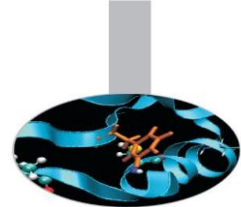# 64th Ticket Meeting

HPC User Support @ CINECA
May, 16th 2022

Content

- Status of the clusters - main events affecting production [April 6 – May 11]

- Examination of active tickets on HPC-US-SECOND queue

- escalated to Intel support
    - escalated to NVIDIA support
    - other tickets

- Ticket statistics on queue [April 7 – May 11]

    - HPC-US-FIRST
    - HPC-US-SECOND

Status of the clusters [Apr 6 – May 11]
Main events affecting production
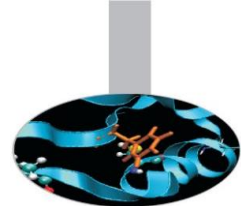
Apr 6: scheduled maintenance operations on Marconi on April 12th
https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi-april-12
https://www.hpc.cineca.it/center_news/reminder-scheduled-maintenance-marconi-tomorrow-april-12th
https://www.hpc.cineca.it/center_news/marconi-maintenance-completed-4

Apr 14: HelpDesk closed on Monday, April 18th
https://www.hpc.cineca.it/center_news/helpdesk-closed-monday-april-18th

Apr 20: scheduled maintenance operations on Marconi100 on April 26th
https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi100-april-26th
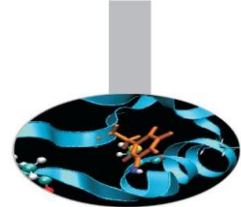https://www.hpc.cineca.it/center_news/reminder-scheduled-maintenance-marconi100-april-26th
https://www.hpc.cineca.it/center_news/m100-maintenance-completed-1

Apr 22: HelpDesk closed on Monday, April 25th
https://www.hpc.cineca.it/center_news/helpdesk-closed-monday-april-25th-0

Apr 28: Issue to HPC-news mailing list
https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi-april-12

May 3: scheduled maintenance operations on Marconi on May 10th
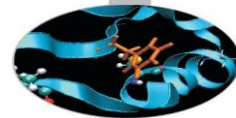https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi-may-10th
https://www.hpc.cineca.it/center_news/reminder-scheduled-maintenance-marconi-tomorrow-may-10th
https://www.hpc.cineca.it/center_news/marconi-maintenance-completed-5

May 11: scheduled maintenance operations on Marconi100 on May 17th
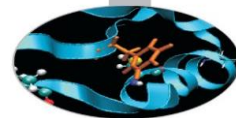https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi100-may-17th
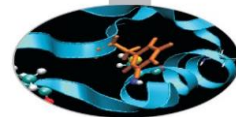
Tickets escalated to NVIDIA support

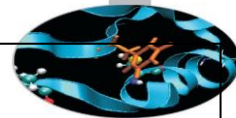| Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
19978	OpenACC compiler problem with function intermediates	nilsm@ipp.mpg.de serhiy.mochalskyy@ipp.mpg.de	2021-08-24 17:14:02	M100	2nd NVIDIA	The user provided a test code that is compiled using hpc-sdk/2021--binary module: "The compiler generates an intermediate, called get_arr1 , to store the result of the multiplication in line 26. This intermediate is copied to the device, as seen in the compiler output. Unfortunately, this intermediate needs to be private, as each thread needs its own copy. It is impossible to achieve that, as its name is not known, and it doesn't exist during compile time. Array b has the correct result as the result of the function call is saved in the variable c , so no intermediate is necessary. This problem emerges for all function calls to a device function that returns an array." ***The issue was escalated to nvidia compiler engineers (a race condition is hypotized for the implicitly privatized fixed size local array). Three suggested workarounds.***
20303	OpenACC compiler problem, unexpected implicit wait	nilsm@ipp.mpg.de serhiy.mochalskyy@ipp.mpg.de	2021-09-09 15:58:01	m100	2nd	A test case created by the user generates an implicit wait that impedes an intended asinchronicity. This seems related to an unwanted uploading and downloading of data that is not necessary, probably caused by an intermediate copy of a struct variable.**Our analysis concludes that the reported behaviour is expected: the uploading and downloading are common when dealing with aggregates, and can be avoided by working with its single components directly; the implicit wait is on the queue 1, where the asynchronicity is cast, while the host or other queues can continue their work.**

Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
24227	Diagnosing the job 9982527 for memory over limit problem	francis.albertde vasagayam@a alto.fi	2022-02-14 17:42:02	SKL	2nd	The user asks for a check in a job that he thinks stopped writing because of memory issues. Our analysis suggests that it is not actually the case. We asked the user for a check on his usage of temporary filesystem and I/O functions/routines in his code.The user presented another job with the same issue, investigations didn't bring any result.
25155	About soft installation	Xudong.Yuan @oeaw.ac.at	2022-03-16 10:28:02	SKL	2nd	The user asked for an update on the version of LAMMPS available on Marconi. We will install an updated module and inform the user.
25494	Recent GNU compilers on Marconi100	huw.leggate@d cu.ie	2022-03-28 14:28:01	M100	2nd	The user asked for an update on the GNU compiler suite on Marconi100, version 11.2, because of the recent developments in GPU offloading. The compiler module has been installed, work in progress for some libraries that depend from it.
25777	Issues when running a serial job on marconi100	oleg.krutkin@e pfl.ch	2022-04-07 13:24:01	M100	2nd	The user is trying to run several independent tasks with PyCUDA. Their implementation (based on mpi4py) fails because of a segmentation fault. We are trying to reproduce the issue and understand it in order to propose a solution.
26048	RCM client	edi.sanchez@c iemat.es	2022-04-21 10:48:02	SKL	2nd	The user is not able to connect to Marconi via RCM. The log prompts different errors when trying to open a new window. He relies on a local cfg file that we need to examinate.

Other active tickets on HPC-US-SECOND

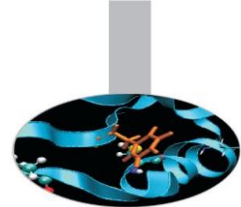| Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
26309	ssh with public key does not work	jose.regana@ci emat.es	2022-05-04 10:44:01	SKL	2nd	The user is not able to login because is asked for a password instead of having the ssh keys working. This is normal when the password expires, but the problem remains even after a reset. Investigation is still ongoing.
26331	Nvidia HPC-SDK 22.3	jferreira@ipfn.t ecnico.ulisboa. pt	2022-05-04 17:46:01	M100	2nd	The user asked for an update on the HPC-SDK compiler suite on Marconi100, to be installed.

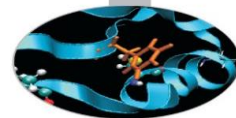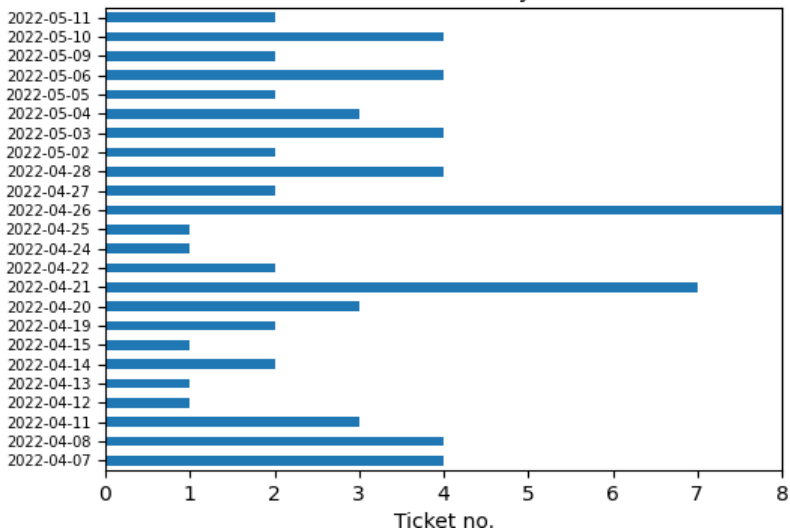| Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
24400	Weird problems with simulation jobs	patrik.ollus@aalto.fi	2022-02-21 14:30:06	SKL	2nd	The user laments an issue when running his software ASCOT. The last MPI rank completes its execution much slower than the other: this is likely an issue with load balancing and has to be discussed with the software developers. The ticket is closed after suggesting to test with profiling tools since the issue is code related.
24535	Marconi job 10003007 not producing output	seppo.sipila@aalto.fi	2022-02-24 12:46:01	SKL	2nd	The user has a job that stops producing output when it's close to the end, with many processes still unfinished. The code is ASCOT, the same of the previous ticket, so the two issues are likely related and equally due some load balancing issues. The ticket is closed after suggesting to test with profiling tools since the issue is code related.
24866	openmpi/4.1.1--gnu--8.3.0	John.Omotani@ukaea.uk	2022-03-07 14:06:01	SKL	2nd	The user laments problems with the module indicated in the subject. When using it, multi-node jobs are stalling without completing any step.The problem is that the module wasn't compiled with pmi2 support but with pmix, that can't be switched off. Therefore the module was taken out of production (but openmpi 4.0.1 is available and working).
25481	Short run on 1024 nodes	tskhakaya@ipp.cas.cz	2022-03-28 09:22:01	SKL	2nd	The user needed to run a 20 minutes job with 1024 nodes on Marconi for benchmark purposes. As it exceeds the limits of the production qos, an approval from the Operation Committee was necessary.
25528	Unable to transfer data into Marconi M100	vignesh.gopakumar@ukaea.uk	2022-03-29 13:08:02	M100	2nd	The user has problems connecting to M100 with scp, because of a host authentication failure. He has been provided a workaround for not having to alter the known_hosts file every time.

Other resolved tickets on HPC-US-SECOND

Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
25653	RE: Tranfer for $WORK data to new project	Patrick.TAMAIN@cea.fr	2022-04-01 13:08:02	SKL	2nd	The user asks for a rename of a Work subfolder of low dimension. It is preferred to let the user transfer manually their files in this case. What is peculiar is that the user already got an answer two weeks earlier but laments that was left unanswered, and hasn't replied yet to the new answer. Thanks to solicitation from colleagues, the user replied and moved autonomously the data he needed.

Ticket Statistics April 7 – May 11
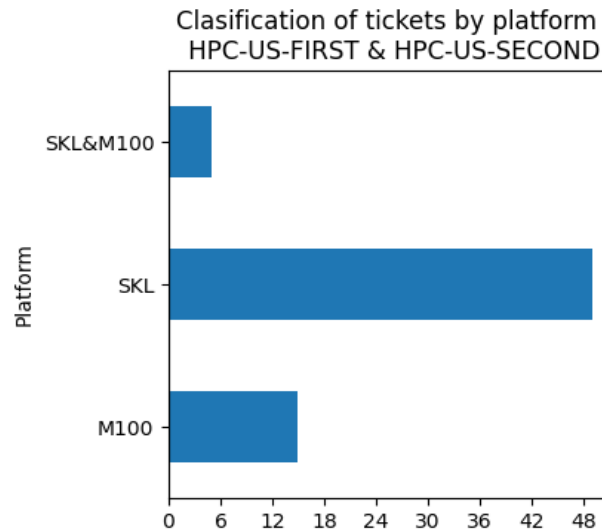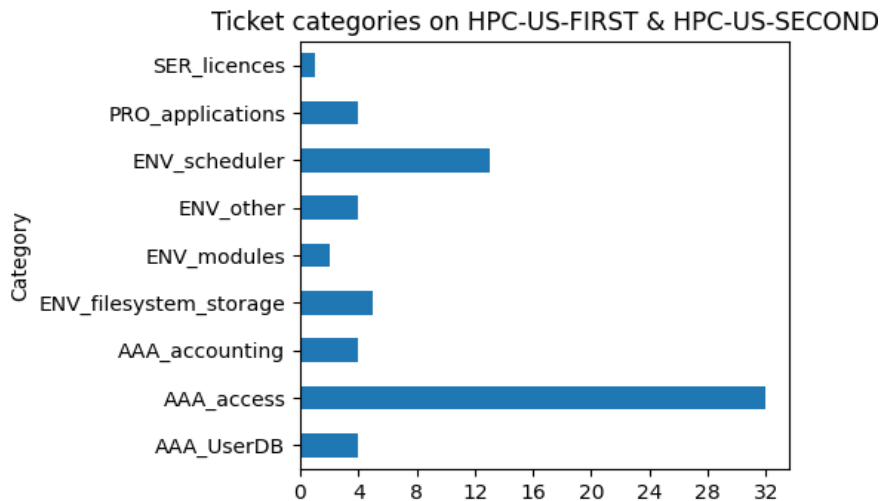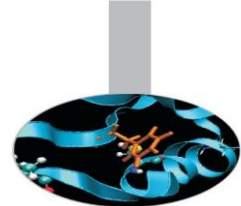## *HPC-US-FIRST & HPC-US-SECOND*

Received tickets by date

Business hours from ticket creation to initial address
HPC US FIRST & HPC US SECOND

TOTAL	→ 69 tickets
- HPC-US-FIRST	→ 44
- escalated to HPC-US-SECOND	→ 25

Ticket categories on HPC-US-FIRST & HPC-US-SECOND

Clasification of tickets by platform HPC-US-FIRST & HPC-US-SECOND
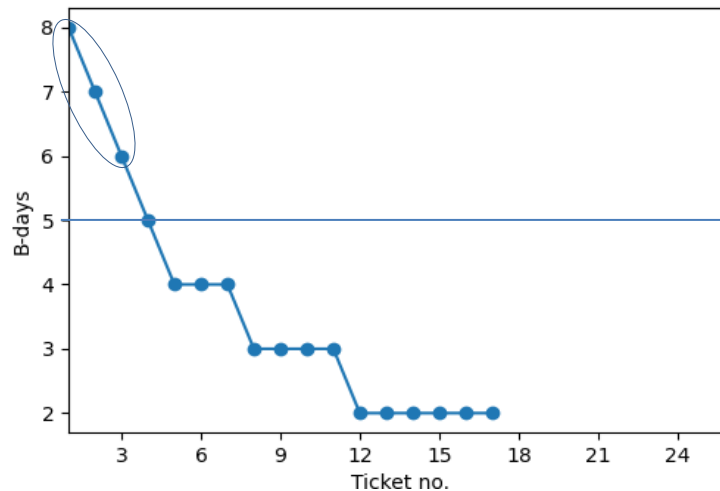
time from ticket creation to ticket resolution
HPC US FIRST

time from ticket creation to ticket resolution
HPC-US-SECOND
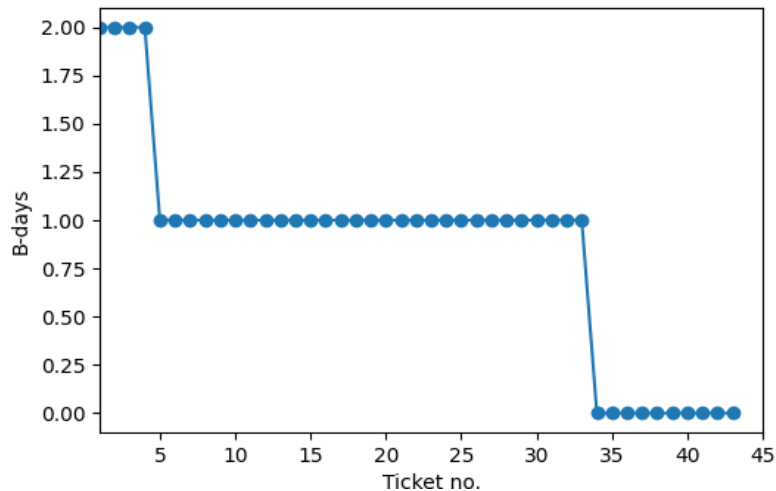
43 / 44 resolved tickets

17 / 25 resolved tickets
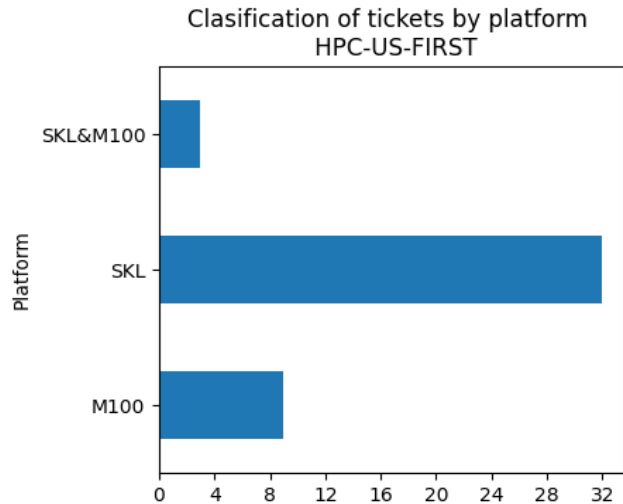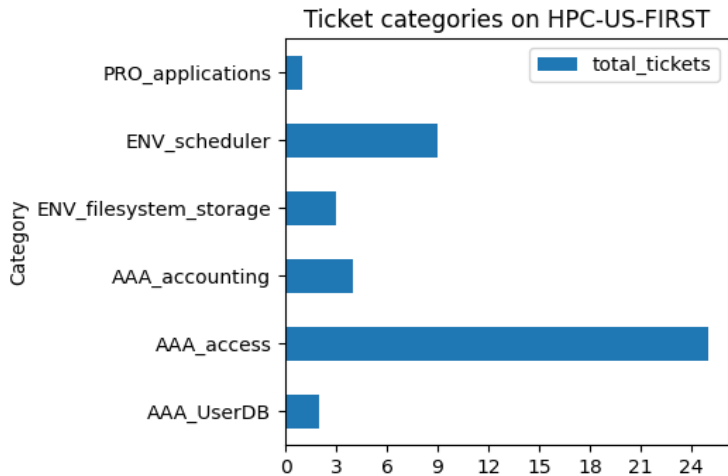
Ticket SECOND	Days	Creation time	Requestor	Subject	Notes
26166	8	2022-04-27 11:44:01	juan.ruiz@physics.ox.ac.uk	Transferring large amounts of data from marconi	The user needed to transfer large amount of data from Cineca to local, and can't rely anymore to his previous system of scp. After we suggested using rsync, we closed the ticket because of no further replies.
26197	7	2022-04-28 10:30:01	M.vanBerkel@differ.nl	FW: Allocation of Marconi Fusion to 6th Cycle Project MANTISNN (Project Leader: Matthijs van Berkel)	A new user needed assistance for completing the UserDB procedures and activate their account on Marconi, as well as receive HPC credentials.
26021	6	2022-04-20 12:32:01	jacob.chapman@ukaea.uk	Marconi jobs stalling but not crashing	The user had problems with Vasp jobs on Marconi, that were stalling after some time spent on calculations. The problem was solved by suggesting the user to execute Vasp with srun instead of mpirun.

Ticket categories on HPC-US-FIRST

Clasification of tickets by platform
HPC-US-FIRST

HPC-US-FIRST			By status			By platform		
			open	resolved		M100	SKL	SKL&M100
Information	AAA_access			1			1	
	AAA_accounting			1			1	
	ENV_scheduler			3			3	
	PRO_applications			1		1		
Problem	AAA_UserDB			2			2	
	AAA_access			9		2	5	2
	ENV_filesystem_storage			2		1	1	
	ENV_scheduler			5			5	
Service Request	AAA_access		1	14		4	10	1
	AAA_accounting			3			3	
	ENV_filesystem_storage			1			1	
	ENV_scheduler			1		1		
total			1	43		9	32	3
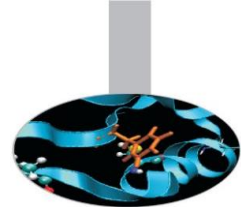
Ticket categories on HPC-US-SECOND
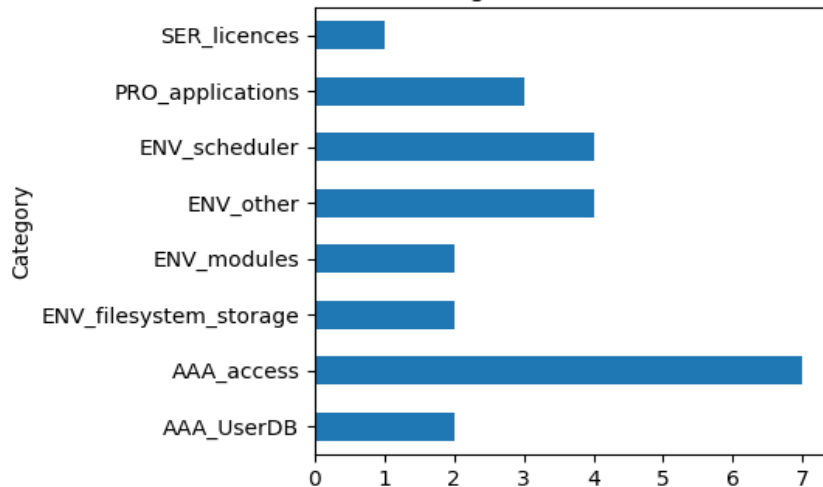
Clasification of tickets by platform HPC-US-SECOND
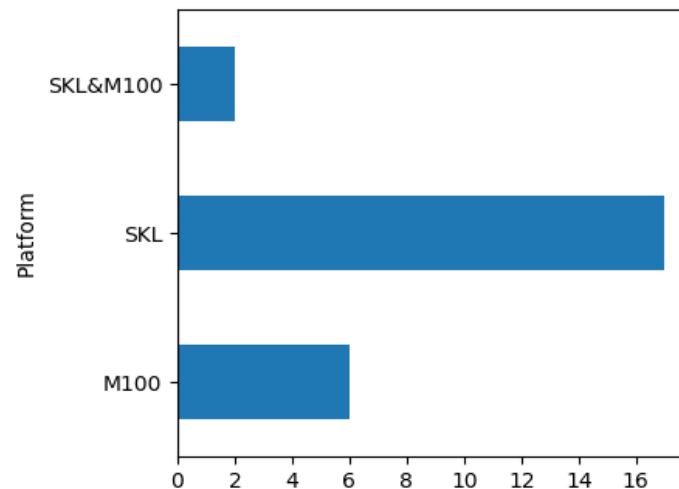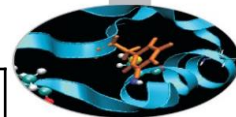
HPC-US-SECOND			By status			By platform		
			open	resolved		M100	SKL	SKL&M100
Information	AAA_access			1			1	
	ENV_other			2			2	
Problem	AAA_access		1	2			3	
	ENV_modules		1				1	
	ENV_other		1	1		2		
	ENV_scheduler		1	3		1	3	
	PRO_applications		1	2		1	2	
	AAA_UserDB			2		1		1
Service Request	AAA_access		1	2			2	1
	ENV_filesystem_storage			2			2	
	ENV_modules		1			1		
	SER_licences		1				1	
	AAA_access			1			1	
total			8	17		6	17	2