

New features on Accounting Portal Release Electra

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- A critical operational tool in EGI:
 - Resource Usage
 - Pledges
 - VO user activity
 - Infrastructure trend tracking.
 - Third party data provider
- The Portal has the challenge of being used to access data from the standpoint of thousands of users with special needs.
- Therefore, user input is very important, and comes from many sources and organizations.
- Availability is critical, but also flexibility.

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- Both production and development servers were migrated from SL4 to SL6.2
- Reinstallation needed as migration path, used to discontinue legacy software and upgrade security.
- Since the servers were fully virtualized, there were no physical implications (connectivity, physical security, refrigeration, etc..)
- Users noticed significant performance increases.
- New versions for supporting services (PHP 5, Apache 2.3).

- Great refactoring and reorganization, removing of legacy code.
- Integration of several branches on a single codebase and distributed repository
- Reduction of 10K+ lines in the codebase.
- Since PHP URL tree organization is directly linked to code structure, instrumental on URL reorganization.

- There was a strong increase on row count on some tables and query execution.
- Slow queries were logged, and appropriate indexes were formulated.
- Index traditionally penalize writing operations (since they force maintenance).
- Since write operations are limited to the backend and off-hours, index creation can be aggressive.
- Some queries were reformulated using constructs that were less expensive on MySQL.

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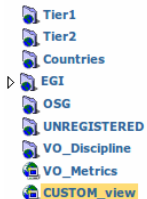
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- The site was based on old frameset technology, this technology works with all HTML servers and clients, but has several negative points:
 - Imposes a fixed minimum width on devices - problems with mobile devices.
 - Pages are not directly accessible with an URL - big problems with bug reporting.
 - Linking from inside pages is complex, and external linking and page inclusion is not possible.
 - It greatly complicated the code organization, since each frame requires a separate HTML file.
- The frame based interface was replaced with a visually equivalent HTML+CSS one that solved all these problems.



Developed by  CESA

- Support made possible with HTML+CSS migration.
- A QR code representing the current URL was added on the sidebar.
 - Useful to synchronize mobile devices with desktop ones.
 - Printable and directly recuperable, so suited to paper reports.
 - There is no upper limit for the URL represented, but in extreme cases it can be too much finely detailed to some mobile cameras.

- The graphs were improved following a RT requirement.
- The improvements were done in order to improve clarity and feasibility for including in reports.
- The size was increased to make use of high resolution devices since there was enough bandwidth and the graphs are highly compressible with PNG.
- The improvements on graphing are a WIP, further updates will be given.

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- The XML datafeeds were created to provide a direct data interface for NA3 and VRC related tasks.
- The resulting interface was derived from the existing CSV one and made public on the custom view.
- Several parties used it (after extension in some cases) and solicited its generalization to all views.

NSL_MD	0	0	0	2	0.00%	
NSL_HOOP	6,808,168	7,127,344	6,226,327	5,487,578	23,650,417	2.31%
NSL_NL	14,938,713	14,280,743	14,999,695	15,978,293	66,207,444	5.43%
NSL_PL	3,192,381	3,614,287	3,944,755	4,961,498	13,912,201	1.42%
NSL_PO	2,738,643	2,692,300	1,509,817	1,817,245	8,758,019	0.79%
NSL_SH	5,035,344	5,426,369	5,624,800	5,404,419	21,582,888	1.88%
NSL_BK	306,153	298,861	241,087	363,690	1,143,791	0.10%
NSL_TR	2,693,329	2,782,565	1,917,172	1,722,315	9,125,381	0.82%
NSL_LIA	162,134	307,339	236,412	434,498	1,266,383	0.11%
NSL_LK	42,267,728	39,215,678	37,808,625	36,999,250	158,291,138	14.27%
ROC_Canada	18,265,790	21,543,639	21,853,798	19,159,200	80,822,427	7.38%
ROC_JGALC	76,405	41,990	22,907	40,420	181,722	0.02%
ROC_LA	425,177	382,492	393,789	276,332	1,477,346	0.13%
Russia	7,861,752	7,043,942	7,694,988	8,685,617	31,086,079	2.89%
Total	272,872,914	268,690,970	273,131,150	284,841,617	1,109,536,651	
Percentage	24.99%	24.22%	24.62%	26.57%		

[Click here for a CSV dump of this table](#)
Click here for the spreadsheet file

- Thus, a generalized XML interface for tree views was implemented.
- The users can give parameters using the web site and retrieve a URL endpoint.
- This endpoint can be treated as a black box, or used programmatically.
- Unfortunately, the interface is too internal to document it fully, so there are plans for a higher-level interface.

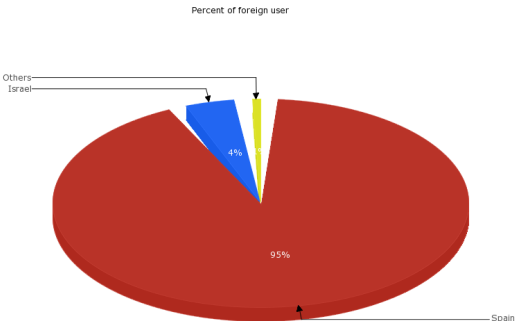
- Some users requested to be able to see all users on certificate-restricted views (VO Manager, Site Manager, etc..)
- Graphs were also updated to support the display of arbitrary numbers of users.

The following table shows the Usage of the Users ordered by Normalised CPU time (kSI2K) and the Total Usage of the Other Users. A detailed view can be obtained by selecting an individual user

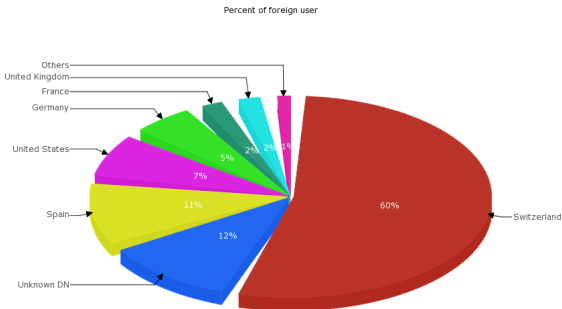
User		VO Users ordered by Normalised CPU time (kSI2K)													
#	User	Jobs		CPU time		Norm. CPU time		WCT		Norm. WCT		CPU Efficiency		Avg. CPU time	Avg. WCT
		#	%	Res	%	Res	%	Res	%	Res	%	Res	%	Res	Res
1	User 1	39,634	14.1%	232,962	26.2%	557,844	26.2%	245,354	22.7%	167,716	22.7%	96.8	5.88	6.19	
2	User 2	20,911	7.3%	130,619	14.7%	312,831	14.7%	180,118	16.7%	431,383	16.7%	72.3	6.37	6.78	
3	User 3	20,154	7.2%	128,348	14.4%	307,389	14.4%	171,646	15.9%	411,090	15.9%	74.8	6.37	6.52	
4	User 4	16,886	6.0%	98,299	11.0%	235,427	11.0%	117,552	10.9%	281,489	10.9%	83.6	5.82	6.96	
5	User 5	3,558	1.3%	57,694	6.5%	138,145	6.5%	84,173	8.7%	225,549	8.7%	95.3	16.31	20.62	
6	User 6	8,686	3.1%	44,903	5.0%	107,546	5.0%	49,067	4.5%	117,515	4.5%	91.3	5.16	5.64	
7	User 7	11,871	4.2%	44,218	5.0%	105,904	5.0%	49,104	4.5%	117,604	4.5%	96.0	3.72	4.14	
8	User 8	4,713	1.7%	42,535	4.8%	101,872	4.8%	43,359	4.0%	103,858	4.0%	98.1	9.03	9.20	
9	User 9	4,210	1.5%	33,587	3.8%	80,464	3.8%	38,242	3.4%	87,986	3.4%	93.8	7.98	8.73	
10	User 10	5,270	1.9%	18,769	2.1%	44,954	2.1%	18,802	1.8%	45,389	1.8%	90.0	3.56	3.60	
11	User 11	1,815	0.6%	12,083	1.4%	28,938	1.4%	12,627	1.2%	30,243	1.2%	96.1	7.48	7.82	
12	User 12	336	0.1%	9,842	1.1%	23,571	1.1%	10,054	0.9%	24,060	0.9%	97.9	29.29	29.92	
13	User 13	2,752	1.0%	7,811	0.9%	19,257	0.9%	7,796	0.7%	18,647	0.7%	96.8	2.77	2.83	
14	User 14	6,628	2.4%	5,548	0.6%	13,298	0.6%	6,197	0.6%	14,840	0.6%	95.5	0.84	0.94	
15	User 15	4,125	1.5%	3,694	0.4%	8,849	0.4%	8,020	0.7%	19,209	0.7%	96.8	0.90	1.94	
16	User 16	96	0.0%	2,992	0.3%	7,168	0.3%	3,005	0.3%	7,196	0.3%	99.8	31.17	31.30	
17	User 17	870	0.3%	2,485	0.3%	6,420	0.3%	3,755	0.3%	8,963	0.3%	91.5	3.08	4.32	
18	User 18	976	0.3%	2,530	0.3%	6,059	0.3%	2,503	0.2%	6,114	0.2%	96.2	2.59	2.62	
19	User 19	8,485	3.0%	2,099	0.2%	5,029	0.2%	2,300	0.2%	5,508	0.2%	96.1	0.25	0.27	
20	User 20	1,990	0.7%	2,020	0.2%	4,840	0.2%	2,269	0.2%	4,428	0.2%	99.2	1.02	1.14	
21	User 21	115	0.0%	1,825	0.2%	4,905	0.2%	1,910	0.2%	4,573	0.2%	98.8	15.96	16.61	
22	User 22	193	0.1%	1,343	0.2%	3,217	0.2%	1,302	0.1%	3,237	0.1%	96.3	6.96	7.01	
23	User 23	965	0.4%	1,080	0.1%	2,588	0.1%	1,349	0.1%	3,230	0.1%	80.1	1.09	1.36	
24	User 24	298	0.1%	640	0.1%	1,532	0.1%	861	0.1%	2,061	0.1%	74.3	2.15	2.89	
25	User 25	460	0.2%	485	0.1%	1,163	0.1%	1,381	0.1%	3,348	0.1%	96.8	1.05	3.09	
26	User 26	137	0.0%	459	0.1%	1,099	0.1%	466	0.0%	1,115	0.0%	98.3	3.35	3.40	
27	User 27	78	0.0%	427	0.0%	1,022	0.0%	431	0.0%	1,031	0.0%	96.1	5.82	6.87	
28	User 28	11,520	4.1%	273	0.0%	694	0.0%	910	0.1%	2,182	0.1%	99.6	0.02	0.08	
29	User 29	42	0.0%	210	0.0%	563	0.0%	222	0.0%	552	0.0%	99.9	8.00	8.29	
30	User 30	117	0.0%	150	0.0%	398	0.0%	151	0.0%	361	0.0%	96.3	1.28	1.29	
31	User 31	5,948	2.1%	87	0.0%	209	0.0%	810	0.1%	1,940	0.1%	96.8	0.01	0.14	
32	User 32	9	0.0%	71	0.0%	170	0.0%	71	0.0%	170	0.0%	100.0	7.89	7.89	
33	User 33	2,029	1.0%	48	0.0%	163	0.0%	233	0.0%	448	0.0%	96.8	0.02	0.08	
34	User 34	653	0.3%	63	0.0%	154	0.0%	36	0.0%	85	0.0%	100.0	0.41	0.08	

- The InterNGI VT was created to compile requirements to make possible reporting the mutual use of resources by NGIs and users.
- The accounting portal has a list of requirements to embed country-aware graphing.
- Users are assigned a country based on the institution that gives them a certificate.
- Full anonymity is preserved, and efficient query mechanism were designed to make this possible on normal views.

Percentage of Users by country		
Country	normcpu	Percentage
Spain	1756293	95.33%
Israel	72856	3.95%
Italy	7023	0.38%
France	5439	0.30%
Unknown DN	359	0.02%
Germany	162	0.01%
Greece	70	0.00%
Switzerland	46	0.00%
Portugal	29	0.00%
Poland	7	0.00%
Netherlands	5	0.00%
Slovakia	0	0.00%
China	0	0.00%
United States	0	0.00%
United Kingdom	0	0.00%
Finland	0	0.00%
Czech Republic	0	0.00%
Korea	0	0.00%
Total	1842289	



Percentage of Users by country		
Country	normcpu	Percentage
Switzerland	61720060	59.54%
Unknown DN	12228299	11.80%
Spain	11151396	10.76%
United States	7750569	7.48%
Germany	5626623	5.43%
France	1945991	1.88%
United Kingdom	1935599	1.87%
Italy	354615	0.34%
Belgium	300778	0.29%
Israel	273176	0.26%
China	104259	0.10%
Portugal	91379	0.09%
Taiwan	54106	0.05%
Poland	41343	0.04%
Austria	24119	0.02%
Morocco	19618	0.02%
Croatia	14367	0.01%
Russia	7203	0.01%
Netherlands	5304	0.01%
Colombia	4932	0.00%
Pakistan	2047	0.00%
Brasil	1195	0.00%
Turkey	783	0.00%
Greece	717	0.00%
Finland	658	0.00%
Ukraine	312	0.00%
Hungary	22	0.00%
Bulgaria	10	0.00%
India	7	0.00%
Azerbaijan	0	0.00%
Mexico	0	0.00%
Czech Republic	0	0.00%
Japan	0	0.00%
Cyprus	0	0.00%
Argentina	0	0.00%
Korea	0	0.00%
Venezuela	0	0.00%
Canada	0	0.00%
Slovakia	0	0.00%
Total	103655487	



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- The new Electra version introduced many internal changes, but also visible and functional ones.
- These changes improved the experience of many users and resolved long standing problems with the tool.
- The InterNGI views brought awareness on correct UserDN reporting and usage trends on countries (e.g. Pilot users misreporting entire VOs).
- In general, the release demonstrated the resilience of the tool on the event of a triple change (server, codebase, functionality).