# Quick Reference Card for
# RWTH Aachen University
Guidelines for the Application, Approval and Allocation
of HPC-Resources at RWTH Aachen University
https://itc.rwth-aachen.de/hpc
document created by https://hpc.dh.nrw

**HPC.NRW**

IT Center | **RWTH**AACHEN UNIVERSITY

## Project Preparation

1. Estimate the needed resources (Core-h, memory, etc.)
   Example Core-h:     One CLAIX 16 compute node (24 cores) for one year (24/7): 0.21 Mio Core-h
                       One CLAIX 18 compute node (48 cores) for one year (24/7): 0.42 Mio Core-h
   Example Memory:     A "typical" node in CLAIX 18 has 192 GB main memory (CLAIX 16: 128 GB).
   In case of any questions, do not hesitate to contact our support servicedesk@itc.rwth-aachen.de or visit our HPC Intro event every March.

2. Select a project category according to the flow graph on the next page.

3. Prepare a project description for your project category:

   - Project title only for **RWTH Thesis** and **RWTH Lecture**
   - Short abstract (1-2 pages) for **RWTH Small** and **PREP**
   - Detailed description (5-10 pages) including details about the used method, algorithms, applications and the code performance for **RWTH Medium** and **BUND**
   - Full description (up to 18 pages) for **JARA**

   Templates can be found here:  http://www.itc.rwth-aachen.de/hpc-project

## Proposal Submission

1. Use the online submission system JARDS https://www.itc.rwth-aachen.de/hpc-project.
2. If the PI is not using a trusted email address (ukaachen, fz-juelich or rwth-aachen domain): Send signed and scanned proposal to: hpc-projects@itc.rwth-aachen.de

## Formal Evaluation

In the formal evaluation the access criteria are verified by members of the IT Center. PI and PC will be contacted if questions or problems show up. This process usually takes up 1-2 day.

## Technical Review

HPC experts at the IT Center will check your proposal for technical feasibility and contact you in case of any problems show up. This process might take up to one week.

## Scientific Review

The scientific evaluation is required for the project categories **RWTH Medium, JARA** and **BUND** only. One to three independent domain scientists from German universities or research facilities will review your project application (single-blind review). This process usually takes 4-6 weeks for the rolling calls (**RWTH Medium** and **BUND**) and up to 10 weeks for calls with fixed deadlines (**JARA**).

## Resource Allocation and Monitoring

1. The RAB/VGG decides about the resources for the project and informs the PI and PC. Since the scientific review process takes some time, **RWTH Medium** and **BUND** projects will get an initial quota after the technical review, which will be increased in case of final approval.

2. Generate HPC accounts, if not done already:

   - External PIs/PCs will receive a coupon, which has to be redeemed in any case.
   - Internal PMs (RWTH, FZJ, UKA) can generate an account by using the RWTH Selfservice: https://itc.rwth-aachen.de/selfservice
   - Internal PCs can invite further external PMs by using the RWTH Partner Manager online portal: https://rwth-aachen.de/partner-manager
   - External PCs can invite further external PMs with the cluster-access online portal: https://www.jards.itc.rwth-aachen.de/cluster-access

3. The PI/PC can add any PM to the project by using the following command:
   `$ member add --name <projXXXX> <userYYYY>`

4. Each PM has to add the following line to the job script: `#SBATCH --account=<projXXXX>`

5. The project accounting information (quota, usage, etc.) can be obtained by the command line tool `r_wlm_usage` by every PM.
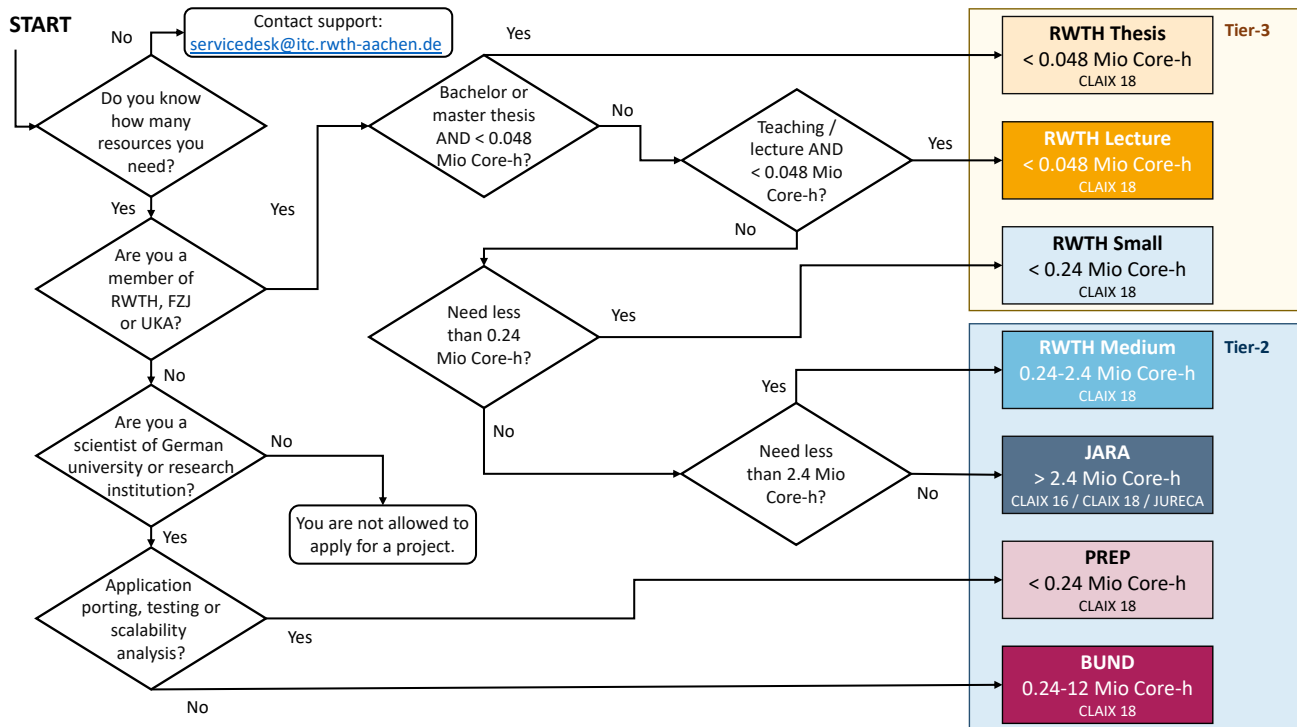
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The consumption of computing time is measured in Core-h. If you need less than 0.024 Mio Core-h per year as a scientist at RWTH Aachen University (students: 0.006 Mio Core-h), there is no need to write an application for compute time, because you can use your personal default quota. Please only submit an application if you need more resources. Furthermore, ensure to apply for an adequate amount of resources which enables you use the compute time over the complete project period (avoid "chain projects"). Use the project selection flow chart below to figure out a fitting project category. Please refer to page 1 to see the complete application and approval process for the selected project category.

**START**

- Do you know how many resources you need? — No → Contact support: servicedesk@itc.rwth-aachen.de
- Are you a member of RWTH, FZJ or UKA? — Yes → Bachelor or master thesis AND < 0.048 Mio Core-h?
  - Yes → **RWTH Thesis** < 0.048 Mio Core-h — CLAIX 18 (Tier-3)
- Bachelor or master thesis AND < 0.048 Mio Core-h? — No → Teaching / lecture AND < 0.048 Mio Core-h?
  - Yes → **RWTH Lecture** < 0.048 Mio Core-h — CLAIX 18
  - No → Need less than 0.24 Mio Core-h?
    - Yes → **RWTH Small** < 0.24 Mio Core-h — CLAIX 18
    - No → Need less than 2.4 Mio Core-h?
      - Yes → **RWTH Medium** 0.24-2.4 Mio Core-h — CLAIX 18 (Tier-2)
      - No → **JARA** > 2.4 Mio Core-h — CLAIX 16 / CLAIX 18 / JURECA
- Are you a member of RWTH, FZJ or UKA? — No → Are you a scientist of German university or research institution?
  - No → You are not allowed to apply for a project.
  - Yes → Application porting, testing or scalability analysis?
    - Yes → **PREP** < 0.24 Mio Core-h — CLAIX 18
    - No → **BUND** 0.24-12 Mio Core-h — CLAIX 18

# Glossary of Terms and Definitions

**Core-h**  A Core-Hour (Core-h) is a unit used for the accounting of compute cluster resources. One core-hour equals one CPU core being used for the duration of one hour of execution time. The latter is always measured as the elapsed wall clock time from the job start to the job finish and not as the actual CPU time. For exclusively scheduled jobs (i.e., jobs using the complete node), the used core-hours usage are always equal to the total number of CPU cores on the allocated nodes times the execution time, regardless of the actual number of node slots allocated to the job.

**PC**  The person to contact (PC) (previously called technical contact,TC) prepares the application and the project description, fills out the (online) forms and manages the computing project technically. After the project has been approved and set up by the IT Center, the PC is responsible for adding each (new) project members (PM) to the project. Typically the PI nominates the PC, but he can as well act as the PC himself. The PC is a project member (PM) as well.

**PI**  The Principal Investigator (PI) has to take responsibility for the project application and the project execution. He/She has to be a senior researcher (a leading scientist with a Dr./PhD degree or a permanent position) who can also act as a reviewer for other submissions of computing project applications or otherwise to nominate and supervise a delegate who is able to thoroughly take part in the reviewing process. He/She has to sign the paper version of the application and he/she is also responsible for any due status or final reports. Furthermore, the PI is responsible for granting access to further project members. He has to make sure that citizens of countries that are subject to the export control policy of the German Federal Government have an additional authorization from the German Federal Office for Economic Affairs and Export Control (BAFA) before they are allowed to use the RWTH Compute Cluster. For lectures, seminars and practica the corresponding lecturer acts as the PI; for thesis works the primary advisor acts as the PI. The PI is a project member (PM) as well.

**PM**  A Project Member (PM) can use the approved compute resources for a specific project.

**RAB/VGG**  The Resource Allocation Board (RAB) (German: Vergabegremium (VGG)) decides about a compute time application based on the technical and/or scientific reviews and the available resources.

**single-blind review**  A review process in which the reviewers know the identity of the authors of the proposal, but the author does not know the identities of the reviewers.