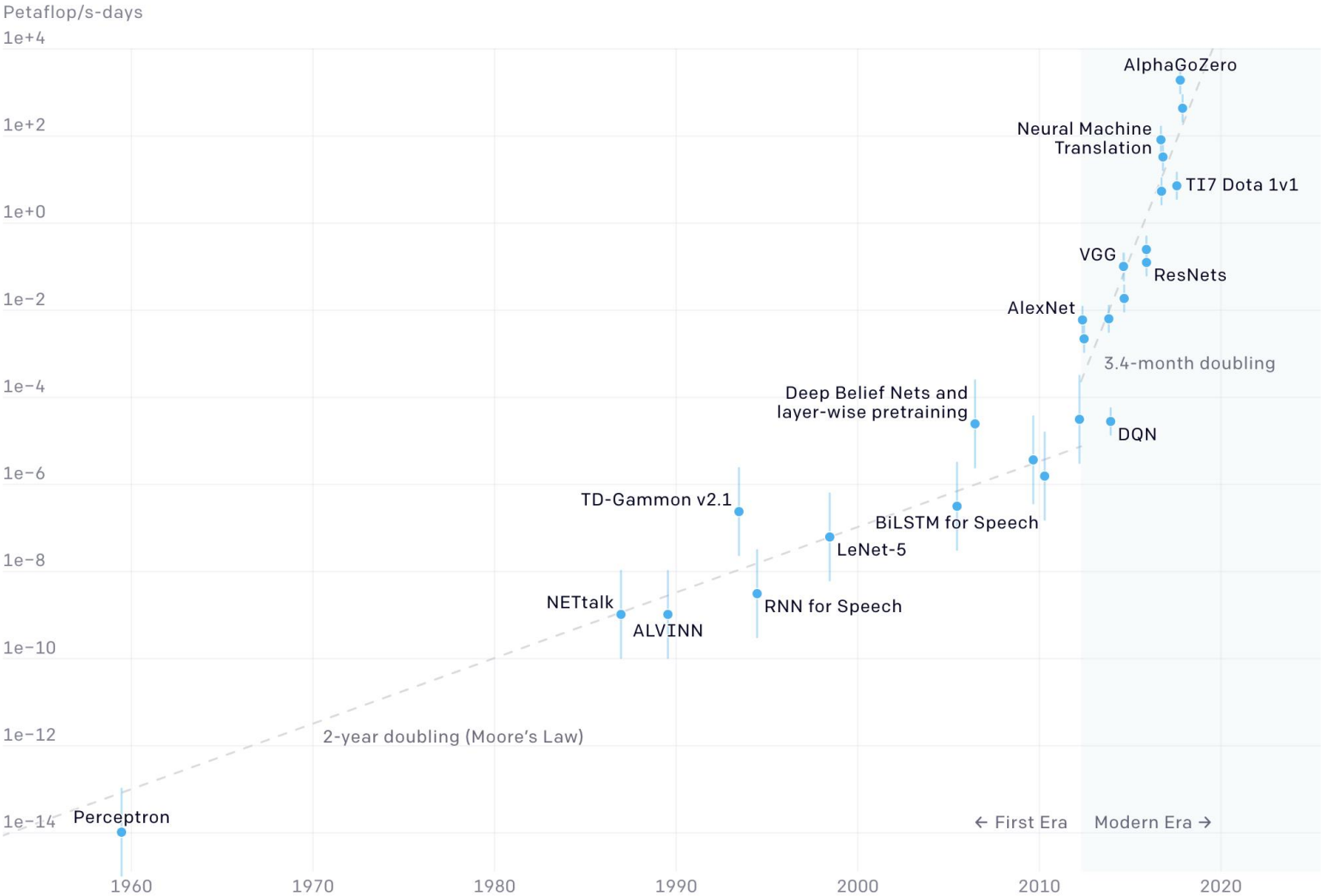
<https://creativecommons.org/licenses/by-sa/3.0/>

<https://en.Wikipedia.org/wiki/TOP500#/media/File:Supercomputers-history.svg>



Since 2102 we observe a 3.4-month doubling in computing power used to train AI models.

Two Distinct Eras of Compute Usage in Training AI Systems



# FLOPS (Floating Point Operations Per Second)

X 200,000



0.05 km/h



1 km/h



100 km/h



1,000 km/h



10,000 km/h



1,000,000,000 km/h



1 TFlop

X 1,000,000



1 EFlop

Operations	Name	Abbreviation
1	FLOPS	FLOPS
$10^3$	Kilo FLOPS	KFLOPS
$10^6$	Mega FLOPS	MFLOPS
$10^9$	Giga FLOPS	GFLOPS
$10^{12}$	Tera FLOPS	TFLOPS
$10^{15}$	Peta FLOPS	PFLOPS
$10^{18}$	Exa FLOPS	EFLOPS

# Large Language Models on HPC

## Estimated GPU Hours for Training:

### 1.Small LLM (~8B):

- ~1.3M GPU hours (LLAMA 3 8B).

### 2.Medium LLM (~70B):

- ~6.4M-7.0M GPU hours (LLAMA 3/3.1 70B).

### 3.Large LLM (~405B):

- ~30.84M GPU hours (LLAMA 3.1 405B).
- Falcon 180B (slightly smaller): ~7M GPU hours.

<https://huggingface.co/meta-llama/Meta-Llama-3-8B-Instruct>

<https://huggingface.co/meta-llama/Llama-3.3-70B-Instruct>

<https://huggingface.co/meta-llama/Llama-3.1-405B-Instruct>

<https://docs.lxp.lu/howto/llama3-vllm/>

<https://huggingface.co/blog/falcon-180b>



## Estimated GPU Requirements for Inference:

•**Small LLM (~8B):** ~80GB GPU RAM (LLAMA 3.1 8B).

•**Medium LLM (~70B):** ~320GB GPU RAM (GPTQ/int4 on Falcon).

**Large LLM (~405B):** ~800GB GPU RAM (FP8 on LLAMA 3.1).

# EuroHPC Access Modes

## [EuroHPC JU Call for Proposals – Extreme Scale Access Mode](#)

For applications with high-impact, high-gain innovative research

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

The expected impact in the application's domain should justify the need for large allocations

## [EuroHPC JU Call for Proposals – AI and Data-Intensive Applications Access Mode](#)

To support ethical artificial intelligence & machine learning

## [EuroHPC JU Call for Proposals – Development Access Modes](#)

To develop, test and optimise applications

## [EuroHPC JU Call for Proposals – Benchmark Access Modes](#)

To test or benchmark applications

[https://eurohpc-ju.europa.eu/access-our-supercomputers/access-policy-and-faq\\_en](https://eurohpc-ju.europa.eu/access-our-supercomputers/access-policy-and-faq_en)

<https://access.eurohpc-ju.europa.eu/>



# 2025 Cut off dates for EuroHPC Access Calls

## BENCHMARK ACCESS:

- 1<sup>st</sup> day of each month

## DEVELOPMENT ACCESS:

- 1<sup>st</sup> day of each month

## AI AND DATA INTENSIVE APPLICATIONS ACCESS:

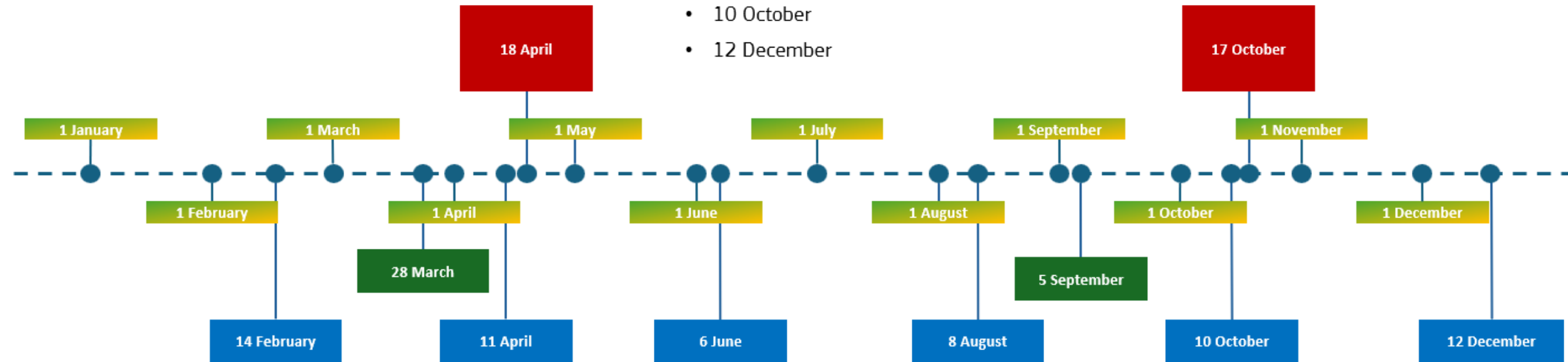
- 14 February
- 11 April
- 6 June
- 8 August
- 10 October
- 12 December

## REGULAR ACCESS:

- 28 March
- 5 September

## EXTREME SCALE ACCESS:

- 18 April
- 17 October



## Open Calls for Proposals



Cut-off ends in

3 hours

### EuroHPC Benchmark Access Call

● Open

The EuroHPC Benchmark call is designed for code scalability test...



Cut-off ends in

6 days

### EuroHPC Extreme Scale Access C...

● Open

The Extreme Scale Access mode is designed to serve research...



Cut-off ends in

7 days

### EuroHPC AI and Data-Intensive A...

● Open

The EuroHPC JU AI and Data-Intensive Applications Access cal...



<https://access.eurohpc-ju.europa.eu/>

☒ Proposal for civilian purposes\*



Is any part of the project confidential?\*

☐ Yes ☒ No



## Research fields

Research field title\*

PE6 Computer Science and Informatics



Research field sub-title\*

PE6\_7 Artificial intelligence, intelligent systems, natural language processing



Research field share (%)\*

50

The sum of all research fields should not exceed the total of 100%



Cut-off ends in

3 hours

## EuroHPC Development Access Call

● Open

The EuroHPC Development call is designed for projects focusing on...

<https://access.eurohpc-ju.europa.eu/>

## Research fields #2

Research field title\*

PE6 Computer Science and Informatics



Research field sub-title\*

PE6\_11 Machine learning, statistical data processing and applications using signal



Research field share (%)\*

50

The sum of all research fields should not exceed the total of 100%

Remove

+ Research fields

AI set of technologies selection

Machine Learning

Natural Language Processing

Deep Learning



If applicable, please select used AI technologies. This is a multi-select field so you are able to choose more than one option.

<https://access.eurohpc-ju.europa.eu/>



## Partitions

Partition name\*

MeluXina CPU



Code(s) used\*

XGBoost

MPI

Horovod

Pytorch

This field is a multi-text field, for adding another code separate it with a comma

Requested amount of resources (node hours)\*

4 000



Average number of processes/threads\*

128

Average job memory (total usage over all nodes in GB)\*

400

Maximum amount of memory per process/thread (MB)\*

10 000

Total amount of data to transfer to/from (GB)\*

100

<https://access.eurohpc-ju.europa.eu/>

Partitions #2 

Partition name\*

MeluXina GPU

Code(s) used\*

Llama

Falcon

Mistral

This field is a multi-text field, for adding another code separate it with a comma

Requested amount of resources (node hours)\*

800 

Average number of processes/threads\*

64

Average job memory (total usage over all nodes in GB)\*

800

Maximum amount of memory per process/thread (MB)\*

12 500

<https://access.eurohpc-ju.europa.eu/>

## Frequently Asked Questions (FAQ)

[https://eurohpc-ju.europa.eu/access-our-supercomputers/access-policy-and-faq\\_en](https://eurohpc-ju.europa.eu/access-our-supercomputers/access-policy-and-faq_en)

- **How can I gain access to computation time on EuroHPC machines?**
  - You will need to **apply** to one of the open **access calls** that **EuroHPC** provides. The list of available calls can be found [here](#).
- **Which organisations are eligible for access to EuroHPC machines?**
  - Any European organisation is eligible for access to perform Open Science research (the **results** of the work are made available for **open access**). This includes **public and private** academic and research institutions, public sector organisations, industrial enterprises and SMEs
- **What is the cost?**
  - Currently access is **free of charge**.
- **What are the participation conditions?**
  - Participation conditions depend on the specific access call that a research group has applied. In general users of EuroHPC systems commit to: **acknowledge** the use of the **resources** in their related publications, contribute to **dissemination** events, produce and submit a **report** after completion of a resource allocation. More information on participation conditions can be found in the call's Documents section.

# Our Training Events <https://eurocc-greece.gr/events-2/>



EURO Greece

**HPC Training Series**

**Course 1**

**HPC for beginners: basic concepts, MPI and OpenMP**

| PRESENTATION LANGUAGE: GREEK |

MARCH 29 | 09:45 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 2**

**Introduction to accelerators: GPUs / CUDA**

| PRESENTATION LANGUAGE: GREEK |

APRIL 19, 2024 | 10:00 EET | ONLINE



EURO Greece itauth

**HPC Training Series**

**Course 3**

**Large Language Models (LLMs) on High Performance Computing (HPC) Systems**

| PRESENTATION LANGUAGE: GREEK |

APRIL 24, 2024 | 10:00 EET | ONLINE



EURO Greece

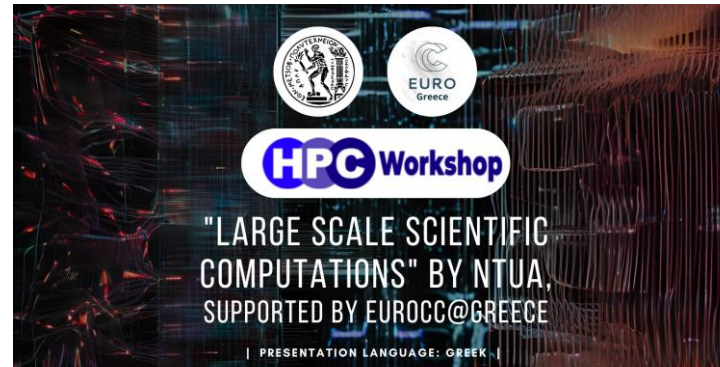
**HPC Training Series**

**Course 4**

**Intermediate-level Programming for HPC using Python**

| PRESENTATION LANGUAGE: ENGLISH |

MAY 29, 2024 | 10:00 EET | HYBRID



EURO Greece

**HPC Workshop**

"LARGE SCALE SCIENTIFIC COMPUTATIONS" BY NTUA  
SUPPORTED BY EUROCC@GREECE

| PRESENTATION LANGUAGE: GREEK |

JULY 11-14, 2024 | 10:00 - 16:00 EET | ON-SITE



EURO Greece

**HPC Training Series**

**Course 5**

**Computational Fluid Dynamics (CFD) using OpenFOAM on High Performance Computing (HPC)**

| PRESENTATION LANGUAGE: GREEK |

JUNE 14, 2024 | 09:30 EET | ONLINE



EURO Greece gnet DCoMEX

**Workshop**

**Data-driven Applications for Exascale Supercomputers**

SEPTEMBER 2-3, 2024 | 09:00 - 17:00 EET | ATHENS, GREECE



EURO Greece

**HPC Training Series**

**Course 6**

**Gradient-based & gradient-free Optimization, with applications to CFD & beyond**

| PRESENTATION LANGUAGE: GREEK |

OCTOBER 4, 2024 | 10:00 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 7**

**AI for Life Sciences**

**Vol. 1: Deep Learning for Health and Life Sciences**

| PRESENTATION LANGUAGE: GREEK |

NOVEMBER 1, 2024 | 10:00 EET | ONLINE



# Our Training Events <https://eurocc-greece.gr/events-2/>



EURO Greece 

**HPC Training Series**

**Course 8**

**Computational Chemistry and High Performance Computing (HPC)**

| PRESENTATION LANGUAGE: GREEK |

DECEMBER 9, 2024 | 10:00 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 9**

**Running LLMs on HPC: Transformers, Inference & Deployment**

| PRESENTATION LANGUAGE: GREEK & ENGLISH |

JANUARY 17, 2025 | 10:00 EET | ONLINE



EURO Greece 

**HPC Training Series**

**Course 10**

**Introduction to Computational Fluid Dynamics and OpenFOAM, using HPC**

| PRESENTATION LANGUAGES: GREEK & ENGLISH |

FEBRUARY 17, 2025 | 09:30 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 11**

**HPC for Beginners: Basic Concepts, MPI and OpenMP**

| PRESENTATION LANGUAGE: GREEK |

MARCH 7, 2025 | 09:45 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 12**

**Introduction to Accelerators: GPUs / CUDA**

| PRESENTATION LANGUAGE: GREEK |

APRIL 4, 2025 | 10:00 EET | ONLINE



EURO Greece

**HPC Training Series**

**Course 13**

**The Weather Research and Forecasting (WRF) Model on HPC**

| PRESENTATION LANGUAGE: GREEK |

APRIL 28, 2025 | 09:45 EET | ONLINE

# HPC Training Series

## Course 13

### *The Weather Research and Forecasting (WRF) Model on HPC*



APRIL 28, 2025 | 09:45 EET | ONLINE

- |              |         |  |
|--------------|---------|--|
| <b>09:45</b> | → 10:00 | <b>Introduction to EuroCC &amp; the training events</b><br>Speaker: Dr Nikolaos Bakas (GRNET)        |
| <b>10:00</b> | → 10:15 | <b>How to access the EuroHPC-JU supercomputers</b><br>Speaker: Dr Nikolaos Bakas (GRNET)             |
| <b>10:15</b> | → 10:30 | <b>How to access the Greek HPC Infrastructure ARIS</b><br>Speaker: Mr Nikolaos Triantafyllis (GRNET) |
| <b>10:30</b> | → 11:00 | <b>How to submit a job via Slurm on an HPC cluster</b><br>Speaker: Mr Nikolaos Triantafyllis (GRNET) |
| <b>11:00</b> | → 11:30 | <b>Compilation Strategies for WRF on HPC</b><br>Speaker: Dr Dimitris Dellis (GRNET)                  |
| <b>11:30</b> | → 13:30 | <b>The Weather Research and Forecasting Model on HPC</b><br>Speaker: Dr Stergios Kartsios (AUTH)     |
| <b>13:30</b> | → 14:00 | <b>Performance Bottlenecks and Scaling Constraints</b><br>Speaker: Dr Dimitris Dellis (GRNET)        |
| <b>14:00</b> | → 14:20 | <b>How WRF - Data Assimilation benefits from HPC</b><br>Speaker: Dr Paraskevi Vourlioti (Neuralio)   |
| <b>14:20</b> | → 14:30 | <b>Wrap Up</b><br>Speaker: Dr Nikolaos Bakas (GRNET)   |



# EuroCC@Greece

<https://eurocc-greece.gr/newsletter/>

<https://www.linkedin.com/company/eurocc-greece>

<https://www.youtube.com/@euroccgreece9501>

[https://twitter.com/EuroCC\\_Greece](https://twitter.com/EuroCC_Greece)



**EuroHPC**  
Joint Undertaking

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