





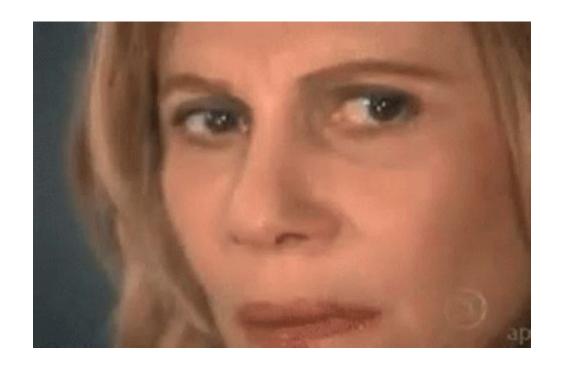
How do I improve my productivity using the Graphical Interface

The Autosubmit Team

Seminar 26/01/2023

Instructions for this session

If you don't understand something, please **don't wait** till the end, ask in the moment!





How I access these powers?







You can only authenticate from inside BSC's network

https://earth.bsc.es/autosubmitapp/



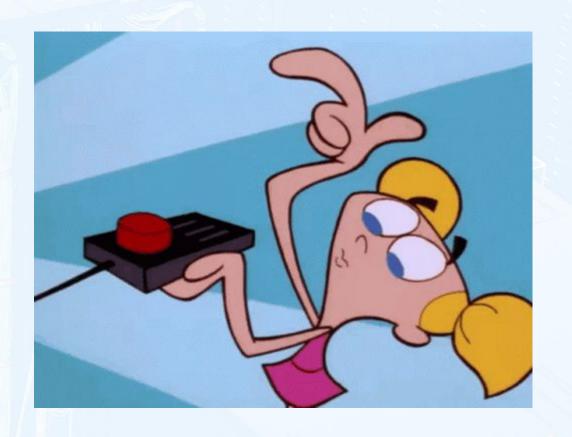
Why remember links?

 That is why we have include them in every time you enter either of the autosubmit machines:)





What does this button do?





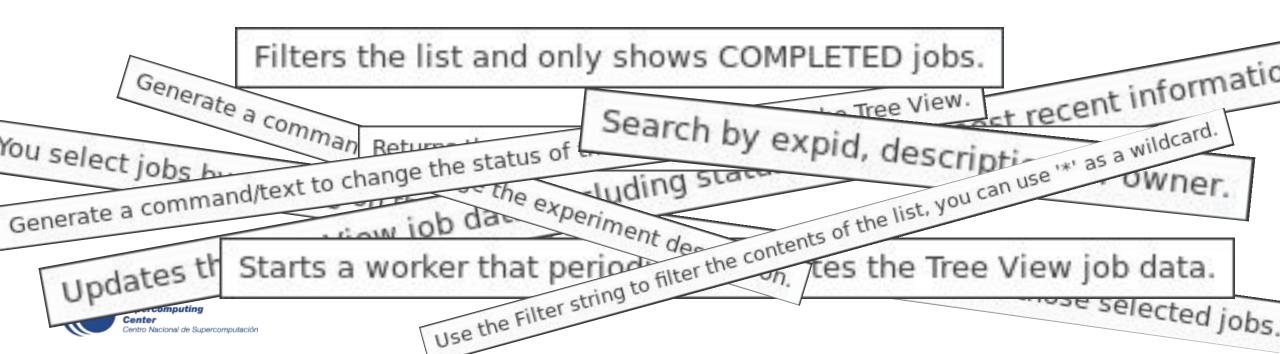
Help is right at your fingertips

should

Brief descriptions pop up if you hover over a button!



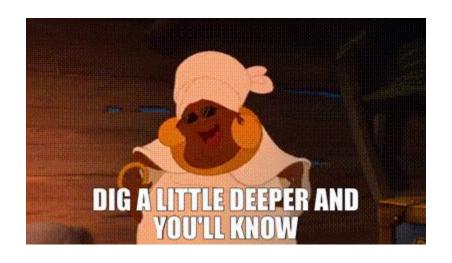
Shows all the experiments that are currently running under Autosubmit.



If you want to dig a little deeper, the wiki

Separate ReadTheDocs for the GUI:

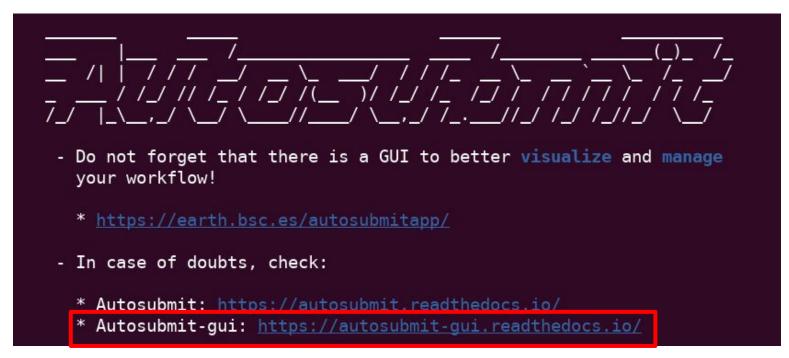
https://autosubmit-gui.readthedocs.io/





Why remember links? II: the sequel

Also there every time you log in!



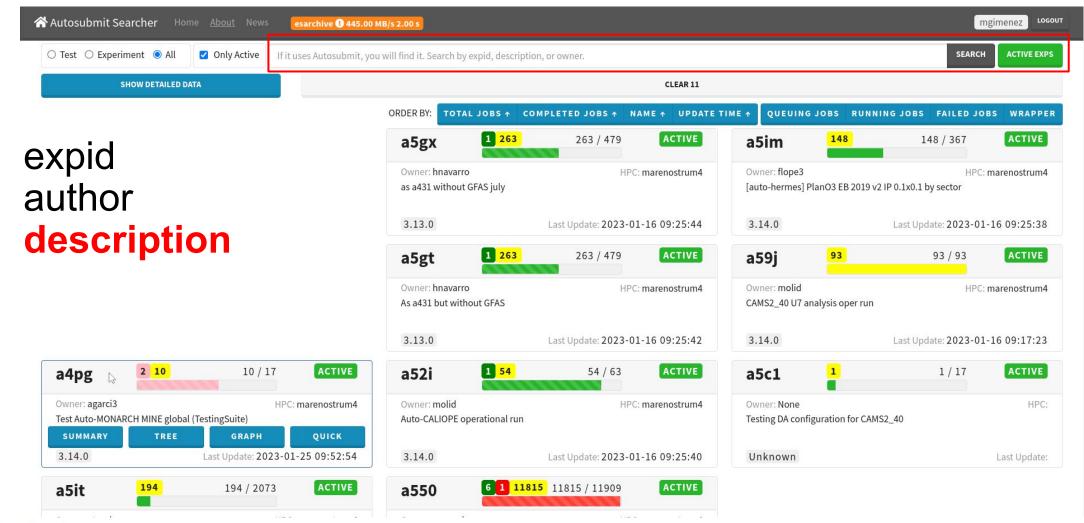


How do I fetch experiments?



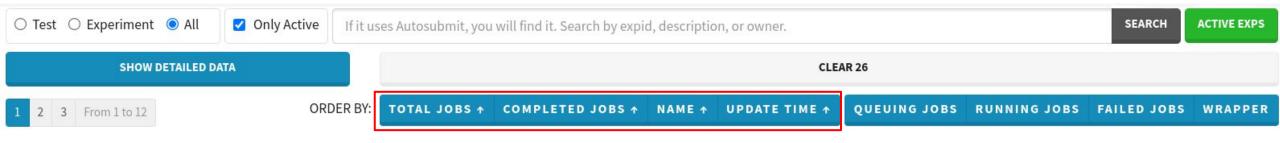


Say hello to the Search Bar, she's your best friend





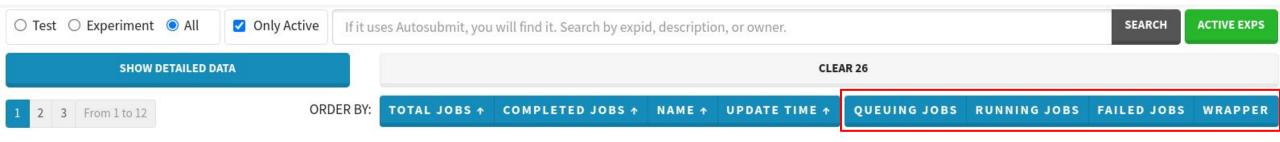
Ordering



- Experiment Cards can be ordered by
 - number of jobs
 - number of complete jobs
 - name (expid)
 - update time



Pop up the important ones



- Show up first
 - number of queuing jobs
 - number of running jobs
 - failed jobs
 - existence of wrappers



Experiment Card

a550



ACTIVE

Owner: acarreri

ri HPC: marenostrum4

HR decadal prediction system - reduced setup 31 sdates (every 2yr), 5memb, 2 forecasted yr - ocean IC: a510 cca (ERA5-

HRES_BE_total_precip/ORAS5_resto/EN4.v4.2.2_nudging/snow_cond=0.2

7) - atm IC: ERA5-BE (a2ym) - a2ye tuning param. - branch 3.3.3.2, RES cns88334 - reduced outclass - possible extension - copy of t0ni, propagate a4fq

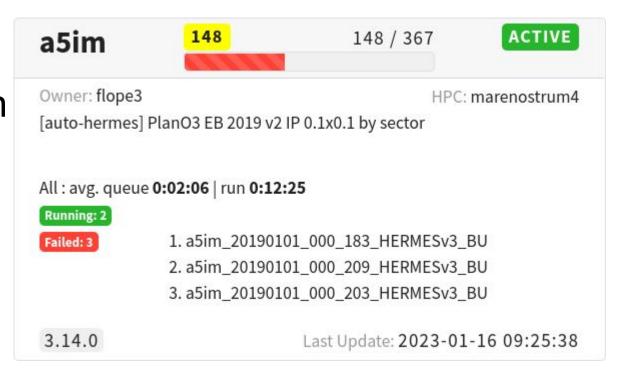
3.13.0 VERTICAL

Last Update: 2023-01-16 09:36:59



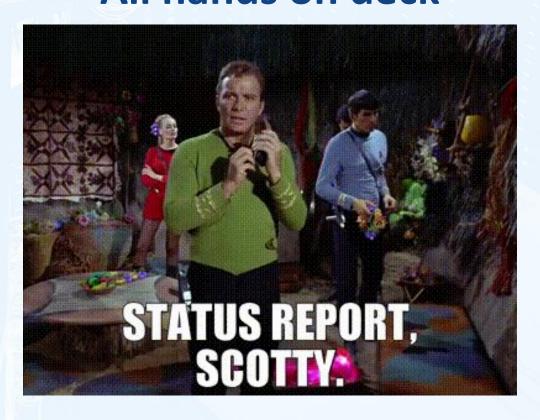
Can you detail? Yes.

- Detailed info for quick info on
 - average queue time
 - average run time
 - list of failed jobs





How do I check my experiment's status? All hands on deck





Tree View

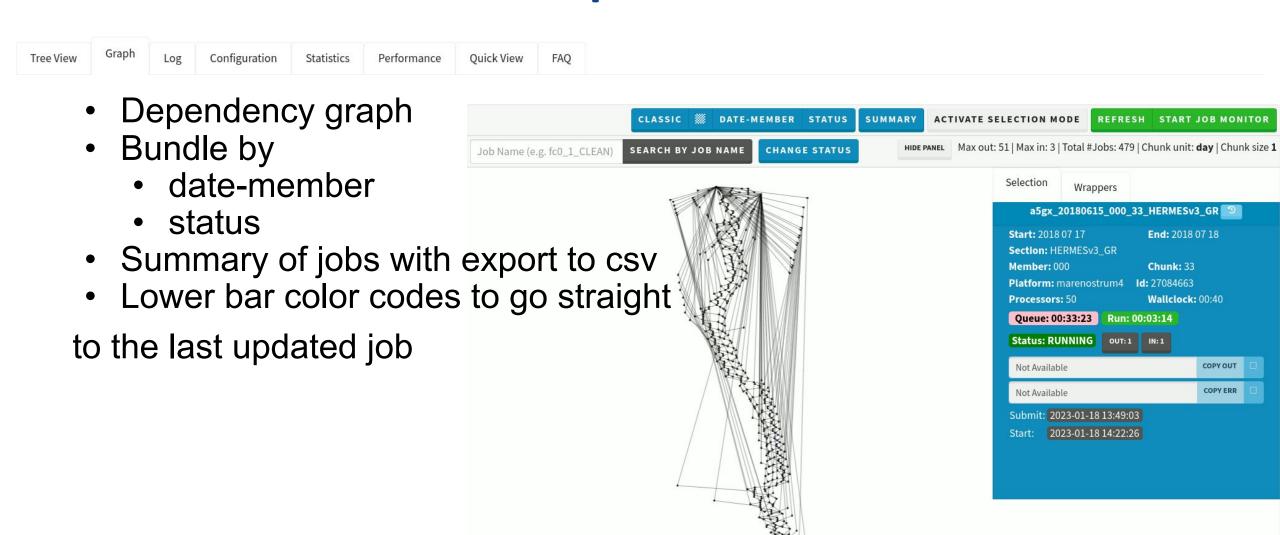
Tree View Graph Log Configuration Statistics Performance Quick View FAQ

- List of all jobs hierarchically
 - collapse and expand all
 - filter by string
 - color coded by status





Graph View



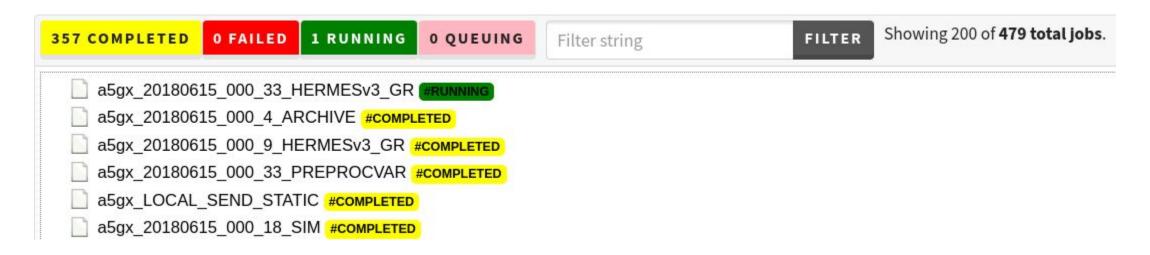
Navigation buttons:



Quick View

Tree View Graph Log Configuration Statistics Performance Quick View FAQ

- List all jobs
 - Failed jobs
 - Complete
 - filter by state XOR name





Log View

Tree View Graph Log Configuration Statistics Performance Quick View FAQ

Barcelona

Center

Supercomputing

Centro Nacional de Supercomputación

Check out the last lines of the AS' log

```
LOG FILE: 20230117_145250_run.log (1674047946)
                                                                                                                               LAST MODIFIED: 2023-01-18 14:19:06
2023-01-18 14:18:39,169 Sleep: 10
2023-01-18 14:18:39,169 Number of retrials: 0
2023-01-18 14:18:39,169 WRAPPER CHECK TIME = 10
2023-01-18 14:18:39,173 Saving JobList: /esarchive/autosubmit/a5dv/pkl/job_list_a5dv_backup.pkl
2023-01-18 14:18:39,186 Job list saved
2023-01-18 14:18:39,195 Checking jobs for platform=marenostrum_archive
2023-01-18 14:18:39,200 Checking jobs for platform=marenostrum4
2023-01-18 14:18:39,203 Checking jobs for platform=local
2023-01-18 14:18:39,203 Checking all jobs at once
2023-01-18 14:18:46,337 Successful check job command
2023-01-18 14:18:46,338 Job a5dv_20220609_1_5_CCTM_CAT is RUNNING
2023-01-18 14:18:46,338 End of checking
2023-01-18 14:18:46,340 Updating FAILED jobs
2023-01-18 14:18:46,340 Updating WAITING jobs
2023-01-18 14:18:46,341 Update finished
2023-01-18 14:18:46,353 Saving JobList: /esarchive/autosubmit/a5dv/pkl/job_list_a5dv.pkl
2023-01-18 14:18:46,365 Job list saved
2023-01-18 14:18:56,382 Reloading parameters...
2023-01-18 14:18:56,382 Loading parameters...
2023-01-18 14:18:56,384 Loading project parameters...
2023-01-18 14:18:56,385 Parameters load.
2023-01-18 14:18:56,385
44 of 266 jobs remaining (14:18)
2023-01-18 14:18:56,386 3 jobs has been failed (14:18)
2023-01-18 14:18:56,386 Sleep: 10
2023-01-18 14:18:56,386 Number of retrials: 0
2023-01-18 14:18:56,386 WRAPPER CHECK TIME = 10
2023-01-18 14:18:56,390 Saving JobList: /esarchive/autosubmit/a5dv/pkl/job_list_a5dv_backup.pkl
2023-01-18 14:18:56,405 Job list saved
2023-01-18 14:18:56,410 Checking jobs for platform=marenostrum_archive
2023-01-18 14:18:56,412 Checking jobs for platform=marenostrum4
2023-01-18 14:18:56,413 Checking jobs for platform=local
2023-01-18 14:18:56,413 Checking all jobs at once
2023-01-18 14:19:03,397 Successful check job command
2023-01-18 14:19:03,398 Job a5dv_20220609_1_5_CCTM_CAT is RUNNING
```

Configuration

Tree View Graph Log Configuration Statistics Performance Quick View FAQ

See the run config and the filesystem config

autosubmit_a2in.conf

expdef_a2in.conf

jobs_a2in.conf

platforms_a2in.conf

proj_a2in.conf

CURRENT RUN CONFIGURATION (HISTORICAL DATABASE)

[communications]

Setting	Value
API	paramiko

[config]

Setting	Value	
AUTOSUBMIT_VERSION	3.13.0	
EXPID	a2in	
MAYMAITING IODG	20	

CURRENT FILESYSTEM CONFIGURATION

[communications]

Setting	Value
API	paramiko

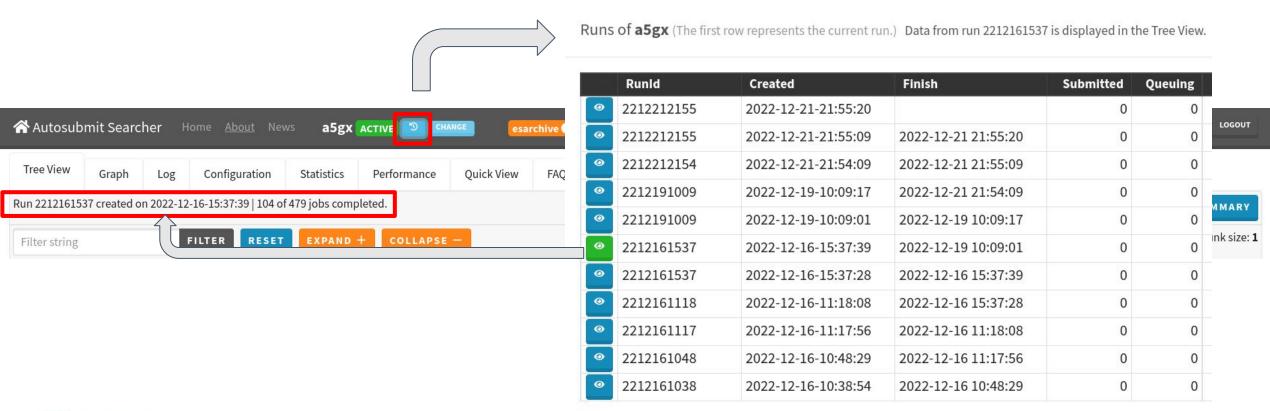
[config]

Setting	Value	
AUTOSUBMIT_VERSION	3.13.0	
EXPID	a2in	
MAYMATING IODG	20	



Change Experiment Run

Change tree view to a different run





let's not forget the Footer bar

At every experiment page, at the bottom (where I forget it)

ReSPonSe - EC-Earth3-CC_FA 1990 control simulation | Branch: 3.3.3_c4mip_production | Hpc: marenostrum4 | Owner: 1860 yruprich | Version: 3.14.0 | DB: 18 | #Jobs: 16207



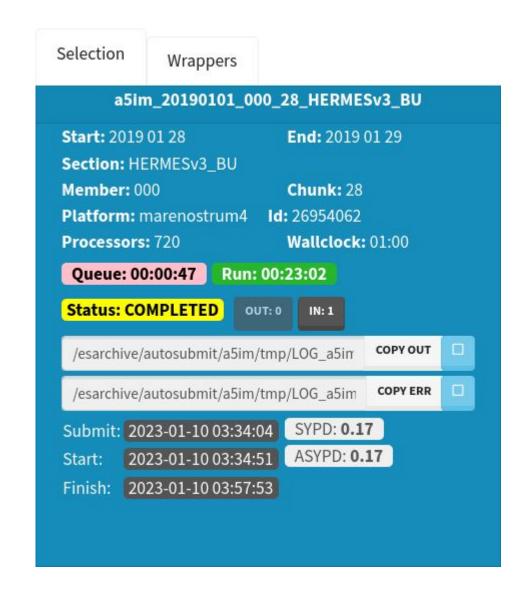
How do I check the status of a job?





Job Card

- Checkout .err and .out
- If applicable, job performance statistics





Statistics





If you like numbers

- Stats are shown in
 - summary in experiment card
 - statistics tab
 - previous runs tab

- In the statistics tab, filter by
 - string
 - time frame

Section. Ex. SIM	Hours	GET STATISTICS
------------------	-------	----------------

Statistics from the time frame: Start of experiment to 2023-01-18 14:04:00

CPU Consumption 20.81 % Total Queue Time 17.07 hours

Description	Count
Jobs Submitted	95
Jobs Run	95
Jobs Completed	91
Jobs Failed	4

Description	Hours
Expected Consumption	55.83
Real Consumption	8.76
Failed Real Consumption	0.02

and all area to be		diam'r.	- 5 + 1 -	in land and	d makeinla
Considers th	e running	ume	or the	lobs and	o retriats.

Description	Hours
Expected CPU Consumption	15,768.33
CPU Consumption	3,281.05
Failed CPU Consumption	18.17

Considers the number of processors requested by the job (and retrials) multiplied by the corresponding running time.



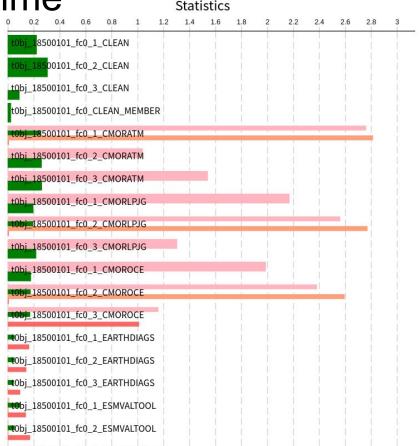
Considers number of jobs and retrials.

But, we like graphs

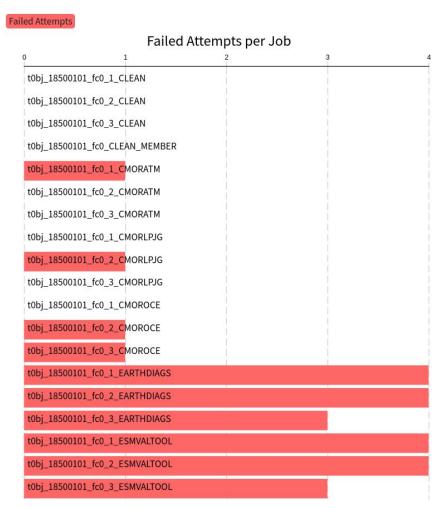
- For each job, graphs for
 - run time
 - queue time

failed queue time

retrials



t0bj_18500101_fc0_3_ESMVALTOOL



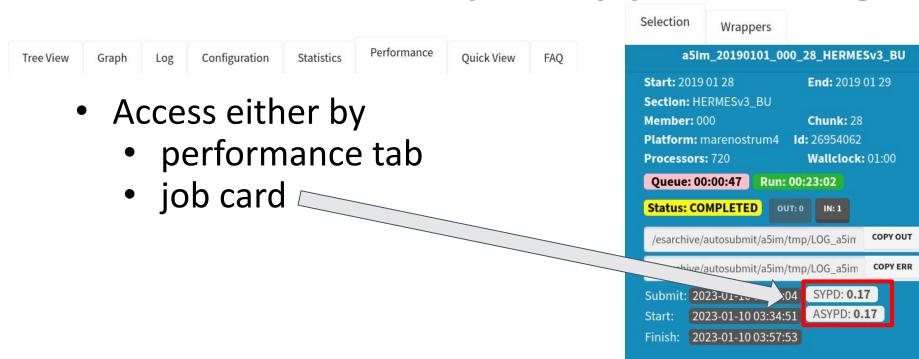


Performance





Adequately performing?



PARALLELIZATION: 382 RSYPD: 0.0101

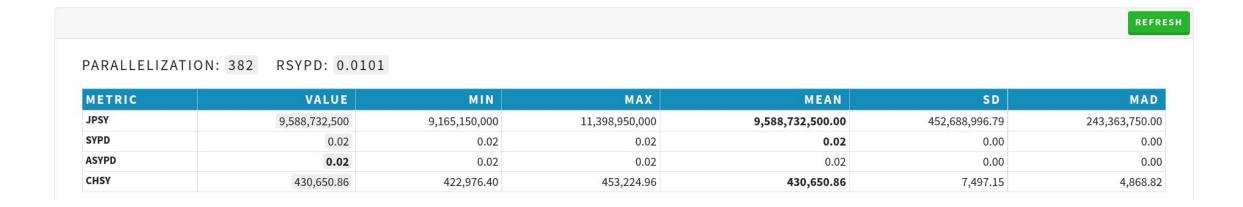
METRIC	VALUE	MIN	MAX	MEAN	SD	MAD
JPSY	9,588,732,500	9,165,150,000	11,398,950,000	9,588,732,500.00	452,688,996.79	243,363,750.00
SYPD	0.02	0.02	0.02	0.02	0.00	0.00
ASYPD	0.02	0.02	0.02	0.02	0.00	0.00
CHSY	430,650.86	422,976.40	453,224.96	430,650.86	7,497.15	4,868.82

REFRESH



No need for pulling out your calculator!

Whole experiment performance





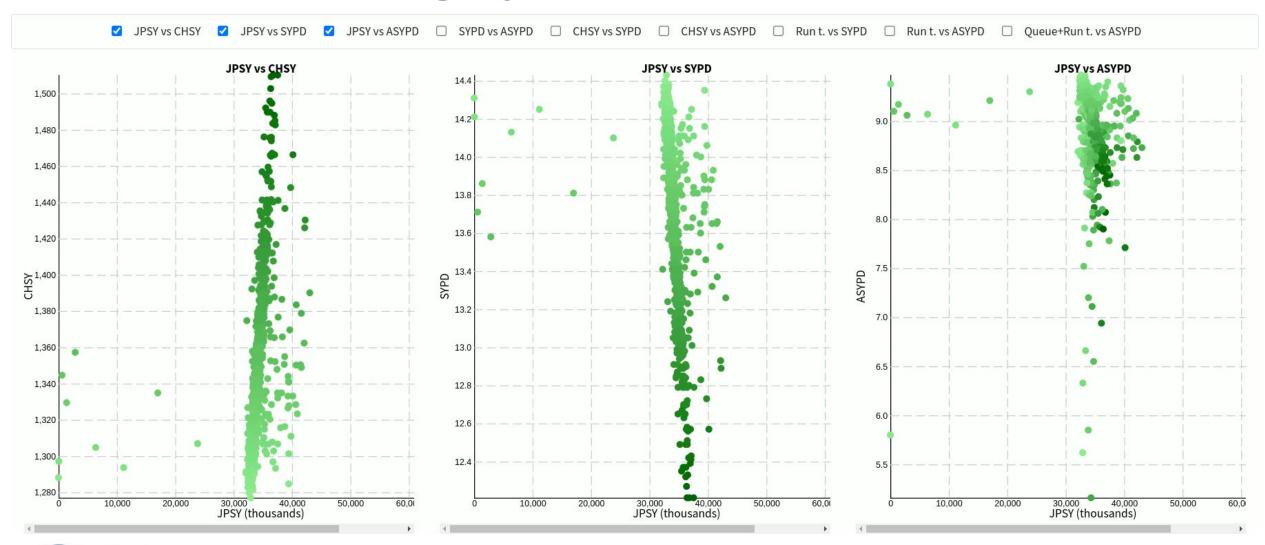
From the creators of Where's Waldo?: Where is the bottleneck?

Per (considered) job performance statistics

#	JOB NAME	QUEUE	RUN	CHSY	SYPD	ASYPD	JPSY	ENERGY
1	a5hb_20180615_000_10_SIM	00:00:33	03:01:51	422,589.09	0.02	0.02	9,384,150,000	25,710,000
2	a5hb_20180615_000_11_SIM	00:34:52	03:03:05	425,455.15	0.02	0.02	9,340,350,000	25,590,000
3	a5hb_20180615_000_12_SIM	00:04:39	03:00:43	419,955.41	0.02	0.02	9,376,850,000	25,690,000
4	a5hb_20180615_000_13_SIM	00:06:38	03:01:07	420,884.95	0.02	0.02	10,727,350,000	29,390,000
5	a5hb_20180615_000_14_SIM	00:01:00	03:01:28	421,698.29	0.02	0.02	10,661,650,000	29,210,000
6	a5hb_20180615_000_15_SIM	00:01:05	03:01:27	421,659.56	0.02	0.02	10,621,500,000	29,100,000
7	a5hb_20180615_000_16_SIM	00:01:38	03:04:08	427,895.18	0.02	0.02	9,511,900,000	26,060,000
8	a5hb_20180615_000_17_SIM	00:01:31	03:01:08	420,923.68	0.02	0.02	9,311,150,000	25,510,000
9	a5hb_20180615_000_18_SIM	00:48:20	03:01:25	421,582.10	0.02	0.02	9,449,850,000	25,890,000
10	a5hb_20180615_000_19_SIM	02:29:00	03:01:13	421,117.33	0.02	0.01	9,135,950,000	25,030,000
11	a5hb_20180615_000_20_SIM	00:01:07	03:01:18	421,310.98	0.02	0.02	9,095,800,000	24,920,000
12	a5hb_20180615_000_2_SIM	00:00:23	03:14:37	452,256.70	0.02	0.02	11,742,050,000	32,170,000
13	a5hb_20180615_000_3_SIM	00:18:08	03:07:47	436,377.17	0.02	0.02	9,738,200,000	26,680,000
14	a5hb_20180615_000_4_SIM	00:03:15	03:01:40	422,163.06	0.02	0.02	9,070,250,000	24,850,000
15	a5hb_20180615_000_5_SIM	01:15:09	02:58:13	414,145.83	0.02	0.02	9,760,100,000	26,740,000
16	a5hb_20180615_000_6_SIM	00:22:56	02:58:13	414,145.83	0.02	0.02	9,117,700,000	24,980,000
17	a5hb_20180615_000_7_SIM	00:34:21	03:00:08	418,599.84	0.02	0.02	9,347,650,000	25,610,000
18	a5hb_20180615_000_8_SIM	00:00:31	03:02:09	423,286.24	0.02	0.02	9,427,950,000	25,830,000



But, we like graphs (Remastered definitive edition)





How do I manage my experiment?





Monitoring in Real Time

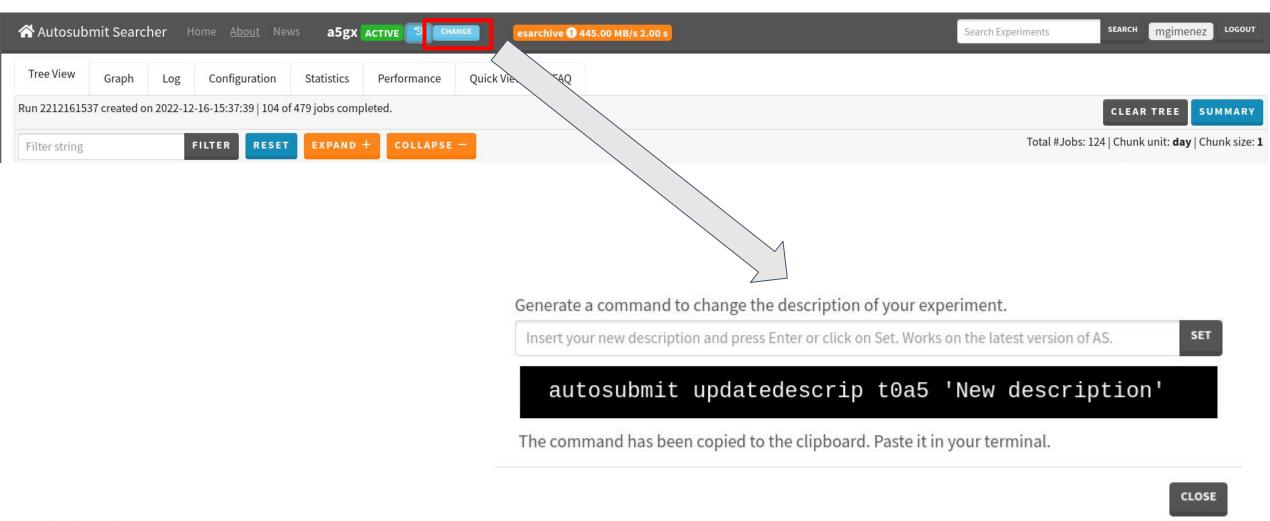
CLEAR TREE SUMMARY **ACTIVATE SELECTION MODE** REFRESH START JOB MONITOR

STOP JOB MONITOR

- Either from tree or graph press start monitoring
- Browser notifications at each update



Generate command for description change



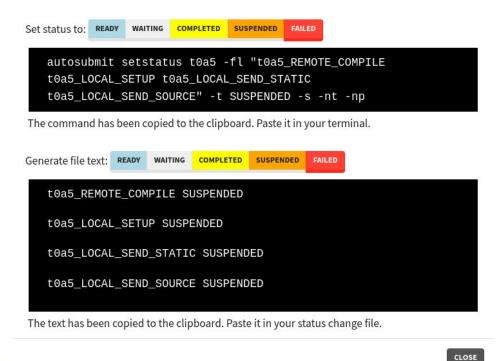


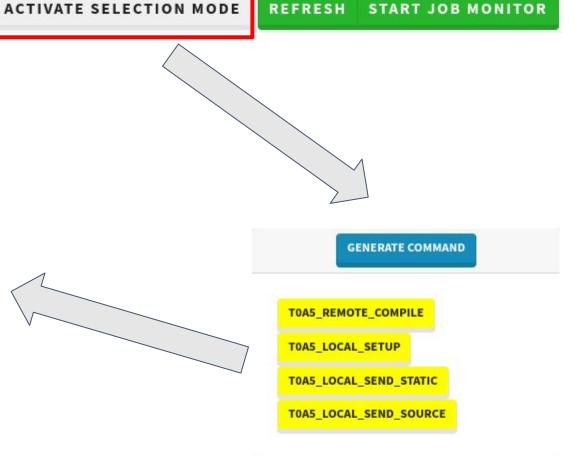
Generate command for job state change

CLEAR TREE SUMMARY

Single or multiple

From graph or tree view







And... What about if something is broken?





Don't Panic, just open Issues at Gitlab! please, for the

love of whatever holy for you, <u>open issues</u> so we can track our job, make milestones, check if the issue was already notified, not spam dev's inbox Don't be shy pleaaaaase

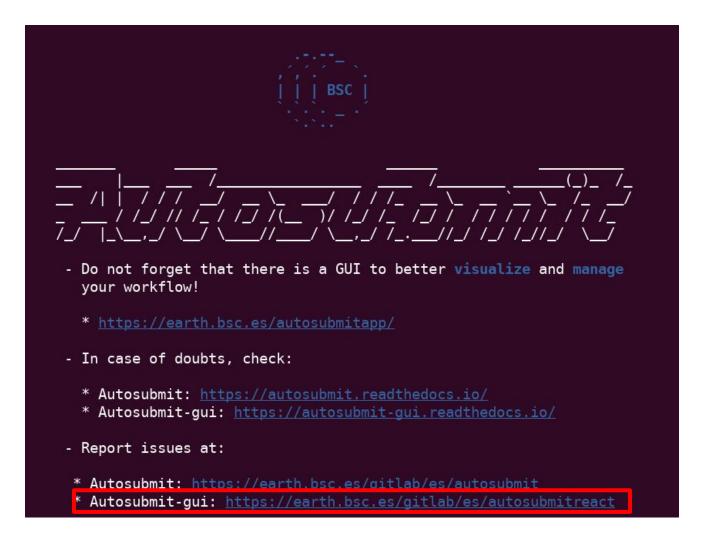


https://earth.bsc.es/gitlab/es/autosubmitreact



Why remember links? III

the unwanted sequel to the sequel that is kinda of a prequel





If it is a matter of life or death

Send an email to us using:

support-autosubmit@bsc.es



