

C EURO²

**EUROHPC BENCHMARK ACCESS & DEVELOPMENT ACCESS ÇAĞRILARI,
ÇAĞRILARA İLİŞKİN DOKÜMANLAR**

Sevil SARIKURT, TÜBİTAK ULAKBİM

EuroHPC JU ÇAĞRILARI



BENCHMARK ACCESS ÇAĞRISI

- Kullanılacak kodların/uygulamaların hedeflenen bir petascale veya pre-exascale sistemde performans verilerini toplamak amacıyla başvuru yapılır.
- İlgili kod/program için gerekli parametreler optimize edilir ve probleme uygun kaynak ihtiyacı belirlenir.
- Regular Access ve Extreme Scale Access çağrıları için teklif hazırlamaya yöneliktir.
- Talep edilebilecek erişim süresi minimum 2 ay veya maksimum 3 aydır.
- Bir AB üye devletinde veya Dijital Avrupa Programı veya Horizon 2020 ile ilişkili bir ülkede kurulmuş veya yerleşik olan akademiden, araştırma enstitülerinden, kamudan ve endüstriden araştırmacılar başvuru yapabilirler.
- Çağrıya sürekli olarak açıktır. Yılda 12 başvuru dönemi vardır.

Başvuru Kesim Tarihleri - 2023

1 Ekim 2023 (11:00 CEST)

1 Kasım 2023 (11:00 CET)

1 Aralık 2023 (11:00 CET)



BENCHMARK ACCESS ÇAĞRISI

EuroHPC JU Kaynakları



SİSTEMLER	EV SAHİBİ ÜLKE	MİMARİ	Benchmark (Node/Hours)	Benchmark (Core/Hours)
Leonardo Booster	İTALYA	Atos BullSequana XH2000	3 500	112 000
LUMI-C	FİNLANDİYA	HPE Cray EX	7 000	896 000
LUMI-G			3 000	384 000
Discoverer CPU	BULGARİSTAN	Atos BullSequana XH2000	7 000	896 000
MeluXina CPU	LÜKSEMBURG	Atos BullSequana XH2000	5 000	640 000
MeluXina GPU			1 000	64 000
MeluXina FPGA			1 500	-
Karolina CPU	ÇEKYA	HPE Apollo 2000 Gen10 Plus x86_64	7 000	896 000
Karolina GPU		HPE Apollo 6500 Gen10 Plus NVIDIA GPGPU	1 000	128 000
Vega CPU	SLOVENYA	Atos BullSequana XH2000	5 000	640 000
Vega GPU			400	51 200

EuroHPC
Sistem
Raporu
(Eylül 2021)



EuroHPC JU ÇAĞRILARI



DEVELOPMENT ACCESS ÇAĞRISI

- Kod ve algoritma geliştirme ve optimizasyonuna odaklanan projeler için tasarlanmıştır. Aynı zamanda yapay zeka uygulama yöntemlerinin geliştirilmesini de içermektedir.
- Akademiden veya endüstriden gelen araştırma projelerine ek olarak Mükemmeliyet Merkezleri (Centres of Excellence) veya Ulusal Yetkinlik Merkezleri (National Competence Centers) gibi büyük kamu veya özel finansmanlı girişimlerin bir parçası da olabilir.
- Kod veya algoritmanın ihtiyacına göre sınırlı sayıda çekirdek/saat tahsis edilir.
- Bir AB üye devletinde veya Dijital Avrupa Programı veya Horizon 2020 ile ilişkili bir ülkede kurulmuş veya yerleşik olan akademiden, araştırma enstitülerinden, kamudan ve endüstriden araştırmacılar başvuru yapabilirler.
- Erişim süresi 6 ay veya 12 aydır. En fazla iki kez yenilenebilir.
- Çağrıya sürekli olarak açıktır. Yılda 12 başvuru dönemi vardır.

Başvuru Kesim Tarihleri - 2023

1 Ekim 2023 (11:00 CEST)

1 Kasım 2023 (11:00 CET)

1 Aralık 2023 (11:00 CET)



DEVELOPMENT ACCESS ÇAĞRISI

EuroHPC JU Kaynakları



SİSTEMLER	EV SAHİBİ ÜLKE	MİMARİ	Development (Node/Hours)	Development (Core/Hours)
Leonardo Booster	İTALYA	Atos BullSequana XH2000	3 500	112 000
LUMI-C	FİNLANDİYA	HPE Cray EX	15 000	1 920 000
LUMI-G			10 000	640 000
Discoverer CPU	BULGARİSTAN	Atos BullSequana XH2000	15 000	1 920 000
MeluXina CPU	LÜKSEMBURG	Atos BullSequana XH2000	10 000	1 280 000
MeluXina GPU			3 000	192 000
MeluXina FPGA			5 000	-
Karolina CPU	ÇEKYA	HPE Apollo 2000 Gen10 Plus x86_64	15 000	1 920 000
Karolina GPU		HPE Apollo 6500 Gen10 Plus NVIDIA GPGPU	3 000	384 000
Vega CPU	SLOVENYA	Atos BullSequana XH2000	10 000	1 280 000
Vega GPU			1 000	128 000

EuroHPC
Sistem
Raporu
(Eylül 2021)



Değerlendirme Süreci ve Kriterler

- ❑ Proje başvurusundan sonra 2 iş günü içerisinde idari kontrol yapılır.
- ❑ Değerlendirme süreci başvuru kesim tarihinden sonra maksimum 2 hafta içerisinde gerçekleşir.
- ❑ Kaynaklara erişim 2-3 hafta içerisinde sağlanır.
- ❑ Değerlendirme süreci sadece teknik değerlendirmeden oluşmaktadır, bilimsel değerlendirme yapılmamaktadır.
 - Proje önerileri, kapanış tarihinden sonra ilgili EuroHPC süperbilgisayar merkezlerine iletilir ve ilgili merkezin uzmanları tarafından talep edilen kaynak değerlendirilir.
 - Başvuru sahipleri ile iletişim: EuroHPC merkezleri başvuru sahipleriyle iletişime geçer.
- ❑ Kabul edilen proje başvuruları için kaynak tahsisinin bildirilmesinden sonra kaynaklara erişim süreci:
 - Projesi desteklenecek kişilerden, belirtilen süre boyunca verilen kaynakları kullanmaya hazır olduklarını ve uygunluklarını teyit etmeleri
 - Olumlu yanıt alındıktan sonra erişimin sağlanması.

BENCHMARK ACCESS ÇAĞRISI



Raporlama

□ Çağrı kapsamında EuroHPC kaynaklarını kullanan başvuru sahiplerinden:

- kıyaslama sonuçları,
- karşılaşılan sorunlar ve
- uygulanan çözümler

dahil olmak üzere erişimlerinin sonucu hakkında kısa bir rapor yazmaları beklenmektedir.

□ İlgili sonuç raporu, erişim süresi bitiminden itibaren 3 ay içerisinde gönderilmelidir.

- access@eurohpc-ju.europa.eu

□ Sonuç raporunun güncel formatına EuroHPC JU sayfasından erişim sağlanabilir.

- https://eurohpc-ju.europa.eu/eurohpc-ju-call-proposals-benchmark-access_en

□ Sonuç raporunun sunulmaması, araştırma grubunun herhangi bir üyesinin EuroHPC'ye gelecekte sunacağı teklifleri diskalifiye edebilir.

□ Diğer çağrılara (Regular Access, Extreme Access vb.) başvuru yapılması durumunda Benchmark erişim kapsamında elde edilen sonuçlar kullanılır.

DEVELOPMENT ACCESS ÇAĞRISI



Raporlama

- ❑ Başarılı başvuru sahiplerinden, erişim süresi bitiminden itibaren 3 ay içerisinde projenin sonucu hakkında rapor göndermeleri beklenmektedir (access@eurohpc-ju.europa.eu).
 - Orijinal proje hedefine kıyasla projenin başarısı,
 - Kullanılan teknik çözümler ve takip edilen uygulama seçenekleri,
 - Altyapıyla ilgili karşılaşılan sorunların açıklaması,
 - Bu erişimden sonraki görüşler.
- ❑ Final raporunun güncel formatına EuroHPC JU sayfasından erişim sağlanabilir.
 - https://eurohpc-ju.europa.eu/eurohpc-ju-call-proposals-development-access_en
- ❑ Projenin geliştirme erişimi kapsamına uyumu, sağlanan rapora göre değerlendirilir.
- ❑ [Sonuç raporunun sunulmaması, araştırma grubunun herhangi bir üyesinin EuroHPC'ye gelecekte sunacağı teklifleri diskalifiye edebilir.](#)
- ❑ Erişim modunun kötüye kullanılması (örneğin, kaynakların talepte belgelenen amaçlar dışında kullanılması), başvuru sahibinin belirli bir süre boyunca başvurularının yasaklanmasına neden olabilir.

BENCHMARK ve DEVELOPMENT ACCESS ÇAĞRILARI



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Başvuru Platformu (Çevrim içi Form)

PRACE

Calls Applications Legacy

Open Calls for Proposals

2023 Call for Inno4Scale Innova...
Cut-off ends in **2 days**
Open
The Inno4Scale project will support the EuroHPC JU in achieving the...

EuroHPC Development Access ...
Cut-off ends in **5 days**
Open
The EuroHPC Development call is designed for projects focusing on...

EuroHPC Benchmark Access Call
Cut-off ends in **5 days**
Open
The EuroHPC Benchmark call is designed for code scalability test...

EuroHPC Benchmark Access Call
Open
Apply to Call

Call Details

The EuroHPC Benchmark call is designed for code scalability tests, the outcome of which will be used in the proposal in a future EuroHPC Extreme Scale Access call. Users receive a limited number of nodes. The maximum allocation period is three (3) months.



All Calls Open Calls

EuroHPC Regular Access Call
Cut-off ends in **38 days**
Open
The Regular Access mode is designed to serve research...

EuroHPC Extreme Scale Access...
Cut-off ends in **10 days**
Open
The Extreme Scale Access mode is designed to serve research...

2023 Call for Inno4Scale Innova...
Cut-off ends in **5 days**
Open
The Inno4Scale project will support the EuroHPC JU in achieving the...

EuroHPC Development Access ...
Cut-off ends in **5 days**
Open
The EuroHPC Development call is designed for projects focusing on...

EuroHPC Benchmark Access Call
Cut-off ends in **5 days**
Open
The EuroHPC Benchmark call is designed for code scalability test...

EuroHPC Development Access Call
Open
Apply to Call

Call Details

The EuroHPC Development call is designed for projects focusing on code and algorithm development and optimisation. This can be in the context of research projects from academia or industry, or as part of large public or private funded initiatives as for instance Centres of Excellence or Competence Centres. Users will typically be allocated a small number of node hours; the allocation period is one (1) year and is renewable up to 2 times.

<https://pracecalls.eu>

Sadece çevrim içi form doldurularak başvuru süreci tamamlanır.

[https://pracecalls.eu/](https://pracecalls.eu)



- Project Application
 - The Project**
 - Principal Investigator
 - Contact Person
 - Team Members Information
 - Partitions
 - Code Details and Feasibility
 - Acceptance of Terms of Reference

The Project

Project details

Project title*

This is mandatory.

Project summary (abstract)*

This is mandatory.

Explain the scientific case of the project for which you intend to use the code(s)*

This is mandatory.

Keywords*

This is mandatory.

Only proposals with a civilian purpose will be eligible. Please confirm by ticking the box.

Proposal for civilian purposes*

This is mandatory.

Is any part of the project confidential?*

Yes No

Research fields

Research field title*

This is mandatory.

Research field share (%)*

This is mandatory.

+ Research fields

Research fields

- Research field title*
- PE1 Mathematics
 - PE2 Fundamental Constituents of Matter
 - PE3 Condensed Matter Physics
 - PE4 Physical and Analytical Chemical Sciences
 - PE5 Synthetic Chemistry and Materials
 - PE6 Computer Science and Informatics

Submission details

Project duration*

2 months 3 months

Preferable starting date*

This is mandatory.

Industry involvement*

This is mandatory.

Public sector involvement*

This is mandatory.

[Save Changes](#) [Next](#)

- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past

Project Application

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- Partitions**
- Code Details and Feasibility
- Acceptance of Terms of Reference

Partitions

Partitions

Partition name*

This is mandatory.

Code(s) used*

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

Average number of processes/threads*

This is mandatory.

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

This is mandatory.

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

This is mandatory.

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

This is mandatory.

Justification of data transfer*

This is mandatory.

Describe the I/O strategy regarding the parameters indicated below.

Describe the I/O strategy regarding the parameters indicated below.

Is I/O expected to be a bottleneck?*

This is mandatory.

I/O libraries, MPI I/O, netcdf, HDF5 or other approaches*

This is mandatory.

Frequency and size of data output and input*

This is mandatory.

Number of files and size of each file in a typical production run*

This is mandatory.

Total storage required (GB)

+ Partitions

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Project Application



- The Project
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- Partitions
- **Code Details and Feasibility**
- Acceptance of Terms of Reference

Code Details and Feasibility

This tab should overall include the following: description of main algorithms, how they have been implemented and parallelized, and their main performance bottlenecks and the solutions to the performance issues you have considered. For each code that needs to be optimized, please provide the details below. Codes can be added by clicking on the Add code button.

Development of the code(s) description*

This is mandatory.

Code details

Name and version of the code

Webpage and other references

Licensing model

Contact information of the code developers

Your connection to the code (e.g. developer, collaborator to main developers, etc.)

+ Code details

Scalability and performance

Describe the scalability of the application and performance of the application*

This is mandatory.

What is the target for scalability and performance?*

This is mandatory.

Optimization of the work proposed

Explain how the optimization work proposed will contribute to future Tier-0 projects*

This is mandatory.

Describe the impact of the optimization work proposed - is the code widely used; can it be used for other research projects and in other research fields with minor modifications; would these modifications be easy to add to the main release of the software?*

This is mandatory.

Describe the main algorithms and how they have been implemented and parallelized*

This is mandatory.

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REGULAR ACCESS ÇAĞRISI: Çevrim İçi Form



EuroHPC Regular Access Call

Proposal ID: DRAFT-3190

Draft

- Project Application
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 - Team Members Information
 - Partitions
 - Code Details and Development
 - Special Needs
 - Collaboration and Funding
 - Excluded Reviewers
 - Acceptance of Terms of Reference

The Project

Project details

Project title*

Project summary (abstract)*

Keywords*

Proposal for civilian purposes*

Is any part of the project confidential?*

Yes No

It is mandatory to use the most recent Project Scope and Plan template available at https://eurohpc-ju.europa.eu/eurohpc-ju-call-proposals-regular-access-mode-0_en
The template can be found under the Documents section.

Project Scope and Plan document upload*

Click to choose a pdf

Browse

The file must be in a PDF format

Research fields

Research field title*

Research field share (%)*

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

+ Research fields

Deadline

03/11/2023 12:00:00 PM

Documents

Delete Application

Submission details

Please tick the box in the case you are submitting the same project that has already been submitted to a previous cut-off but was not awarded. The proposal will be considered as a Re-submission.

Submission type*

First submission

Continuation

Re-submission

Save Changes

Next

Select the track that you wish to submit your proposal to. Please note that in order to apply for the Industry or Public Administration Access Tracks, the PI must be affiliated with Industry or the Public Sector respectively.

Access Track selection*

Scientific Access Track

Industry Access Track

Public Administration Access Track

REGULAR ACCESS ÇAĞRISI: Çevrim İçi Form



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Principal Investigator

Personal information

Gender*

This is mandatory.

Title*

This is mandatory.

First (given) name*

This is mandatory.

Last (family) name*

This is mandatory.

Initials

Date of birth*

This is mandatory.

E-mail address*

This is mandatory.

Secondary e-mail address

Track record of the PI

CV and publications list upload*

Browse

This is mandatory.

Granted patents and other measures for the relevance of the work

Prior allocation history in EuroHPC, PRACE, national calls, as well as international programs such as INCITE of the US DoE

Participation of team members in other European Commission (EC) actions, such as ERC or Marie Skłodowska-Curie EC grants, etc.

Previous presentations at EuroHPC Summit Week or PRACEdays

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Contact Person

First (given) name*

This is mandatory.

Last (family) name*

This is mandatory.

E-mail address*

This is mandatory.

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Team Members Information

Please insert all the team members that will participate in this research

Team Members

Personal Information

Gender*

This is mandatory.

Title*

This is mandatory.

First (given) name*

This is mandatory.

Last (family) name*

This is mandatory.

Initials

Date of birth*

This is mandatory.

E-mail address*

This is mandatory.

Secondary e-mail address

Nationality*

This is mandatory.

REGULAR ACCESS ÇAĞRISI: Çevrim İçi Form



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Partitions

Please note that it is strongly advised to contact the HPC centre(s) prior to submitting your proposal in order to clarify any uncertainties regarding the systems' architectures, readiness of your codes, conversion factors, data transfer or similar.

Partitions

Partition selection and resources request

Partition name*

Code(s) used*

|

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

IMPORTANT: The resources requests should be requested in node hours. For further information about conversion calculations between node-core hours please consult the Regular Access call page and the corresponding Technical Guidelines.

Jobs

Number of jobs simultaneously*

Wall clock time of a typical job execution (h)*

Checkpoints

Are you able to write checkpoint?*

Yes No

Maximum time between 2 checkpoints (h)*

Partition name*

- Vega CPU
- Vega GPU
- Karolina CPU
- Karolina GPU
- MeluXina CPU
- MeluXina GPU
- Discoverer CPU
- LUMI-C
- LUMI-G
- Leonardo BOOSTER
- MareNostrum5 GPP
- Leonardo DCGP
- MareNostrum5 ACC

EuroHPC Regular Access Teknik Yönergeler

EuroHPC Sistem Raporu (Eylül 2021)

REGULAR ACCESS ÇAĞRISI: Çevrim İçi Form



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Cores/nodes

Minimum # CPU cores*

Average # CPU cores*

Maximum # CPU cores*

of CPU cores used per node

of GPUs used per GPU node

Memory

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

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

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

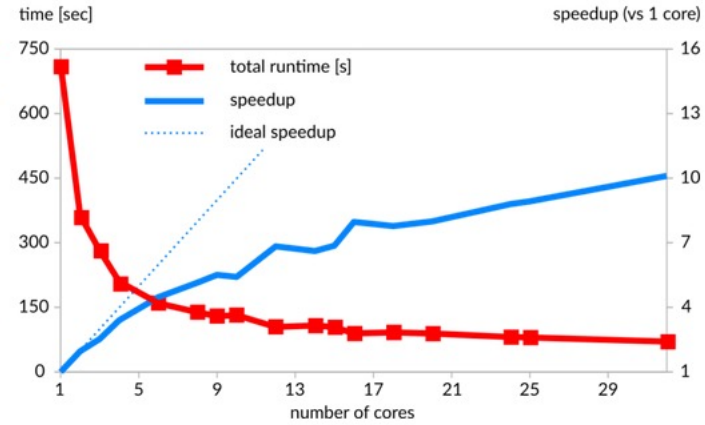
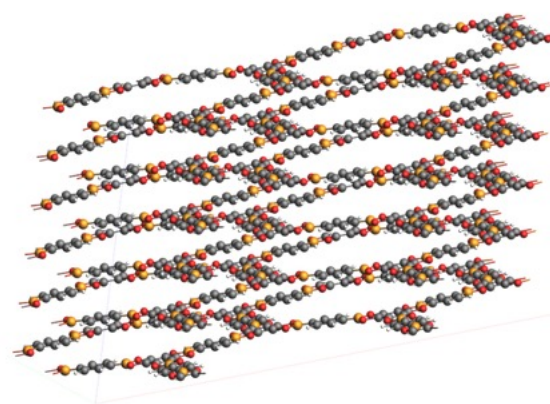
Storage

Maximum amount of SCRATCH needed at a time (TB)*

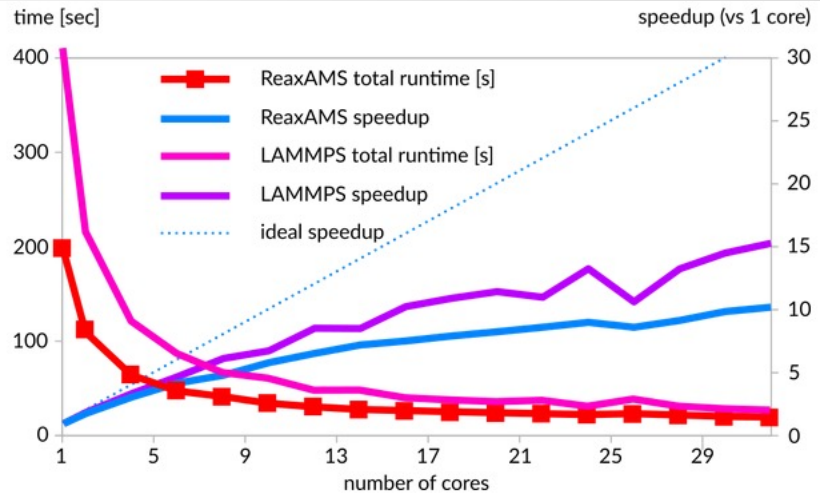
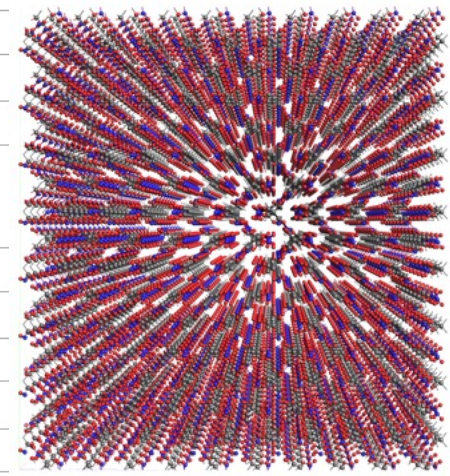
Maximum amount of WORK needed at a time (TB)*

Maximum amount of HOME needed at a time (TB)*

Maximum amount of ARCHIVE needed at a time (TB)*



Scaling SCC-DFTB (matsci-0-3 parameters) single point calculation of a six-layer COF $C_{720}H_{288}B_{144}O_{288}$ (1440 atoms), within a single 32-core node



ReaxAMS 10 fs molecular dynamics simulation (100 steps) of a $C_{5600}H_{8960}N_{4480}O_{13440}$ PETN supercell (32480 atoms) and comparison with LAMMPS

REGULAR ACCESS ÇAĞRISI: Çevrim İçi Form



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Cores/nodes

Minimum # CPU cores*

Average # CPU cores*

Maximum # CPU cores*

of CPU cores used per node

of GPUs used per GPU node

Memory

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

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

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

Storage

Maximum amount of SCRATCH needed at a time (TB)*

Maximum amount of WORK needed at a time (TB)*

Maximum amount of HOME needed at a time (TB)*

Maximum amount of ARCHIVE needed at a time (TB)*

Maximum # files to be stored on SCRATCH (thousands)*

Maximum # files to be stored on WORK (thousands)*

Maximum # files to be stored on HOME (thousands)*

Maximum # files to be stored on ARCHIVE (thousands)*

Total amount of data to transfer to/from (TB)*

Justification of data transfer*

I/O

I/O Strategy*

I/O data trafic R/W per hour

I/O files generated per hour

+ Partitions

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Code Details and Development

The Code Details and Development tab should include the following: description of main algorithms, how they have been implemented and parallelized, and their main performance bottlenecks and the solutions to the performance issues you have considered. For each code that needs to be optimized, please provide the details below. Codes can be added by clicking on the Add code button.

Development of the code(s) description*

Code details

Name and version of the code*

Webpage and other references*

Licensing model*

Contact information of the code developers*

Your connection to the code*

e.g. developer, collaborator to main developers, etc.

+ Code details

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Special Needs

Please specify the needs that are not listed and are specific and necessary for the completion of the project (e.g. data transfer tools, workflow tools, other middleware requirements, dependence on a specific member of local/external staff, funding stream, 3rd party software, outcomes of other projects, etc.)

Special needs description

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Collaboration and Funding

This is a multiselect field. If applicable, you can select multiple funding options and you need to provide a description for each option.

Please mention any additional funding or international collaborations that you are involved in. This will help strengthen your proposal.

Select one or more funding options applicable to the project*

- EC funding
- International collaboration
- National funding
- Other funding

REGULAR ACCESS ÇAĞRISI

Proje Kapsamı ve Planı – Word Dokümanı



Project Scope and Plan – Regular Access

Project name	
Research field	

Principal Investigator (PI)

Title (Dr., Prof., etc.)	
First (given) name	
Last (family) name	
Organisation name	
Department	
Group	
Country	

Co-PIs (same information)

Provide the details of any Co-PIs in the project, including Title, First (given) name, Last (family) name, Organisation, Department, Group and Country.

It is mandatory to include all team members on the online form.

Co-Principal Investigator (Co-PI)

Title (Dr., Prof., etc.)	
First (given) name	
Last (family) name	
Organisation name	
Department	
Group	
Country	

1 Key scientific/societal/technological contribution of the proposal (200 words max.)

Outline the scientific/societal/technological importance of your project, how High Performance Computing (HPC) will help you achieve your goals and what the major expected outcomes are. This section would typically be the same as the abstract of the proposal in the submission form.

<Enter your text here>

2 Detailed proposal information (Maximum 8 pages, graphs and tables included)

The information should be suitable for expert peer review in your discipline. It must also have appropriate information for a broader audience as your proposal will be evaluated by a panel and in parallel with proposals in other disciplines.

2.1 Justification for the importance of the scientific problem and the requested resources (1 page)

Describe the proposed research and the main scientific/technical advances you will achieve with the requested EuroHPC allocation. For industrial applications, proposals should demonstrate the innovation and industrial impact on the specific market and the broader socio-economic impact. For public sector applications, the proposal should demonstrate the innovative aspects of the applications, the expected societal impact, and how the application will contribute to the delivery of quality and efficient public sector services. The justification of the requested resources must be clearly linked to the software performance evaluation (Section 2.6).

<Enter your text here>

2.2 Overview of the project (2 pages)

Describe the motivation, objectives and scientific challenges of the problem. Describe and justify the choice of computational methods. State the advances that will be enabled through the requested EuroHPC Regular Access award (e.g. impact on community paradigms, valuable insights or solving a long-standing challenge, new technology/therapy, etc.). Provide a list of expected outcomes of your proposal and, if relevant, the interdisciplinary value of your proposal.

<Enter your text here>

2.3 Validation, verification, state of the art (1 page)

Please describe the validity of the simulations and predictions made with this proposal. In case you provide references to relevant publications please include here also the key relevant results. Please address issues of reproducibility and highlight the predictive capabilities of your simulations.

2.3.1 Validation & Verification

Please summarize the validation of your model against experiments or other established reference data. Please also provide how the numerical consistency and stability of your computational method has been verified or provide evidence of existing verifications.

<Enter your text here>



2.3.2 Comparison with state of the art

Place the project in the context of competing work. Explain the relative advantages AND drawbacks of your approach.

<Enter your text here>

2.4 Software and Attributes (1 page)

(Please see also **Examples of Performance Reporting** in Section 2.6.2.1). Describe the software that will be used including a discussion of the state of the art in the field. The description should mention:

2.4.1 Software

Please describe all codes you are using in the proposal. Justify your choices and describe alternatives (if any).

<Enter your text here>

2.4.2 Particular libraries

Describe particular libraries required by the production and analysis software, algorithms and numerical techniques employed (e.g. finite element, iterative solver), programming languages. Please specify requirements for compilation or build environment (build system (e.g. cmake, python version), version control system (e.g. git, subversion) etc.).

<Enter your text here>

2.4.3 Parallel programming

Model(s) used (e.g., MPI, OpenMP/Pthreads, CUDA, OpenACC, etc.).

<Enter your text here>

2.4.4 I/O requirements

I/O requirements (e.g. amount, size, bandwidth, etc.) for execution, input files, restart and other output. Describe I/O strategy (number of files, frequency, read/write size) and I/O behaviour of your code during the period of calculations. Please specify the restart overhead, not only for I/O; (e.g. a code may have to perform a costly domain decomposition first).

<Enter your text here>

2.5 Data: Management Plan, Storage, Analysis and Visualization (~1 page)

2.5.1 Data Management Plan covering

Data Management Plan covering both short-term and long-term aspects, including needs for I/O bandwidth, number of files and input/output data volumes. Specify for which system the data will be provided, how long the data must be stored at the computing centre after the termination of the project, how it will be moved from the

centre, and how subsequent analysis will be performed. Specify the availability of both code and data to other researchers, and how this will be handled. EuroHPC should be given credit for all data produced through EuroHPC allocations when publishing, and described in the provenance when depositing to other infrastructures.

<Enter your text here>

2.5.2 Project workflow

Project workflow including the role and timeline of data analysis and visualisation identify where the analysis will be done and any potential bottlenecks in the analysis process. Describe any analysis and/or data reduction tools used.

<Enter your text here>

2.5.3 Software workflow solution

Software workflow solution (e.g. pre- and post-processing scripts that automate run management and analysis) to facilitate this volume of work.

<Enter your text here>

2.5.4 I/O requirements

I/O requirements (e.g. amount, size, bandwidth, etc.) for data analysis and visualisation. Highlight any exceptional I/O needs. Please provide data for (one or several) precise systems that will be simulated.

<Enter your text here>

2.6 Performance of Software (Maximum 2 pages)

2.6.1 Testing of your code on the requested machine

If it is strongly recommended that your production code is tested in the requested machine(s) (see also the text referring to Benchmark Access in the Important Notice at the top of page 1). Please specify the EuroHPC Benchmark Access project (if any) or other projects (previous PRACE Calls, national calls, etc.) used to prepare the Regular Access proposal. If the preparatory host machine is different from the target machine, specify why you think the data is relevant. In the latter case, please report briefly the conversion factor (in terms of ratio of time to solution, flops or requested node hours) from the machine where the preparatory tests were performed to the requested system. Moreover, your proposal must account for all technical constraints and requirements of the targeted machine(s) as documented in the separate Technical Guidelines for Applicants document; failing to do so will significantly increase the risk that your project will be technically rejected.

<Enter your text here>

2.6.2 Quantify the HPC performance of your project

The presented data must be representative of the entire workflow of the project proposed and refer to the main application code you intend for the production work. The software scalability data (see **Examples of Performance Reporting** below) must be used to choose the most efficient job size(s) for the simulations planned in production; the corresponding software performance must be clearly linked to the justification of the

computing resources requested. The Domain Panels will not accept estimates based on related codes and/or data related to parts of your production. All data must refer to the targeted systems in your production runs or a system with comparable size, software stack and with the same architecture, and network (e.g. a project can be accepted on MeluXina GPU if it was benchmarked on another GPU machine with the same NVIDIA A100 GPU). Please coordinate with the centres if in doubt about the portability of your code. Specify that performance results are reported on the basis of one of the following: whole application including I/O; whole application except I/O; kernel only; other (specify). More specifically you must include:

2.6.2.1 Strong and weak scalability

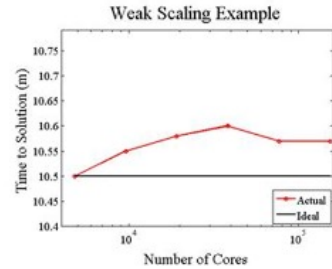
Starting with the minimum size of the computer necessary to run the problem (usually 1 core or 1 node). Justify the minimum size for your scaling if it is larger than 1 core or 1 node (e.g. memory limitations). Please provide a justification in case that either the weak (e.g. study of one particular bio-molecule) or the strong (e.g. study of an ensemble), scalability metric is not considered relevant to your project. See **Examples of Performance Reporting** below for the requested format.

<Enter your text here>

Examples of Performance Reporting. For the weak and strong scaling please start with the minimum and finish with the maximum number of nodes that are suitable for your application. Please mark the number of nodes that you expect to perform the main load of your work. On the Y axis you may use time to solution (scaled or otherwise) or speedup with respect to the minimum number of cores. **The table with the timings is mandatory.**

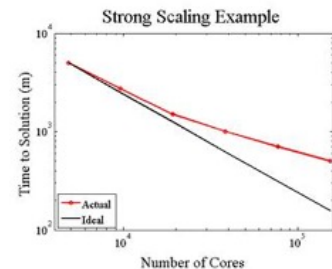
The table should include the speedup and the parallel efficiency. Log/log plots are useful to span many orders of magnitude.

Weak Scaling Example



nProc	Time to Solution (m)	Ideal Time to Solution (m)
4800	10.50	10.50
9600	10.55	10.50
19200	10.58	10.50
38400	10.60	10.50
76800	10.57	10.50
153600	10.57	10.50

Strong Scaling Example



nProc	Time to Solution (m)	Ideal Time to Solution (m)
4800	5000.00	5000.00
9600	2725.00	2500.00
19200	1500.00	1250.00
38400	1000.00	625.00
76800	700.00	312.50
153600	500.00	156.25

Ölçeklenebilirlik (Scalability)

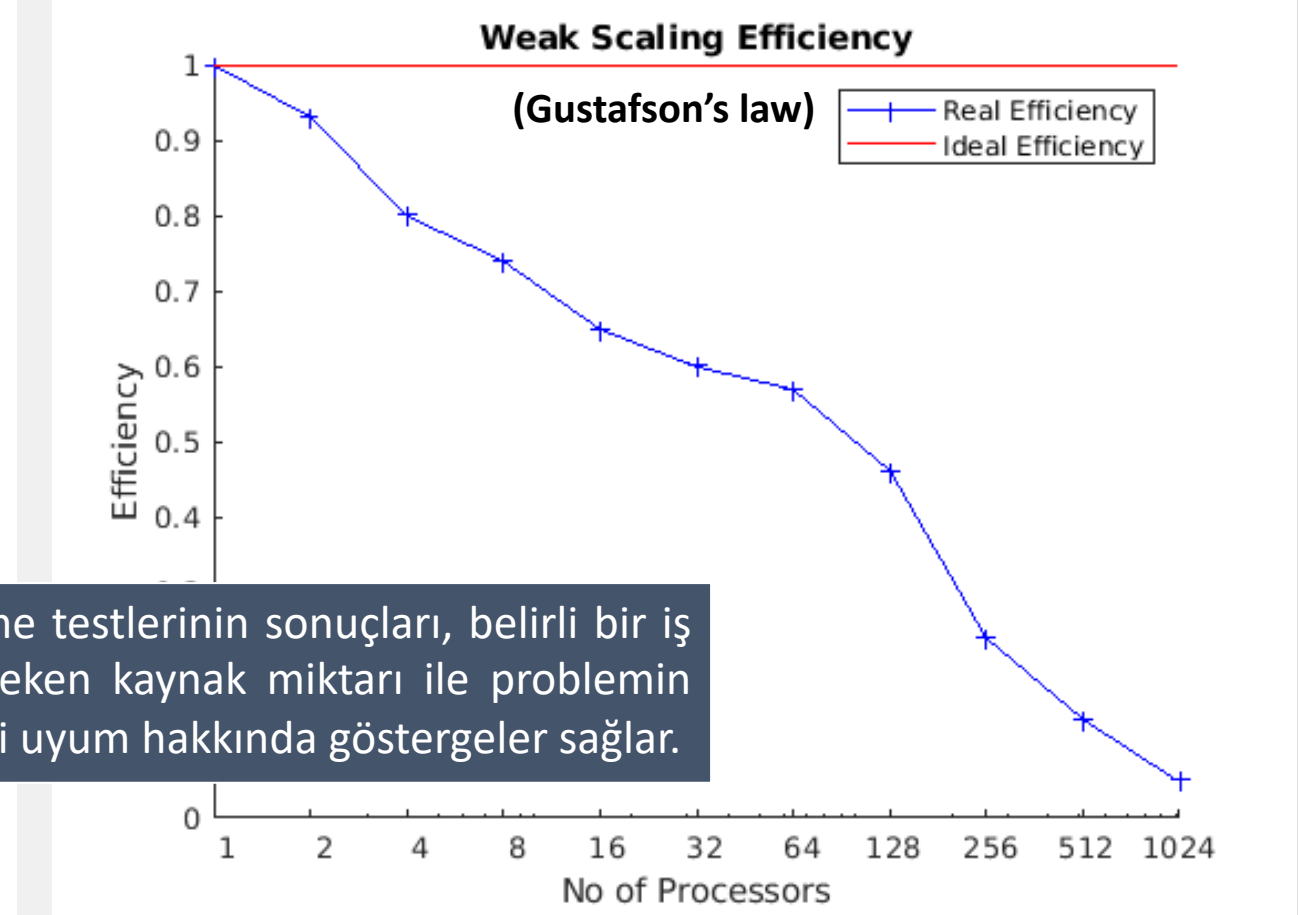
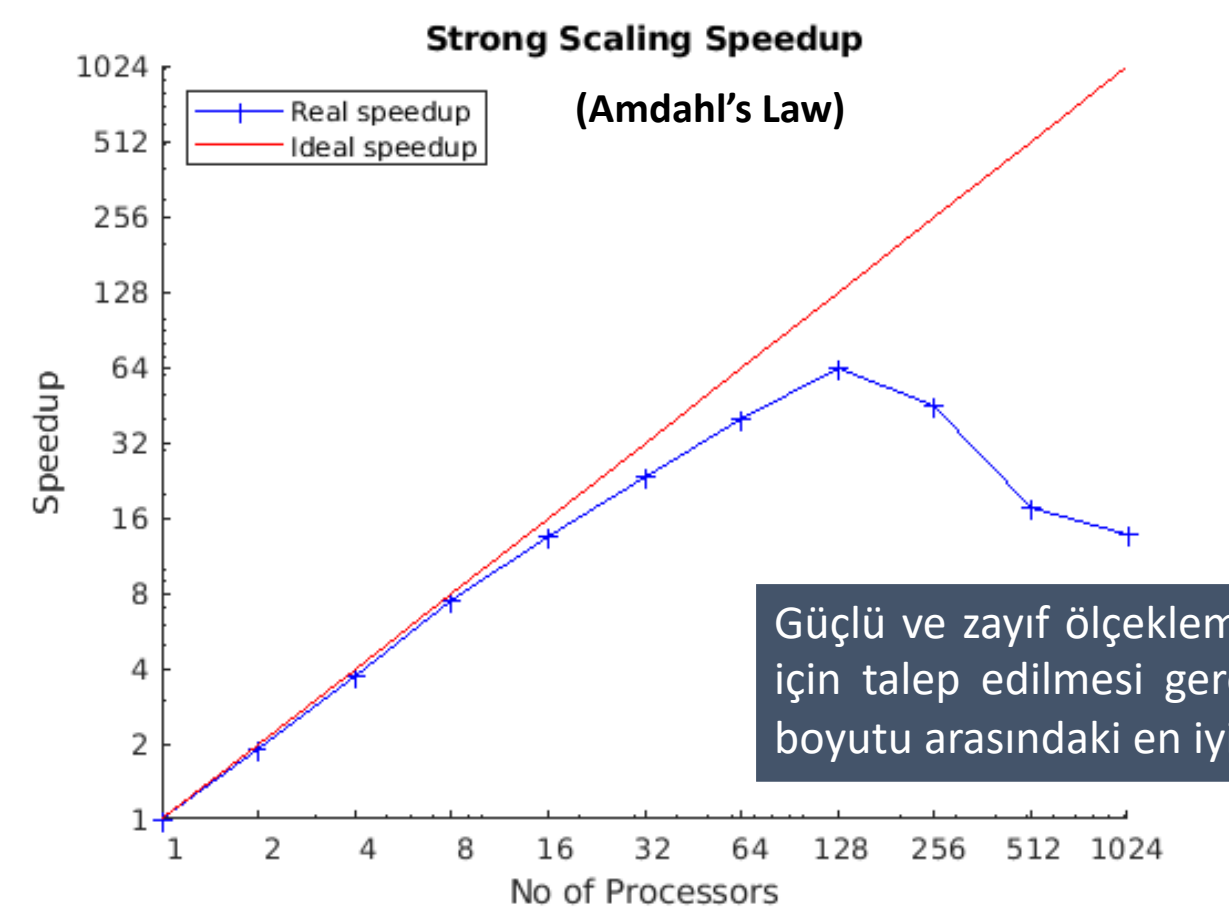
- ❑ Yüksek performanslı bilgi işlem kümeleri ile çok sayıda işlemci kullanarak büyük problemler çözülebilir. Çok sayıda işlemcinin, hesaplama süresini azaltmak için aynı anda çalıştığı paralel hesaplama durumları olabilir.
- ❑ Ölçeklenebilirlik; donanım ve yazılımın, kaynak miktarı arttığında daha fazla hesaplama gücü sağlama yeteneğini belirtmek için kullanılır.
- ❑ YBH kümeleri için ölçeklenebilir olmaları yani daha fazla donanım eklenerek tüm sistemin kapasitesinin orantılı olarak artırılabilmesi önemlidir.

REGULAR ACCESS ÇAĞRISI

Ölçeklenebilirlik: Güçlü ve Zayıf Ölçeklendirme

Strong scaling: İşlemci sayısı artırılırken, problemin boyutu sabit tutulur.

Weak scaling: Hem işlemci sayısı hem de problemin boyutu artırılır.



Güçlü ve zayıf ölçekleme testlerinin sonuçları, belirli bir iş için talep edilmesi gereken kaynak miktarı ile problemin boyutu arasındaki en iyi uyum hakkında göstergeler sağlar.

REGULAR ACCESS ÇAĞRISI

Çözüm Süresi

2.6.2.2 Precision reported

One of: single precision, double precision, mixed precision. Only the precision you use in the simulation is relevant.

<Enter your text here>

2.6.2.3 Time-to-solution

Time-to-solution as normalised/averaged per iteration.

$$T_i^* = \frac{t_i \cdot N_c}{N_e}$$

AND the normalized total time to solution.

$$T_f^* = \frac{t_f \cdot N_c}{N_e}$$

with t_i the time per iteration, t_f the total time to solution, N_c the number of cores and N_e the number of computational elements (size of the problem).

IMPORTANT: Justify the choice of your code (e.g., comparison with existing codes, methods or any other scientifically rigorous argumentation). See also the text referring to Preparatory Access in the Important Notice at the top of Page 1.

<Enter your text here>

2.6.2.4 System scale

One of: results measured on full-scale system, projected from results of smaller system, other (specify).

<Enter your text here>

2.6.2.5 Measurement mechanism

One of: timers, FLOP count, static analysis tool, performance modelling, other (specify).

<Enter your text here>

2.6.2.6 Memory usage

Specify requirements per node or core depending on the size of the problem.

<Enter your text here>

2.6.2.7 OPTIONAL: Percentage of available peak performance

Please collaborate with the Centres on obtaining this information (see also the text referring to Preparatory Access in the Important Notice at the top of Page 1). Alternatively provide code specific metrics for the requested machine (FLOPS, etc.).

<Enter your text here>

- ❑ Hedef sistem ve teklifte bulunulacak sistem birbirinden farklı olduğunda; hazırlık (benchmark) testlerinin yapıldığı makineden istenen sisteme dönüştürme faktörünün (Time to Solution ve Normalized Total Time to Solution) belirtilmesi gerekmektedir.

Time to Solution

$$T_i^* = t_i * N_c / N_e$$

Normalized Total Time to Solution

$$T_f^* = t_f * N_c / N_e$$

- t_i : iterasyon başına süre
- t_f : toplam çözüm süresi
- N_c : çekirdek sayısı
- N_e : hesaplama elemanlarının sayısı (problemin boyutu)

3 Milestones (quarterly basis) (Maximum 1 page)

Goals and milestones should articulate simulation and developmental objectives and be sufficiently detailed to assess the progress of the project for each year of any allocation granted. It is especially important that you provide clear connections between the project's overarching milestones, the planned production simulations, and the compute time expected to be required for these simulations. Please clarify any dependencies of milestones on other milestones. Please ensure that the node hour consumption is regular throughout the allocation or provide a requested schedule after consultation with the centres.

Run Type	Code(s)	No. of runs	No. of nodes	No. of steps per run	No. of cores per node	Time per step(s)	Total node hours
A (init. condition prep.)	Code 1						
B (low resolution)	Code 2						
C (high resolution)	Code 2						
D (post processing)	Code 3						

3.1 Gantt Chart

Provide a Gantt Chart of the simulation plan in production indicating job sizes and scheduling of computing tasks including a communication plan for the results and the strategy and timeline for the dissemination of the results.

<Enter your text here>

4 Personnel and Management Plan (0,5 page)

What personnel are already in place and what are their roles on the project? If applicable, describe (i) personnel that will be hired for the project in the future and their responsibilities and (ii) potential personnel turnover that may occur during the project and a strategy for replacing them. The EuroHPC Regular Access calls welcome proposals from individual PIs or teams of collaborators. Outline the focus of each individual or subgroup and their interrelationships.

It is mandatory to include all team members on the online form.

<Enter your text here>

5 References (Maximum 30)

<Enter your text here>

6 Confidentiality (0,5 page)

- Is any part of the project covered by confidentiality? **yes/no**

If **YES**, specify which aspect is confidential and justify (Maximum 500 words):

- Does your project involve handling of personal data? **yes/no**

If **YES** please confirm to take care of the data controller's responsibilities as described in applicable data protection legislation – and note that you will need to make a data processing agreement with the production site.



EuroHPC Peer-Review
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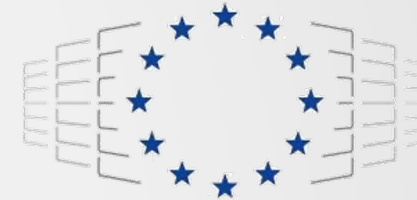


<https://eurocc.truba.gov.tr>

<https://indico.truba.gov.tr>

<https://docs.truba.gov.tr>

Teşekkürler!



EuroHPC
Joint Undertaking

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