CURRENT USAGE MODEL

Project-centered

- Applications for research projects
  - Example: User A is member of two research projects led by PI1 and PI2

<table>
<thead>
<tr>
<th>Project 1</th>
<th>Project 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PID:</strong> HLZ10, <strong>PI:</strong> PI1</td>
<td><strong>PID:</strong> HHH25, <strong>PI:</strong> PI2</td>
</tr>
<tr>
<td><strong>Budget:</strong> HLZ10</td>
<td><strong>Budget:</strong> HHH25</td>
</tr>
<tr>
<td><strong>Account of user A:</strong> HLZ104</td>
<td><strong>Account of user A:</strong> HHH251</td>
</tr>
<tr>
<td><strong>Unix group all accounts:</strong> HLZ10</td>
<td><strong>Unix group all accounts:</strong> HHH25</td>
</tr>
<tr>
<td>$HOME: hlz10/hlz104</td>
<td>$HOME: hhh25/hhh251</td>
</tr>
<tr>
<td>$WORK: hlz10/hlz104</td>
<td>$WORK: hhh25/hhh251</td>
</tr>
<tr>
<td>$ARCH: hlz10/hlz104</td>
<td>$ARCH: hhh25/hhh251</td>
</tr>
</tbody>
</table>

- Close connection between PID, account, budget of research projects and storage is a problem
## USE CASES / MOTIVATION

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Current Model</th>
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<tr>
<td><strong>Access to more than one resource pool</strong></td>
<td>The same user needs several accounts connected to budgets</td>
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<tr>
<td><strong>Sharing data between different users/projects</strong></td>
<td>cp to $WORK or allow access to $HOME – big data needs to be copied by administrators</td>
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<tr>
<td><strong>Access to data of former project members</strong></td>
<td>Via dispatch/PI, copying of data</td>
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<tr>
<td><strong>Carry forward data onto a new project</strong></td>
<td>Data needs to be copied by users or administrators</td>
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NEW USAGE MODEL

User-centered

• Same Example: User A is member of two research projects led by PI1 and PI2
## USE CASES / MOTIVATION II

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Current Model</th>
<th>New Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to more than one resource pool</td>
<td>The same user needs several accounts connected to budgets</td>
<td>Only one account for one user with access to different budgets</td>
</tr>
<tr>
<td>Sharing data between different users/projects</td>
<td>cp to $WORK or allow access to $HOME – big data needs to be copied by administrators</td>
<td>$PROJECT / $DATA in research project / data project for communities</td>
</tr>
<tr>
<td>Access to data of former project members</td>
<td>Via dispatch/PI, copying of data</td>
<td>Data remains in $PROJECT / $DATA</td>
</tr>
<tr>
<td>Carry forward data onto a new project</td>
<td>Data needs to be copied by users or administrators</td>
<td>Data projects are independent of research projects</td>
</tr>
</tbody>
</table>
One account

surname# (# is a consecutive number)

• Transition Example
MAIN FEATURES

Separation of user and project data

• Single account with HOME data
  • Separated home per system
    .../jureca,.../juwels,.../shared

• Project space
  • $project, $scratch
  • setgid, -rwxrws---

• Transition
  • $HOME → $PROJECT/<old_account>
  • Access rights not changed
MAIN FEATURES

Data projects

- Characteristics and usage
  - Access to ARCHIVE, …
  - Independent from research project
  - exchange of data between projects, community data
  - for running projects/analysis, not just data repository (2019)
  - Runtime 1 year, in future long-term possible
- After transition: application for a data project needed
  - Rolling call starting Jan 2019
  - Technical Review
  - Prolongation yearly
- Later on:
  - Scientific review, longer runtimes possible
DATA AND COMPUTE PROJECTS

Transition example

Transition
- Each project with data in ARCH will get a data project
- Data projects get the name of the former single project
- Compute projects are named c<project_id>, budget is still <project_id>!
NEW USAGE MODEL – TRANSITION

Database and Data Migration

- Filling of new LDAP
- New usernames
- New project associations
- Data Migration
  - Transparent to the user
  - Already started

$HOME

$PROJECT

$SCRATCH

$DATA

$FASTDATA

$ARCH

$ARCHIVE

Users

Research Projects

Data Projects
HOW TO WORK WITH THE NEW MODEL

User tools

- `q_cpuquota -?`
  - Query CPU quota
  - New: `-l <old_account>`

- `jutil - Querying information and activating projects`
  - Usage: `jutil [-h] person|user|project|env <action> [<options>] [-v] [-o <format>]`

  **Actions:**
  - `show` : Query info for users or projects
  - `projects`: List of projects that a user is member of
  - `cpuquota` : Query CPU quota
  - `dataquota` : Query disk quota
  - `activate` : Activate a project -> exports env vars and change current unixgroup
Options:
- `u <val>, --user=<val>` : Specify user
- `k <val>, --pkey=<val>` : Specify personal key
- `p <val>, --project=<val>` : Specify project
- `g <val>, --group=<val>` : Specify project or (primary) group
- `c <val>, --contpart=<val>` : Query a contingent partition
- `A <val>, --account=<val>` : Query/activate a budget account
- `a <val>, --all` : Query all entries (Only as root)
- `h, --help` : Print this help message
- `v, --verbose` : Show more info/logs
- `o <val>, --output=<val>` : Output format: rows(default),columns,parsable,json
- `--research` : Switch for research projects only
- `--data` : Switch for data projects only
- `--system` : Show info for current system only
JUTIL

Reference

Allowed user interface:

jutil person show [-u <uid>|-k <persKey>|-a]

djutil user show [-u <uid>|-a [---system]]

djutil user projects [-u <uid>] [---research|---data]

djutil user cpuquota [-u <uid>|-a] [-p <proj> [-c <contpart> [-A <budget>]]]

djutil user dataquota [-u <uid>|-a] [-p <proj>]

jutil project show -p <project>|-a

djutil project cpuquota -p <project>|-a [-c <contpart> [-A <budget>]]

djutil project dataquota -p <project>|-a

jutil env activate -p <project> [-A <budget>]

djutil env init

djutil env refresh
> jutil user show -u janetzko2
name=Stefanie Janetzko
email=st.janetzko@fz-juelich.de
uidNumber=8003
...

> jutil user projects -u janetzko2 --o columns
project unixgroup project-type budgets
-------- -------- --------------- 
  hbi18     hbi18   D       -
  cjsc      cjsc    R      zam
  jsc       zam     D       -
Example

> jutil project dataquota -p cjsc
name=cjsc
filesystem=project
storage=just
data-hard-limit=…
…

name=cjsc
filesystem=scratch
storage=just
data-hard-limit=…
…
> jutil env init

export ARCHIVE_zam=/arch2/zam; export PROJECT_cjsc=/p/project/cjsc;
export SCRATCH_cjsc=/p/scratch/cjsc; export HOME=/p/home//jusers/janetzko2/jureca_booster; export FASTDATA_zam=/p/fastdata/zam; export FASTDATA_hbi18=/p/fastdata/hbi18;
export ARCHIVE_hbi18=/arch2/hbi18;

> jutil env activate -p cjsc

unset SLURM_ACCOUNT; export JSC_BUDGET_ACCOUNTS=zam; export SCRATCH=/p/scratch/cjsc; export PROJECT=/p/project/cjsc;

> jutil env activate -A zam –p cjsc   BE CAREFUL!

export SLURM_ACCOUNT=zam; export JSC_BUDGET_ACCOUNTS=zam; export SCRATCH=/p/scratch/cjsc; export PROJECT=/p/project/cjsc;
HOW TO WORK…

Job submission

- Budget needed
  - -A <budget-id> or --account=<budget-id> in the batch script
  - jutil env activate –A <budget-id>
- The name of the budget is the same as before the transition!
- Be careful in choosing the right project!

- Environment variables
  - E.g. data is no longer in $HOME, but in $PROJECT
  - $WORK→$SCRATCH
• Administration of accounts/projects
  • Account application 1x
  • Approve/Reject/Delete account for projects
• User Agreement
• Almost paperless
• Role-based (User/PI/PA)
  • PI – Principle Investigator
  • PA – Project Administrator
• Future
  • Resource usage
JUDOOR – MAIN TASKS

- Get access to a project
  - PI is informed about project id
  - User → “Join a project”
  - PI approve user and assigns resources
- Manage ssh-keys
- View/Accept user agreement
- Change contact data (not FZJ)
- Get software access
- Webservices
JUDOOD – PI VIEW

- Add/modify users in a project
- Add resources
- Appoint user to project administrator (PA)

Modify access for user in CPR0J1

Max Mustermann
Account: mustermann1
E-mail address: max.mustermann@example.com

As PI or PA of the project you are obliged to follow data protection regulations, in particular to maintain confidentiality. That means not to communicate or make data accessible to other persons without authorization by the data provider (even after the end of the project).

Data access
- JUDAC
- Contingent proJ1
- JUWELS
- JUWELS_GPUS

You can restrict the available resources for this user before adding the user to the project.

Save  Remove from project  Promote user to PA  Cancel

Legal Notice  Privacy Policy
Forschungszentrum Jülich, JSC  Contact Dispatch

You would like to appoint the following person as a project administrator for the project CPR0J1:

Name: Max Mustermann
Email: max.mustermann@example.com
Account: mustermann1

This will allow the person to see a list of all project members, add and remove persons from this project as well as assigning compute resources to project members.

By appointing the person as a project administrator you declare that the actions taken by the PA shall be attributed to yourself and that you are responsible for all of the PA’s measures taken in the context of your supercomputing project.

On pressing “Appoint as PA” Max Mustermann will receive a form, which has to be signed and sent to the JSC user administration in order to complete the appointment.

Appoint as PA  Cancel
USER DOCUMENTATION

- Usage Model

- JuDoor
  - http://www.fz-juelich.de/ias/jsc/judoor
MAINTENANCE AND SUPPORT INFORMATION

- Maintenance for transition to the new model affects all systems
  - November 30, 8 a.m. – December 4
  - All queued jobs will be cancelled!

- SC – Support
  - 02461/61-2828
  - sc@fz-juelich.de