bwForTreff
bwHPC user meeting

bwHPC Competence Center MLS&WISO
Universitätsrechenzentrum Heidelberg
Rechenzentrum der Universität Mannheim
What is bwForTreff?

**Participants**
- Users of bwHPC systems in Heidelberg and Mannheim
- Students and scientists interested in HPC

**Scope**
- Introduction to bwHPC
- Status of bwHPC clusters
- Introduction of new bwHPC systems
More offers for HPC Users

**HPC Courses**
- Duration: 1/2 day up to 1 week
- Courses from our bwHPC partners in Baden-Württemberg
- Courses in Heidelberg and Mannheim. Plans for 2015:
  - Linux for HPC, HPC data management
  - Parallel R, Parallel Java, GASP

**HPC User Contributions**
- bwHPC Symposium once a year
- Participate with a talk or a poster
- Meet other HPC users from Baden-Württemberg
## bwForTreff 12.11.2014 - Agenda

<table>
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<th>Time</th>
<th>Topic</th>
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<tr>
<td>16:15</td>
<td>Introduction bwHPC (H. Kredel, MA)</td>
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<td>16:45</td>
<td>Introduction bwUniCluster (S. Richling, HD)</td>
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<td>17:30</td>
<td>Discussion</td>
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<td>18:00</td>
<td>End</td>
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bwHPC and bwHPC-C5
What is bwHPC/bwHPC-C5?

bw = Baden-Würtemberg

bwHPC = Strategy for high performance computing in BW for 2013 to 2018 (in particular for Tier 3)

bwHPC-C5 = Federated user and IT support activities for bwHPC
bwHPC: Tier 3 (2013-2018)

KA: bwUniCluster

MA/HD:
bwForCluster MLS&WISO

TU:
bwForCluster BinAC

UL:
bwForCluster TheoChem

FR:
bwForCluster NME
bwHPC - covered research areas

- Economy and social science
- Molecular life science
- General purpose, Teaching
- Bioinformatics
- Astrophysics
- Neurosciences
- Microsystems engineering
- Theoretical chemistry
- Elementary particle physics
- Karlsruhe
- Mannheim
- Heidelberg
- Tübingen
- Freiburg
- Ulm
bwUniCluster:

- Uni = „universal“ or „University“
- Financed by Baden-Württemberg's ministry of science, research and arts and the shareholders:
  - Freiburg, Tübingen, KIT, Heidelberg, Ulm, Hohenheim, Konstanz, Mannheim, Stuttgart

Usage:

- Free of charge
- General purpose, teaching & education
- Technical computing (sequential & weak parallel) & parallel computing

Access / limitations:

- For all members of shareholder's university
- Quota and computation share based on university's share
Federated HPC@Tier3 (2)

bwForCluster:
- For = „Forschung“ (research)
- Financed by German Research Society (DFG) and Baden-Württemberg's ministry of science, research and arts

Access:
- All university members in Baden-Württemberg
- For science communities according to DFG proposal

Usage, limitations:
- Free of charge
- Access only to bwForCluster matching users field of research
- Access requires approval of compute proposal
What is bwHPC-C5?

- C5 = Coordinated compute cluster competence centers
- Federated user support and IT services activities for bwHPC

For User:
- Send your support requests to competence centers (CC)
  - CC are not local, but distributed over whole BW
  - CC are community specific

For BW:
- Bridging Science & HPC
- Bridging HPC tiers
- Embedding services
bwHPC-C5: Location of project partners

- Uni Heidelberg
- Uni Mannheim
- KIT
- Uni Stuttgart
- HTF Stuttgart
- Uni Hohenheim
- HS Esslingen
- Uni Tübingen
- Uni Ulm
- Uni Freiburg
- Uni Konstanz
bwHPC-C5: Federated science support

- **HPC competence centers**
  - Formation of a HPC expert pool (related to field of research and knowledge in parallel software development)
  - Coordination of tiger team activities (high level support teams)
  - Buildup of a best practice repository

- **Coordination of teaching activities**
  - Evaluation of courses
  - Generate offline and online material (eLearning, MOOC)

- **Cluster Innovations**
  - New Technology: Accelerators etc.
  - HPC virtualization, Compute cloud
  - Innovative cluster access, pre- and post-processing tools
bwHPC-C5: What kind of support?

- Information seminars, hands-on, HPC specific workshops
- Documentation + best practices repository [www.bwhpc-c5.de/wiki](http://www.bwhpc-c5.de/wiki)
- Providing/maintaining/developing:
  - simplified access to all bwHPC resources
  - software portfolio
  - cluster independent & unified user environment
  - tools for data management
  - trouble ticket system
  - cluster information system
- Migration support:
  - code adaptation, e.g. MPI or OpenMP parallelisation
  - code porting (from desktop or old HPC clusters)
  - to tier 2 and 1
Status bwHPC (and bwGRiD)

- **bwHPC**
  - **BwCluster (Tier 3)**
    - bwUniCluster: available since Q1/2014
    - bwForCluster BinAC and MNE: in 2015/2016
  - **ForHLR (Tier 2):** open for project proposals
  - bwFileStorage: open since 12/2013

- **bwGRiD**
  - **Cluster:**
    - Stuttgart, Karlsruhe and Ulm already offline
    - Freiburg will close in December 2014
    - Heidelberg/Mannheim will close 2015 (running without support)
    - Tübingen and Esslingen will close 2015 or later
  - **Storage:** closed in 12/2013