Fact sheet on applications for JARA/VSR computing time projects
Important changes with respect to previous calls are marked in *red*

1. Prospective users can apply for computing time twice a year at defined periods of time. The dates for the next call can be found on the website of the JARA partition.

2. Eligible are scientists of the RWTH Aachen and Forschungszentrum Jülich. The principle investigator (PI) of a project must have a proven scientific record (preferable 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 (see section 7. below) might be rejected.*

5. *In the upcoming granting period the old JURECA Cluster Module will be replaced by its successor called JURECA-DC (data centric). For detailed specifications of the JURECA-DC Cluster Module please see the table below. Only researchers of the Forschungszentrum Jülich are eligible to apply for this module. The production start of the new module is currently scheduled for December 2020. Therefore, please allow for a transition period with smaller allocations at the beginning of the next granting period when planning your project. The JURECA Booster Module will continue to be available and will be tightly coupled to the new JURECA-DC Cluster Module.*

6. *Computing time is provided on several supercomputers which can be requested within one computing time proposal. However, the effective computing power per core-hour differs for each system. Thus, computing time requirements for more than one system cannot be specified coherently by adding up core-hours over the individual resources. To take this into account, computing time requirements expressed in units of core-hours for each requested resource will be converted to floating point operations in units of exaFLOP (EFLOP) based on the corresponding theoretical peak performance starting with this call[1]. The project's total demand is given by adding up the requested computing time in EFLOP for all requested resources. In the electronic questionnaire, computing time requirements have to be specified per resource 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 systems and resources per call, for further details see the partition's computers:

CLAIX (Cluster Aix-la-Chapelle)		
Compute section	Node characteristics	Available resources[2]
CLAIX-2016-MPI	2 Intel E5-2650v4 processors "Broadwell", (2.2 GHz, 12 cores each), 24 cores/node with 128 GB main memory (~5 GB main memory/core)	~50 Mcore-h or about 6500 EFLOP
CLAIX-2016-SMP (CLAIX Large Memory)	8 Intel E7-8860v4 processors "Broadwell", (2.2 GHz, 18 cores each), 144 cores/node with 1 TB main memory (~7 GB main memory/core)	~4 Mcore-h or about 500 EFLOP
CLAIX-2018-MPI	2 Intel Xeon Platinum 8160 Processors "SkyLake" (2.1 GHz, 24 cores each), 48 cores/node with 192 GB main memory (~4 GB main memory/core)	~95 Mcore-h or about 23500 EFLOP
CLAIX-2018-GPU	CPU configuration identical to CLAIX-2018-MPI 2 NVIDIA Tesla V100 GPUs per node coupled with NVLINK, 16 GB HBM2 memory per GPU	~4 Mcore-h[3] or about 5500 EFLOP
Remarks		
At least 2.4 million core-hours **have to be requested** per proposal. Applicants requesting less resources must apply for resources on CLAIX via the simplified application process.		

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[1] Example: 1 Mcore-h on the JURECA-DC Cluster Module CPU nodes correspond to about 130 EFLOP, 1 Mcore-h on the Cluster Module GPU nodes to about 2300 EFLOP. This gives as total computing requirement about 2430 EFLOP. These example values have been rounded for better readability.

[2] The exact conversion factors (core-hour to FLOP in units of EFLOP/Mcore-h) as used in the electronic questionnaire are: 126.72 (CLAIX-2016-MPI and SMP), 241.92 (CLAIX-2018-MPI CPU) and 1366.82 (CLAIX-2018-MPI GPU).

[3] Resources on GPU nodes are accounted in core-h of the host CPU.

JURECA-DC (Jülich Research on Exascale Cluster Architectures – Data Centric)		
Resource type	Node characteristics	Available resources[4]
Cluster Module CPU	*2 AMD EPYC Rome 7742 (2.25 GHz, 64 cores each), 128 cores/node with at least 512 GB main memory (~4 GB memory/core)*	*~150 Mcore-h or about 19500 EFLOP*
Cluster Module GPU	*2 AMD EPYC Rome 7742 (2.25 GHz, 64 cores each), 128 cores/node, 512 GB main memory (~4 GB/core) + 4 NVIDIA A100 with 40 GB HBM2e memory per GPU*	*~45 Mcore-h or about 104500 EFLOP*
Booster Module	1 Intel Xeon Phi 7250-F Knights Landing processor (1.4 GHz, 68 cores), 68 cores/node with 96 GB main memory (~1.4 GB main memory/core) + 16 GB MCDRAM HBM	~180 Mcore-h or about 29000 EFLOP[5]
Remarks		
Only researchers of the Forschungszentrum Jülich are eligible to apply for resources on the JURECA-DC Cluster Module (CPU and GPU).		

Application link for all resources: https://application.fz-juelich.de/jara

Please fill out the sections of the online application form considering the following information:

- 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 use the latest versions of the sample documents (project description: Word, LaTeX, PDF, status report: Word, LaTeX, PDF) and observe the guidelines. *You must address comments and questions from the reviewers of your previous proposals in the corresponding **new** section of the status report.* Please be aware that the description is limited to 18 pages (font 12pt) and 60MB, the status report is limited to 10 pages (font 12pt) and also 60MB.
- Section *Finalize*: After pressing the FINALIZE button you will get back to the application list. Here you can find this application in the list of "finalized applications". Please print the application form and, if applicable, the PI agreement, sign it and send it to the Coordination Office for the Allocation of Computing Time preferred by email (coordination-office@fz-juelich.de).

Collection of relevant links

Call information, guidelines and applications
JARA partition
https://www.jara.org/en/research/center-for-simulation-and-data-sciences/jara-partition
Guidelines for applications
https://www.jara.org/en/research/center-for-simulation-and-data-sciences/jara-partition/applying-for-computing-time
HPC systems
https://www.jara.org/en/research/center-for-simulation-and-data-sciences/jara-partition/the-partitions-computers

Templates for project descriptions
Word
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-project-description.docx
LaTeX
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-project-description.zip
PDF
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-project-description.pdf

Templates for status and final reports
Word
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-final-status-report.docx
LaTeX
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-final-status-report.zip
PDF
https://www.jara.org/files/jara/downloads/JARA-CSD/Dokumente%20Partition/JARA-template-final-status-report.pdf

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[4] The exact conversion factors (core-hour to FLOP in units of EFLOP/Mcore-h) as used in the electronic questionnaire are: 129.60 (JURECA-DC Cluster Module CPU), 2323.35 (JURECA-DC Cluster Module GPU) and 161.28 (JURECA Booster Module).

[5] Contains ~100 Mcore-h (about 16000 EFLOP) dedicated to applicants from FZJ.