

## Fact sheet concerning applications for GCS/NIC computing time projects on JUWELS

1. Prospective users can apply for computing time twice a year at defined periods. The dates for the next call can be found on the [GCS website](#).
2. Eligible are scientists employed at universities or research facilities in Germany. Here, the nationality of the applicant ("Principle investigator, PI") is irrelevant. Applicants from Europe but outside of Germany are advised of the possibility to apply at [PRACE](#). The PI of a project must have a proven scientific record (preferably a PhD or comparable degree) and must be able to successfully accomplish the proposed tasks.
3. Projects which will expire in the ending allocation period can be extended in the upcoming allocation period. On-going projects **cannot be extended** in the upcoming call.
4. Applications are accepted online only. Applications via email will not be accepted. The call deadlines are strict deadlines, requests for applying after the call deadline **will be rejected**. Applications that do not use the required templates for the project description and the status report **might be rejected**. The links to the templates are given under point 7 in this document.
5. JUWELS is currently being expanded by the JUWELS Booster Module and will be made available in this call. JUWELS computing power increases sevenfold compared to the previous system and provides a total of 87 PFLOPS to its users. The final specification is given in the table under 6.
6. **Important note:** The effective computing power per core-hour of JUWELS differs for each module. Thus, computing time requirements for more than one module cannot be specified coherently by adding up core-hours over the individual modules. To take this into account, resource requirements for each resource type in core-hours will be converted to floating point operations in units of exaFLOP (EFLOP) based on the theoretical peak performance of the requested module<sup>1</sup>. The project's total demand is given by adding up the requested computing time in EFLOP for all modules. In the electronic questionnaire, computing time requirements have to be specified per resource type either, like previously, in million core-hours (Mcore-h) or in EFLOP. Both units will be converted into each other on the fly and displayed in due consideration of the requested resource types. Nonetheless, resources will be granted, allocated and accounted in core-hours only for each resource type.

Available resources on JUWELS are:

JUWELS (Jülich Wizard for European Leadership Science)		
Resource type	Node Configuration	Available Resources <sup>2</sup>
Cluster Module • CPU	Two Intel Xeon Platinum 8168 "Skylake" (2.7 GHz, 24 cores each, 48 cores/node) <ul style="list-style-type: none"> <li>• 2271 nodes: 96 GB main memory (~2 GB memory/core)</li> <li>• 240 nodes: 192 GB main memory (~4 GB memory/core)</li> </ul>	270 Mcore-h or about 84000 EFLOP per call
Cluster Module • GPU	Two Intel Xeon Gold 6148 "Skylake" (2.4 GHz, 20 cores each, 40 cores/node, 4 NVIDIA V100) <ul style="list-style-type: none"> <li>• 56 nodes: 192 GB main memory (~4 GB/CPU-core)</li> </ul>	7 Mcore-h or about 20500 EFLOP per call
Booster Module	Two AMD EPYC Rome 7402 (2.8 GHz, 24 cores each, 48 cores/node, 4 NVIDIA Ampere A100, 40 GB HBM2e each) <ul style="list-style-type: none"> <li>• 936 nodes: 512 GB main memory (~10 GB memory/core)</li> </ul>	103 Mcore-h or about 615000 EFLOP per call
Remarks		
<p>Please note that the specifications for large-scale projects have been changed. From now on, projects fall into the category "large-scale" if they require at least 2% of the system's annual production in terms of estimated availability. As of now, JUWELS consists of two different modules with different hardware architectures. Thus, the minimal computing time requirements for GCS-LS projects requesting more than one JUWELS resource cannot be coherently specified by use of core-hours but EFLOP are used instead as explained above. The projects' minimal requirements over all requested modules should be at least 45000 EFLOP.</p> <p>Approx. 50 applications were competing for the given resources in the previous call<sup>3</sup>.</p> <p><b>General remark:</b> Proposals requesting 45000 EFLOP and beyond need to apply for a GCS large-scale project (GCS-LS project). For further details about JUWELS, please visit the <a href="#">JUWELS website</a> of JSC.</p> <p><b>Link to apply:</b> <a href="https://jards.gauss-centre.eu/gcshome/application">https://jards.gauss-centre.eu/gcshome/application</a></p>		

<sup>1</sup> Example: 1 million core-hours (Mcore-h) on the JUWELS Cluster Module CPU nodes correspond to about 310 EFLOP, 1 Mcore-h on the Cluster Module GPU nodes to about 3000 EFLOP and 1 Mcore-h on the new JUWELS Booster Module to about 6000 EFLOP. This gives as total computing requirement about 9310 EFLOP. These example values have been rounded for better readability.

<sup>2</sup> The exact conversion factors (core-hour to FLOP in units of EFLOP/Mcore-h) as used in the electronic questionnaire are: 311.04 (Cluster Module CPU), 2976.48 (Cluster Module GPU) and 6012.00 (Booster Module).

<sup>3</sup> Provided to help applicants to estimate how many core-h can be **realistically** requested per application.

7. Please fill out the sections of the online application form observing the following information:
- **Section Application list**  
If you have an extensible project (see point 3. of this fact sheet) and you would like to continue studies on the topic of the project, please extend this project by providing the corresponding project ID and click on EXTEND, otherwise, on NEW.
  - **Section Scientific Objectives**  
Please fill out the point "Other applications for computing time" carefully - incomplete information may lead to a significant cutback of resources or even to the rejection of the proposal. ***Please provide this information in the online form only and not in the project description.***
  - **Section Upload files**  
Please upload your detailed project description in PDF format here. Please ***use the template*** which is available in [Word](#), [LaTeX](#) and [PDF](#) and adhere to the [guidelines](#) given on the GCS webpage. Since the templates may change from call to call make sure to use always the latest version using the links above. Please be aware that the size of the description is limited to ***18 pages (font size 12pt) and 60MB***. Should you apply for a project extension, please also upload the status report (***max. 10 pages, font size 12pt) as a separate file*** (PDF). Please ***use the template*** which is available in [Word](#), [LaTeX](#) and [PDF](#).
  - **Section Finalize**  
After pressing the FINALIZE button you will come back to the application list. Here you can find this application in the list of "finalized applications". Please use the PRINT button for printing the application form, sign the form and send it to the Coordination Office for the Allocation of Computing Time preferred by email (coordination-office@gauss-centre.eu). Sending it ***additionally*** by regular mail ***is not necessary***.

## Collection of relevant links

### ***Call information, guidelines and applications***

Modular Supercomputer JUWELS

[https://www.fz-juelich.de/ias/jsc/EN/Expertise/Supercomputers/JUWELS/JUWELS\\_node.html](https://www.fz-juelich.de/ias/jsc/EN/Expertise/Supercomputers/JUWELS/JUWELS_node.html)

Information about the usage model at JSC

[https://fz-juelich.de/ias/jsc/EN/Expertise/Supercomputers/NewUsageModel/NewUsageModel\\_node.html](https://fz-juelich.de/ias/jsc/EN/Expertise/Supercomputers/NewUsageModel/NewUsageModel_node.html)

What is a data project and how to apply for it?

<https://fz-juelich.de/ias/jsc/EN/Expertise/Supercomputers/NewUsageModel/DataProjects.html>

GCS regular and large-scale application guidelines

<https://www.gauss-centre.eu/for-users/hpc-access/>

GCS regular and large-scale application form

<https://jards.gauss-centre.eu/gcshome/application>

### **Templates for project descriptions**

Word:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-project-application.docx](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-project-application.docx)

LaTeX:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-project-application.tar](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-project-application.tar)

PDF:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-project-application.pdf](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-project-application.pdf)

Templates for status and final reports

Word:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-Report.docx](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-Report.docx)

LaTeX:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-Report.tar](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-Report.tar)

PDF:

[https://www.gauss-centre.eu/fileadmin/user\\_upload/generic\\_fotos/Documentation/GCS-Template-Report.pdf](https://www.gauss-centre.eu/fileadmin/user_upload/generic_fotos/Documentation/GCS-Template-Report.pdf)