BioDATEN – Provider's perspective in the NFDI

3rd NFDI Community Workshop in Munich (10/02/20)
Services for Research Data Management in Neuroscience

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Universities of Freiburg, Kaiserslautern, Tübingen, …

FZ Jülich, …

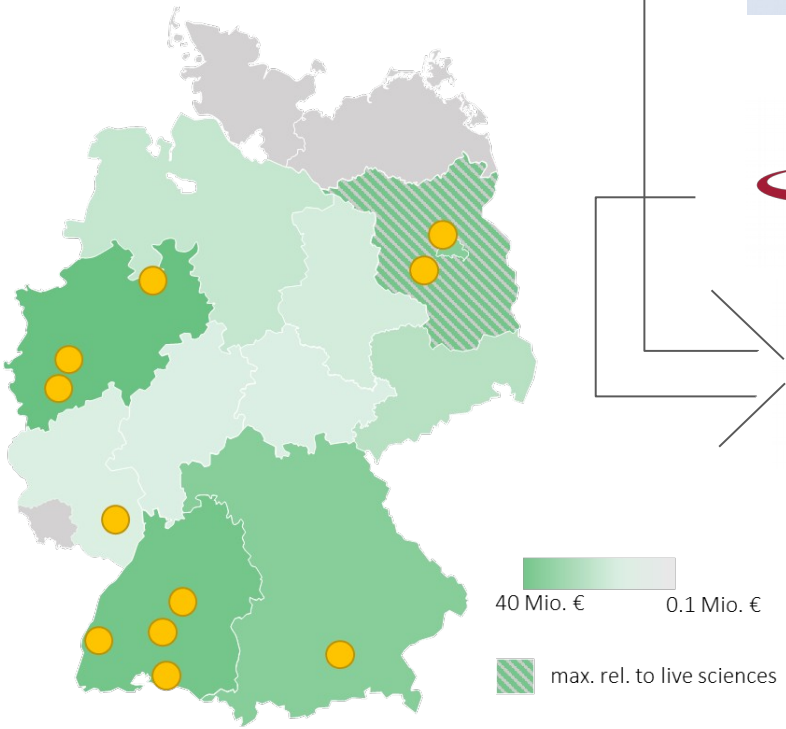
Outline

- Background: The BioDATEN science data center and the DataPLANT consortium
- Computer centers as service providers
- The changing role of the (university) computer center as a service provider
- Structural and legal challenges of cooperation
- … in the context of data repository operators
- Actually offered (provider) resources in DataPLANT (in-kind contribution)

Background: About BioDATEN

- Science Data Center focusing on Bioinformatics in the state of Baden Württemberg
  - Standardization in the Bioinformatics community
  - Qualification and education
  - Research and development
  - Services and infrastructure
- Four year project started in July 2019, funded by the Ministry of Science, Research and the Arts to support the BW NFDI activities

About DataPLANT



DFG Förderatlas 2018: *Funding in plant sciences 2014 - 2016*

DaPLUS+

BioDATEN Life Cycle

Data)(PLANT

- Building on existing, working infrastructure
- Preserving research context
- Comparably smaller, but focused community
- Configuration: 4 applicant institutions, ~30 participants
- 11.5 Mio € budget total planned

Wide representation of the fundamental plant research community and of infrastructure+services

⇒ strength; rooted in fundamental plant hotspots

⇒ **complementary expertise** of scientific community, developers and service providers

Contradicting requirements

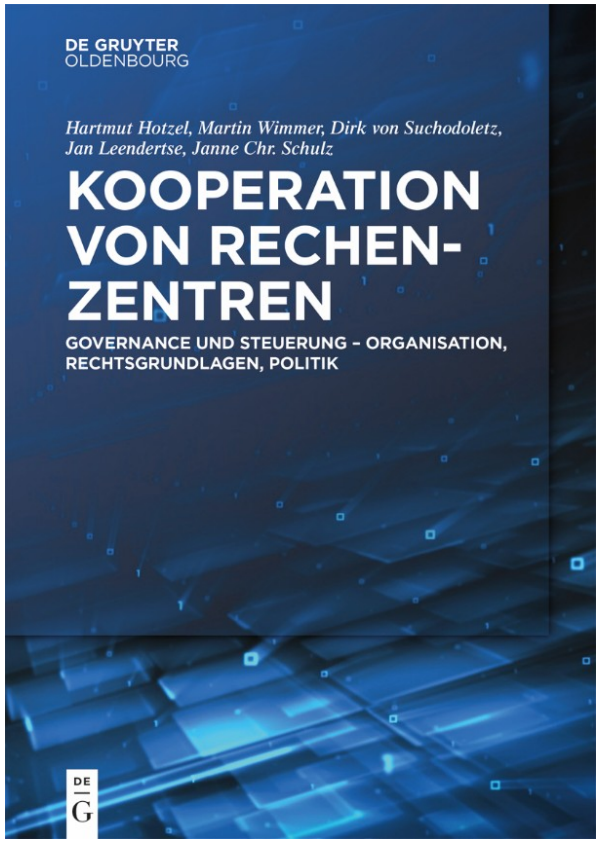
- Often impossible to define the exactly “right” resource (sizing challenge)
- Clouds and aggregated HPC resources
  - IT industry and science driven
- Increased efforts for market analysis, system selection, proper procurement and operation of (large scale) IT infrastructures
- Contradiction of typical project run times vs. delay for equipment provisioning and write down time spans of that equipment

Ongoing cultural change

- More and more cloud-like operation of workflows
  - Data and compute moving into centralized resources
- Shared infrastructures allow for a fast start of projects (as necessary overhead capacity is much easier to maintain and justify in centralized resources)
  - Shared overhead much less than individual ones
- Grant providers start to understand the changed technological landscape and to adopt their requirements

Cooperation

- Significantly widened scope of IT services
- Cooperation a chance to keep up with the demand and offer a relevantly wide service, e.g.
  - bwLehrpool
  - bwHPC + bwDATA, bwCloud
  - de.NBI cloud
- Allows for specialization and community focus
- Unsolved issues still remain

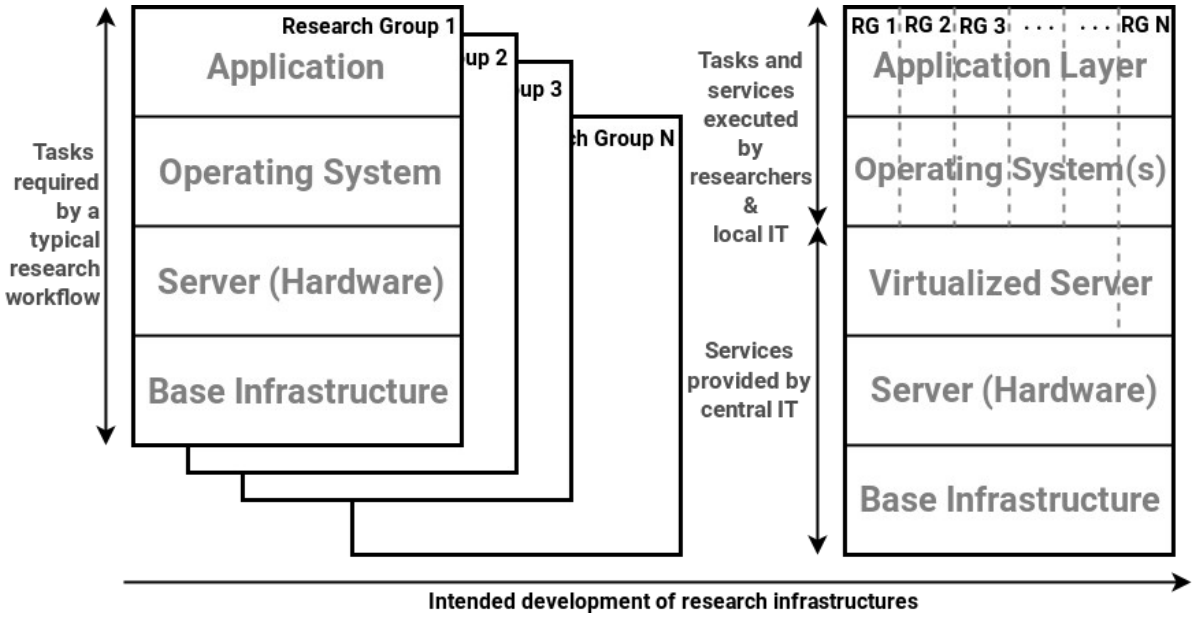


Motivation for providers

- Massive changes in the IT landscape and user expectations require re-orientation of university (scientific) computer centers
- Define future strategies and operation models like find a new meaning in *research data management*
- Recalibrate the role of (de-)central IT service provisioning (for basic and high level services)
- Provide efficient infrastructures and consultation to the various scientific communities
- Participate in infrastructure calls

Motivation for users

- Offloading of non-domain specific tasks and services (organization, procurement, operation)
- Focus on domain specific tasks



Governance

- Ensure a persistent relevance of future computer centers through user participation and feedback loops
  - Close cooperation and consultation (like we do in NEMO and for bwSFS) helps all stakeholders to have suitable, up to date infrastructures tailored to the users' needs
- Such structures in its infancy, but required for NFDI (grant application)
- NFDI wide coordination should advance this topic
- Core for a successful NFDI operation

Re-Financing

- Often grant driven (and inherently not sustainable)
- Changed flow of money from simple project driven and organization centered practice to fragmented streams to different providers
- Large infrastructure initiatives (de.NBI, NFDI, …) need
  - To solve role of personnel (permanent vs. project based)
  - Define suitable business and operation models
  - Untangle the federal / state requirements of cash flows in mixed consortia (honor the VAT requirements)

Infrastructure4NFDI

- Not part of the ongoing NFDI call yet, but nevertheless required
- Many consortia bring in established infrastructures (which are often quite un-coordinated)
- Cross-cutting topic and will be a task of the NFDI directorate to be defined / solved
- de.NBI cloud might get established as the federal cloud infrastructure for the NFDI (many consortia asked for letters of support)

Resources offered (in DataPLANT)

- Commitment for
  - 3.156+ cores
  - 9.900+ Tbyte
- Enables hosting/execution of
  - The DataPLANT Hub
  - Workflows
  - Data
  - Metadata
  - and much more …

Tübingen

Freiburg

Thank you for your attention!

BioDATEN is sponsored by:

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