

User Portal and Job Monitoring

Webportals and Support-Tools @ JSC

21.05.2024 | Dr. Jolanta Zjupa

Getting access to JSC resources

	Test project	Compute project	Data project
Apply	anytime	twice a year: mid Feb/Aug <i>next deadline:</i> 5 August 2024, 17:00 CEST	anytime
Compute time	~ (5.-20.) 000 core-h	intensive \geq (5.-10.) Mcore-h	none
Duration	up to 4 months	1 year	1 year
Systems	JUWELS, JURECA, JUSUF, JUDAC	JUWELS, JURECA, JUSUF, JUDAC	JUDAC
Filesystems	PROJECT, SCRATCH	PROJECT, SCRATCH	ARCHIVE, FASTDATA, DATA

- <https://www.fz-juelich.de/en/ias/jsc/systems/supercomputers/call-for-applications-for-test-projects-with-jsc-supercomputing-and-support-resources>
- <https://www.fz-juelich.de/en/ias/jsc/systems/supercomputers/apply-for-computing-time>
- <https://www.fz-juelich.de/en/ias/jsc/systems/supercomputers/call-for-proposals>
- <https://www.fz-juelich.de/en/ias/jsc/services/data-services/data-projects>

3 Steps to access the HPC systems

Step 1: JuDoor account registration

JuDoor Login

Portal for managing accounts, projects and resources at JSC.



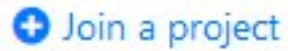
Login using JSC webservice account	Login with e-mail callback
<p>Username</p> <input type="text" value="luehrs2"/>	<p>Login mail address</p> <input type="text"/>
<p>Password</p> <input type="password" value="••••••••"/>	<p>A confirmation email to confirm your identity will be sent to this address.</p>
<p>Login Register Reset password</p>	<p>Send identification mail</p>

If you are stuck take a look at the [JuDoor Documentation](#).

<https://judoor.fz-juelich.de>

Step 2: Join a project

Two alternatives



in JuDoor if you
know the project ID

Follow invitation link send
by PI or PA

<https://judoor.fz-juelich.de/projects/join/...>

PI/PA receives notification and grants
project resource specific access

If you are already a project member but don't see all
available project systems, you can use

Request access for resources

Projects

 CST Application Support		ccstao
 Institutskontingent JSC	Compute project	cjsc
 PROJEKT PARATEAM		cparateam
 Datenprojekt JSC	Data project	jsc
  Introduction to Supercomputing at JSC - Theory & Practice	PI/PA access	training2230
 Join a project		

A user can be part of multiple compute and data projects

JuDoor

PI/PA

- receives notification
- manages project members
- grants access to specific resources
- manages data inheritance (PI only)
- has access to all project info on LLview and Kontview

PM

- project specific permanent contact point at JSC
- either from a SDL or ATML

<https://www.fz-juelich.de/en/ias/jsc/services/user-support/project-mentoring>

Project training2230

Project title

Introduction to Supercomputing at JSC - Theory & Practice

Type

🏢 Computeproject

Principal Investigator

Ilya Zhukov

Project Admin

Dr. Jolanta Zjupa

Project Mentor

Ilya Zhukov

Start date

01.11.2022

End date

30.11.2022 ⌚

Community

Training

Address

Forschungszentrum Jülich GmbH
Wilhelm-Johnen-Straße
52428 Jülich
Germany

Group name

training2230

Active Budgets

Budget **cstao** ?

Data access is possible up to 3 month after the end of the project via JUDAC.

JuDoor

Each projects grants access to various systems and partitions.

Systems

Usage agreement link must be visited first before Manage SSH-Keys link appears

click-able status page link

deep	Manage SSH-keys	Usage agreement confirmed on 27.10.2022	
DEEP_BOOSTER: deepsea iosea DEEP_CPU: deepsea iosea DEEP_DAM: deepsea iosea			
judac	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
ccstao deepsea iosea cparateam punch_astro training2400 training2403 training2410 cjsc jsc cstao			
jureca	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JURECA-DC_CPU: ccstao cparateam punch_astro training2403 training2410 cjsc JURECA-DC_GPU: ccstao punch_astro training2410 cjsc			
jusuf	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JUSUF_CPU: ccstao training2403 training2410 cjsc JUSUF_GPUS: ccstao training2410 cjsc			
juwels	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JUWELS: ccstao cparateam training2410 JUWELS_BOOSTER: ccstao training2410 JUWELS_GPUS: ccstao training2410			

Projects connected to this resource

Service status


[Service Status](#) [Legal notice](#) [Privacy Policy](#) [Mail Subscriptions](#)

JSC Service Status










- Cluster Systems

 JUWELS Cluster	 JUWELS Booster
 JURECA DC	 JUSUF HPC
 JUDAC	 QLM
 JUZE1	 HDF-ML
 DEEP	


- File Systems

 \$HOME	 \$PROJECT
 \$SCRATCH	 \$ARCHIVE Next Maintenance at Jun 17, 2024, 08:00
 \$FASTDATA	 \$DATA
 \$CSCRATCH	

- Services

 JuDoor	 Jupyter-JSC
 JSC Cloud	 Backup
 Job reporting	 UNICORE Next Maintenance at Jun 10, 2024, 09:00
 HDF Cloud	 Cloud Object Storage
 JUSTCOM	

- Support

 SC Support

JUWELS

Jülich Wizard for European Leadership Science



Copyright:
— Forschungszentrum Jülich

Status

Please see the [JSC Service Status Page](#) for system status information:

System messages JUWELS Cluster

System messages JUWELS Booster

<https://status.jsc.fz-juelich.de/>

Read the MOTD

Supercomputers

JUWELS

- [User Documentation](#)
- [Configuration](#)
- [FAQ](#)
- [Known Issues](#)
- [Job Reporting](#)
- [Modules overview](#)
- [Related Organisations](#)
- [JURECA](#)
- [JUSUF](#)
- [Apply for test access](#)
- [Apply for computing time](#)

Service status

JUWELS Cluster

The Cluster partition of the JUWELS Supercomputer [↗](#)



JUWELS Cluster is currently degraded

Degraded base services

Unavailable login nodes

- juwelsvis01.fz-juelich.de

 \$CSCRATCH [↗](#)

Current state

Issues in cell 03

28. Feb. 2022, 14:20:00 - unknown

Today, on Monday 2022-02-28, at 14:20, a series of hardware failures resulted in a malfunction in the power and cooling systems of cell 03 in JUWELS Cluster. As a result the InfiniBand network suffered instabilities that affected other cells, and some jobs failed. The cell is now disconnected from the fabric and the system is stable.

We apologize for the inconvenience.

History

New software stage

10. Feb. 2022, 12:00:00 - 7. März 2022, 20:14:16

The default software stage has been changed to Stages/2022. If you wish to continue using the previous default stack please load Stages/2020 before any other module. Note that this stage will be deprecated.

JuDoor

Each projects grants access to various systems and partitions.

Systems

Usage agreement link must be visited first before Manage SSH-Keys link appears

click-able status page link

deep	Manage SSH-keys	Usage agreement confirmed on 27.10.2022	
DEEP_BOOSTER: deepsea iosea DEEP_CPU: deepsea iosea DEEP_DAM: deepsea iosea			
judac	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
ccstao deepsea iosea cparateam punch_astro training2400 training2403 training2410 cjsc jsc cstao			
jureca	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JURECA-DC_CPU: ccstao cparateam punch_astro training2403 training2410 cjsc JURECA-DC_GPU: ccstao punch_astro training2410 cjsc			
jusuf	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JUSUF_CPU: ccstao training2403 training2410 cjsc JUSUF_GPUS: ccstao training2410 cjsc			
juwels	Manage SSH-keys	Usage agreement confirmed on 20.04.2022	
JUWELS: ccstao cparateam training2410 JUWELS_BOOSTER: ccstao training2410 JUWELS_GPUS: ccstao training2410			

Projects connected to this resource

Step 3: Upload your SSH-key

MFA



SSH keys on jureca



Here you can upload an SSH public key to the system. Information on how to create an SSH public key can be found [here](#). It might take up to 15 minutes until the newly added SSH key is activated.

More details on from-clause handling and key generation

Upload SSH public keys

To use our systems your public key options have to include a `from=`-clause to restrict the usage of the key to your personal IP address range. Your current IP address is `134.94.52.69`. See [the documentation](#) for more information.

☐ Remove all other existing public keys.

Your current public IP

Your public key and options string

`from="134.94.52.69" ssh-ed25519 AAAAC3N...`

use ed25519
no RSA ssh keys

Paste the content of your `.pub`-file here or upload a file below.

Your public key file

Browse

Additional public key options

E.g. `from="134.94.52.69",...`

Can be a list of static IP, a static network range, a static hostname or a hostname suffix using `*` as a wildcard symbol

You can specify your `from=` clause and other public key options here

Start upload of SSH-Keys

Add additional keys...

Your SSH keys on jureca

sebi@zam495

SHA256:

MD5:

Options: `from="134.94.0.0/16"`



Further steps to get you going

Log in to JSC system of choice, over terminal:

```
ssh [-X] <username>@<system>.fz-juelich.de
```

alternatively you can use **JupyterLab**, favourite editor (upon set up of ssh connection), mount point (sshfs)

Talk tomorrow by
J.-H. Göbbert (JSC)

➤ This will bring you to \$HOME on <system> (there is a separate home on each JSC system)

Note: \$HOME has only 16GB and is *not* meant for production - go to: \$PROJECT or \$SCRATCH

Note: \$SCRATCH has **no backup** and files that have not been touched 90 days are **automatically deleted**

Documentation & overview preinstalled software

JUWELS

Jülich Wizard for European Leadership Science



Copyright:
— Forschungszentrum Jülich

Supercomputers

JUWELS

[User Documentation](#)

[Configuration](#)

[FAQ](#)

[Known Issues](#)

[Job Reporting](#)

[Modules overview](#)

[Related Organisations](#)

JURECA

JUSUF

[Apply for test access](#)

[Apply for computing time](#)

**Talk tomorrow by
R. Partzsch (JSC)**

Supercomputers: [https://www.fz-juelich.de/en/ias/jsc/systems/supercomputers\(/<system>\)](https://www.fz-juelich.de/en/ias/jsc/systems/supercomputers(/<system>))
Storage systems: [https://www.fz-juelich.de/en/ias/jsc/systems/storage-systems\(/<system>\)](https://www.fz-juelich.de/en/ias/jsc/systems/storage-systems(/<system>))

Further steps to get you going

Log in to JSC system of choice, over terminal:

```
ssh [-X] <username>@<system>.fz-juelich.de
```

➤ This will bring you to the **Log in node**:

- **shared resource**
- time spend on Log in node is *not* deducted from the budget
- number of parallel processes limited
- *not* meant for production but for setup, compilation and submission to:

➤ **Compute node**:

- **exclusive resource**, no node-sharing
- submit jobs using (PS)Slurm or get an interactive session
- all time a compute node is allocated for you is deducted from your budget **also if no computations are performed!**

Talk tomorrow by
C. Paschoulas (JSC)

Quota calculation

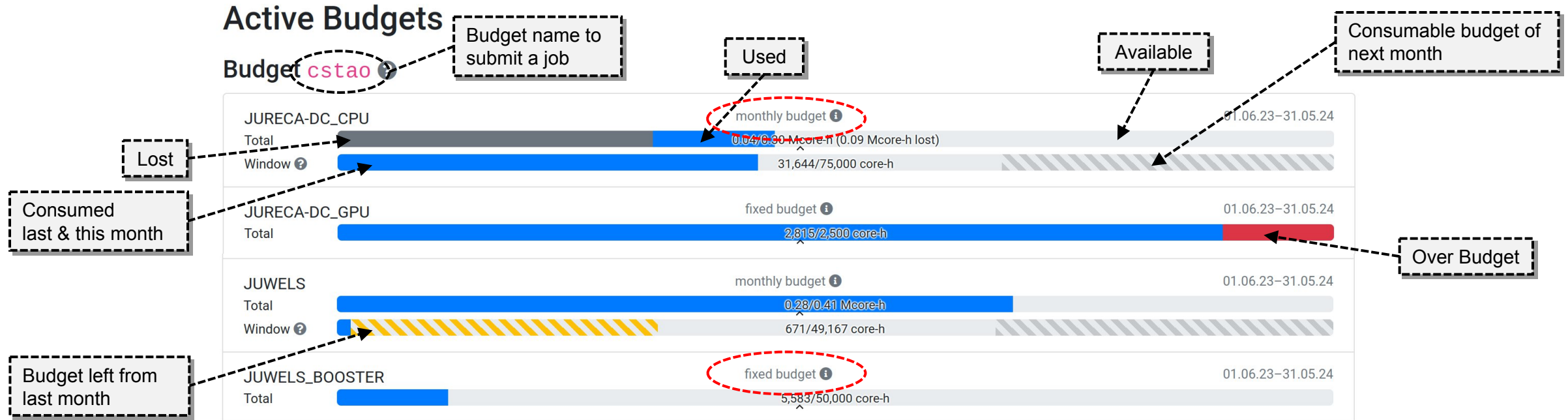
core-h =

#nodes x #physical_cores_per_node x runtime

- **#physical_cores_per_node:**
 - JUWELS or JUWELS_BOOSTER: 48, JURECA-DC or JUSUF: 128
 - **GPUs** are accounted for through core-h
- **runtime:** actual job runtime, not the provided walltime of the job
- There is no node-sharing on compute nodes
- The quota is fully placed on the day when the job ended
- The quota of a job is not taken into account in advance
- The base priority of a job based on the overall project quota and is updated on a daily basis

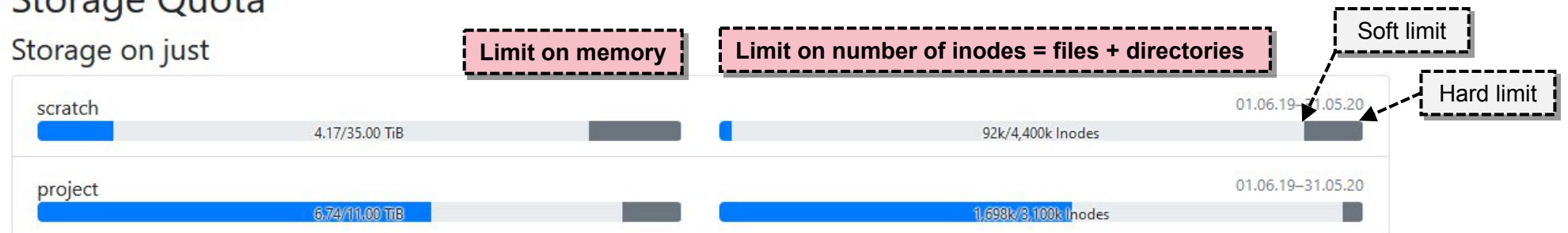
JuDoor quota status

Active Budgets



Storage Quota

Storage on just



Jutil tool & budget monitoring

- The budget can be monitored using the command line tool `jutil` in the terminal
- `jutil` can also be used to activate a specific budget by default for a running shell:

```
# See your projects  
jutil user projects
```

```
# See your compute allocation  
jutil user cpuquota
```

```
# See your disk quota  
jutil user dataquota
```

```
# Activate environment (and optionally default budget) for a given project  
# Sets $PROJECT and $SCRATCH  
jutil env activate -p <project> [-A <budget>]
```

<https://apps.fz-juelich.de/jsc/hps/just/jutil.html>

complementary to providing the budget on a per job basis (using the `--account` or `-A` option in the batch script)

Project quota overview: KontView

Accessible from JuDoor:

Show extended statistics

Show extended statistics for PI/PAs

User view

PI/PA view

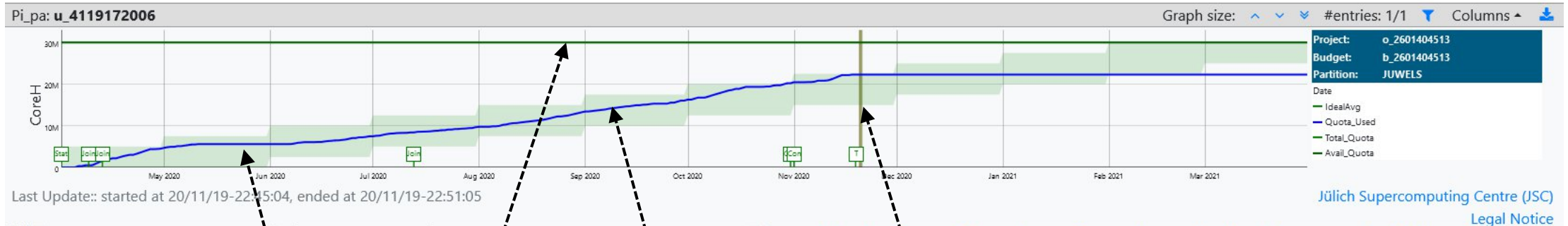


JSC KontView for **Juwels and Jureca** - PI/PA view

JÜLICH
Forschungszentrum
JÜLICH SUPERCOMPUTING
CENTRE

Compute Projects Data Projects

Class	Project	Budget	Partition	PI	Mentor	Kind	Status	Start	End	Elapsed %	Coreh used	% of avail.	% of requ.	Coreh ideal	% of ideal	Coreh avail.	Coreh awarded	Coreh requ.	Coreh bonus	Coreh lost	Coreh nocont
filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter	filter
											Σ 22286298.00	Ø 74.29	Ø 74.29		Ø 116.37	Σ 30000000.00	Σ 30000000.00	Σ 30000000.00	Σ 0.00	Σ 0.00	Σ 218119.29
pra	o_2601404513	b_2601404513	JUWELS	u_4119172006	u_0325695197	m	A	01.04.20	31.03.21	63.84%	22286298	74.29%	74.29%	19150685	116.37%	30000000	30000000	30000000			218119.29



3-month window

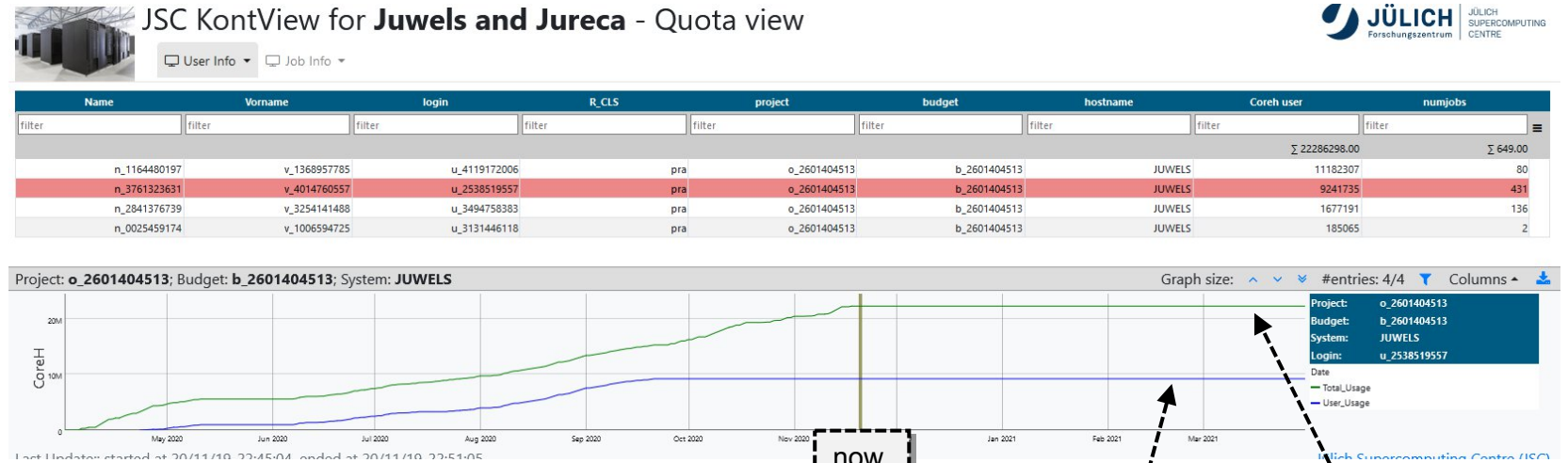
total quota

used quota

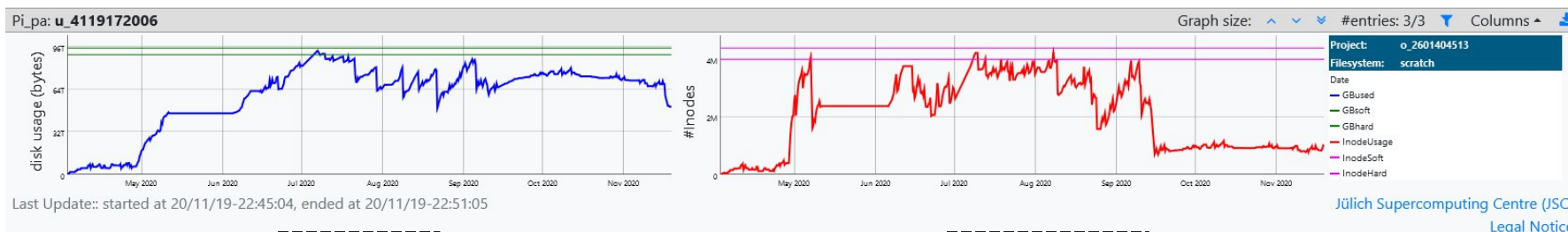
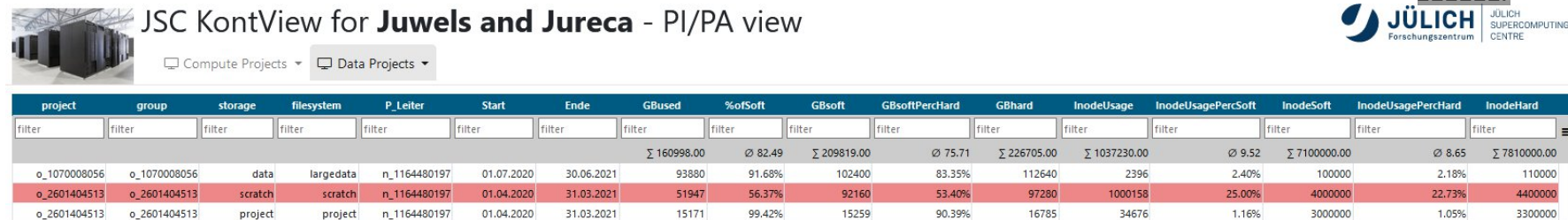
now

Project quota overview: KontView

PI/PA view:
display quota per user:



Storage utilization:




Job monitoring & reports: LLview

JUWELS

Jülich Wizard for European Leadership Science

SPONSORED BY THE
Federal Ministry of Education and Research



Copyright:
— Forschungszentrum Jülich

JUWELS is a multi-petaflop modular supercomputer operated by Jülich

Supercomputers

JUWELS

- User Documentation
- Configuration
- FAQ
- Known Issues
- Job Reporting**
- Modules overview
- Related Organisations

JURECA

JUSUF

- Apply for test access
- Apply for computing time
- Calls for proposals

<https://llview.fz-juelich.de/<system>>

Home / Services / User Support / JSC Software & Tools / LLview

LLview

Access to Job reports for JSC systems

- JUWELS
- JUWELS Booster
- JURECA-DC
- JUSUF
- DEEP

Useful Links

- Job reporting full documentation

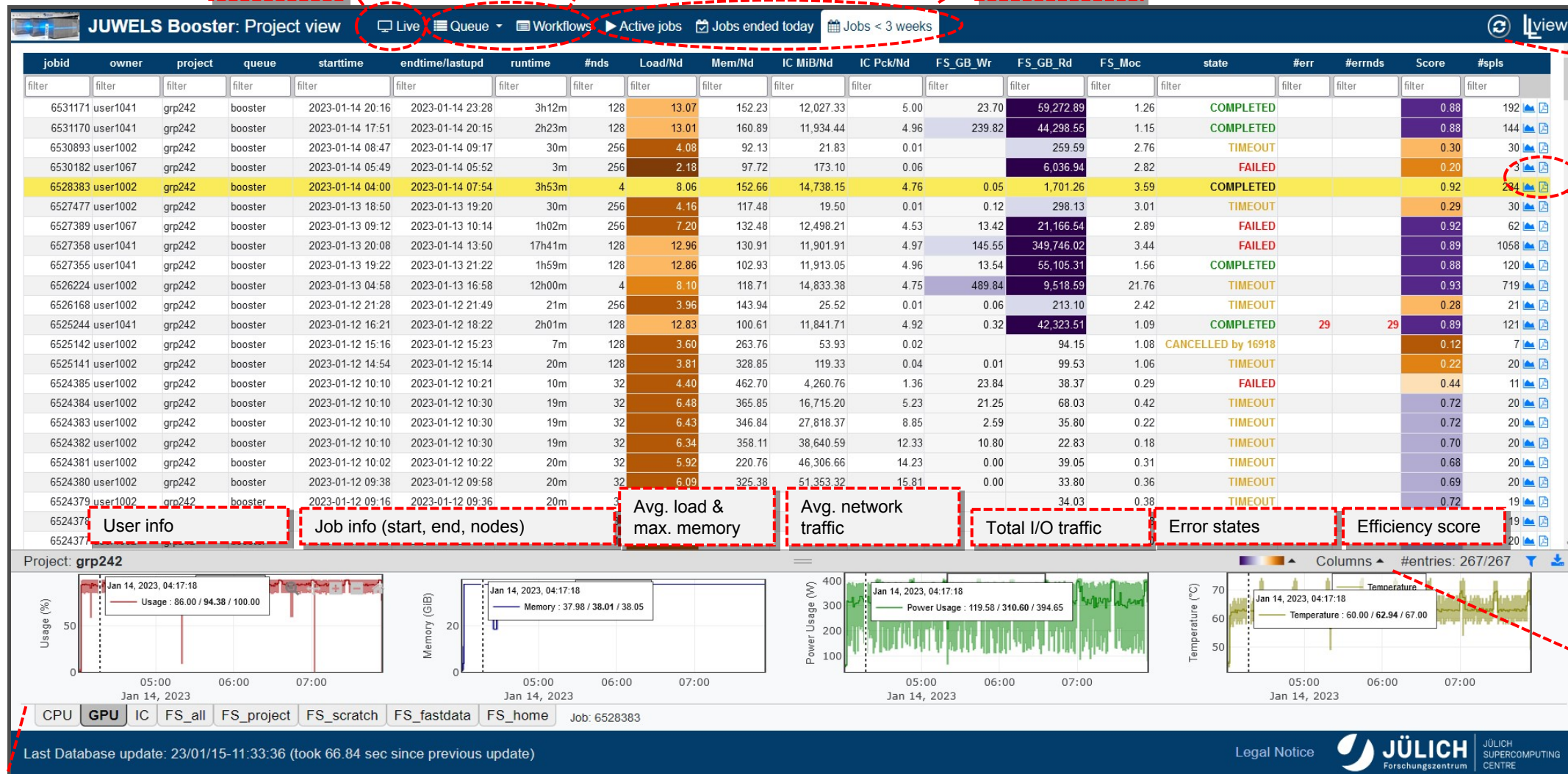
LLview

Logindata: JuDoor username & password

Live View

Scheduler overview

Job overviews



Auto-Reload

Job report
(interactive
HTML view, or
PDF download)

- Column selection:
- ☒ FS_all
 - ☐ FS_by_fs
 - ☐ GPU
 - ☐ GPU_max
 - ☒ final_status
 - ☒ info
 - ☒ loadmem
 - ☐ mentor
 - ☒ network
 - ☒ sched
 - ☐ sched_ext
 - ☒ score
 - ☐ timings

Job specific metric history for CPU, GPU, ...

LLview version 2.0
Dec. 2022

Job reports

receive link to job report per email:

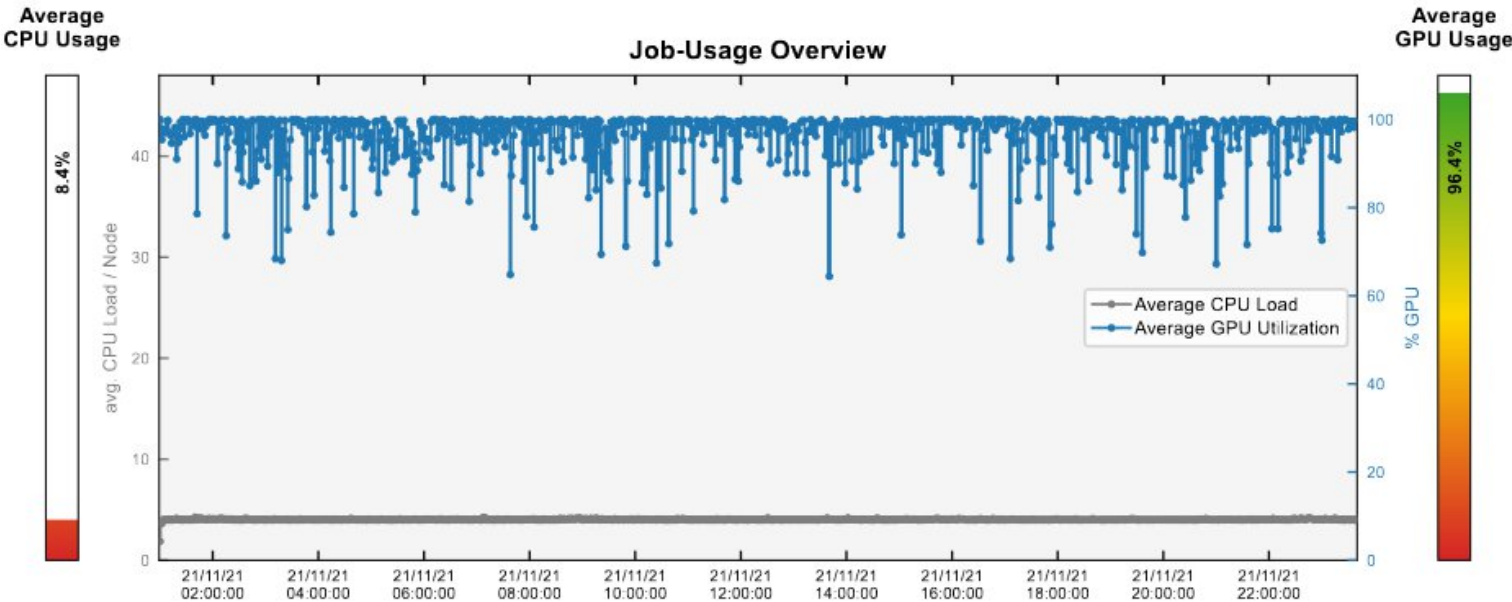
```
#!/bin/bash -x
```

```
#SBATCH --mail-type=BEGIN,END,FAIL
```

```
#SBATCH --mail-user=<email>
```

Job Runtime: 22h40m → 94.42% of Wall: 1d00h00m		Job Performance Metrics			
Job Start Time:	2021-11-20 23:58:33		min.	avg.	max.
Job Last Timestamp:	2021-11-21 22:38:12 (Running)				
Current Time:	2021-11-21 22:38:12				
Job Endtime (Est.):	2021-11-21 23:58:51				
Queue: booster					
Job Size, #Nodes:	1	#Data Points:	1147		
Job Size, #GPUs:	4	#Data Points:	901		
Job I/O Statistics		Total Data Write	Total Data Read	max. Data Rate/Node Write	max. Data Rate/Node Read
\$HOME:	0.00 MiB	0.00 MiB	0.00 MiB/s	0.00 MiB/s	0.00 op./s
\$PROJECT:	0.00 MiB	0.00 MiB	0.00 MiB/s	0.00 MiB/s	0.00 op./s
\$SCRATCH:	0.00 MiB	0.00 MiB	0.00 MiB/s	0.00 MiB/s	0.00 op./s
\$FASTDATA:	0.00 MiB	0.00 MiB	0.00 MiB/s	0.00 MiB/s	0.00 op./s
Job GPU Statistics					
avg. GPU Usage:	96.40 %	avg. Mem. Usage Rate:	13.52 %	avg. GPU Temp.: 69.03 °C	avg. GPU Power: 310.22 W
max. Clk Stream/Mem:	1410/1215 MHz	max. Mem. Usage:	1738.50 MiB	max. GPU Temp.: 75.00 °C	max. GPU Power: 343.43 W

This job will use approximately 1 nodes × 48 cores × 24.000 hours = 1152.00 core-h for the specified walltime (up to now: 1087.68)



Job reports – further job stats

Nodelist

1 jwc07n106 Interconnect group: 88	2 jwc07n107 Interconnect group: 88	3 jwc07n108 Interconnect group: 88	4 jwc07n109 Interconnect group: 88	5 jwc07n110 Interconnect group: 88	6 jwc07n111 Interconnect group: 88	7 jwc07n112 Interconnect group: 88	8 jwc07n113 Interconnect group: 88
9 jwc07n114 Interconnect group: 88		10 jwc07n115 Interconnect group: 88					

Job Finalization Report

Job State: **FAILED**

Job Return Code: **11**

Job Signal Number: **0**

Timings (Accounting):

Start Time **2021-11-20 11:25:20**
End Time **2021-11-21 10:25:44**
Wall Time **24.00**
Runtime **23.00 hours**

Step RCs:

Step: batch	RC: 11	Sig.-Nr: 0
Step: 0	RC: 0	Sig.-Nr: 9

Node System Error Report

Msgs **1**

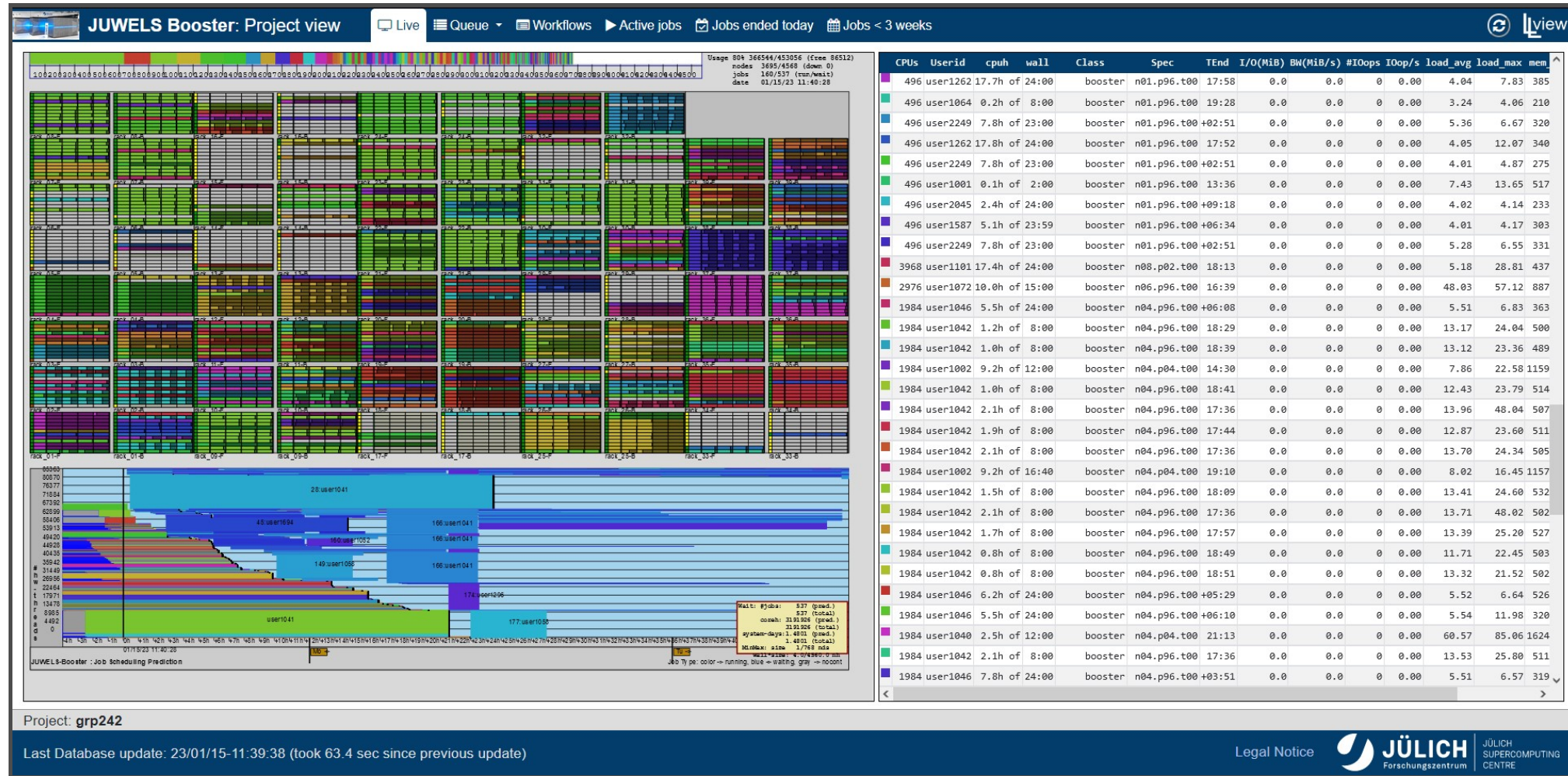
Nodes **1**

Error Messages:

```
2021-11-21T10:25:08+0100 jwc07n112.juwels kernel: ramses3d invoked oom-killer: gfp_mask=0x6280ca(GFP_HIGHUSER_MOVABLE! __GFP_ZERO), order=0, oom_score_adj=0
```

Scheduler overview

- Current usage of system:
- clickable
- update 1min
- Mapping of jobs to nodes
- Prediction of system usage using JuFo



JuFo: Simulator for Job Schedulers on HPC Systems, C.Karbach, T.Bauer, JSC

HELP

For *general* questions and inquiries, contact SC support at sc@fz-juelich.de.

- What is your **user ID**? What is the **project ID**?
- Which **system** did you use?
- If there was an error, what is the **error message**?
- Is the error **reproducible**?
- If related to a job, what was the **job ID**?
- Which **module environment** did you use?



For *project specific* questions and inquiries, contact your **Mentor**.