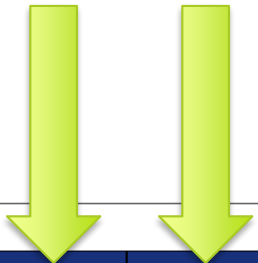# Tutorial:
How to make a EuroHPC application

Preparatory Access Level

Benchmark (Type A)
Development (Type B)

Version 1.3 , 3rd of November 2021

Access Mode	Extreme Scale	Regular	Benchmark	Development	Academic Fast Track	Industry Fast Track
Duration	1y renewable	1y renewable	2 to 3 months	1y renewable	< 6 months	1y renewable
Periodicity	Continuous calls, bi-yearly cut-offs	Continuous call, cut-offs every four months (3 cut-offs per year).	Continuous call, monthly cut-offs	Continuous call, monthly cut-offs	Continuous call, cut-offs ev. 2w/1m	Continuous call, cut-offs ev. 2w/1m
Share of resources	~70% Mostly pre-exascale	20 to 30% Mostly multi-petascale	Few % All systems	Few % All systems	~5% All systems	~5% All systems
Data storage needs	Large storage for medium to long term	Large storage for medium to long term	Limited	Data processing environment and platform		
Accessible to industry	Yes – Open R&D With specific evaluation criteria	Yes – Open R&D With specific track	Yes – Open R&D	Yes – Open R&D	No – use industry Fast Track instead	Exclusively Open R&D
External sc. Peer-review	Yes	Yes	No	No	No / Pre-identified	No / Pre-identified
Tech. assessment	Yes	Yes	Yes	Yes	Yes	Yes
Data Management Plan required	Yes	Yes	No	No	Yes	Yes
Application type	Full application	Full application	Technical application	Technical application	Light request + support documents	Full application
Prerequisite	Benchmark	Benchmark	None	None	Previous allocation or Benchmark	Benchmark
Submission period	> 2 months	> 2 months	N/A	N/A	N/A	N/A
Duration of evaluation process	3 months	2 months	≥1 week <2 weeks	≥1 week <2 weeks	≥2 weeks <1 month	≥2 weeks <1 month

(EuroHPC Access Policy, pp. 16-17)

Version	Comments, What has been added or adjusted
1.0, Oct 6th 2021	First version of screen-dump guide for how to make an application for EuroHPC Benchmark and Development Calls
1.1, Nov 10th 2021	Small adjustments of text
1.2, Nov 17th 2021	No adjustment of content – adjustment of file name
1.3, Dec 3rd 2021	Slide 2: Table with version description included

1. Make a profile (Temporary via PRACE)

https://prace-peer-review.cines.fr/user/login

DeiC

EuroHPC Joint Undertaking

Choose:

PRACE Preparatory Access

(In the application form (=proposal) there is more updated information about EuroHPC terms)

Preparatory access call

- **The Preparatory Access call is open all year round with the following cut-off dates for evaluation:**
  - 44. Monday 1 March 2021 at 11:00:00 CET
  - 45. Tuesday 1 June 2021 at 11:00:00 CEST
  - 46. Wednesday 1 September 2021 at 11:00:00 CEST
  - 47. Wednesday 1 December 2021 at 11:00:00 CET
- **Call announcement:** https://prace-ri.eu/hpc-access/preparatory-access/preparatory-access-open-calls/
- Awarded projects are subject to a **mandatory** final report ; information and template documents are provided at https://prace-ri.eu/hpc-access/preparatory-access/preparatory-access-information-for-awarded-projects/
- Please note that you may *delete* your pending proposals (the **not submitted** ones)
  Pending proposals that are older than one year may be automatically deleted without action from you.

Number:	Proposal name:	Actions

Create a proposal (Preparatory access)

PRACE PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE PEER REVIEW TOOL

Frontpage

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Welcome ………..

It is mandatory to add all collaborators to the proposal. Collaborators are defined as all researchers (including PhD students) who will work on the project and as such will need access to the PRACE systems. Persons not registered as collaborators or Project Investigator (only one per project) will not be given access to the PRACE machines. Please follow the link below to add all collaborators.

Your proposals:

twenty-first call (*closed*)

- **Closing date:** Tuesday 5 May 2020 10:00:00 CEST
- For proposals requesting access as **continuation to previous access,** it is mandatory to present the final report or a progress report **by the date mentioned on page 1 of the Terms of Reference** and on the PRACE website ("PRACE Project Access" ↗). This report should be sent to the Peer Review Team (peer-review@prace-ri.eu ✉), and will be analysed by the Scientific Reviewers and the Access Committee to evaluate the status of on-going access. The template document for this report is available on the PRACE website ("Information for PRACE Awardees"), and it must be carefully respected.
- **https://prace-ri.eu/hpc-access/project-access/project-access-open-calls/** ↗
  PRACE_Call_21_Terms of reference 📄
  - PRACE_Call_21_Technical_Guidelines_for_Applicants 📄
  - PRACE_Call_21_Project_Scope_and_Plan 📄 (.docx)
    Please note that the template of the « Project Scope and Plan template » of the proposal must be carefully respected (Headings, Length of Paragraphs, Tables and Figures). Proposals that do not follow the template or that are incomplete cannot be considered for peer-review.
  - ERC Peer Review Evaluation Panels 📄

Number:	Proposal name:	Technical assessment	Scientific assessment *review #x : score*	Actions

Preparatory access call

- **The Preparatory Access call is open all year round with the following cut-off dates for evaluation:**
  - 44. Monday 1 March 2021 at 11:00:00 CET
  - 45. Tuesday 1 June 2021 at 11:00:00 CEST
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  - 47. Wednesday 1 December 2021 at 11:00:00 CET

EuroHPC:

Type A, Benchmark Access

Type B, Development Access

PARTNERSHIP FOR ADVANCED COMPUTING IN EUROPE

PRACE PEER REVIEW TOOL

Frontpage > New proposal for the Preparatory access call

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New proposal for the Preparatory access call

You will be able to create your proposal after this step. Please provide the mandatory information below (you will be able to change this later).

- Type of proposal:

  - ○ **A – Code scalability testing**
  - ○ **B – Code development and optimization by applicant (without PRACE support)**
  - ○ ~~C – Code development with support from PRACE experts~~
  - ○ ~~D – Code development, starting on Tier-1 system with support from PRACE experts~~

- Research field:

  - ○ **Economics, Finance and Management**
  - ○ **Linguistics, Cognition and Culture**
  - ○ **Biochemistry, Bioinformatics and Life sciences**
  - ○ **Physiology and Medicine**
  - ○ **Mathematics and Computer Sciences**
  - ○ **Fundamental Physics**
  - ○ **Chemical Sciences and Materials**
  - ○ **Engineering**
  - ○ **Universe Sciences**
  - ○ **Earth System Sciences**
  - ○ **Fundamental Constituents of Matter**

Proceed to the application form

4. Fill Out the Application Form

EuroHPC:
Only Type A
or Type B!

EuroHPC:
Only Type A
or Type B!

General information

Type of proposal: ■ ⦿ **A – Code scalability testing**
Scalability testing to obtain scalability plots which can be used as supporting information when applying to future PRACE project.
*Please fill out parts **1-8** of the application form*

○ **B – Code development and optimization by applicant (without PRACE support)**
*Please fill out parts **1-13** of the application form*

○ ~~C – Code development with support from PRACE experts~~
*Please fill out parts **1-14** of the application form*

○ ~~D – Code development, starting on Tier-1 system with support from PRACE experts~~
*Please fill out parts **1-15** of the application form*

Preferable starting date:

For Type C and D, the preferable starting date should be either one and half or two months after the announced date for evaluation cut-off.

Is this proposal a: ☐ **Continuation of Type D project (only for Type A)**
ID of the previous proposal: 2010PAxxxx

Project name: ■

Research field: ■ Biochemistry, Bioinformatics and Life sciences ⌄

A **Project Investigator (personal data and contact)**

☐ ■ The employment contract of the Project Investigator with the research organisation must be valid to at least 3 months after the end of the allocation period.

Gender:	Female
Title:	Miss
First name:	HPC
Last name:	Hansen
Initials:	
Date of birth: ■	
Nationality:	Danish
e-mail:	HPC@xyz.dk ✉
Phone number:	+4510111111
Fax number:	

To change your personal data go to user profile

B **Project Investigator (organisation and job title)**

Job title: ■
Website:

Organisation name: ■
Department: ■
Group:
Address: ■

Postal code: ■
City: ■
Country: ■ [▼]

Organisation with a Research activity: ■ ○ Yes ○ No
For commercial companies,
• Is the head office of the organisation in Europe? ○ Yes ○ No
• % of R&D activity in Europe as compared to total R&D activity: [   ]

C **Contact person for all correspondence**

Please give your professional e-mail address.
E-mail addresses such as Gmail and Hotmail are not accepted.

Name: ■
E-mail: ■

Requested computer systems ▪

You may choose more than one computer system.

IMPORTANT: Please request resources on more than one system only if your project proposal needs an additional system;
do not request resources on more than one system as alternative(s) to the preferred system.

If requesting resources on more than one system, please justify why, indicating the work that will be carried out on each system ▪

Computing center	Machine
EuroHPC	
IZUM Maribor *Institute of Information Science*	☐ VEGA CPU STANDARD
IZUM Maribor *Institute of Information Science*	☐ VEGA CPU LARGE MEMORY
IZUM Maribor *Institute of Information Science*	☐ VEGA GPU
IT4Innovations *IT4I VSB-TUO*	☐ KAROLINA CPU
IT4Innovations *IT4I VSB-TUO*	☐ KAROLINA GPU
IT4Innovations *IT4I VSB-TUO*	☐ KAROLINA ANALYTICS

At the moment, only two EuroHPC machines are available for these calls: Vega at IZUM Maribor (Slovenia) and Karolina at IT4Innovations (Czech Republic).

PRACE

BSC
Barcelona Supercomputing Center

☐ MARENOSTRUM

CINECA
CINECA

☐ MARCONI100

CSCS
Swiss National Supercomputing Centre

☐ PIZ DAINT

Gauss/HLRS
High Performance Computing Center Stuttgart (HLRS)

☐ HAWK

Gauss/JSC
Juelich

☐ JUWELS BOOSTER

Gauss/JSC
Juelich

☐ JUWELS CLUSTER

Gauss/LRZ
Leibniz-Rechenzentrum

☐ SUPERMUC-NG

GENCI/CEA
Commissariat à l'Énergie Atomique

☐ JOLIOT CURIE - KNL

GENCI/CEA
Commissariat à l'Énergie Atomique

☐ JOLIOT CURIE - ROME

GENCI/CEA
Commissariat à l'Énergie Atomique

☐ JOLIOT CURIE - SKL

- or -

Tier-1 system **(for PA Type D)**
A Tier-1 system will be selected based on your given information

☐ *Tier-1*

Specific Tier-1 system **(for PA Type D)**
Name of the preferred Tier-1 system

PLEASE NOTE that there is **NO** prototype system available for access at this cut-off date.

EuroHPC: Is using the PRACE Pier Review Tool. Therefore, PRACE resources are also listed.

EuroHPC:
Only Type A
or Type B!

1. Summary of the project . *(for Types A, B, C, D)*
To be published in the PRACE website. Maximum 500 words.

EuroHPC: Is using the PRACE platform until otherwise is stated.

2. Scientific case of the project . *(for Types A, B, C, D)*
Explain the scientific case for which you intend to use the code(s). Maximum 500 words.

EuroHPC:
Only Type A
or Type B!

3. Describe the impact of the optimization work proposed. ▪ *(for Types B, C, D. Maximum 250 words)*

Answer ALL the following points:

- Explain how the optimization work proposed will contribute to future Tier-0 projects.
- Is the code widely used?
- Can the code be used for other research projects, with minor modifications?
- Can the code be used in other research fields?
- Would the modification be easy to add to the main release of the software?

EuroHPC:
Only Type A
or Type B!

4. Computer resources requested ▪ *(for Types A, B, C), or expected for Type D*

Total storage required (Gbyte)
(only available during the duration of
the preparatory access project)

Maximum amount of memory per core (Mbyte)

4. Computer resources requested ∎ *(for Types A, B, C), or expected for Type D*

Total storage required (Gbyte)
(only available during the duration of
the preparatory access project)

Maximum amount of memory per core (Mbyte)

5. Please provide the details listed below for the main simulation application ∎ *(for Types A, B, C, D)*

Name and version

Webpage
or other reference

License
If the code is open
source please, fill out
open source for this
query.

6. Describe the main algorithms and how they have been implemented and parallelized ∎
(for Types A, B, C, D ; Maximum 250 words)

EuroHPC:
Only Type A
or Type B!

7. Current and target performance . *(for Types A, B, C, D ; including the points below. Maximum 250 words)*

- Describe the scalability of the application and performance of the application
- What is the target for scalability and performance? (i.e. what performance is needed to reach the envisaged scientific goals)

EuroHPC:
Only Type A
or Type B!

8. Confidentiality . *(for Types A, B, C, D)*

Is any part of the project covered by confidentiality? ○ Yes ◉ No

If YES, please specify which aspect is confidential and justify:

9. Describe the I/O strategy regarding the parameters indicated below . *(for Types A, B, C, D)*

9.a) Is I/O expected to be a bottleneck? *(Maximum 50 words)*

9.c) Frequency and size of data output and input: *(Maximum 50 words)*

9.b) Implementation: I/O libraries, MPI I/O, netcdf, HDF5 or other approaches: *(Maximum 50 words)*

9.d) Number of files and size of each file in a typical production run: *(Maximum 50 words)*

EuroHPC: Only Type A or Type B!

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10. Main performance bottlenecks . *(for Types B, C, D. Maximum 250 words)*

11. Describe possible solutions you have considered to improve the performance of the project .
(for Types B, C, D. Maximum 250 words)

EuroHPC:
Only Type A
or Type B!

12. Describe the application enabling/optimization work that needs to be performed to achieve the target performance .
(for Types B, C, D. Maximum 250 words)

EuroHPC:
Only Type A
or Type B!

13. Which computational performance limitations do you wish to solve with this project? .
(for Types B, C, D. Maximum 250 words)

14. Describe the request plans for work with support from PRACE experts . *(for Type C,D)*

14.a. Describe the level of collaboration with PRACE experts you have planned for and how much effort (person months) have you reserved for this?

Specify a rough estimate for the amount of person months this work entails :

14.b. Describe the optimization work you expect to be done with the support of a PRACE expert for your project

14.c. Please specify the amount of PRACE experts person months required to support your project (1-6 PMs):

Not for EuroHPC!

15. Please describe your hardware architecture currently in use to allow an optimal selection of a feasible Tier-1 system . (for Type D only, Maximum 250 words)

Not for EuroHPC!

☐ ▪ I certify that I have read, understand, accept and comply with the terms and conditions of *PRACE Preparatory access – Call for proposals* available at
https://prace-ri.eu/hpc-access/preparatory-access/preparatory-access-open-calls/ ↗

Those terms include the ones reproduced hereinafter for the sake of clarity:

The users commit to:

a. Provide to PRACE within the period established in the guide for applicants a final report, using the proper PRACE template, with the results obtained through the access to the PRACE Research Infrastructure, as well as a qualitative feedback on the use of the resources.
b. Acknowledge the role of the HPC Centre and PRACE in all publications which include the results above mentioned. Users shall use the following (or equivalent) wording in such acknowledgement in all such papers and other publications:

« *We acknowledge PRACE for awarding us access to resource [machine name] based in [country] at [site]* »

Where technical support has been received the following additional text should also be used:

« *The support of [name of person/people] from [organisation name], [country] to the technical work is gratefully acknowledged.* »

c. Allow PRACE to publish the mentioned report as of one year from the termination of the allocation period.
d. Commit to collaborate with PRACE, upon its request, in the preparation of dissemination material.
e. The applicant commits to not use the project results for military purposes.

National HPC in DK:
(If used)

https://www.deic.dk/en/Supercomputing/Instructions-and-Guides/Remember-to-acknowledge-the-use-of-national-hpc

A. Add list of collaborators.

After filling in the proposal, in case the researcher wants/needs to add collaborators to their project, they should go to the home page of the Preaparatory Access and select the option as shown.

B. Submit final proposal.

In order to submitt the proposal, researchers should go to **Go to final submission**, as shown.