Software and network issues in RO-16-UAIC site

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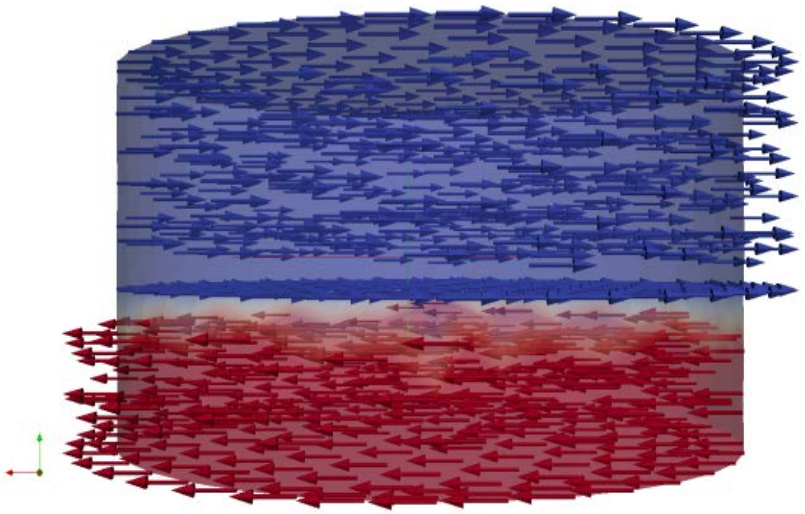
Agenda

- INTRODUCTION
- COMPUTATION POWER OF RO-16-UAIC
- THE SOFTWARE ISSUE IN RO-16-UAIC SITE
- THE NETWORK ISSUE IN RO-16-UAIC SITE
- JOBS STATISTICS
- CONCLUSIONS

Introduction

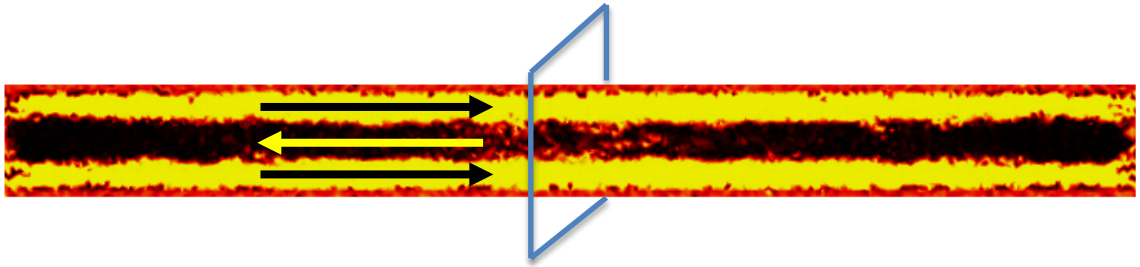


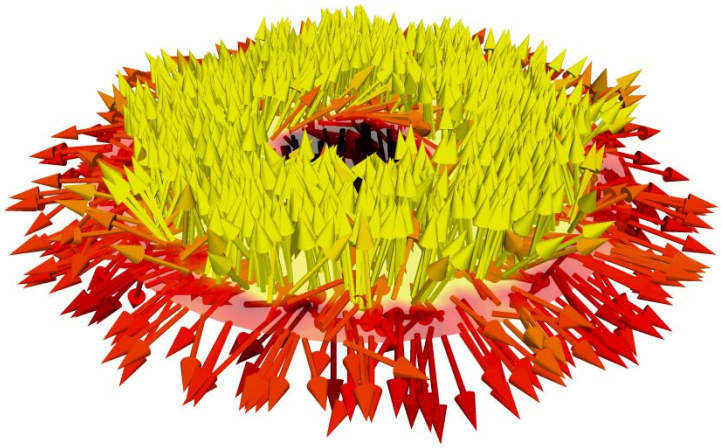
Parallel computation

I.antiferromagnetic commutation
In SAF memory

C. Pinzaru, L. Stoleriu, A. Stancu, IEEE Transactions on Magnetics 02/2014; 50(7)

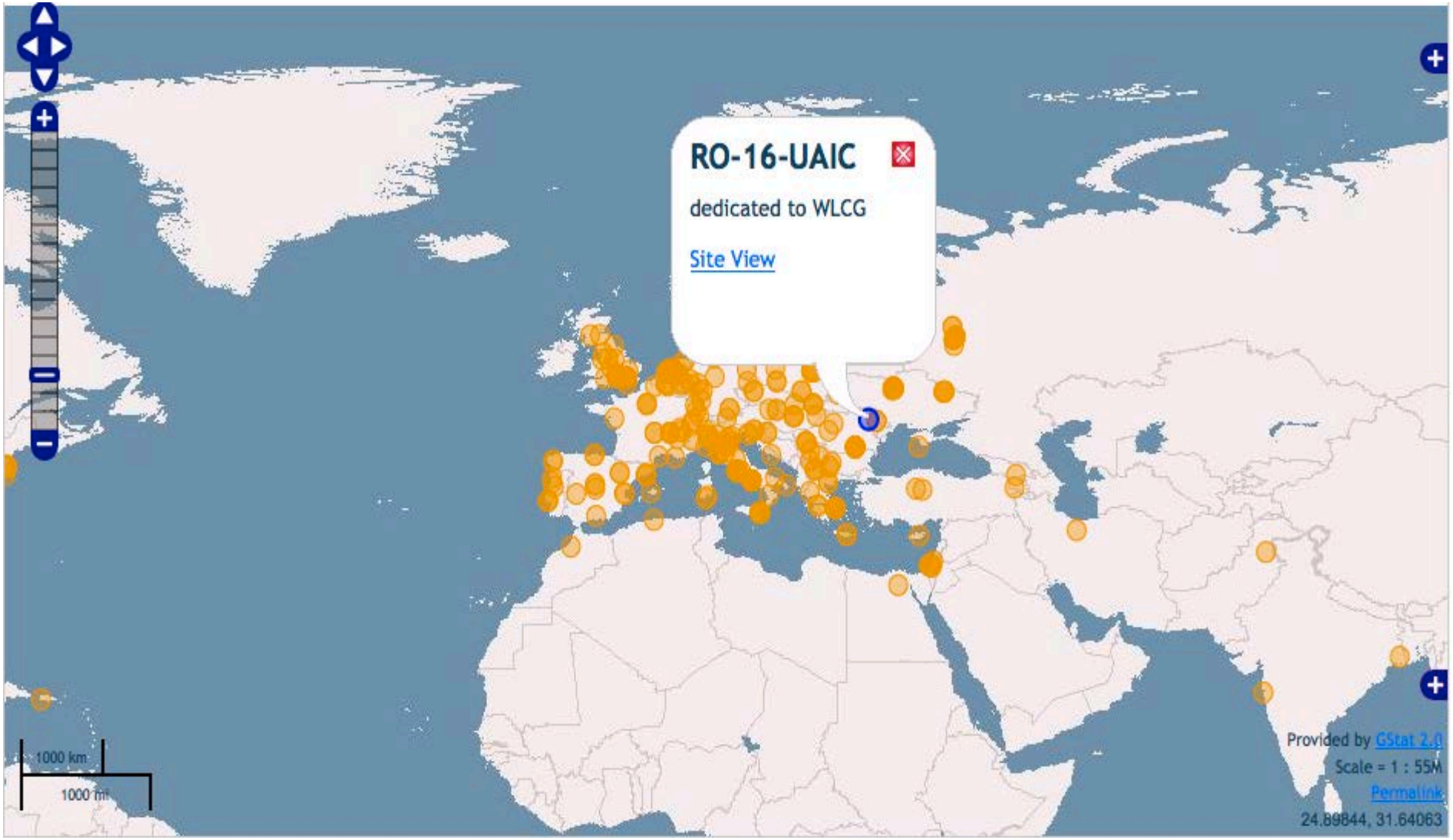
II. amorphous metallic nanowires simulation





L. Stoleriu, C. Pinzaru, A. Stancu, *Appl. Phys. Lett.* **100**, 122404 (2012)

Introduction



Introduction

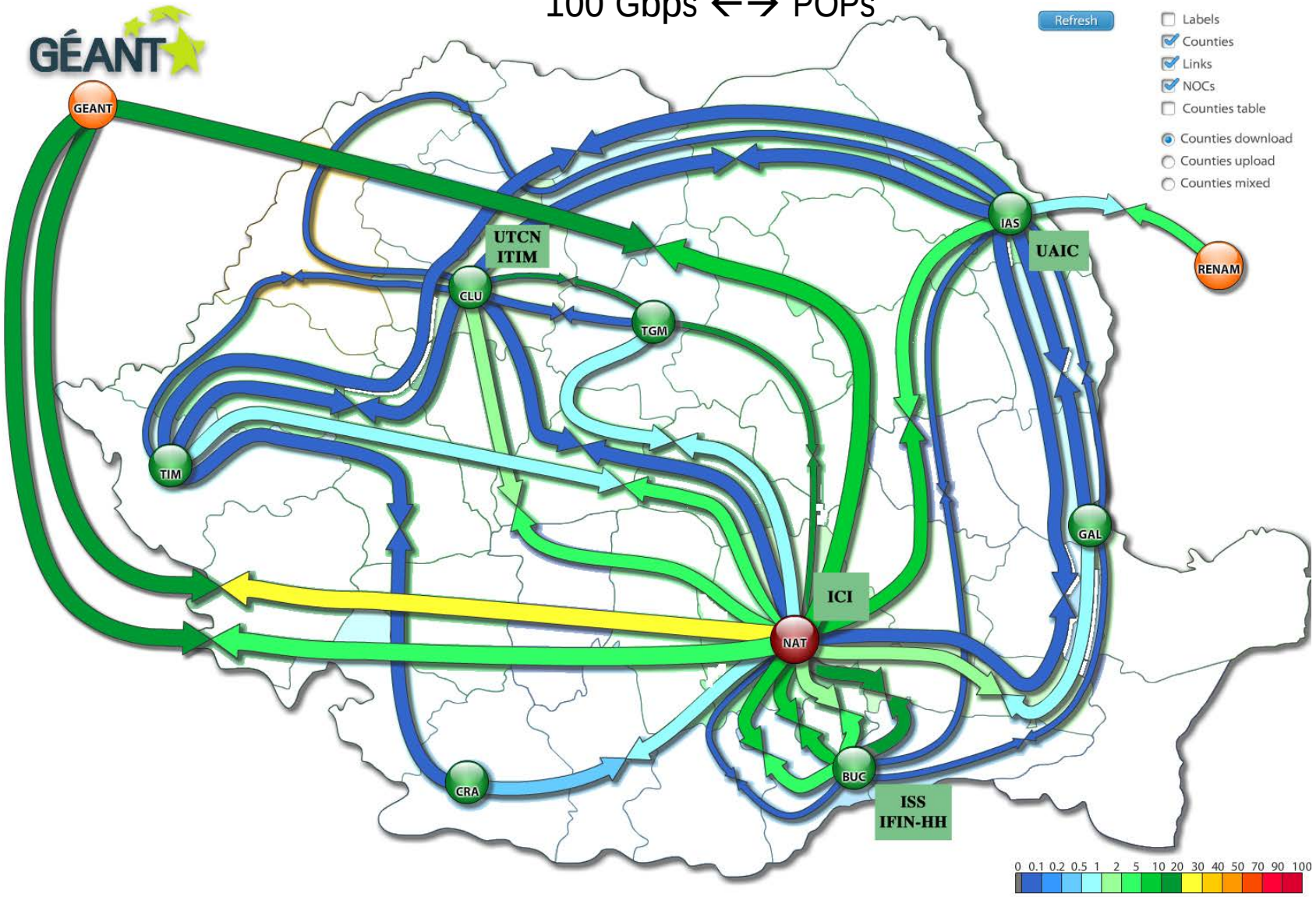
RO-LCG sites

Name	Status	CPUs			Online Storage Space (GB)	
		Physical	Logical	SI2000	TotalSize	UsedSize
GRIDIFIN		5	28	60,984	7,383	5%
NIHAM		665	3,322	6,691,750	984,032	55%
RO-02-NIPNE		85	740	1,792,040	225,440	42%
RO-07-NIPNE		202	1,704	4,190,680	1,371,504	45%
RO-11-NIPNE		2	304	662,112	52	9%
RO-13-ISS		88	416	819,520	121,491	20%
RO-14-ITIM		55	440	958,320	58,554	26%
RO-15-NIPNE		54	108	156,600	31	25%
RO-16-UAIC	OK	106	424	923,472	171,987	20%
Total		1,262	7,486	16,255,478	2,940,474	1,345,705

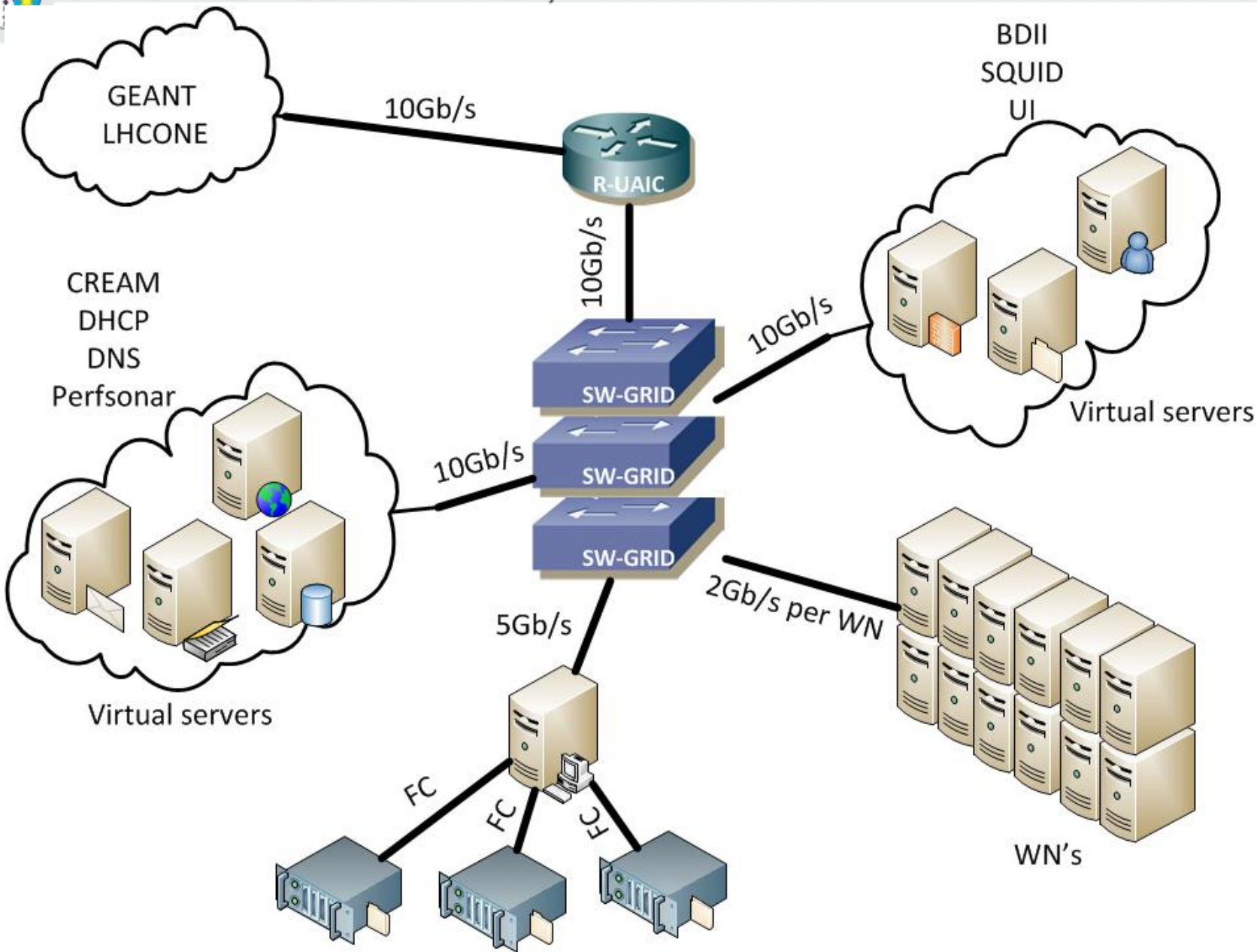
Introduction

NREN

100 Gbps ←→ POPs



COMPUTATION POWER OF RO-16-UAIC



COMPUTATION POWER OF RO-16-UAIC

Server tip	No.	Obs.
Cream	1	Virtual server
BDII	1	Virtual server
UI/APEL	1	Virtual server
Squid	1	Virtual server
Network man.	1	Virtual server
Perfsonar BW.	1	Virtual server
Perfsonar LAT.	1	Virtual server
WN	53+1	424 CPU
SE	1	133TB

COMPUTATION POWER OF RO-16-UAIC

1* 3 TB HDD

2 * server M630

12 core processors at 2.4Ghz

64GB RAM at 2.1 Ghz

2* 250 GB HDD at 7.2K RPM

1*10Gbps Ethernet

Torque 4.2.10 → automatic update

root@cream#: pbsnodes –a
Unable to communicate with cream server Cannot connect to specified server host cream-server. pbsnodes: cannot connect to server cream-server, error=111 (Connection refused)

root@cream#:qstat -q
/usr/bin/pbsnodes:
cannot connect to server cream server, error=15137
(could not connect to trqauthd)

Torque 4.2.10 → automatic update

Solution I –(resolve the dependency of Torque 4.2.10)

- dependence packet: trqauthd
- correct the rights of file and folders

root@crema:chmod 1777 /var/lib/torque/spool /var/lib/torque/undelivered /var/lib/torque/checkpoint

- modification of access to pilot accounts
- recompile CE and all WN's

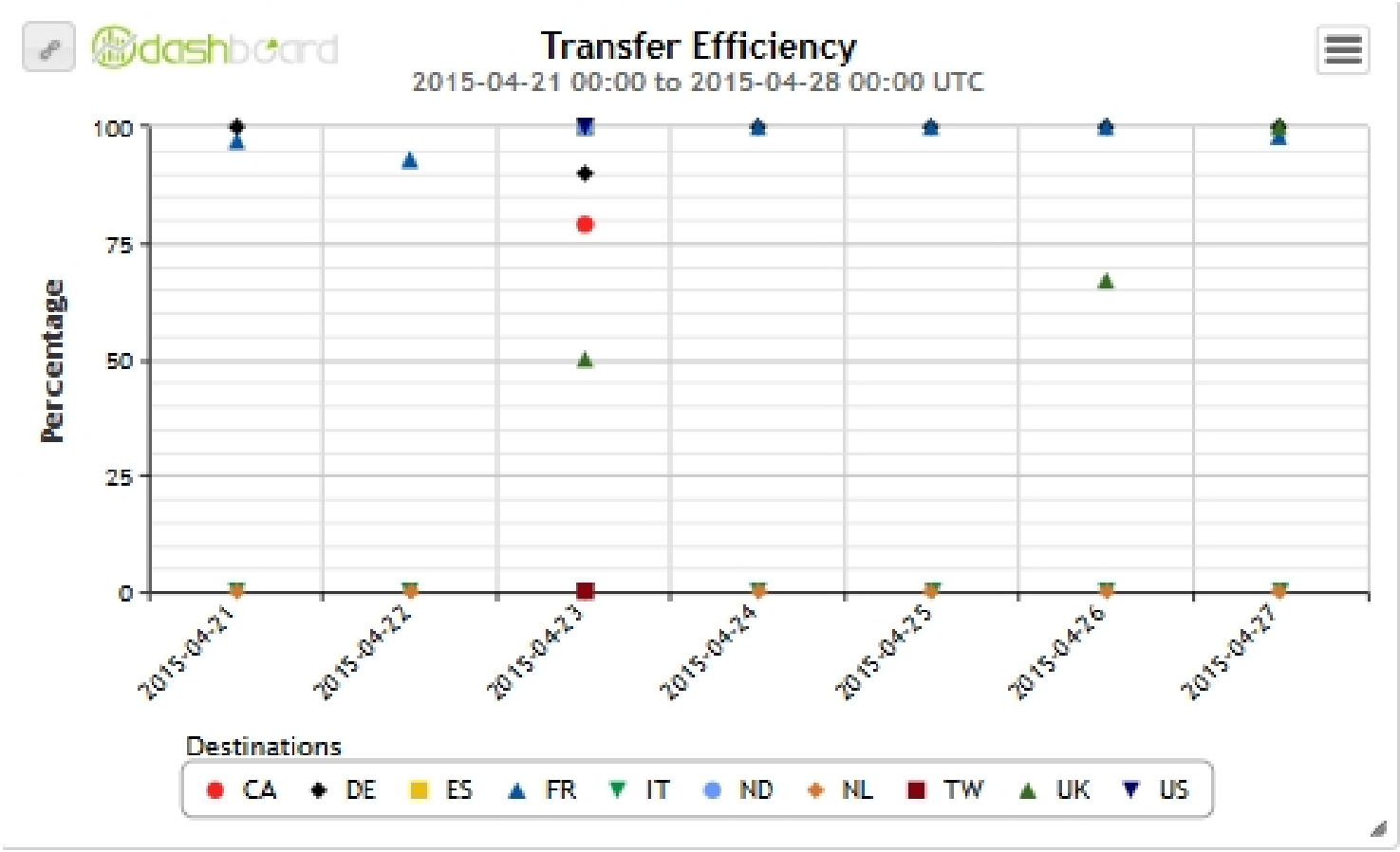
Solution II –(downgrade)

- Downgrade Torque to 2.4 version
- Recompile CE and all WN's

THE NETWORK ISSUE IN RO-16-UAIC SITE

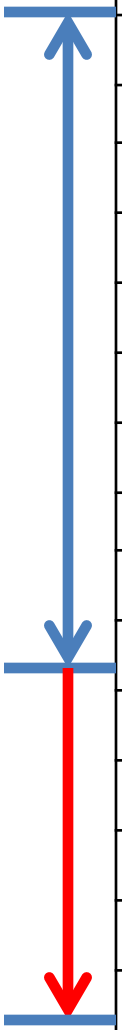
GGUS Ticket-ID:113192

- Between RO-16-UAIC and INFN-T1 transfer efficiency 0 %
- Between RO-16-UAIC and other sites transfer efficiency 100%



THE NETWORK ISSUE IN RO-16-UAIC SITE

	Traceroute to 131.154.128.26		
No. hops	Answer for diagram 1	Answer for diagram 2	Answer for diagram 3
1	85.122.31.126	85.122.31.126	85.122.31.126
2	217.73.168.1	217.73.168.1	217.73.168.1
3	37.128.233.21	37.128.233.21	37.128.233.21
4	37.128.239.105	37.128.239.105	37.128.239.105
5	37.128.239.150	37.128.239.150	37.128.239.150
6	62.40.126.244	62.40.126.244	62.40.126.244
7	62.40.112.117	62.40.112.117	62.40.112.117
8	62.40.98.39	62.40.98.39	62.40.98.39
9	62.40.126.221	62.40.126.221	62.40.126.221
10	62.40.126.202	62.40.126.202	62.40.126.202
11	193.206.128.41	90.147.80.93	90.147.80.93
12	193.206.128.42	193.206.128.42	90.147.80.6
13	193.206.128.41	193.206.128.41	193.206.128.41
14	193.206.128.42	193.206.128.42	193.206.128.42
15	131.154.128.26	131.154.128.26	131.154.128.26



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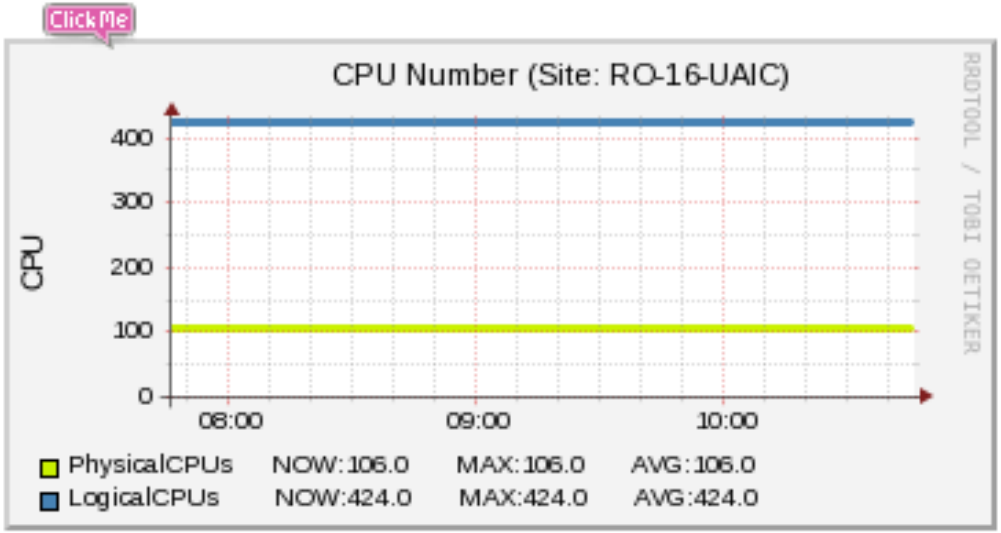
3	37.128.233.21	37.128.233.21	37.128.233.21
4	37.128.239.105	37.128.239.105	37.128.239.105
5	37.128.239.150	37.128.239.150	37.128.239.150
6	62.40.126.244	62.40.126.244	62.40.126.244
7	62.40.112.117	62.40.112.117	62.40.112.117
8	62.40.98.39	62.40.98.39	62.40.98.39
9	62.40.126.221	62.40.126.221	62.40.126.221
10	62.40.126.202	62.40.126.202	62.40.126.202
11	193.206.128.41	193.206.128.41	193.206.128.41
12	193.206.128.42	193.206.128.42	193.206.128.42
13	131.154.128.26	131.154.128.26	131.154.128.26

JOBS STATISTIC

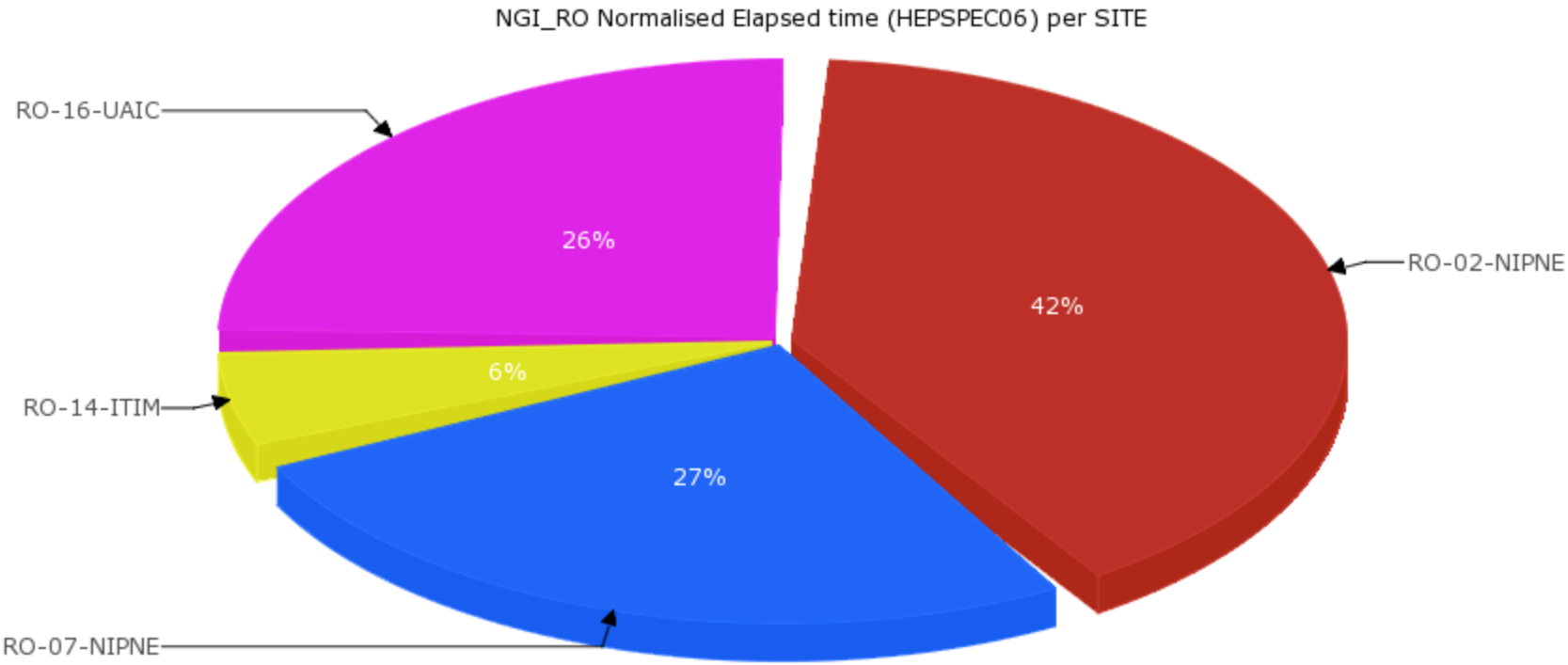
Computing Resource		
Physical CPUs	**Logical CPUs**	**SI2000**
106	424	923,472



Total Size	Used Size	Usage Percentage
171,987	33,494	19%

JOBS STATISTIC

Last year statistic (01-10/2014)	
Number of jobs	393 K
Normalized CPU time (HEPSPEC06)	8,5 M



JOBS STATISTIC

Atlas single job

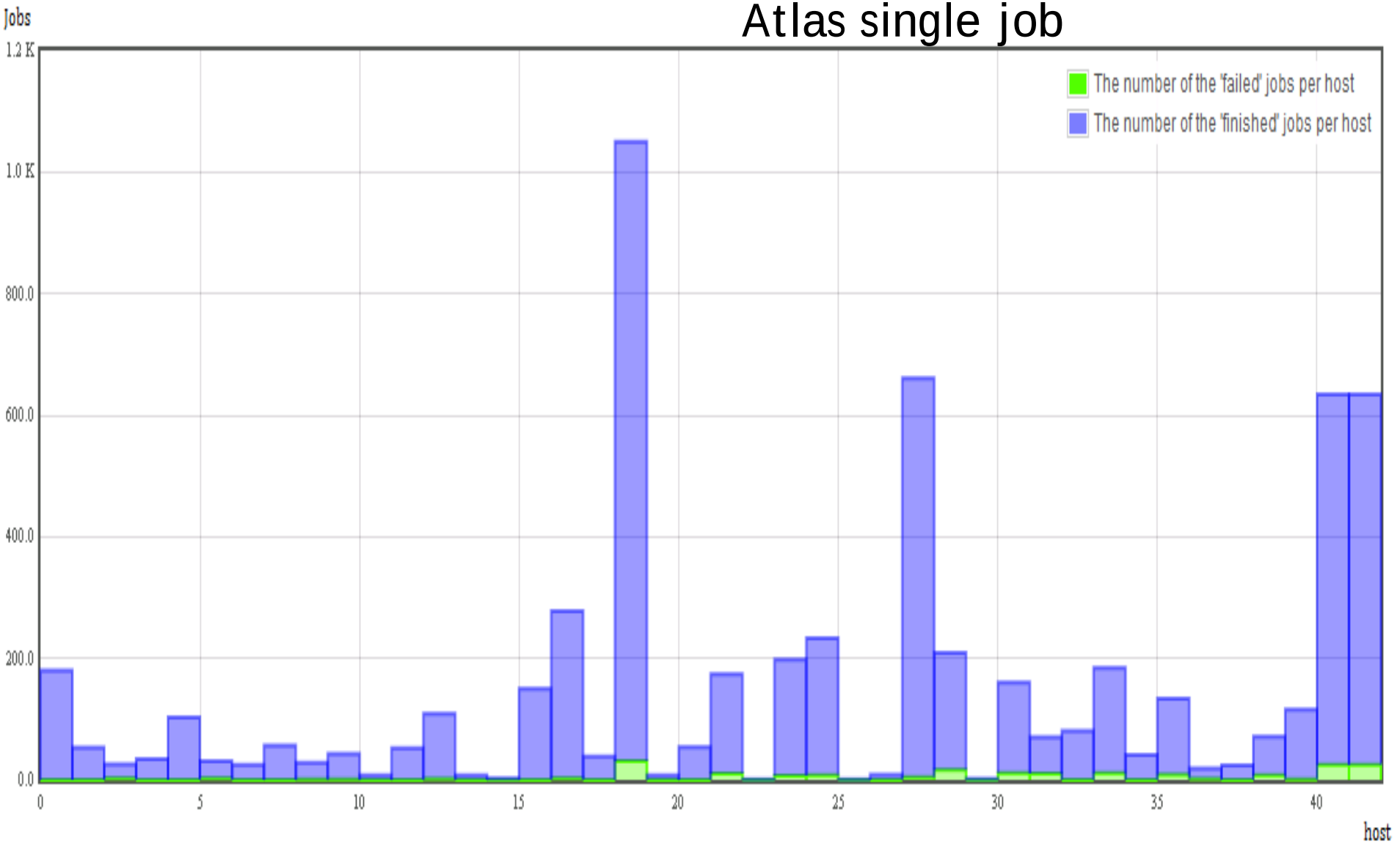
CPU Efficiency (%) by SITE and VO	
SITE	atlas
RO-02-NIPNE	197.0
RO-07-NIPNE	112.0
RO-14-ITIM	94.8
RO-16-UAIC	97.7
Total	142.1

Atlas multicore job

CPU Efficiency (%) by SITE and VO	
SITE	atlas
RO-02-NIPNE	94.7
RO-07-NIPNE	73.2
RO-14-ITIM	5,056.9
RO-16-UAIC	176.9
Total	1,350.4

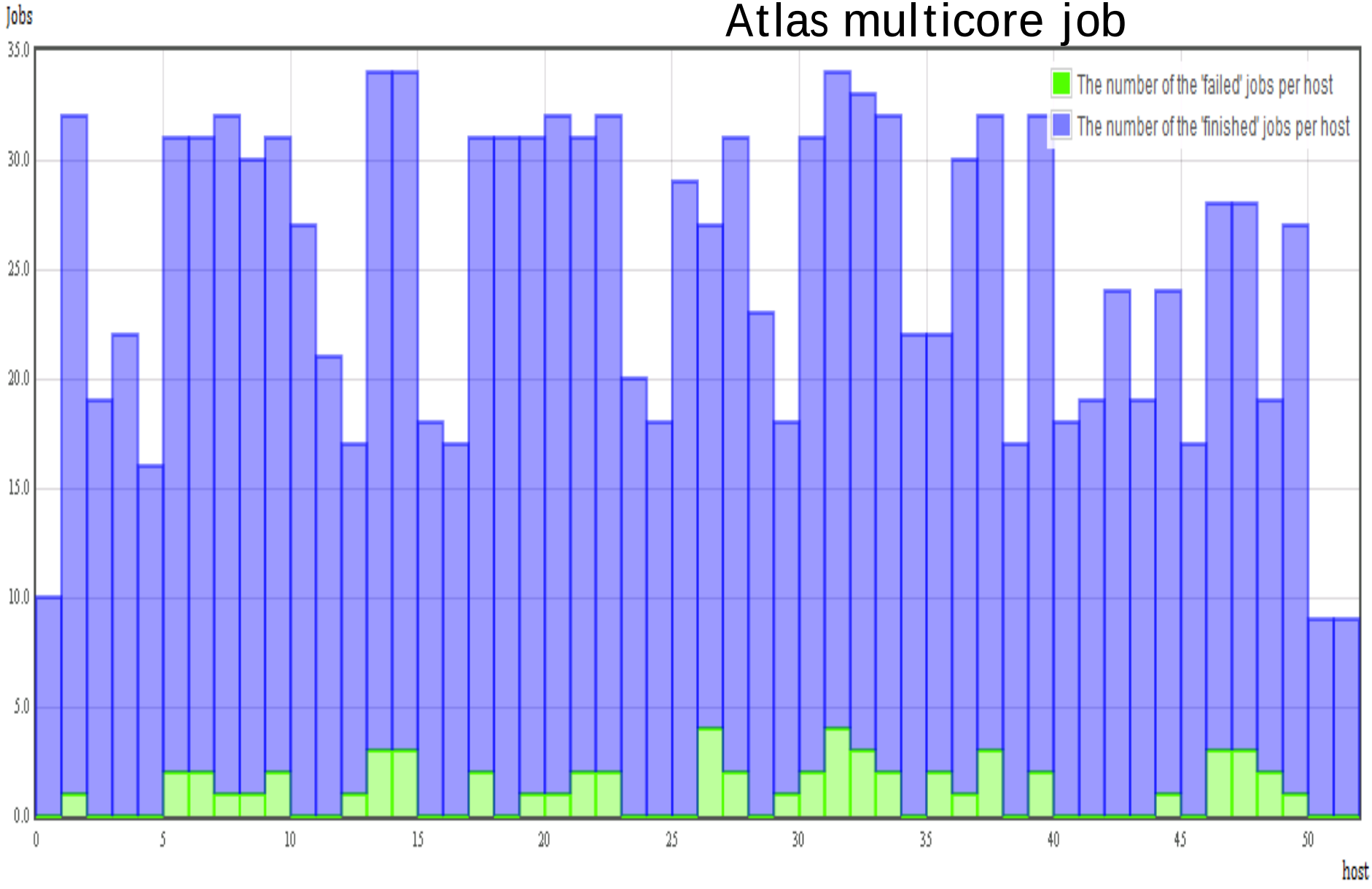
JOBS STATISTIC

Atlas single job



JOBS STATISTIC

Atlas multicore job



Conclusion

- ✓ number of jobs 391 K;
- ✓ Normalized CPU time (HEPSPEC06) 8 M;
- ✓ CPU Efficiency 97.5 % for single job;
- ✓ Need a unit for measuring jobs in single and multicore processing;

Thank you!

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