bw | HPC – C5

Access: bwUniCluster, bwForCluster, ForHLR

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www.bwhpc-c5.de

Outline

- Introduction
- Registration Processes
  - bwUniCluster
  - bwForCluster
  - ForHLR Phase I & II
- First Steps
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- Questions

1. Introduction

Introduction

- bwUniCluster
  - Tier 3, Baden-Württemberg (BW) cluster for general purposes
  - Simple registration process
- bwForCluster (JUSTUS, MLS&WISO, NEMO, BinAC)
  - Tier 3, BW research clusters
  - Architecture optimized for certain scientific communities
  - Access process ensures using the suitable cluster and enhances user support
- ForHLR I & II
  - Tier 2, national research cluster
  - Access process ensures that applications fulfill requirements of parallelization

2. Registration

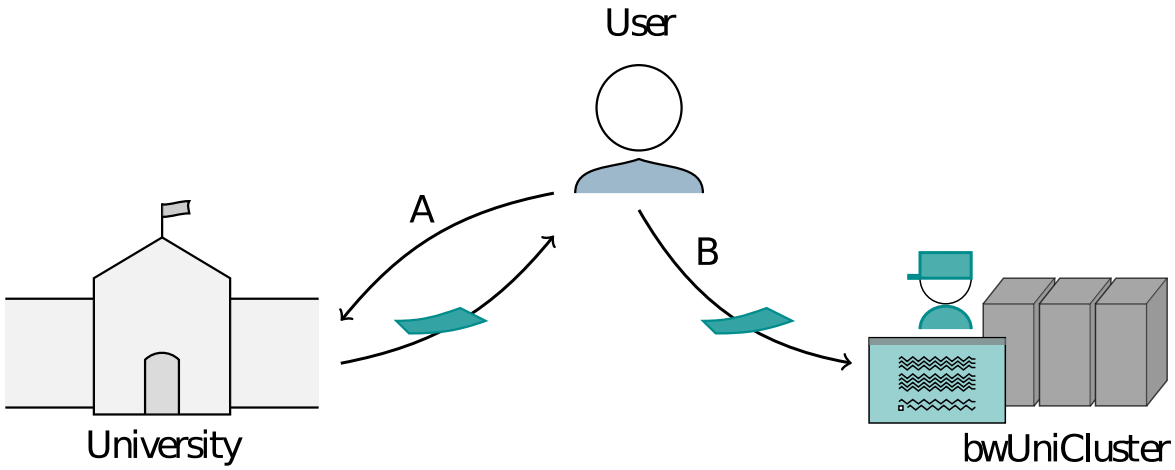
Registration

Different clusters → different registration processes

- bwUniCluster
- bwForCluster
- ForHLR Phase I & II

Registration Process - bwUniCluster

- Access only for members of shareholder universities.
- Authentication with usual university account via bwIDM.
- Authorization via bwUniCluster entitlement issued by the universities.



Step A: Obtainment of bwUniCluster entitlement

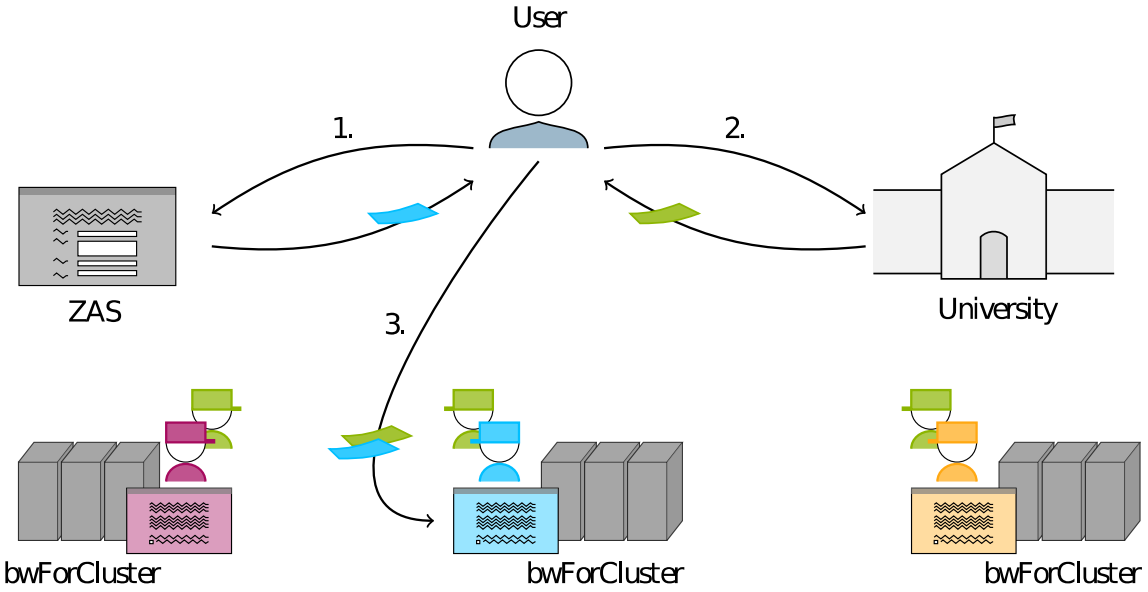
- Each university has its own entitlement granting policies!

Step B: Web registration at https://bwidm.scc.kit.edu/

- Login via bwIDM with your account at university

Registration Process - bwForClusters

- Access for members of Baden-Württemberg's universities.



Step 1: Registration at „Central Application Site (ZAS)“

- Approval of Cluster Assignment Team (CAT)

Step 2: Obtainment of bwForCluster entitlement

Step 3: Web registration at bwForCluster site

- e.g. http://bwidm.rz.uni-ulm.de/, bwForCluster JUSTUS (Computational Chemistry)

Registration Process: bwForClusters – Step 1

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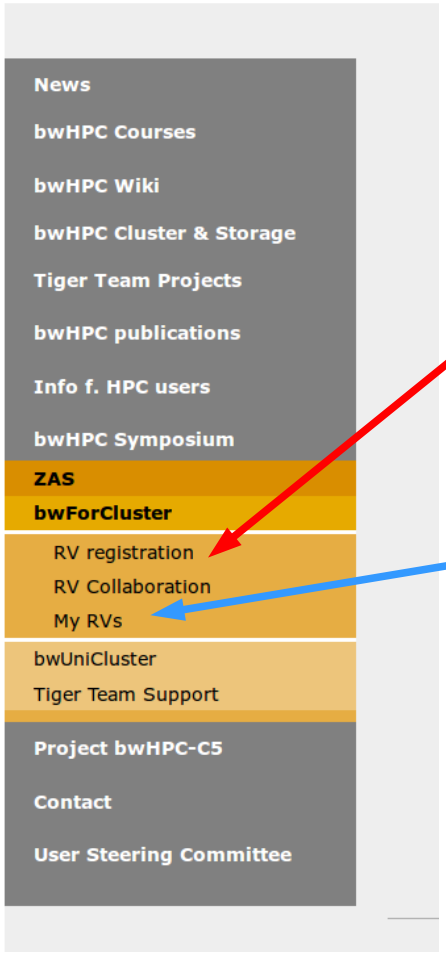


***Rechenvorhaben* (RV)**

RV = planned compute activities

research objective,
used methods & software packages, ..

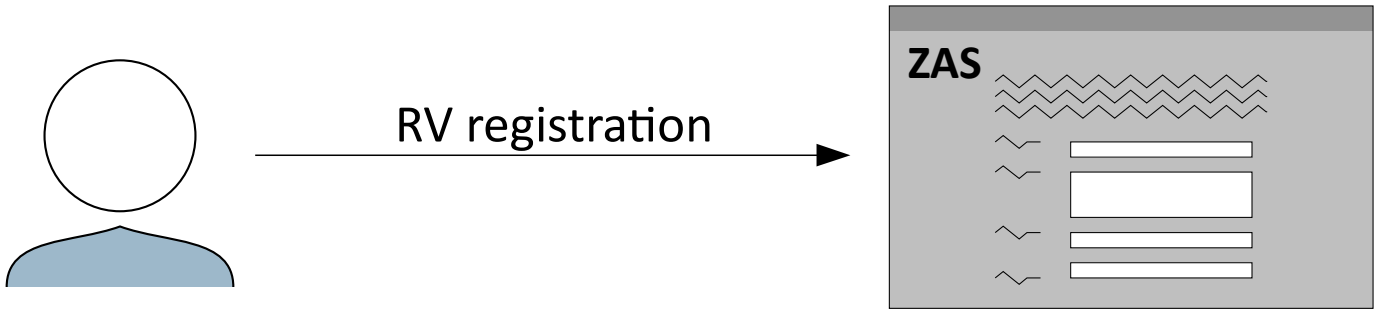
Resource requirements
CPU Hours, memory, disk space, ..

RV responsible
= applicant

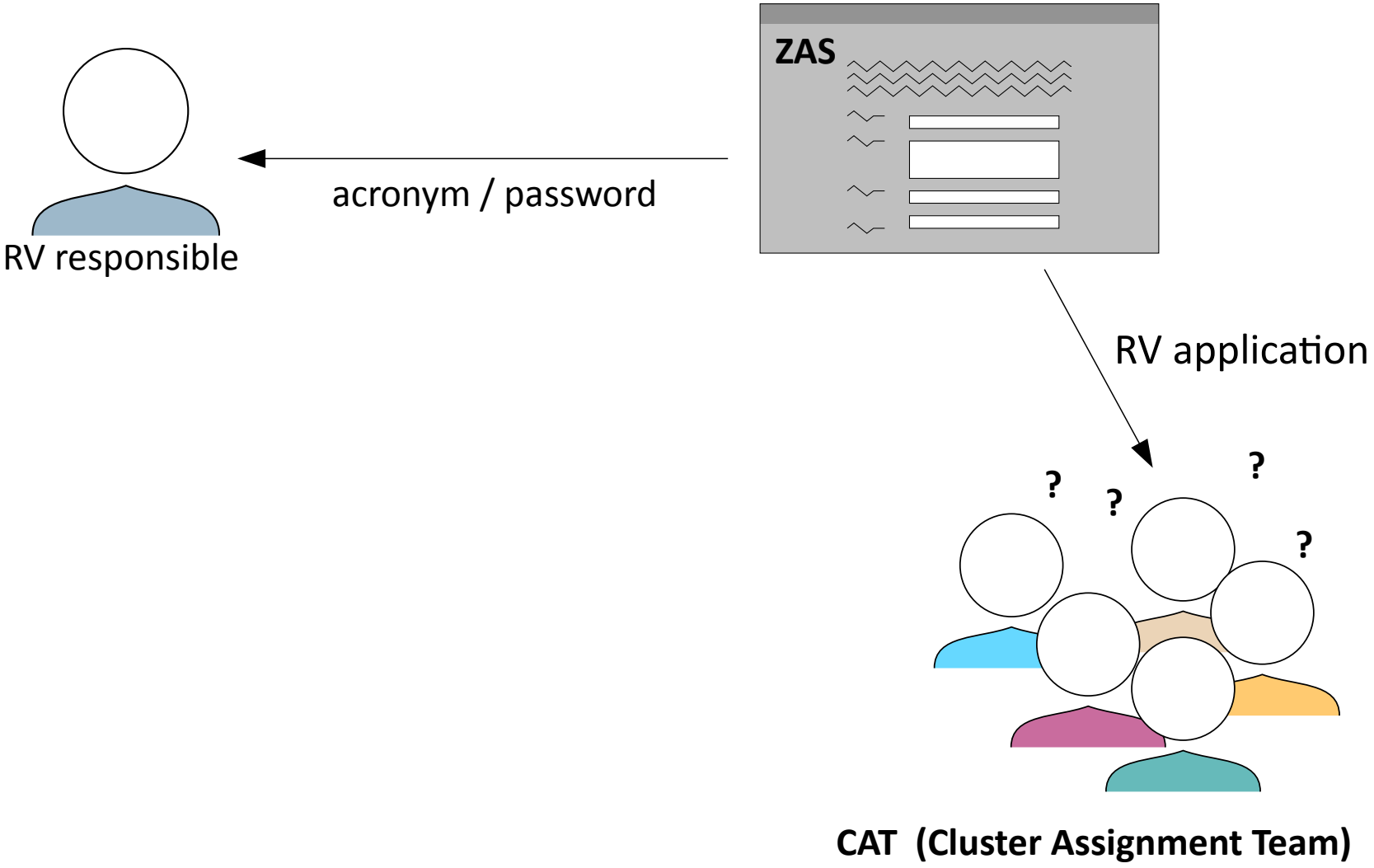
Team
managers, coworker

- An RV approval is valid for
  - **one** certain bwForCluster
  - **all team members**
  - a period of **one year** after the approval

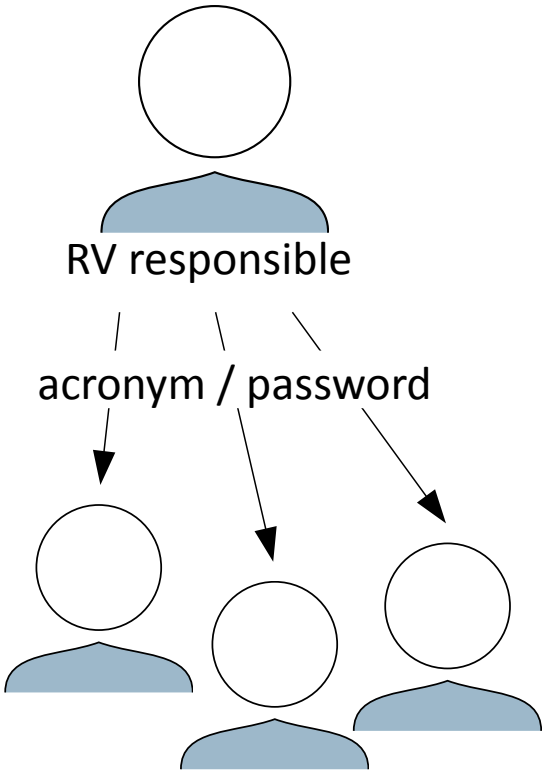
Registration Process: bwForCluster – Step 1a

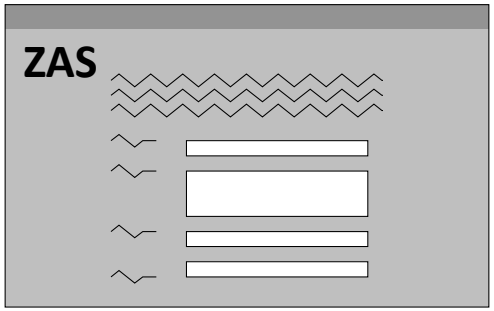


Registration Process: bwForClusters – Step 1b

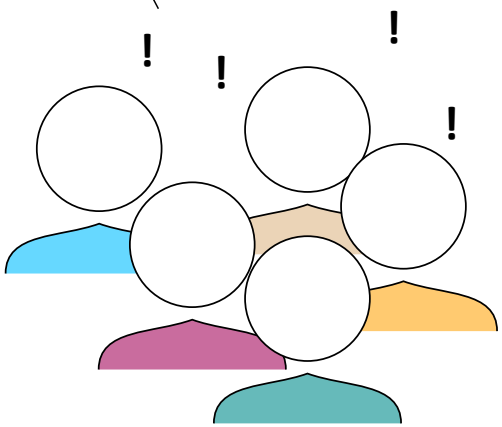


Registration Process: bwForClusters Step 1c



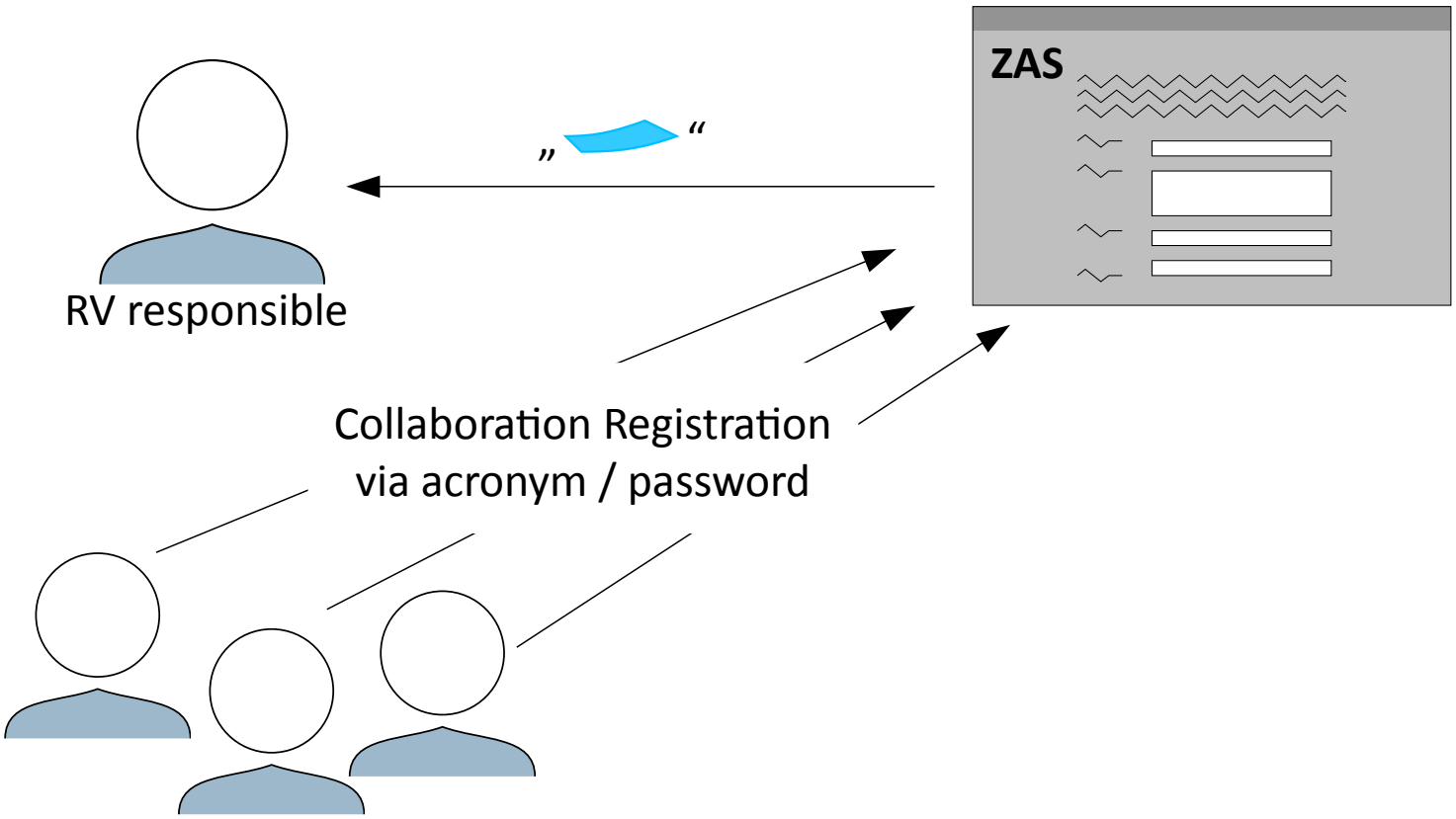


RV approval

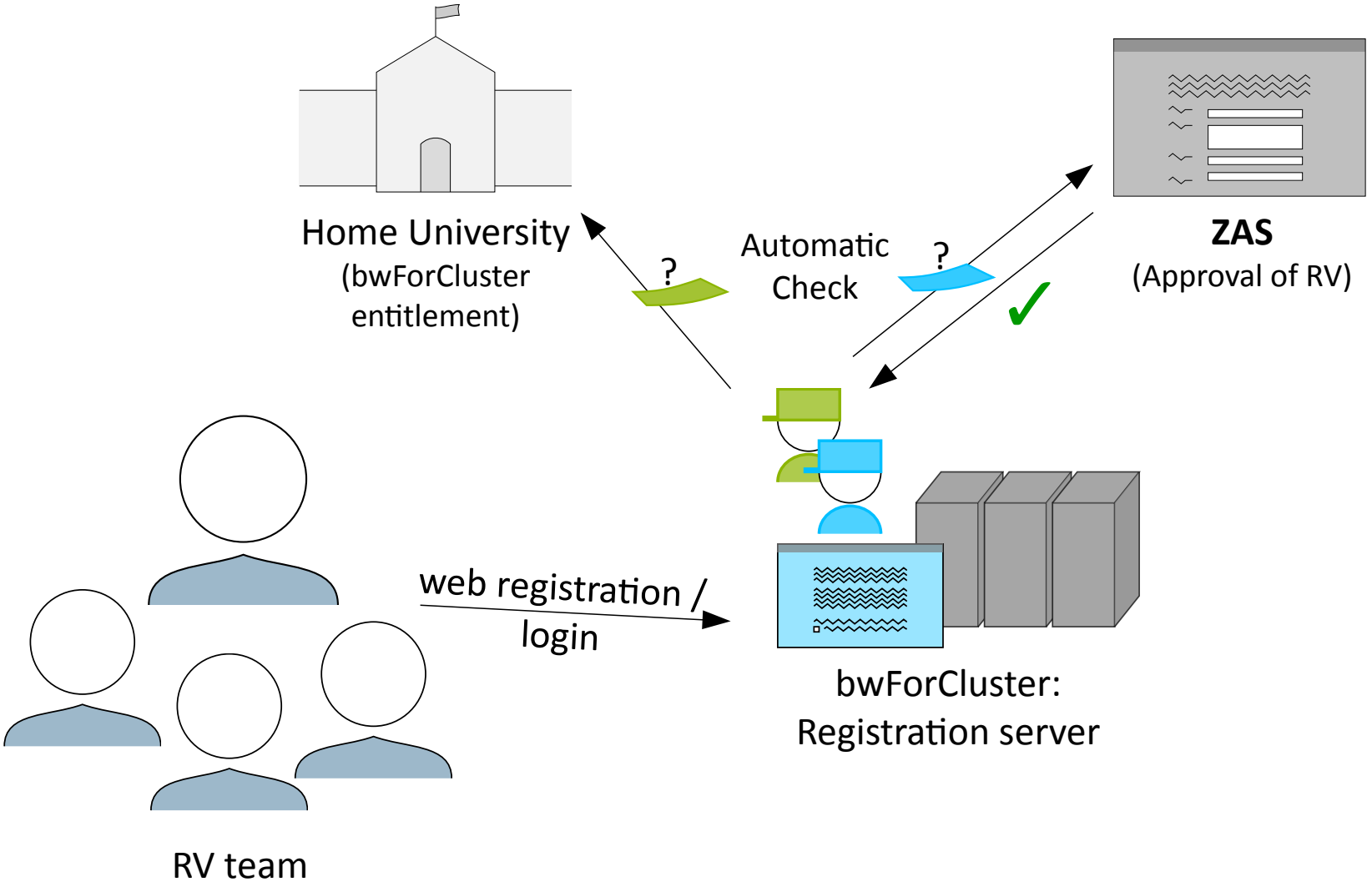


CAT (Cluster Assignment Team)

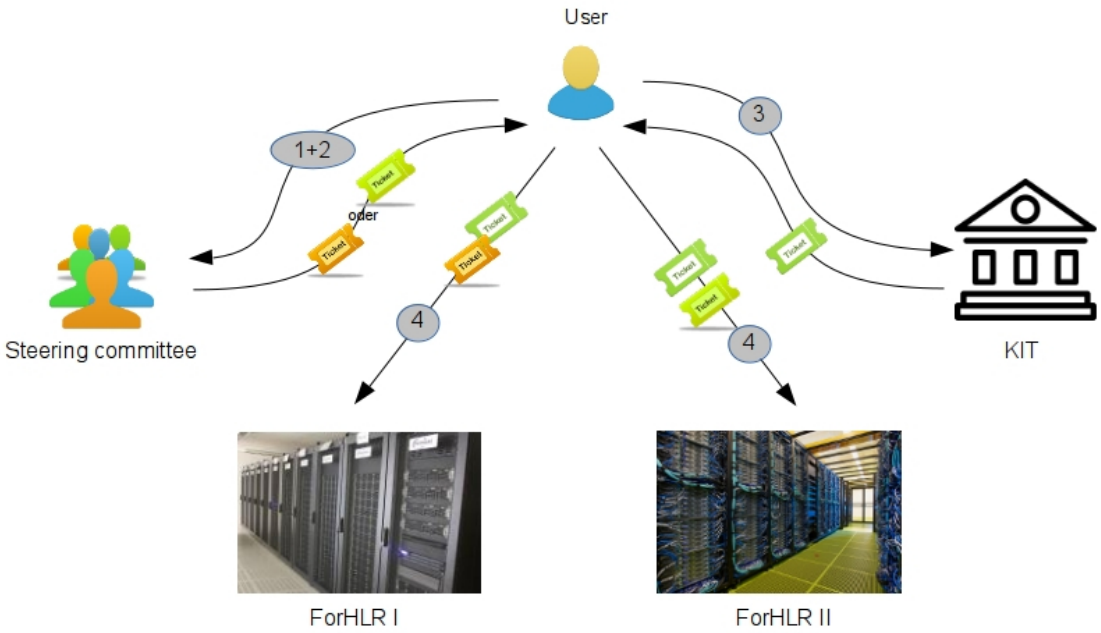
Registration Process: bwForClusters – Step 1a



Registration Process: bwForClusters – Step 3



Registration Process – ForHLR I & II



Step 1: Completion of the „Online Proposal Form“. (http://www.scc.kit.edu/forschung/4971.php)

(Resources to be granted are CPU-time and permanent disk space)

Step 2: Writing the extended project description (3-5 pages). PDF-file must be send to forhlr-projects@lists.kit.edu

Step 3: Fill out of the ForHLR entitlement form for each project collaborator.

Form must be send to SCC-Service desk or scanned to haefner@kit.edu

Step 4: Personal registration for ForHLR I & II on website https://bwidm.scc.kit.edu

3. First Steps - Login

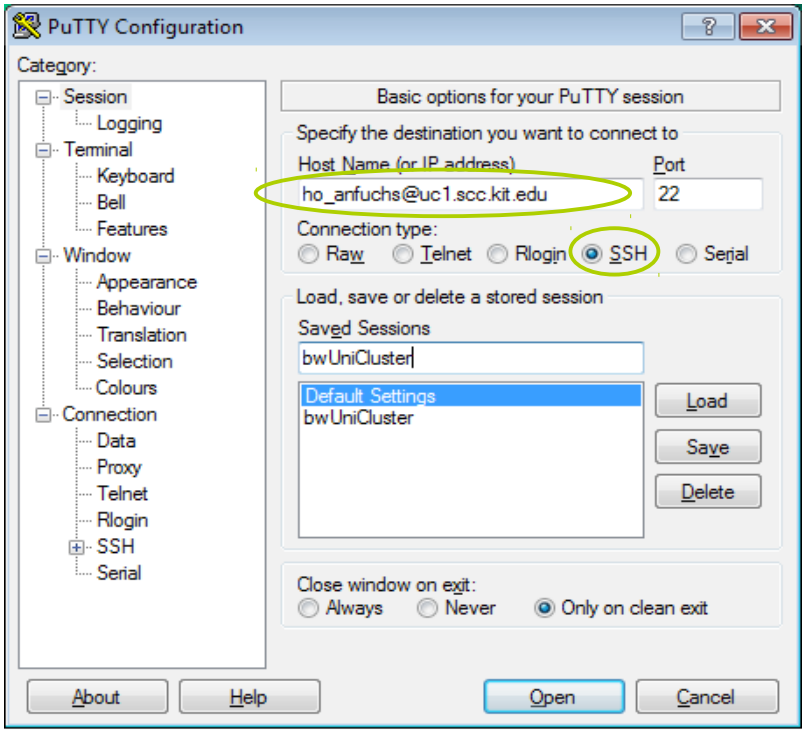
Login (1)

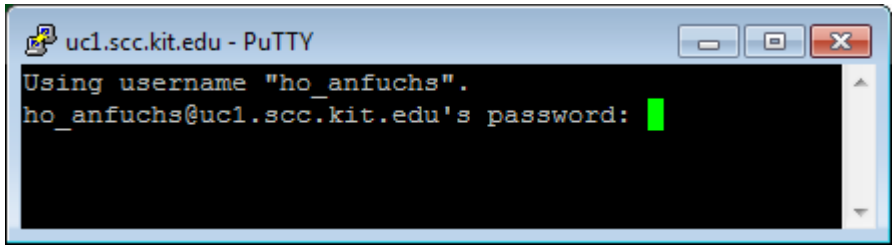
- General
  - Connection by **ssh**
  - Username
    [<prefix>_]<username>
    - **ab1234** (KIT)
    - **ho_anfuchs** (Hohenheim)
  - Host:
    - **uc1.scc.kit.edu**
    - **justus.uni-ulm.de**
    - **fh1.scc.kit.edu**

- Linux / Mac OS

```
$ ssh ab1234@uc1.scc.kit.edu
ab1234@uc1.scc.kit.edu's password:
```

- Windows (via PuTTY)





Login (2)

- Add host key

- .. and welcome!

Basic commands

`$ pwd`	show path of working directory
`$ mkdir <dirname>`	make directory
`$ ls -l`	list directory contents
`$ cd`	change directory
`$ cp <sourcefile> <targetfile>`	copy file
`$ mv <sourcefile> <targetfile>`	move file
`$ rm <filename>`	remove file
`$ man <command>`	show command's manual
`$ vi`	standard unix editor

File transfer

File transfer - Linux

`$ scp <sourcefile> <targetfile>`	secure copy (remote file copy program)
`$ scp -r <sourcedir> <targetdir>`	recursively copy entire directories
`$ sftp <targetdir>` `$ put|get <sourcefile>`	secure file transfer program upload/download file

- Example
  - `$ scp paket.tar ab1234@uc1.scc.kit.edu:dir/`

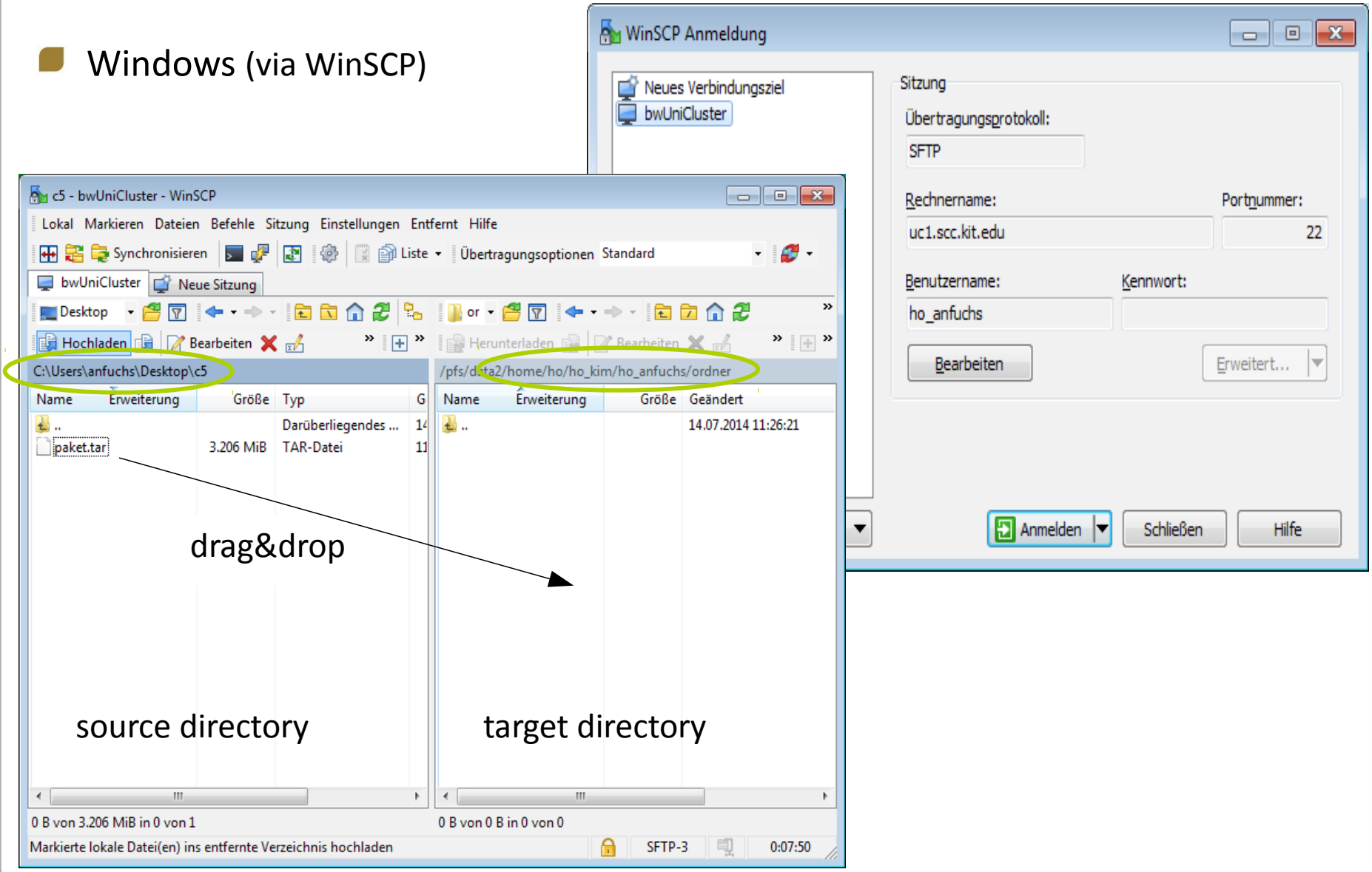
    ```
    ab1234@uc1.scc.kit.edu's password:
    ```

  - `$ sftp ab1234@uc1.scc.kit.edu:dir`

    ```
    ab1234@uc1.scc.kit.edu's password:
    Connected to uc1.scc.kit.edu.
    Changing to: ${HOME}/dir
    sftp> put paket.tar
    ```

File transfer - Windows

- Windows (via WinSCP)



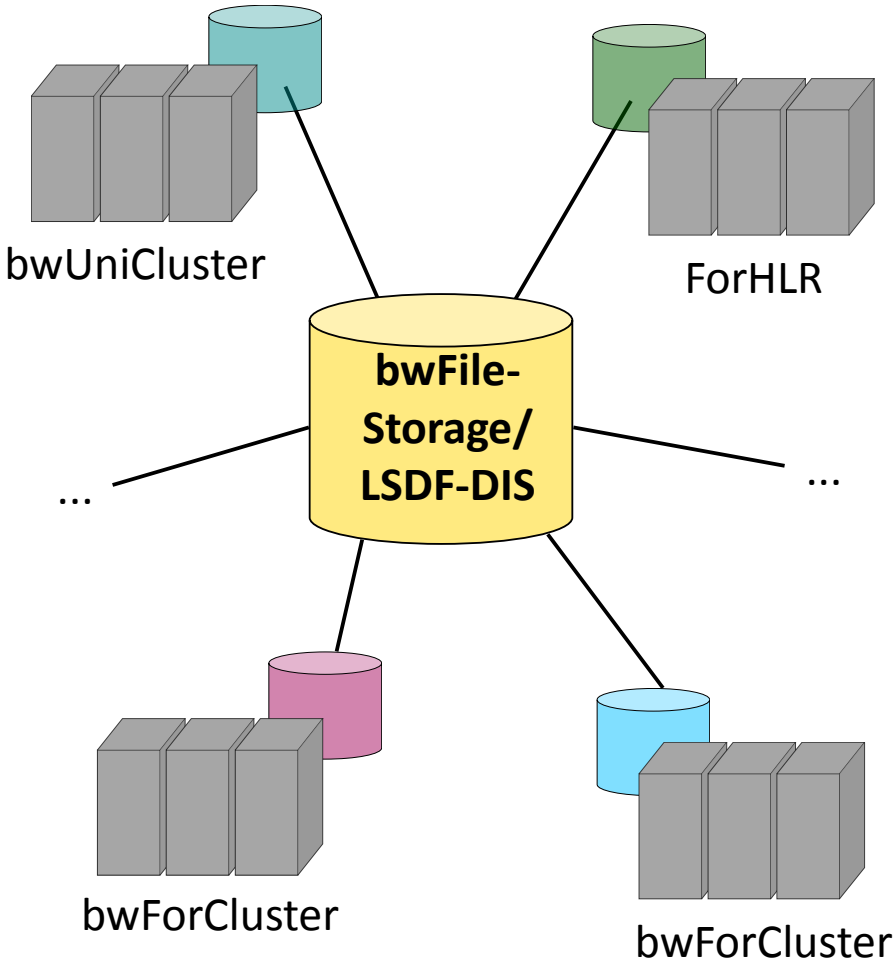
bwFileStorage

bwFileStorage/LSDF-DIS

- Central storage located at KIT
- 100GB disk space per user

- Requirements
  - bwFileStorage entitlement
  - web registration at https://bwidm.scc.kit.edu
- Hosts
  - Via web: https://bwfilestorage.lsdf.kit.edu
  - Via ssh: bwfilestorage-login.lsdf.kit.edu

- Transfer tools
  - scp, sftp, rsync, https, ...
  - rdata @ bwUniCluster, ForHLR



bwFileStorage: rdata

- File system operations on „data mover“ nodes
- Supported commands:

  cp, rm, ls, rsync, mv, mkdir, ...
- Environment variables:
  - $BWFS=/bwfilestorage/ka/ka_scc/ab1234/
- Example:

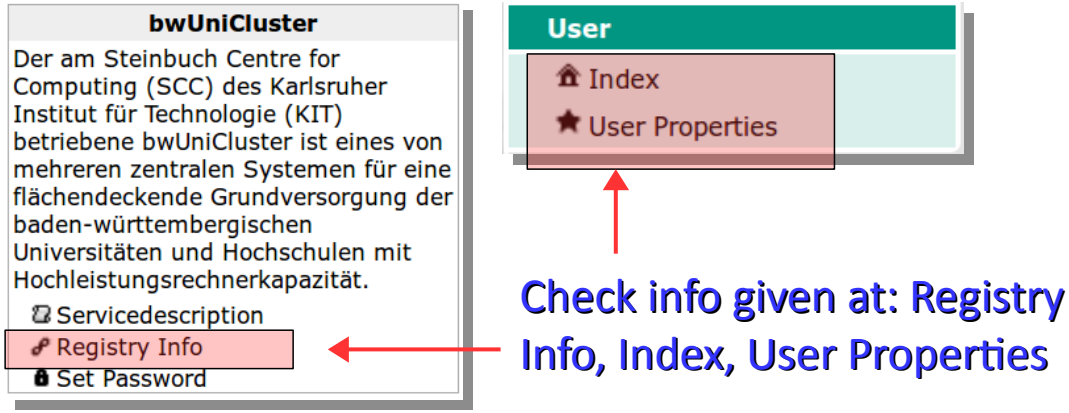
  $ scp file ka_ab1234@bwfilestorage.lsdf.kit.edu:

  $ rdata cp file $BWFS
  - Performance with a file size of 20000 MB:
    - scp : 2min 24s (139 MB/s)
    - rdata cp : 1min 5s (308 MB/s)

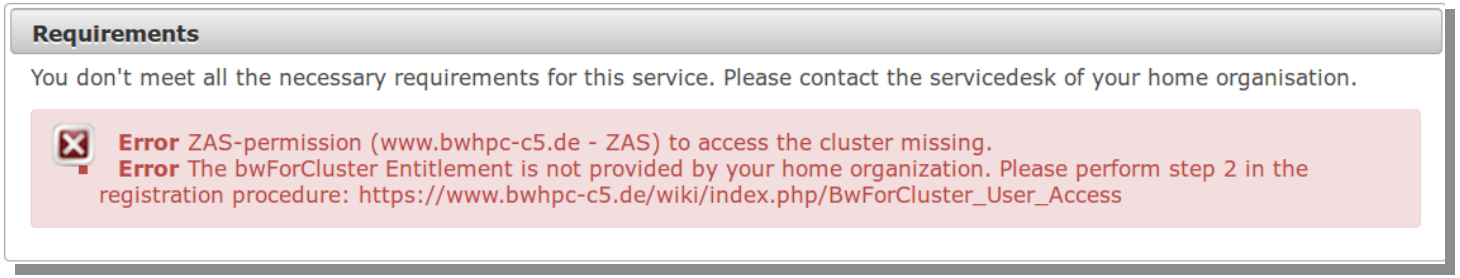
FAQ

"I cannot login", why?

- Login at registration server of your cluster
  - e.g. bwUniCluster → https://bwidm.scc.kit.edu



  - @ bwUniCluster: Check if you've done the questionnaire within 14 days after the registration.
  - Errors may look like:



4. Questions