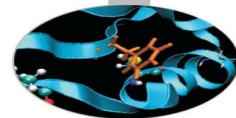# 63rd Ticket Meeting

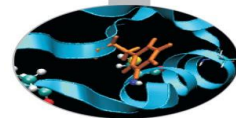HPC User Support @ CINECA
April, 11th 2022

Content

- Status of the clusters - main events affecting production [March 11 – April 7]

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

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

- Ticket statistics on queue [March 10 - April 6]

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

Mar 17: scheduled maintenance operations on Marconi on March 22nd
https://www.hpc.cineca.it/center_news/marconi-scheduled-maintenance-march-22nd
https://www.hpc.cineca.it/center_news/reminder-scheduled-maintenance-marconi-tomorrow-march-22nd
https://www.hpc.cineca.it/center_news/marconi-maintenance-completed-3

Mar 23: scheduled maintenance operations on Marconi100 on March 30th
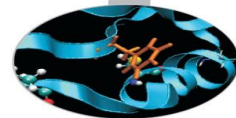https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi100-march-30th
https://www.hpc.cineca.it/center_news/reminder-scheduled-maintenance-marconi100-tomorrow-march-30th
https://www.hpc.cineca.it/center_news/m100-maintenance-completed-0

Apr 6: scheduled maintenance operations on Marconi on April 12th
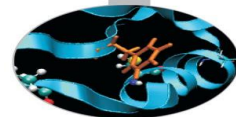https://www.hpc.cineca.it/center_news/scheduled-maintenance-marconi-april-12

Tickets escalated to NVIDIA support

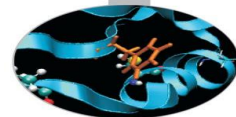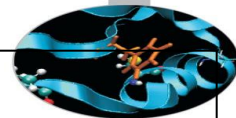| Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
19978	OpenACC compiler problem with function intermediates	nilsm@ipp.mpg.de serhiy.mochalskyy@ipp.mpg.de	2021-08-24 17:14:02	M100	2nd NVIDIA	The user provided a test code that is compiled using hpc-sdk/2021--binary module: "The compiler generates 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.This issue is still under investigation. We will also report it to nvidia if necessary as soon as preliminary checks will be completed.

Other active tickets on HPC-US-SECOND

Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
24227	Diagnosing the job 9982527 for memory over limit problem	francis.albertdevasagayam@aalto.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, to be investigated.
24400	Weird problems with simulation jobs	patrik.ollus@aalto.fi	2022-02-21 14:30:06	SKL	2nd	The user laments two issues when running his software ASCOT. The first is that 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 second is an unexpected crash for some jobs, that we are relate to a broken OPA link (now fixed).
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. We are looking for the cause (the code seems to be ASCOT, the same of the previous ticket).

Other active tickets on HPC-US-SECOND

| Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
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 subjects. 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 needs 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 is necessary.
25494	Recent GNU compilers on Marconi100	huw.leggate@dcu.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.
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 to cancel the local known_hosts everytime, and is in search for a simpler way to authenticate.
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.

Ticket	Subject	Requestors	Created	Host	Supp. Level	Comments
23189	problema mamoria M100	giovanni.digiannatale@epfl.ch	2022-01-07 10:50:06	M100	2nd	The user is observing out of memory errors when running an ORB5 simulation, he is asking for 32 nodes for the run.The case he is running foresees 1600M particles, 32 nodes is on the edge. Ticket has been escalated to CINECA 2nd level support, that reproduced the issue and concluded that the restart files have too many informations and this causes the out of memory issue, therefore it is code-related and not system-related.
23515	Pointer issues at runtime	fwidmer@rzg.mpg.de	2022-01-18 16:54:01	M100	2nd	The user encounters errors of invalid pointers at the first simulation step of Orb5. The error happens when running simulations with collisions, while simulations without them work fine. We asked further details to the user and we suggested him to contact the EF high level support, since the issue seems code related. The user agrees with this conclusion and approves the closure of the ticket.
24201	Issue with submission script	fwidmer@rzg.mpg.de	2022-02-11 11:04:01	SKL	2nd	After maintenance, simple commands such as "mv" prompt "command not found" when added in a function defined inside the .bashrc, if such function is then called from a batch job. The problem was that the user has redefined the variable PATH inside his jobscript.
24579	HDf5 module for HPC-SDK 2022 spectrum MPI	huw.leggate@dcu.ie	2022-02-25 16:44:02	SKL	2nd	The user asks for HDF5 compiled with hpc-sdk 2022. The module of version 1.12.1 has been created, but the ticket stays open for consulence about how to use the library.

Ticket Statistics Mar 10 - Apr 6
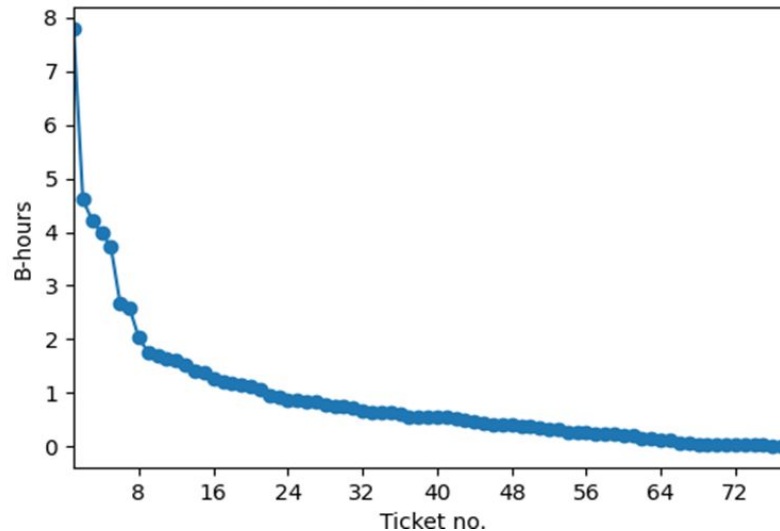## HPC-US-FIRST & HPC-US-SECOND
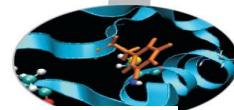
Received tickets by date
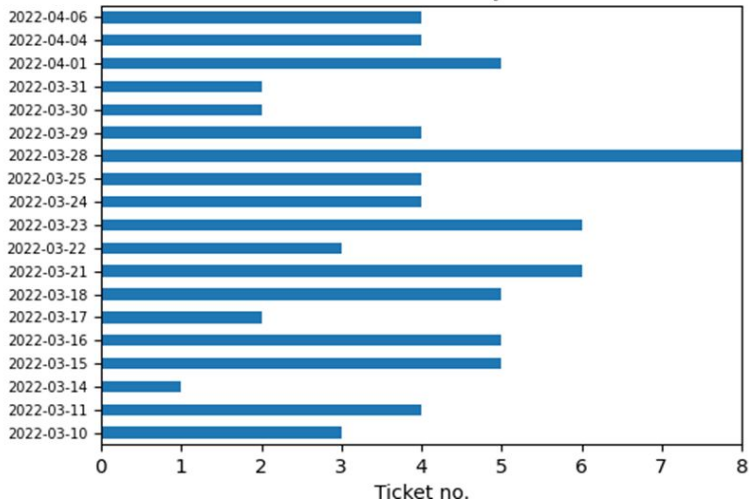
Business hours from ticket creation to initial address
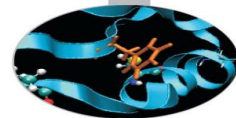HPC US FIRST & HPC US SECOND

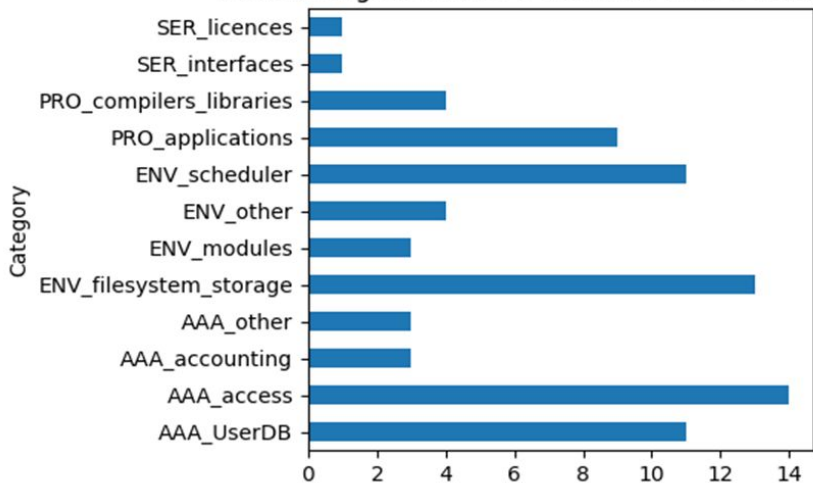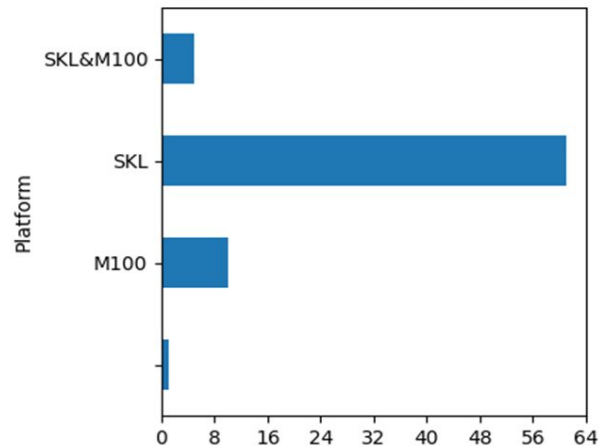| TOTAL | 77 tickets |
| - HPC-US-FIRST | 42 |
| - escalated to HPC-US-SECOND | 35 |

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

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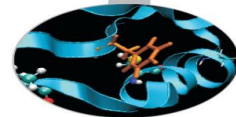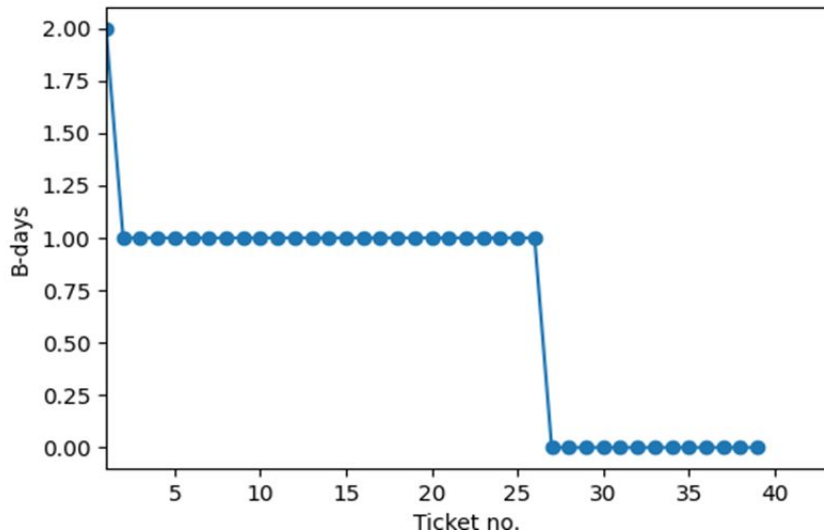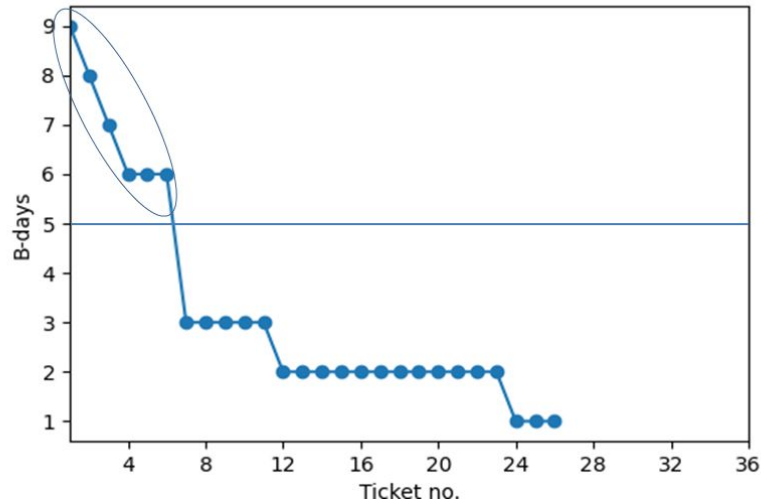
time from ticket creation to ticket resolution
HPC US FIRST

time from ticket creation to ticket resolution
HPC-US-SECOND

39 / 42 resolved tickets
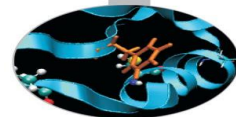
26 / 35 resolved tickets

Ticket SECOND	Days	Creation time	Requestor	Subject	Notes
25138	9	2022-03-15 18:01:56	huw.leggate@dcu.ie	CUDA hooks and PAMI	The user has issues when compiling with mpipgifort, getting undefined symbol errors. The issue was fixed by adding an explicit linking to the Makefile.
25159	6	2022-03-16 11:36:01	chiara.mistrangelo@kit.edu	rename $WORK directory	The user requests for a rename of a work folder, so that the FUA35 data can be migrated to the new FUA36 project.
25293	6	2022-03-21 09:48:01	jose.regana@ciemat.es	internal priority within project along users/codes	The user asks if it is possible to personalize job priorities depending on the collaborators of the account of which is PI. Unfortunately, the answer is negative.
2543	8	2022-03-23 18:34:01	francesco.iannone@enea.it	MARCONI FUSION module gcc 10.3.0	The user noticed that the module in question lacks the proper gnu compilers inside it. We recompiled the module and fixed some dependencies so that the gnu10 environment is now available again
25423	7	2022-03-24 14:06:01	alberto.mariani@istp.cnr.it	Errori dopo maintenance ed estensione WORK	The user asks for an extension of his WORK quota and for an analysis on an error with his large job on Marconi. Since the problem didn't show up anymore, it's supposed to be a temporary issue on the nodes involved in the job.
25500	6	2022-03-28 15:48:01	elinach@kth.se	job run issue	The user isn't able to use the Vasp module, although she is correctly authorized to use it. There was a problem with folder permissions that was promptly fixed.

Ticket categories on HPC-US-FIRST

Clasification of tickets by platform HPC-US-FIRST
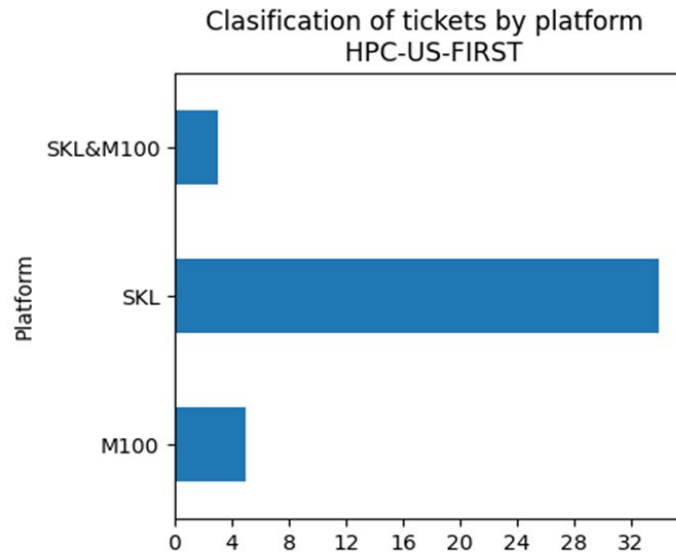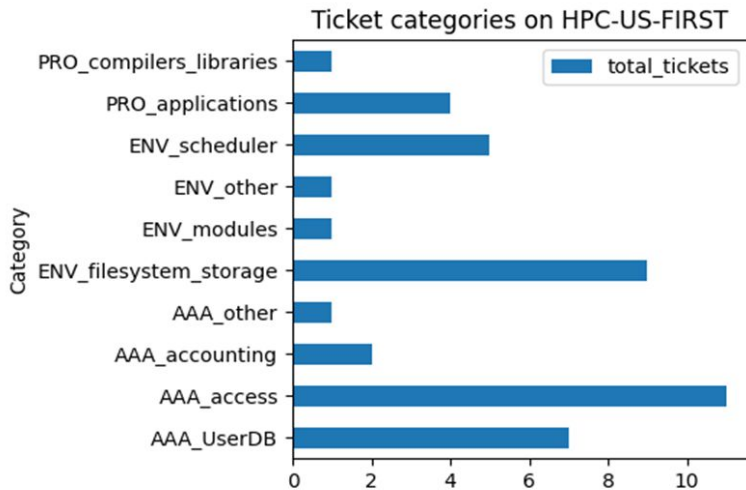
Ticket statistics Mar 10 – Apr 6

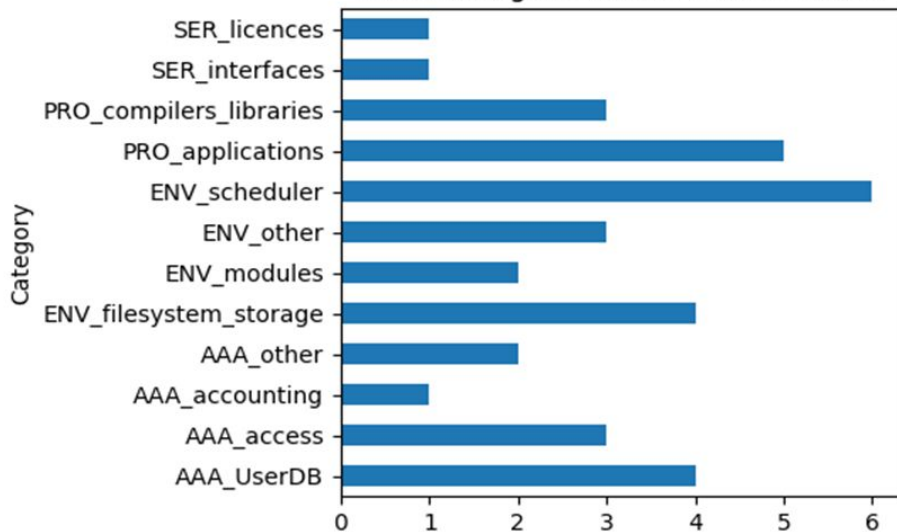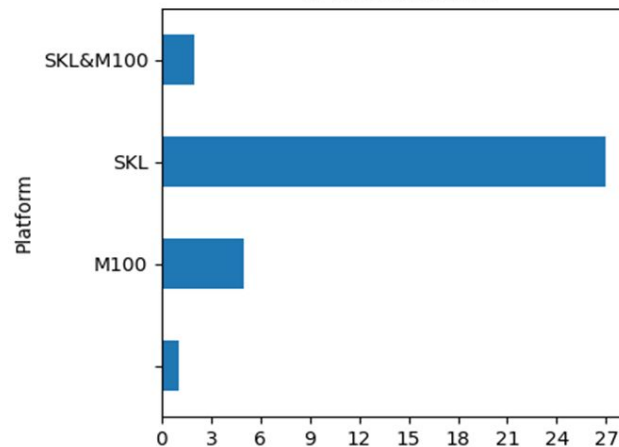| HPC-US-FIRST			By status			By platform		
			open	resolved		M100	SKL	SKL&M100
Information	AAA_UserDB			1			1	
	ENV_modules			1			1	
	ENV_other			1			1	
	ENV_scheduler			1			1	
Problem	AAA_UserDB			3			2	1
	AAA_access		1	3			4	
	ENV_filesystem_storage			1			1	
	ENV_scheduler			1			1	
	PRO_applications			4			4	
	PRO_compilers_libraries			1		1		
Service Request	AAA_UserDB			3			3	
	AAA_access			7		1	6	
	AAA_accounting			2			1	1
	AAA_other			1			1	
	ENV_filesystem_storage		1	7		1	7	
	ENV_scheduler		1	2		2		1
total		**42**	**3**	**39**		**5**	**34**	**3**

Ticket statistics Mar 10 - Apr 6
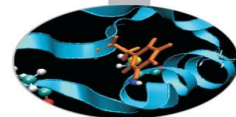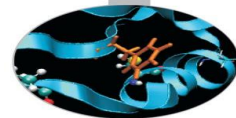## *HPC-US-SECOND*
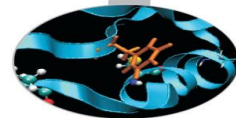
Ticket categories on HPC-US-SECOND

Clasification of tickets by platform
HPC-US-SECOND

Ticket statistics Mar 10 – Apr 6

HPC-US-SECOND		By status		By platform		
		open	resolved	M100	SKL	SKL&M100
Information	AAA_UserDB		1		1	
	ENV_filesystem_storage	2			2	
	ENV_other	1	1		2	
	ENV_scheduler	1	2	1	2	
	PRO_applications	1	1	2		
Problem	AAA_UserDB		1		1	
	AAA_access	1				1
	ENV_modules		1		1	
	ENV_scheduler		2	1	1	
	PRO_applications		2		2	
	PRO_compilers_libraries		2	1	1	
	SER_interfaces		1		1	

HPC-US-SECOND		By status		By platform		
		open	resolved	M100	SKL	SKL&M100
Problem	AAA_UserDB		2		1	1
	AAA_access		2		2	
	AAA_accounting		1		1	
	AAA_other		2		2	
	ENV_filesystem_storage	1	1		2	
	ENV_modules		1		1	
	ENV_other		1		1	
	ENV_scheduler	1			1	
	PRO_applications		1		1	
	PRO_compilers_libraries	1		1		
	SER_licences		1		1	
total	35	9	26	6	27	2