

bwHPC and bwHPC-S5

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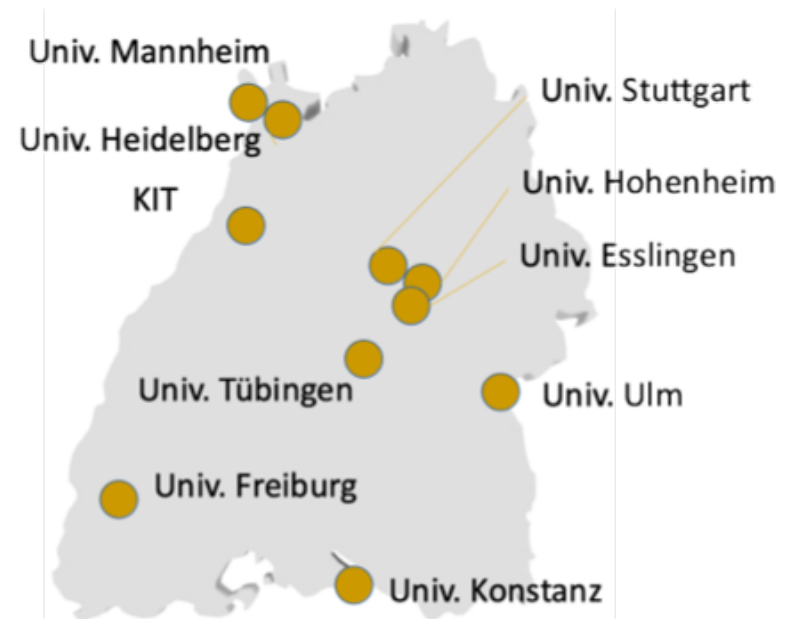
In a nutshell (1)

- bwHPC = **H**igh **P**erformance **C**omputing (HPC),
Data **I**ntensive **C**omputing (DIC) and
Large **S**cale **S**cientific **D**ata **M**anagement (LS2DM)
in **B**aden-**W**ürttemberg
= *bw HPC ~~DIC~~ LS2DM*

= **Implementation strategy**



Members:

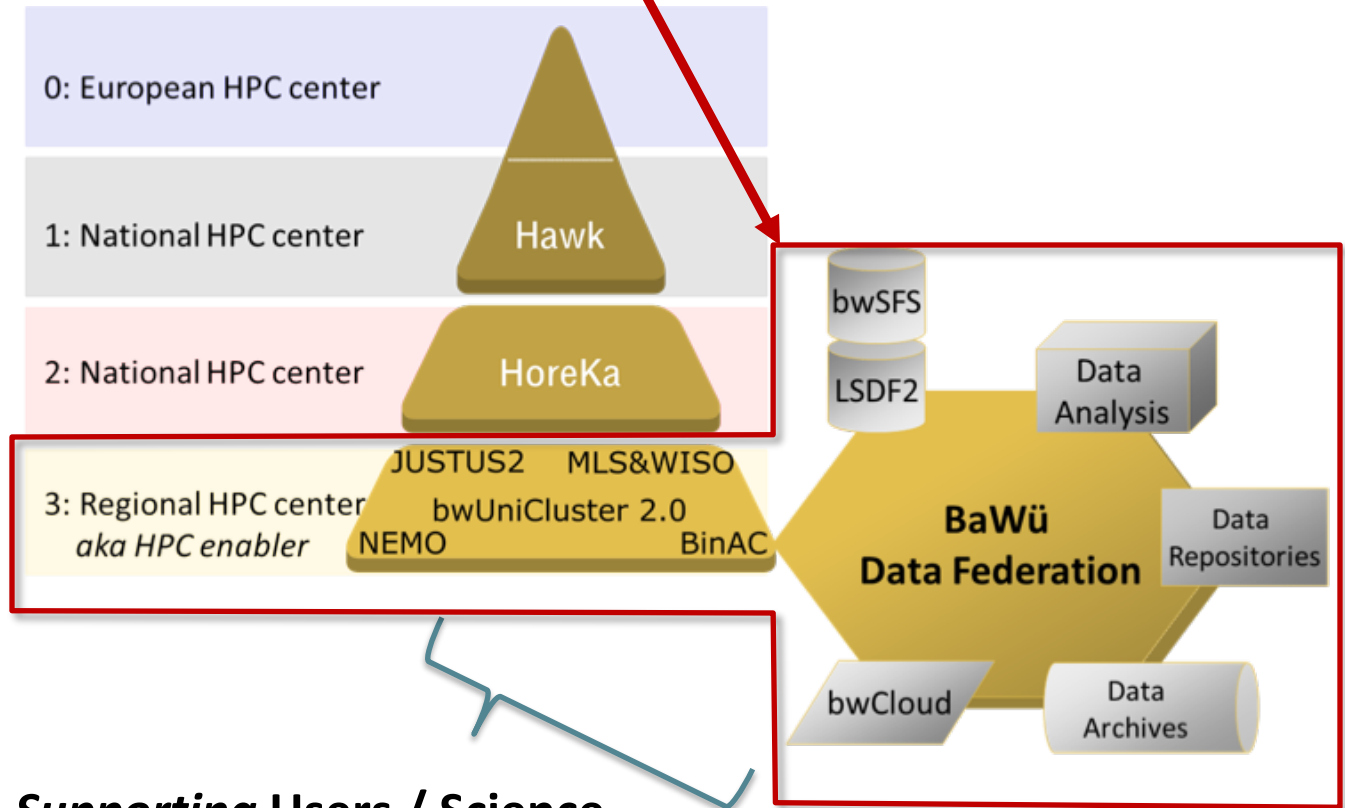


In a nutshell (2)

■ bwHPC =

Implementation strategy concerning:

Advancing IT infrastructure & services:

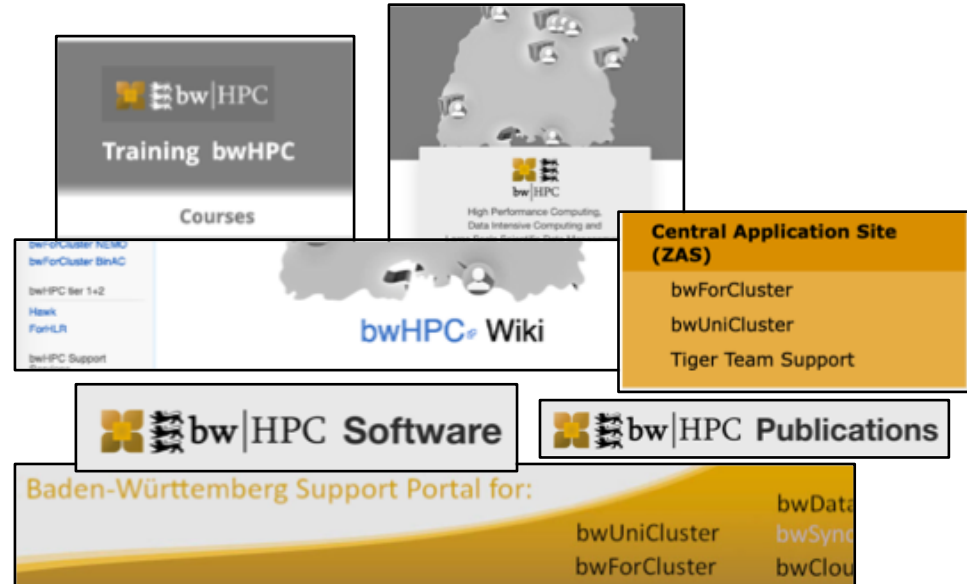


Supporting Users / Science
by projects

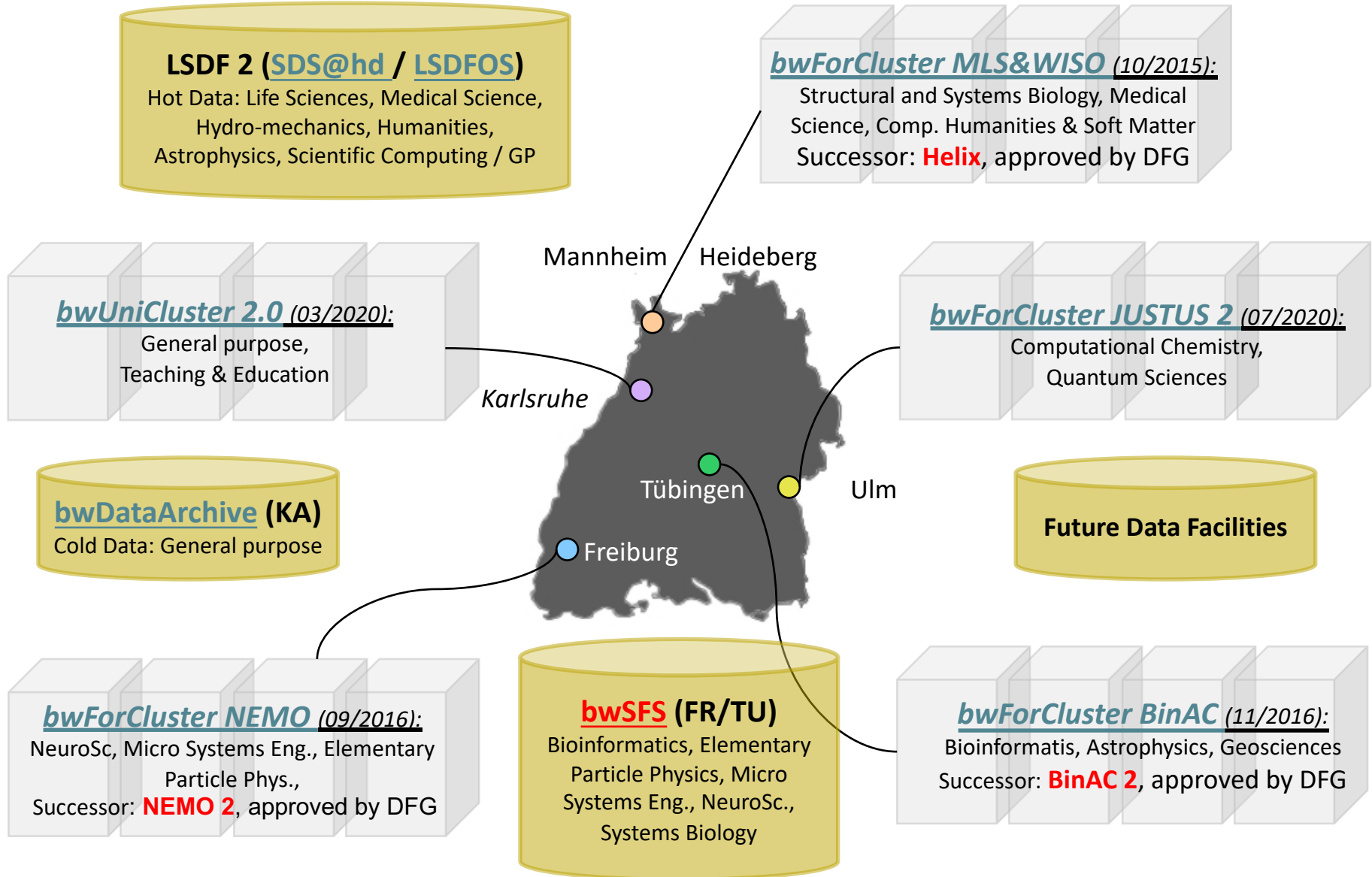
In a nutshell (3)

- bwHPC-S5 = Supporting users & Bridging science and *bwHPC* IT services
- = Scientific Simulation and Storage Support Services
- = state project in 3 phases (2018 – 2025), currently in the 2nd

= bwHPC competence centers = portals & services



HPC/Storage: Status & Outlook



Federated Science Support (1)

Key instruments:

bwHPC competence centers

- Linking scientific communities and HPC, Data storage facilities, Science Data Centers, and NFDIs
- 7 centers + 1 “cross-sectional” team
- to coordinate/provide, e.g.:

Tiger Team projects:

<https://zas.bwhpc.de/shib/call4tt.php>

since 2013: 100+ projects

- ☐ Porting of applications to bwUniCluster/bwForCluster
- ☐ Optimization of batch job scripts
- ☐ Parallelization of sequential parts of code
- ☐ Build configuration
- ☐ Usage/Linkage of performance-optimized libraries
- ☐ Implementation and optimization of workflows
- ☐ Checkpointing/restart functions of applications
- ☐ Implementation and optimization of data management
- ☐ I/O performance optimization

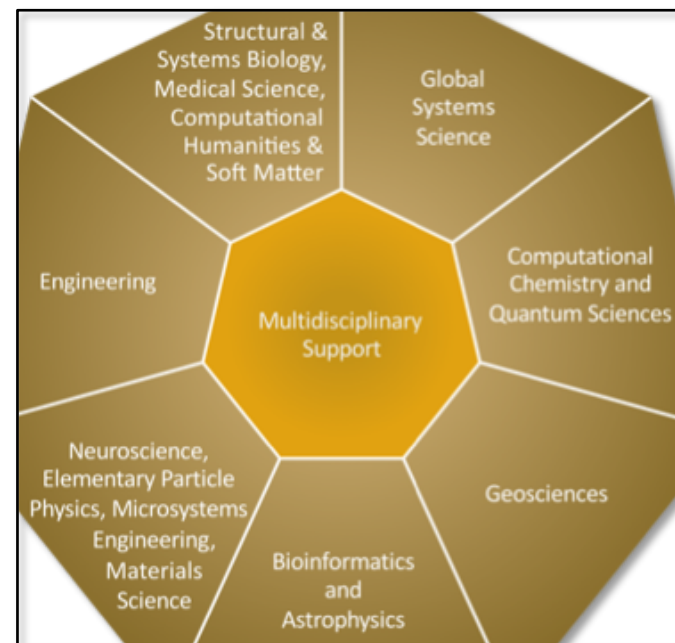
bwHPC Wiki:

wiki.bwhpc.de

165+ user guides,
65 authors



bwHPC® Wiki



Software provisioning:

<https://www.bwhpc.de/software.php>

750+ different modules of over
210 SW packages

 bw|HPC Software

The bwHPC team provides and maintains software ranging from scientific (commercial) applications over multi-performance tools.

Search available software on bwUniCluster 2.0, bwForCluster JUSTUS 2, bwForCluster MSL&NISO, bwForCluster NE (extracted @ 2021-11-07 23:01)

Federated Science Support (2)

Key instruments (cont.):

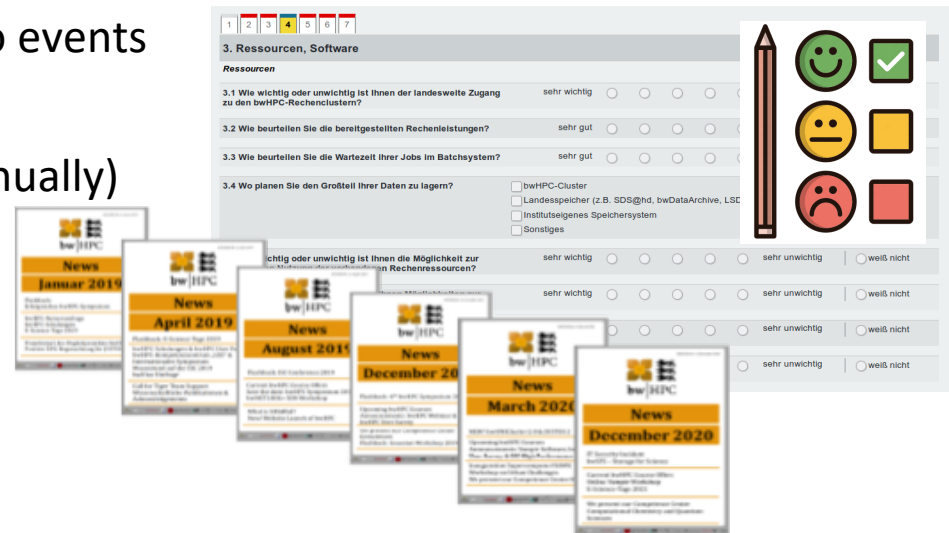
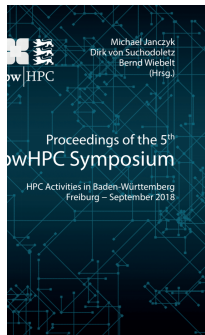
Training

- Coordination and planning of training courses (training.bwhpc.de)
- Develop new course modules f. web seminars, e-learning



Public Relations

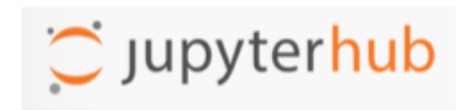
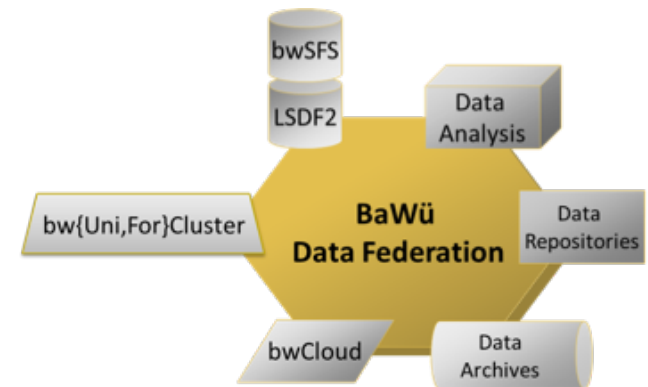
- www.bwhpc.de, newsletters, flyers, info events
- [List publications](#) (+1600)
- bwHPC symposium, bwHPC surveys (annually)




Under the „hood“ activities

Federated HPC & Data Infrastructure

- Defining policies & operating models, coordinate operations
- Aiding procurement processes
- Technology evaluation
 - + prototyping to enhance existing infrastructure
- Optimization of:
 - e.g. job submit, scheduling & reporting, data transfers, installation framework, software stack
 - basic services, e.g. trouble ticket system, central proposal site, bwHPC wiki, information portal ...



Acknowledgement / Funding

-  Ministry of Science, Research and the Arts Baden-Württemberg



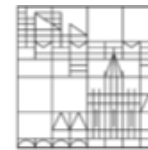
- All contributors and members of bwHPC-S5:

- Uni Ulm
- Uni Konstanz
- Uni Freiburg
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- HS Esslingen
- Uni Hohenheim
- Uni Tübingen
- Uni Mannheim
- Uni Heidelberg
- KIT



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Thank you for your attention!

? Questions ?

