

Aims

In order to address the scientific computing and the rising demand for processing large volumes of data in research, teaching and studies, a new state-wide strategy “bwHPC” for High Performance Computing (HPC) has been implemented for the state of Baden-Württemberg. This concept not only allows for the advancement of HPC at all levels, but also Data Intensive Computing DIC and associated Large Scale Scientific Data Management (LS²DM), both of which become more important in recent years under the keyword “Big Data”.

The accompanying state-wide project “bwHPC-S5” coordinates federal support for the bwHPC users and all associated provisions and activities. The project bwHPC-S5 is funded by the Ministry of Science, Research and Arts of Baden-Württemberg (MWK). As the connecting body between scientists and HPC systems, bwHPC-S5 creates synergies for the development of state-wide user support. The formation of professional competence centers concentrates and focuses the expertise and helps to embed the scientific communities into the HPC, DIC and LS²DM world.

bwHPC-S5 extends the federal service management established in previous projects to include the acquisition, processing, storage and archiving of large scientific datasets. There is also a coordinated training program for the topics HPC, DIC and LS²DM.


In this framework, new technologies can be discussed with users and their assessment can be coordinated state-wide. The findings of these processes can then be merged into the current operations and procedures in a timely fashion.

Project Partners

 Hochschule Esslingen
University of Applied Sciences



Contact

 www.bwHPC.de
office@bwHPC.de

 Projektleitung@bwHPC-C5.de

Project management:
Steinbuch Centre for Computing
Karlsruhe Institute of Technology (KIT)
Communication and Information Center (kiz)
Ulm University



Scientific Simulation and Storage Support Services

Concentrating competences and support for High Performance Computing in Baden-Württemberg



A project to aid the concerted high performance computing efforts of the universities of Baden-Württemberg (HPC), Data Intensive Computing (DIC), and Large Scale Scientific Data Management (LS²DM)

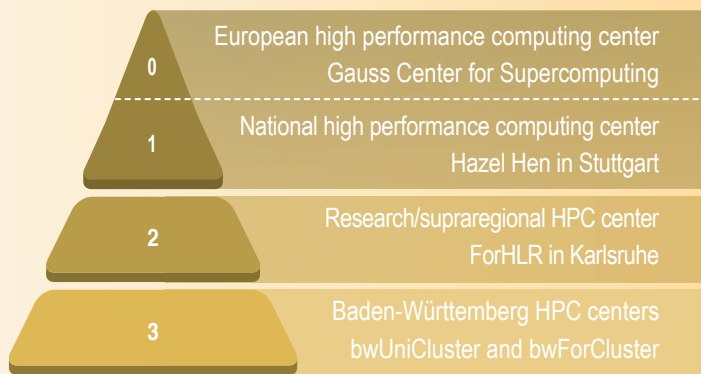
bwHPC-S5

The bwHPC-S5 project bundles professional competences in High Performance Computing (HPC), Data Intensive Computing (DIC) und Large-Scale Scientific Data Management (LS²DM). It provides scientists with a starting point for using these services.



HPC and Data Storage Systems for any demand

State-of-the-art HPC and data storage systems covering all performance levels are available for researchers in Baden-Württemberg. They are also suitable for DIC applications. The compute clusters are classified in the form of “tier levels” ranging from 3 to 0. The levels reflect the increasing compute capacities of such systems, which are associated with a rising degree of parallelization of the simulation codes and quantity the processed data.



The bwUniCluster and the bwForClusters, funded by the state of Baden-Württemberg and the German Research Society (DFG), respectively, represent the base of the tier level pyramid.

In order to ensure a high degree of efficiency, these clusters were tailored towards the needs of particular scientific communities and their specific applications.



Services

bwHPC-S5 offers a comprehensive and demand-oriented service for users in Baden-Württemberg for topics around the existing HPC, DIC and LS²DM systems, e.g.:

- support for new users entering the HPC systems of tier level 3,
- support for parallelizing their code and to traverse to higher tier levels,
- support for data intensive computing (DIC) and for the management of extensive scientific data (LS²DM),
- an HPC, DIC und LS²DM training program with courses coordinated state-wide,
- technical documentation and best practice guides for most efficient usage of the HPC resources,
- provision of development tools and scientific software on the HPC systems,
- a state-wide support portal or users of the HPC systems.



Scientific field-specific HPC Competence Centers, DIC and LS²DM Competence Centers

The bwHPC-S5 project offers the aid of Competence centers consisting of expert teams from across the universities of Baden-Württemberg in the fields of HPC, DIC and LS²DM. In these centers, the available state-wide expertise for user support in selected research areas is bundled and concentrated. Consequently, the advisory foundation for the diverse scientific peer groups is strengthened and enlarged.



Further information is available at the project website www.bwHPC.de with links to:

- technical documentation and best practice guides, usage of the HPC resources,
- access procedures, installed software and status of the clusters and data storage systems,
- information on the state-wide course program,
- results of the bwHPC-S5 project,
- details on further tasks and responsibilities of bwHPC-S5.