RWTH Aachen University
Bielefeld University
Ruhr University Bochum

University of Bonn
University of Cologne
TU Dortmund University

University of Duisburg-Essen
Heinrich Heine University Düsseldorf
University of Münster

Paderborn University
University of Siegen
University of Wuppertal

HPC.NRW

THE HPC.NRW COMPETENCE NETWORK

Project Goals

HPC Concept of the German State of North Rhine-Westphalia (NRW)

1. Establishing **HPC consulting services**

   · Creation of personnel and organizational conditions to provide **scientific services** in addition to pure hardware infrastructure.

2. Structured **provision of HPC resources** for Tier-2 and Tier-3 centers in NRW

   · **User support** regarding the selection of a suitable center and the applications for compute time.

   · Establishment of uniform and **science-driven application and approval procedures** for Tier-2 systems.

   · Networking of HPC system operators with the aim of promoting the **quality of operation** (software equipment, monitoring, capacity utilization, efficiency control).
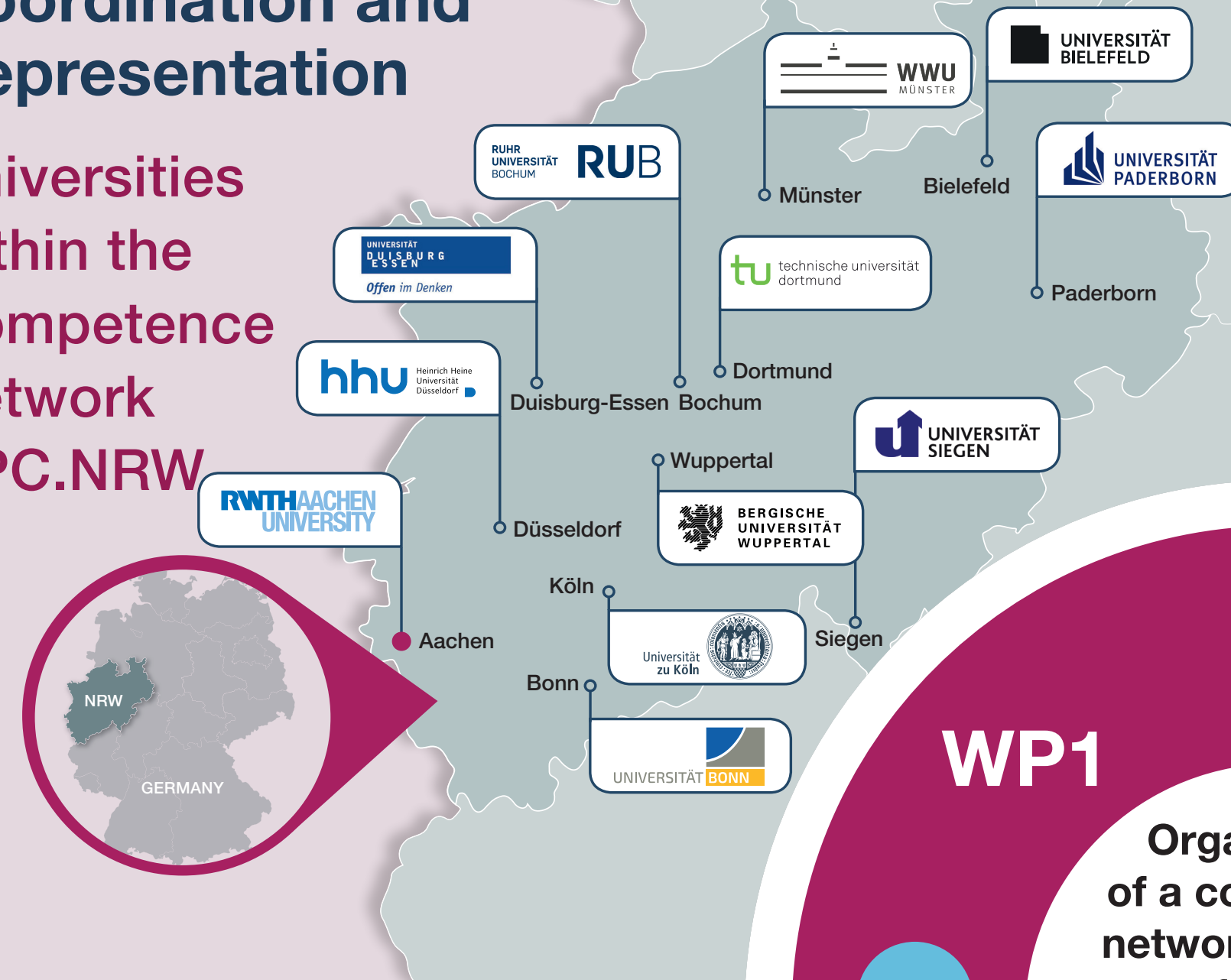
PROJECT FACTS	
PERIOD	04/2019 – 03/2022
PARTNERS	12 Universities
BUDGET	5.6 Million €
PERSON MONTHS	~1100*

*(incl. own contribution, excl. students)

WORK PACKAGE 1:

Coordination and Representation

Universities within the Competence Network HPC.NRW

WWU MÜNSTER · UNIVERSITÄT BIELEFELD · RUHR UNIVERSITÄT BOCHUM / RUB · UNIVERSITÄT DUISBURG ESSEN / Offen im Denken · technische universität dortmund · UNIVERSITÄT PADERBORN · hhu Heinrich Heine Universität Düsseldorf · RWTH AACHEN UNIVERSITY · BERGISCHE UNIVERSITÄT WUPPERTAL · UNIVERSITÄT SIEGEN · Universität zu Köln · UNIVERSITÄT BONN

Münster · Bielefeld · Paderborn · Dortmund · Bochum · Duisburg-Essen · Wuppertal · Siegen · Düsseldorf · Köln · Aachen · Bonn

NRW · GERMANY

WP1

Organization of a competence network for high-performance computing for North Rhine-Westphalia (HPC.NRW)

WP2

WP4

WP3

WORK PACKAGE 2:

Consulting, Training, Tutorials, Workshops

· Establishing of statewide third-level **HPC helpdesk** infrastructure

· Introducing of **new user groups** to the usage of Tier-3 systems

· Creating of a common platform for **online tutorials and trainings**

· Provision of integrated profiling and **performance monitoring tools**

· Expanding hpc-wiki.info for **common HPC documentation**

· Community-specific intensive **consulting**

· Qualified support for **performance analysis**

WORK PACKAGE 4:

Structured Access to HPC Resources

· Establishing a common infrastructure for **compute time application and approval processes** across HPC centers in NRW

· **Supporting scientists** in the preparation and application for compute time storage resources

· Increasing the **Tier-level permeability** between HPC centers

· Providing common **reporting and accounting**

WORK PACKAGE 3:

Coordination of Software Environment and HPC System Operation

· Provisioning of a standardized **HPC software ecosystem**

· Harmonizing **user experiences** across HPC systems in NRW

· State-level licensing of **common HPC software**

· Establishing a **competence network** for operational concerns

Achievements

· Introduced **individual consulting** for new users of HPC systems

· Third-level **HPC ticket support system** across NRW

· **State-level licenses** for PGI, Intel, TotalView and ARM software

· First contributions to the **best practice guide** for operation of HPC systems

· First extensions of the common **documentation platform** hpc-wiki.info

· First steps towards a common **computing time application and approval system** for Tier-2 centers in NRW (based on JARDS)

· Evaluation of **common reporting criteria**

· Establishment of **regular communication channels** (weekly video conferences, ticket system, mailing lists etc.)