

---

# Project Proposal



TECHNISCHE  
UNIVERSITÄT  
DARMSTADT

---

## Computing time on the Lichtenberg Hochleistungsrechner

---

**Project ID:** 310

**Project class:** SMALL

**Generated:** 2016-08-15 16:25:55

**Contact person:** The Great Admin alias BOFH (Thomas.Opfer@hrz.tu-darmstadt.de)

---

### 1 Administrative Details

---

(Please give the professional e-mail addresses. E-mail addresses such as Gmail and Hotmail are not accepted.)

**Project Title:** Testing the Project Proposal Form

**Project ID of previous project:**

**University/Institution:** Test University

**Department/Institute:** Test Institute

**Federal State of the proposing Institution:** Hessen

---

#### 1.1 Director of the Institute

---

**Title:** Prof.

**First name:** Dals

**Last name:** Nippa

**Street:** Geiranger 1

**Postal code:** 12345

**City:** Test City

**Phone:** 06151 / 16-01

**Email:** Dals.Nippa@tu-darmstadt.de

---

#### 1.2 Principal Investigator (If it is not the Director)

---

**Principal investigator is the director of the institution.**

---

#### 1.3 Project Manager/Main Researcher

---

The Project manager is responsible for the administrative tasks of the project, e.g. distribution and supervision of the granted login's and resources. In case of a SMALL project, this may be a student.

**Title:** Dipl.-Ing.

**First name:** Fritz

**Last name:** Filter

**Street:** Karolinenplatz 5

**Postal code:** 64289

---

---

**City:** Darmstadt  
**Phone:** 06151 / 16-01  
**Email:** Fritz.Filter@tu-darmstadt.de  
**TU-ID:** No

---

#### 1.4 Researchers

---

**No additional researchers.**

If the fields above are not sufficient, please send an email to [hhlr@hrz.tu-darmstadt.de](mailto:hhlr@hrz.tu-darmstadt.de).

---

#### 1.5 Project Partners

---

If project partners from outside the proposing institute are involved, please list them here. Project partners will not be granted access to the Lichtenberg Computer unless you specify them as “Researchers” (in section 1.4), too.

**No project partners.**

If the fields above are not sufficient, please send an email to [hhlr@hrz.tu-darmstadt.de](mailto:hhlr@hrz.tu-darmstadt.de).

---

## 2 Project Details

---

**Research area:** other

**If not in the list, please specify:** Architecture

**Estimated end date of the entire project:** March 2019

**Number of months (max. 12 months per proposal period):** 12

**This project is funded by:** other

---

### 2.1 Abstract

---

The abstract of the project should be written in English, since this text will be published to demonstrate ongoing work on Lichtenberg computer. It should consist 800 to 2500 characters. Typically, this abstract will be published by HRZ on the project web pages (see also 4).

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te feugait nulla facilisi. Lorem ipsum dolor sit amet, consetetur adipiscing elit, sed diam nonumy nibh euismod tincidunt ut laoreet dolore magna

---

---

aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te feugait nulla facilisi.

---

### 3 Technical Description

---

Please have a look at the hardware overview of the HRZ first, and verify that you really need a machine of this size for your project. The CPU time requirement for MIDDLE and LARGE project class must be justified in a detailed project description.

In the following, always count the number of individual processors (cores) that your program will need.

---

#### 3.1 Project class

---

**CPU time (without accelerators):** 178000 core-hours

(This is the total compute time for your project, e.g.: wall clock time for parallel application\*number of cores\*number of runs + testing + etc.)

**Accelerator Type:**

The following accelerator card hours are additional compute hours. For the compute hours we need to account 8 cores per card in average. In case you only want to use accelerator cards (and corresponding host CPUs), please let the above field empty (zero).

**NVIDIA:** 2000 card-hours

**Xeon-PHI:** 1250 card-hours

**Total CPU time:** 204000 core-hours

**Project class:** SMALL

---

#### 3.2 Detailed resource requirements of the project

---

**Base architecture of the estimated core hours above:** AVX 2

**Required CPU architecture for your job:** AVX

(Total for home directories. Change this default value only if it is really necessary! This is an expensive resource. Files are backed up regularly.)

**Home:** 10 GB

Independently from the proposal each user has access to the /work/scratch area (with a default quota of 100 TB). In case your project needs more, please contact us independently via email request.

---

#### 3.3 Resource requirements of a typical single batch run

---

For a typical single run (as well as for a typical interactive run), fill in the expected average values in the production phase of your project (in contrast to developing and debugging phases). Of course, the numbers can only be estimated. Use section 3.6 (Special Requirements) for extraordinary maximum resource requirements.

---

---

**Number of cores:** 128 cores

**Main memory per core:** 2 GB

If you need more than 5 GB main memory per core, you have to provide a special statement (concerning e.g. limited scalability of the code or model with respect to memory, communication, or algorithm bottlenecks; number of available software licences; benchmarking):

**Run time (wall-clock time):** 24 hours

If you really need more than 24 hours, provide the reason and give a statement about checkpointing and restart capabilities of your application:

**Disk space:** 10 GB

---

### 3.4 Software

---

**Scientific main application of your cluster computations:** Polymake

Please check which programming languages, programming models, tools, and libraries you intend to use (multiple checks are possible). You may list other software packages as well. The HRZ will then check if the software is available or can be ported with reasonable effort.

---

#### Programming Languages

---

**The selected language(s) are:** C, C++, Perl

---

#### Programming models for parallelization

---

**The selected programming models are:** MPI, OpenMP

---

#### Tools

---

**The selected tools are:** Vampir, Intel Tracing Tools, TotalView

---

#### Libraries

---

**The selected libraries are:** MKL Intel Math Kernel Library

---

### 3.5 Small Projects

---

The steering committee grants SMALL project accounts with restricted resources before MIDDLE and LARGE projects are finally reviewed. Those test accounts are granted for any project proposal that comes with a sufficiently explanatory abstract and/or detailed description.

However, the risk of useless work in case the project is rejected remains with the project proposer.

The duration of a test project is at most one year.



### 3.6 Special Requirements

---

In case you have special requirements for your project (time-critical execution of the project, software, licenses etc.), you may list them here:

(None.)

---

#### 4 Submission

---

Please check the following conditions affirming that any person entered in 1.1, 1.2, 1.3 and 1.4 or being added later to the project

- 
- will report on the progress of the project and publish the results in adequate form,
  - confirms that, publications arising from this project, the computing time grant from Lichtenberg cluster will be acknowledged and that references to these publications will be sent to HRZ, and for Tubiblio publications, the category “Hochleistungsrechner”; within the list “Divisions” as a sub-category of “Hochschulrechenzentrum” will be added.
  - I have verified that the results which will be achieved by the project are not liable to any EC Dual Use Regulation.
- 

Please note:

Applicants for MIDDLE and LARGE projects are also expected to act as reviewers of other proposals.

Project ID:

310

2016-08-15 16:25:55

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature Professor<sup>1</sup> (Director of the Institute or Principal Investigator)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature Main Researcher

<sup>1</sup> For SMALL and MIDDLE projects, the signature of a postdoc is sufficient if the project manager is a PhD student.