



**RO-LCG 2016 "Grid, Cloud and HPC in Science"
26-28.10.2016, Bucharest-Magurele**



Overview of the national computing support for the LHC community

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19 Sites (Note, Scope values marked with (x) indicate the parent NGI does not share that scope)

Name	Certification Status	Production Status	Scope(s)
RO-08-UVT	Uncertified	Production	Local(x)
RO-14-ITIM	Certified	Production	atlas(x), EGI, tier2(x)
RO-01-ICI	Uncertified	Production	EGI, Local(x)
RO-11-NIPNE	Certified	Production	EGI, lhcb(x), tier2(x)
NIHAM	Certified	Production	alice(x), EGI, tier2(x)
RO-12-ICI	Closed	Production	EGI
RO-13-ISS	Certified	Production	alice(x), EGI, tier2(x)
RO-03-UPB	Certified	Production	EGI
RO-09-UTCN	Closed	Production	EGI
RO-07-NIPNE	Certified	Production	alice(x), atlas(x), EGI
PPS-RO-01-UPB	Closed	PPS	EGI
RO-17-INCDTM	Uncertified	Production	Local(x)
RO-19-UCV	Uncertified	Production	Local(x)
RO-02-NIPNE	Certified	Production	atlas(x), EGI, tier2(x)
RO-16-UAIC	Certified	Production	atlas(x), EGI, tier2(x)
RO-18-INCDTP	Uncertified	Production	Local(x)
RO-15-NIPNE	Certified	Production	EGI, lhcb(x), wlcg(x)
GRIDIFIN	Certified	Production	EGI
CLOUDIFIN	Uncertified	Production	EGI

RO-LCG: 7 production sites

ALICE: 3 sites

ATLAS: 4sites

LHCb: 2sites

RO-07-NIPNE: 3 experiments

Connected to LHCONE VPN

Monitored by:

NGI-RO / EGI - core services

LHC experiments



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INSTALLED CAPACITIES

Experiment requirements + Computing Resources Scrutiny Group report +
+ National Funding -> Resource pledges

Installed Capacities						
Year: 2016		Month: 10				
Infrastructure	Site Name	Physical CPU	Logical CPU	HEPSPEC06	Disk (GB)	Tape (GB)
EGI	NIHAM	665	3,322	26,769	984,032	0
EGI	RO-02-NIPNE	86	752	7,285	213,624	0
EGI	RO-07-NIPNE	212	2,257	23,964	1,249,581	0
EGI	RO-11-NIPNE	2	304	2,955	52	0
EGI	RO-13-ISS	88	416	2,784	121,491	0
EGI	RO-14-ITIM	55	440	3,960	58,554	0
EGI	RO-16-UAIC	110	472	4,248	171,987	0
Total		1,218	7,963	71,965	2,799,321	0



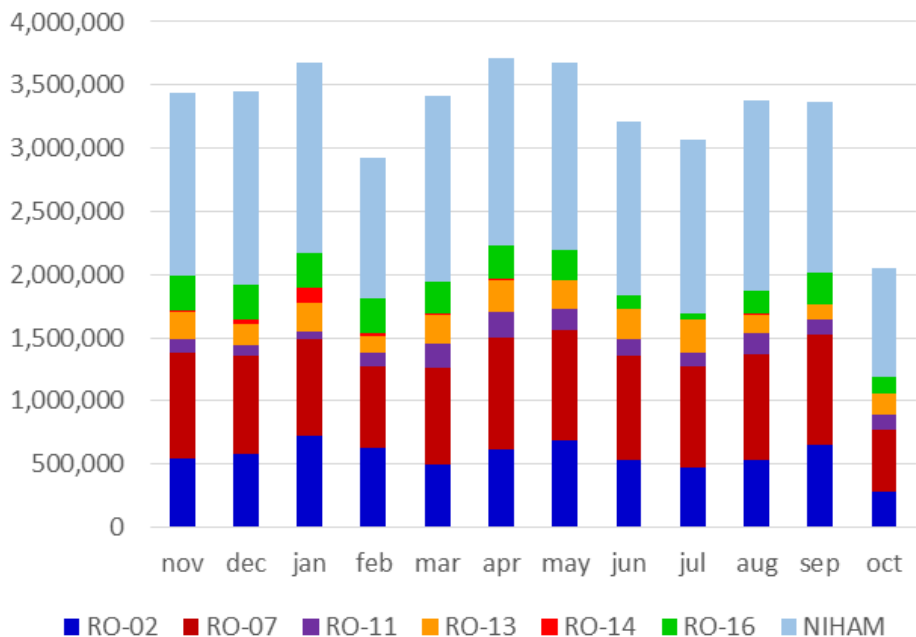
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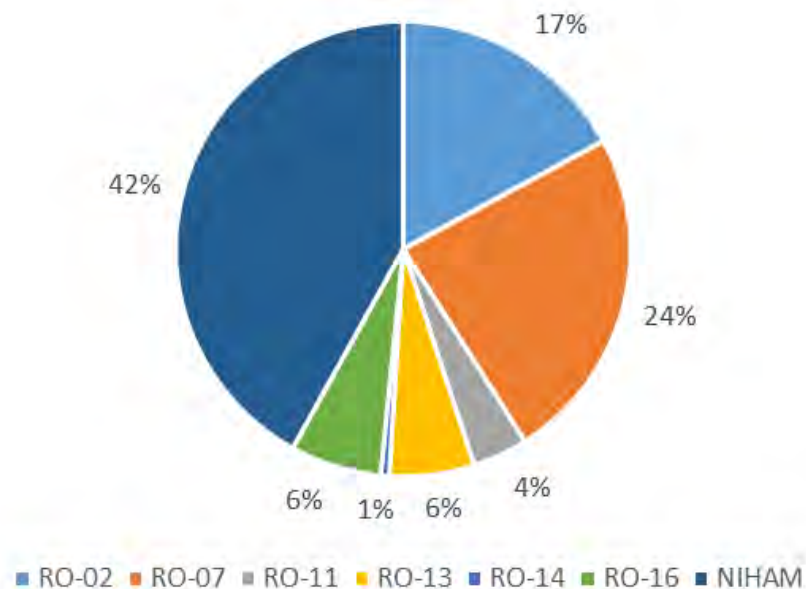
RO-LCG's SITES ACTIVITY

SRC.: EGI accounting portal + MonALISA (for NIHAM)

CPU hours (21.10.2016)



Sites share



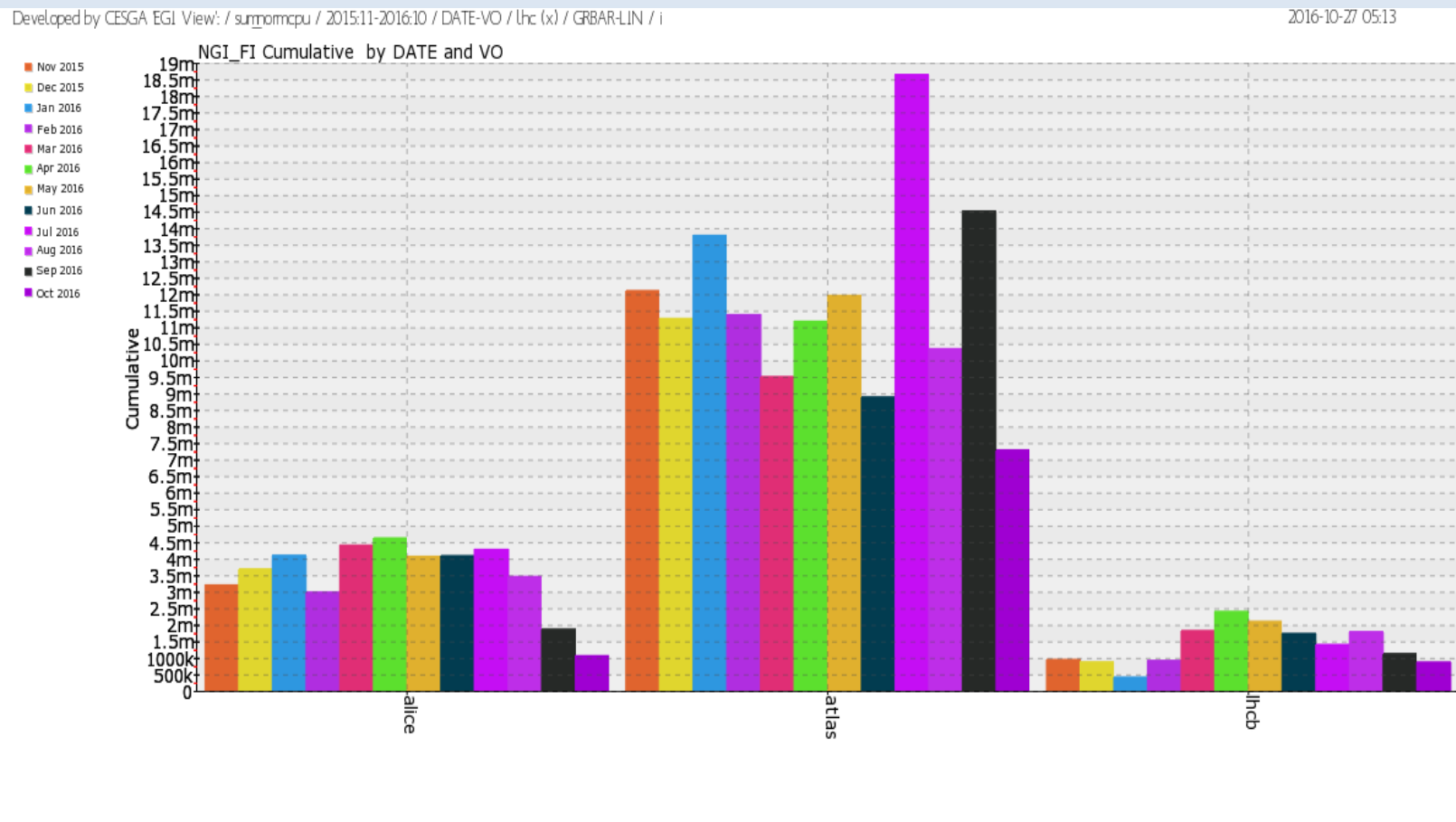


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USER COMMUNITIES (as in accounting.egi.eu)

CPU time 12 months (NIHAM ALICE activity not accounted here)





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From ALICE site review

In the reporting period the computing centres performance has been outstanding, with individual site availability and reliability well above the T2 WLCG targets and in average above 97%. The site components – CPU, storage and network – are well tuned in proportion to each other and are used efficiently. The computing centres technical support is highly experienced, reacting promptly to incidents and able to quickly implement operational and software changes required by ALICE. The communication between the local experts and ALICE Grid management is clear and efficient.

The support teams have shown high level of competencies and abilities both in assuring the continuous operation and also in improving the services and procedures at the sites, with **minimal downtime**. We strongly encourage them to keep the current high level of operational readiness and to assume leadership role in implementing new technologies, which could further improve the sites efficiency. To that end, it may be necessary to **increase the present modest level of personnel at the individual sites**, rarely above 1 FTE per site.

Furthermore, we encourage the sites to **renew their hardware components** more aggressively, in line with standard business models. This will allow them to profit from the latest CPU types and higher core counts per CPU, thus decreasing the footprint and overall energy consumption of the installations while increasing the computing power. The same arguments apply to the storage resources.



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From ATLAS site review

The 4 Romanian sites involved in ATLAS contribute very significantly to the FR-cloud: 13.5% of CPU delivered and 8.5% of pledged disk resource. They run all the ATLAS workflows with good efficiency, although **user analysis contribution is too low for Tier-2s**. In addition to providing all the necessary environment required by ATLAS (multicore, CREAM), they look at new solutions (ARC and Slurm for RO-07-NIPNE).

The sites have often been affected by network instabilities and limitations. The situation is much better now. Some sites have also been affected by disk hardware issues, yielding a lot of operational burden. Although the situation did improve, one should think of **upgrading and renewing the hardware, especially the storage**.

Having 4 sites located in different places does not facilitate the communication. A **better exchange of information between sites concerning issues which are often not site specific is desirable**. In this respect, having a person from Romania following the 4 sites and providing a solid interface to ATLAS would be extremely useful.

Concerning the close future, ATLAS policy recommends to sites provide less than 400 TB storage to stop investing on disk increase, and to put emphasis on CPU increase.

In a medium term future, for efficiency and operational issues, ATLAS is pushing for limiting the number of Tier-2s and grouping them under federations.

This idea is currently making its way in many countries. One could think in the future to have the 4 sites grouped in a federation, with **one entry point only**.



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From LHCb Site review

The two LHCb sites at IFIN-HH are in the active production status. The T2-D site RO-07-NIPNE is participating in the MC Production activity as well as for the user analysis jobs. The site RO-11-NIPNE is participating to the MC Production activity. Both sites have contact persons ready to respond to operational issues.

The current site availability is satisfactory after solving of a number of issues in the last year. The sites are running a complete set of necessary grid services.

Some of the **site hardware should be upgraded** in the near future; **upgrade plans should be defined**.

The sites are suffering from **irregular load coming from LHCb**, which should be investigated. The T2-D RO-07-NIPNE site is used only for user analysis apart from the usual MC Production activity. **Including the site into the production data processing activity is desirable; this might need one more site commissioning as T2-D site in order to confirm its correspondence to the T2-D criteria**. Diversification of the site workload can help to increase the site load. The RO-11_NIPNE site is dedicated to the LHCb MC Production only, which is one of the reasons of its low usage efficiency. **Diversification of the site activity** is also desirable.

The site administrators are reporting a lack of communication with the LHCb Production team. This suggests that the **site administrators should be better informed of the LHCb production operations and problems**, for example by participation of the T2-D site administrators in the regular LHCb Operations meetings.



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THANK YOU FOR YOUR ATTENTION !