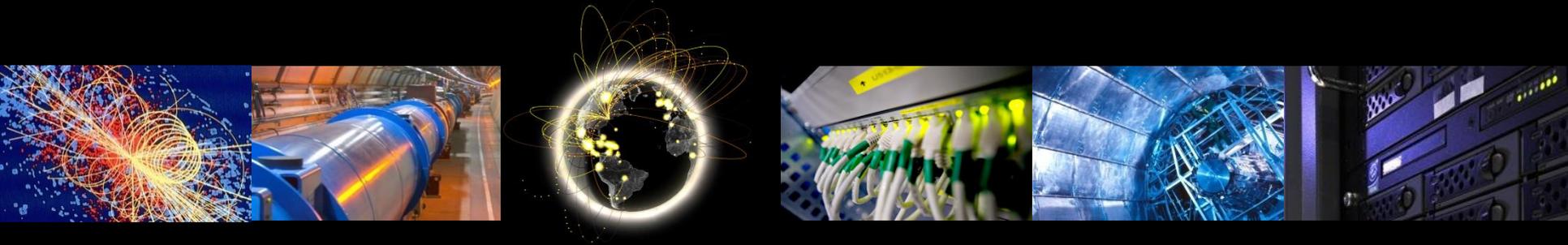


Accounting Update

John Gordon



Outline

- Multicore
- CPU Accounting Developments
- Cloud Accounting
- Storage Accounting
- Miscellaneous

MultiCore Usage

- The campaigns to encourage sites to start publishing accounting information on the number of cores used were successful.
- >99% of LHC usage reports #cores.
- Of the remaining <1%, 90%+ is due to ARC CEs at DESY-HH
 - Intractable interaction between ARC CE and PBS
 - Should be fixable as CREAM was fixed.
- Very low level of failed jobs on ARC CEs still report 0 cores with little or no cpu and small wall.

Refresh

by REGION and NUMBER PROCESSORS.
LHC VOs. November 2015 - December 2015.

The following table shows the distribution of grouped by REGION and NUMBER PROCESSORS (only information about LHC VOs is returned).

by REGION and NUMBER PROCESSORS																
REGION	0	1	2	3	4	5	6	8	9	10	12	16	20	40	Total	%
AfricaArabia	0	1,792,407	0	0	0	0	0	0	0	0	0	0	0	0	1,792,407	0.09%
AsiaPacific	1,676	67,091,786	0	0	0	0	0	22,402,563	0	0	0	0	0	0	89,496,025	4.66%
CERN	0	135,486,076	20,458,562	0	0	0	0	19,636,403	0	0	0	0	0	0	175,581,042	9.14%
NGI_ARMGRID	0	79,443	0	0	0	0	0	0	0	0	0	0	0	0	79,443	0.00%
NGI_BG	119	0	0	0	0	0	0	0	0	0	0	0	0	0	119	0.00%
NGI_CH	0	12,117,361	11,386	0	0	1	0	7,362,142	0	0	0	0	0	0	19,490,890	1.01%
NGI_CHINA	0	10,192,040	0	0	0	0	0	995,886	0	0	0	0	0	0	11,187,926	0.58%
NGI_CZ	0	16,045,577	0	0	0	0	0	3,727,645	0	0	0	0	0	0	19,773,222	1.03%
NGI_DE	13,007,515	151,311,170	0	0	0	0	0	69,465,655	0	0	0	0	0	1,824,103	235,608,444	12.26%
NGI_FRANCE	0	205,412,337	31,975	11	0	0	0	58,149,866	0	0	0	0	0	0	263,594,188	13.72%
NGI_GRNET	0	2,824,233	0	0	0	0	0	0	0	0	0	0	0	0	2,824,233	0.15%
NGI_HR	0	54	0	0	0	0	0	0	0	0	0	0	0	0	54	0.00%
NGI_HU	0	6,801,615	0	0	0	0	0	0	0	0	0	0	0	0	6,801,615	0.35%
NGI_IBERGRID	0	46,946,320	0	0	2	0	0	35,283,958	0	2	0	0	0	0	82,230,282	4.28%
NGI_IL	0	8,409,990	0	0	0	0	0	6,031,630	0	0	0	0	0	0	14,441,619	0.75%
NGI_IT	0	167,204,915	426,358	0	45	0	0	50,251,191	0	0	0	0	0	0	217,882,509	11.34%
NGI_NDGF	0	26,403,787	166,728	0	0	0	0	8,080,953	0	0	1,869,987	323,447	0	0	36,844,901	1.92%
NGI_NL	0	75,857,308	0	0	14,700,898	0	0	0	0	0	0	0	0	0	90,558,206	4.71%
NGI_PL	0	30,231,011	0	0	0	0	0	0	0	0	0	840,084	0	0	31,071,095	1.62%
NGI_RO	214,082	12,291,241	0	0	0	0	0	3,680,949	0	0	0	0	0	0	16,186,271	0.84%
NGI_SI	0	16,350,582	0	0	0	0	0	9,809,879	0	0	0	0	0	0	26,160,461	1.36%
NGI_SK	0	10,126,611	0	0	0	0	0	2,879,847	0	0	0	0	0	0	13,006,458	0.68%
NGI_TR	0	458,145	0	0	0	0	0	19,137	0	0	0	0	0	0	477,281	0.02%
NGI_UA	1,328,965	619,548	0	0	0	0	0	0	0	0	0	0	0	0	1,948,513	0.10%
NGI_UK	3,359	244,113,110	0	0	1,629,325	0	0	68,407,525	0	0	0	0	0	0	314,153,319	16.35%
ROC_Canada	0	53,229,091	0	0	0	0	31,760,607	1,787,627	0	0	0	0	0	0	86,777,325	4.52%
ROC_LA	0	20,577,529	0	0	0	0	0	1,220,470	0	0	0	0	0	0	21,797,999	1.13%
Russia	0	105,797,719	0	0	0	0	0	22,437,007	0	0	13,316,652	0	0	0	141,551,378	7.37%
Total	14,555,717	1,427,771,002	21,095,010	11	16,330,270	1	31,760,607	391,630,333	0	2	15,186,639	1,163,531	0	1,824,103	1,921,317,227	
Percentage	0.76%	74.31%	1.10%	0.00%	0.85%	0.00%	1.65%	20.38%	0.00%	0.00%	0.79%	0.06%	0.00%	0.09%		

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Monthly Reports

- While waiting for APEL to migrate, the monthly WLCG Reports were adapted to take their data from the development portal with its information on cores used.
- The November report, available now for checking by sites uses $\text{wallclock} * \text{ncores}$

Viewing in production portal

- The Accounting Portal is in the middle of a major rewrite and they are loath to make major changes (lack of effort, etc)
- They have added a new tree EMI3 (WLCG?) alongside the EGI one and the former contains the data visible today on the development portal which now has historical data going back 18 months. (Earlier data will follow shortly)
- The Tier1 and Tier2 trees (and reports?) are from the latest data and include SubmitHost, Number of Processors(cores) and Number of CPUs. Wallclock time is viewable as raw, normalised and normalised*ncores. The last number is used to calculate efficiency.
- Please let us know of any discrepancies you see either with what is visible in the original production view (EGI) or with what you expect to see for your site.

LHC VOs. January 2015 - December 2015.

The following table shows the distribution of CPU Efficiency grouped by SITE and DATE (only information about LHC VOs is returned).

CPU Efficiency (%) by SITE and DATE													
SITE	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Total
EFDA-JET	59.7	48.1	82.3	30.2	1.5	0.9	2.0	1.9	2.2	2.7	2.2		21.3
RAL-LCG2	86.4	82.9	84.3	83.0	81.5	84.0	83.2	81.5	88.2	88.8	90.7	89.3	85.3
UKI-LT2-Brunel	136.9	62.2	70.8	66.9	63.4	61.5	59.0	63.2	61.5	55.5	60.0	60.2	68.4
UKI-LT2-IC-HEP	304.2	271.5	110.9	88.8	86.9	88.3	82.4	88.3	88.4	92.1	91.3	84.0	123.1
UKI-LT2-QMUL	62.8	78.9	84.1	81.2	77.8	73.8	87.5	84.9	87.0	86.4	92.3	87.4	82.0
UKI-LT2-RHUL	379.7	86.6	87.5	87.6	86.9	80.4	88.1	77.1	88.0	87.1	87.4	85.0	110.1
UKI-NORTHGRID-LANCS-HEP	90.5	89.0	91.1	91.4	77.5	66.3	89.6	94.0	92.7	93.1	92.4	91.7	88.3

Refresh

RAL-LCG2 CPU Efficiency by VO and DATE.
LHC VOs. January 2015 - December 2015.

The following table shows the distribution of CPU Efficiency grouped by VO and DATE (only information about LHC VOs is returned).

CPU Efficiency (%) by VO and DATE													
VO	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Total
alice	91.5	86.0	93.1	92.0	93.3	90.8	80.8	76.3	76.9	89.1	83.8	45.4	83.3
atlas	87.4	76.6	87.9	91.2	89.8	87.6	89.3	90.3	91.6	89.6	90.9	92.6	88.7
cms	73.2	81.7	63.1	44.6	37.4	55.6	53.5	39.7	68.2	72.7	85.7	92.2	64.0
lhcb	86.1	90.5	92.0	94.4	96.2	90.3	91.8	94.9	95.5	94.8	96.1	96.8	93.3
Total	84.6	82.9	77.5	94.4	79.2	81.1	78.9	75.3	83.1	86.5	89.1	81.8	82.9

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Key: 0% <= eff < 50%; 50% <= eff < 60%; 60% <= eff < 75%; 75% <= eff < 90%; 90% <= eff < 100%; eff >= 100% (parallel jobs)

CPU Accounting Developments

- ARC Parser
 - This will allow a site to publish their CREAM and ARC in one go from a single host.
 - Keeps local history and allows easy republishing.
 - Under test. VO info still to be added
- HTCondorCE
 - Rumours of use outside OSG (and CERN)
 - Can anyone testing please get in touch so accounting can be developed in parallel, and not when someone alerts us after it is in production
- New versions
 - The same request applies to new releases of batch systems. Several times we have had tickets raised by production sites who have upgraded their batch systems and only then looked at accounting.
 - Some planning would be good. Is there a forum where the first WLCG site about to try a new level of batch system can announce this?
 - We are happy to get involved in testing and can run logs through our test client.

Cloud Accounting

- Updated Usage Record
 - Allows benchmark and structure within a site
 - Waiting for developers to test their producers
- Monthly reports for long-running VMs
 - Under development. Implemented at server end by APEL.
- Tier2 view but only 5 T2s are reporting cloud usage to APEL. (no Tier1s). Of these only 1 runs LHC work. There is LHC usage at non T2 sites.
 - I know there are many tests using cloud infrastructures. Can more of them please report accounting of their VMs.
 - It is not necessary to join the EGI FedCloud but if you don't meet their criteria you may not be visible in EGI accounting, only in the WLCG views.
- The infrastructure is in place.

The following table shows the distribution of Total number of VM run grouped by VO and SITE.

VO	Total number of VM run by VO and SITE																				Total	%					
	100IT	BIFI	CERN-PROD	CESGA	CESNET-MetaCloud	CETA-GRID	CYFRONET-CLOUD	FZJ	GoeGrid	HG-09-Okeanos-Cloud	IFCA-LCG2	IISAS-FedCloud	IISAS-GPUCloud	IN2P3-IRES	INFN-CATANIA-NEBULA	INFN-CATANIA-STACK	INFN-PADOVA-STACK	MK-04-FINKICLOUD	NG-INGRID-PT	PRISMA-INFN-BARI			SZTAKI	TR-FC1-ULAKBIM	UA-BITP	UPV-GRYCAP	
ALICE	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0.00%	
asistants	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.00%
ATLAS	0	157,137	4,235	0	0	3,326	0	37,381	0	0	0	14,029	0	0	0	0	54,218	0	0	0	0	0	0	0	270,326	54.29%	
auger	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.00%	
bitp	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	41	0.01%	
chipster.csc.fi	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	0	0	0	0	123	0.02%	
cloudpyme	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0.00%	
CMS	0	0	1,304	0	0	0	0	0	0	0	0	0	0	618	0	0	0	0	0	11,685	0	0	0	0	13,607	2.73%	
drihm.eu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	38	0.01%	
dteam	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	7,689	9,142	0	0	0	0	0	0	0	16,836	3.38%	
enmr.eu	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	0	243	0	0	0	0	0	0	0	271	0.05%	
fedcloud.egi.eu	0	847	0	170	6,813	2,301	5	250	282	0	77	488	165	264	1,203	505	749	9	11	906	0	33	0	770	15,848	3.18%	
fogbow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	171	0.03%	
fogbow-extra	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.00%	
hadoop	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.00%	
IT	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.00%	
IT-Batch	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.00%	
jinr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	0.01%	
LHCb	0	0	40,087	0	0	0	0	0	0	0	0	0	0	0	0	0	402	0	0	0	0	0	0	0	40,489	8.13%	
None	0	0	0	0	0	30	0	0	0	2,335	175	0	0	0	0	0	0	5,745	0	0	1,221	61	0	9,567	1.92%		
oneadmin	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	15	47	0.01%	
ops	7,253	17,181	0	5,717	8,171	7,444	5,836	3,840	7,616	0	7,865	7,650	1,490	7,982	7,930	1,773	8,754	1,648	7,105	675	0	5,688	596	6,386	128,600	25.83%	
peachnote.com	0	0	0	0	15	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0.01%	
training.egi.eu	0	227	0	0	378	254	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	869	0.17%	
trgridb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	0.01%	
users	0	0	0	172	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	176	0.04%	
vo.chain-project.eu	0	0	0	0	66	4	0	0	0	0	0	0	0	0	470	119	0	0	0	55	0	0	0	0	714	0.14%	
vo.formation.idgrilles.fr	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0	42	0.01%	
vo.france-grilles.fr	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	13	0.00%	
Total	7,253	175,392	45,649	6,100	15,475	13,359	5,845	41,515	7,898	2,335	8,128	22,167	1,655	8,919	9,603	10,086	73,508	7,411	7,116	13,480	1,221	5,746	737	7,345	497,943		
Percentage	1.46%	35.22%	9.17%	1.23%	3.11%	2.68%	1.17%	8.34%	1.59%	0.47%	1.63%	4.45%	0.33%	1.79%	1.93%	2.03%	14.76%	1.49%	1.43%	2.71%	0.25%	1.15%	0.15%	1.48%			

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Country	TR-FC1-ULAKBIM	UA-BITP	UPV-GRYCAP	Total	Percentage
Canada	752	707	499	1,958	0.39%
NGI_HR	191	309	35	535	0.11%
NGI_HU	0	0	0	0	0.00%
NGI_IBERGRID	249	491	596	1,336	0.27%
NGI_IL	52,128	33,873	24,074	110,075	22.10%
NGI_IT	752	707	499	1,958	0.39%
Total	54,143	95,057	75,184	124,384	24.87%
Percentage	10.87%	19.09%	15.10%	10.47%	6.80%

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Storage Accounting

- This stalled and has recently been revived.
- We have data from a few dpm and dcache sites.
- There are discrepancies in the data they publish: different time ranges; missing data.
- Still need to work with developers. Useful discussions at pre-GDB DPM Workshop.
- Work still needed to check correctness for all configurations.
- The Accounting Portal Storage view has been improved
- EGI plan a wider roll out in February

SL5 and Poodle

- The Poodle SSLv3 vulnerability was not considered high risk for a service like the APEL repository and the EGI Message Brokers.
- The plan is to block SSLv3 in the brokers if the SVG deems it necessary.
- If MBs block SSLv3, APEL servers running on SL5 OpenSSL will fail.
- SL5 is in security-only support until 31March2016 so sites will need to upgrade by then. To mitigate the risk of SSLv3 being blocked at short notice, please plan to upgrade to SL6 now.
- Unfortunately we cannot tell which sites, if any, are still running SL5 on APEL node.

Indigo DataCloud

- As part of RAL's work in Indigo DataCloud we will develop a RESTful interface to extract data directly from the repository by approved clients.
- The Accounting Portal also has a deliverable in EGI-Engage to provide a RESTful interface to their data.
- We will work together to make the interfaces as similar as possible while meeting possibly different requirements.
- Such interfaces may be of interest to anyone who currently downloads data from the portal.
- We will involve WLCG in defining the spec if anyone is interested.