NEW JSC USAGE MODEL AND PORTAL

ESM USER FORUM

6. FEBRUARY I STEFANIE JANETZKO
OLD USAGE MODEL

Project-centered

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

Project 1
- **PID**: HLZ10, **PI**: PI1
- **Budget**: HLZ10
- **Account of user A**: HLZ104
- **Unix group all accounts**: HLZ10
  - $HOME: hlz10/hlz104
  - $WORK: hlz10/hlz104
  - $ARCH: hlz10/hlz104

Project 2
- **PID**: HHH25, **PI**: PI2
- **Budget**: HHH25
- **Account of user A**: HHH251
- **Unix group all accounts**: HHH25
  - $HOME: hhh25/hhh251
  - $WORK: hhh25/hhh251
  - $ARCH: hhh25/hhh251

• Close connection between PID, account, budget of research projects and storage is a problem
NEW USAGE MODEL

User-centered

Research Project 1
- PID: HLZ10, PI: PI1
- Budget: HLZ10
- Unix group all accounts: HLZ10
  - $PROJECT
  - $SCRATCH
  
Research Project 2
- PID: HHH25, PI: PI2
- Budget: HHH25
- Unix group all accounts: HHH25
  - $PROJECT
  - $SCRATCH

User A
- Groups: jusers, hlz10, hhh25, dp1

Account: surname#
- Budget: ---
- Unix group: jusers
  - $HOME
  - jusers/surname#

Small Quota
For credentials

Community-relevant
Data archive (tape)

Community-relevant
Data (online)
NEW USAGE MODEL

User-centered

Key features:
- one account
- separation of user and project data
- data projects

I also want to share data with people outside of my project!

Project-relevant data
- Executables
- Libraries
- Inputs …
One account

Surname# (# is a consecutive number)

- Email address as key
  - In case you got more than one account, just contact us
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
  - -> setgid can be set by the user
MAIN FEATURES

Data projects

- Characteristics and usage
  - Access to **ARCHIVE, DATA, FASTDATA**, (SOFTWARE) possible
  - Independent from research project
  - Exchange of data between projects, community data
  - For running projects/analysis, not just data repository
  - Runtime 1 year, in future long-term possible
  - Projects from transition: runtime as former compute project
  - Technical Review
  - Prolongation yearly
- Later on:
  - Scientific review, longer runtimes possible
HOW TO WORK WITH THE NEW MODEL

Terms – project/group/budget

- The **project** is just the official name of the compute or data project as found also in JuDoor. You need to ask for access to a project via JuDoor to get access to the compute time and data.
- The **group** is the UNIX-group assigned to the project, the **data** in the project is assigned to that group.
- The **budget** provides access to the **compute time** of the project, you have to specify the budget in which you would like to run your job in slurm or via jutils.
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
Allowed user interface:

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

jutil user show [-u <uid>|-a [--system]]
jutil user projects [-u <uid>] [--research|--data]
jutil user cpuquota [-u <uid>|-a] [-p <proj> [-c <contpart> [-A <budget>]]]
jutil user dataquota [-u <uid>|-a] [-p <proj>]

jutil project show -p <project>|-a
jutil project cpuquota -p <project>|-a [-c <contpart> [-A <budget>]]
jutil project dataquota -p <project>|-a

jutil env activate -p <project> [-A <budget>]
jutil env init
jutil env refresh
```
Example

> jutil user show -u janetzko2

name=Stefanie Janetzko
email=st.janetzko@fz-juelich.de
uidNumber=8003
...

> jutil user projects -u janetzko2 --o columns

<table>
<thead>
<tr>
<th>project</th>
<th>unixgroup</th>
<th>project-type</th>
<th>budgets</th>
</tr>
</thead>
<tbody>
<tr>
<td>hbi18</td>
<td>hbi18</td>
<td>D</td>
<td>-</td>
</tr>
<tr>
<td>cjsc</td>
<td>cjsc</td>
<td>R</td>
<td>zam</td>
</tr>
<tr>
<td>jsc</td>
<td>zam</td>
<td>D</td>
<td>-</td>
</tr>
</tbody>
</table>
Example

```bash
> jutil project dataquota -p cjsc
name=cjsc
filesystem=project
storage=just
data-hard-limit=…
...
name=cjsc
filesystem=scratch
storage=just
data-hard-limit=…
...
```
Example

> 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, possibilities:
  - Via batch script: `#SBATCH - - account=<name of budget>`
  - Via submission command: `sbatch/salloc -A <name of budget>`
  - Via jutil: `jutil env activate -p <project> -A <budget-id>`
  - **Be careful in choosing the right project!**

- Environment variables changed in the new model
  - E.g. data is no longer in `$HOME`, but in `$PROJECT`
  - `$WORK$SCRATCH`
  - `$ARCH$ARCHIVE`
Data sharing

There are different use cases and solutions for sharing data between users:

• **Solution 1 - Project data**
  - Users are members of the same project and can access each other's data. Please regard that a user can also get member of a project without access to project's compute resources. Such a user can just access the data of the project.

• **Solution 2 - Data projects for sharing data between compute projects**
  - Data can be shared via a common data project. Members of different compute projects can join the same data project.

• **Solution 3 - Single files**
  - Data can be made available also via the SCRATCH filesystem: All users can access $SCRATCH/../share for this purpose.
NEW PORTAL - JUDOOR

- Managing of accounts / projects
- Role-based
  - User, PI/PA
- Overview of resources
- Paperless account creation

- Manage ssh-keys
- View/Accept user agreement
- Change contact data
- Get software access
- Get and access web services

- Future: resource usage,…

Max Mustermann

Account: mustermann1
E-mail address: max.mustermann@example.com
Telephone: 1234-5678
Fax: 1234-5678
Address:

Systems

- judac Manage SSH-keys
  Usage agreement confirmed on 14.11.2018
- jureca Manage SSH-keys
  Usage agreement confirmed on 14.11.2018
- juwels You need to sign the usage agreement to access this system

Projects

- Compute project title one CPR031
- Compute project title two CPR032
JUDOOR – MAIN TASKS

- Get access to a project
  - PI is informed about project id
  - User → “Join a project”
  - PI approves user and assigns resources
- PI view
  - Add/modify users in a project
  - Add resources
  - Appoint user to project administrator (PA)
USER DOCUMENTATION AND SUPPORT

• Usage Model
  • http://www.fz-juelich.de/ias/jsc/usage-model

• JuDoor
  • http://www.fz-juelich.de/ias/jsc/judoor

• SC – Support
  • 02461/61-2828
  • sc@fz-juelich.de
THANK YOU FOR YOUR ATTENTION