HPC.NRW

HPC.NRW IN A NUTSHELL

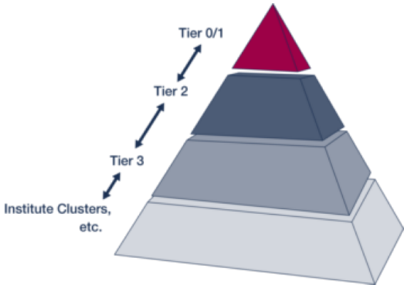
Overview of services

June 2, 2025 |

OVERVIEW OF HPC TIERS

HPC.NRW

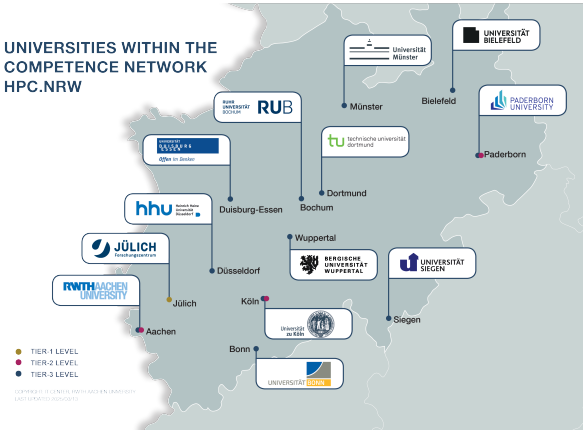
- Tier 0/1
  - Large-scale national supercomputing centers
- Tier 2
  - Regional and national computing centers
  - National user base
- Tier 3
  - Local computing centers (University level)
  - Basic computing capacities



HPC.NRW LOCATIONS

HPC.NRW

- 13 Partners in HPC.NRW
  - 1x Tier 1
    - Jülich
  - 3x Tier 2
    - Aachen, Paderborn, Köln
  - 9x Tier 3
    - Bielefeld, Bochum, Bonn, Duisburg-Essen, Düsseldorf, Dortmund, Münster, Siegen, Wuppertal



HPC.NRW RESOURCES

HPC.NRW

- 13 Partners in HPC.NRW
- Easy and quick access to local resources
- Access to larger compute-time allocations via application procedure
- HPC.NRW assists in finding the right allocation

BENEFITS OF HPC.NRW

HPC.NRW

- Extending pool of expertise of local support teams
- Joint support with contact to remote support teams
- Intensive support (longer-term) projects for users
  - Topics: Software Engineering, Parallelization, Performance, Correctness, AI, ...
  - Contact helpdesk@hpc.nrw
- Joint training program
  - Training workshops
    - C++, MATLAB, MPI, OpenMP, ...
  - Self-paced tutorials
  - HPC documentation at: `https://hpc-wiki.info/`

SUPPORT FOCUS AREAS

HPC.NRW

- Performance & Correctness
  - Training in use of tools
  - Consulting in examining performance data
  - Consulting in optimization efforts
  - ...
- Artificial Intelligence
  - Training is use of frameworks and applications
  - Consulting in integrating AI into HPC workflow
  - Consulting in optimizing AI pipeline on HPC resources
  - ...

SUPPORT EXAMPLES

Aachen A widely used code with a hybrid parallelization-implementation of MPI and OpenMP was further optimized. The optimization consisted of a better workload distribution, which resulted in an improved run time of 60%.

Bielefeld Support for the parallelization of Python code for a master thesis. This way the thesis could be finished on time while utilizing the computing capacities of the cluster.

Dortmund A user from a field without previous HPC experience wanted to run her numerical evaluations on the local cluster. HPC.NRW advised her regarding basics of HPC and helped to optimize her evaluations.

CONTACT US

HPC.NRW

Contact Info (VCard)

Weblink to more information