



WLCG Service Report November 2010 – January 2011

1 February 2011

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This report covers the end of the initial prolonged proton-proton run of the LHC, the inaugural heavy ion run and the first end-of-year shutdown during the LHC data-taking era. The WLCG service continued to operate smoothly during this period, reaching new records in terms of data rates (multi-GB/s), number of jobs (1M jobs/day) and users (1000 unique analysis users for ATLAS per month, some 500 for CMS and somewhat lower for ALICE and LHCb) and in total data volume collected (15PB excluding replicas).

As in previous quarters, the Key Performance Indicators of GGUS statistics, Site Usability plots and Service Incident Reports (SIRs) / Risk Assessments, continue to provide a realistic overview of the service during a given period and are used in the regular reports to the WLCG Management Board (MB). The number of GGUS tickets remains rather constant, dominated by TEAM tickets and with a small fraction of ALARM tickets to which the response continues to be within the targets. In common with EGI-InSPIRE, we introduce the number of HEP tickets and the meantime for their resolution.

Number of HEP VO support tickets	929 (ATLAS: 699, ALICE: 13, CMS: 108, LHCb: 109)
Mean time to resolution	241:38 (HHH:MM)

Table 1 - HEP metrics for EGI-InSPIRE SA3

The Site Usability plots show a marked improvement since their introduction in the Service Reports at the time of STEP'09, although the number of "false negatives" due to failures of the tests themselves still needs to be improved.

Summary of Main Service Incidents

Previous quarterly reports have included a table listing by date, site and service the main incidents for which a [Service Incident Report](#) (SIR) was produced. These are typically characterized by a serious degradation or total loss of service of at least several hours and / or when an alarm ticket was generated.

As introduced at CHEP 2010, SIRs are now categorized by service area: Infrastructure, Middleware, Database, Storage or Network. In this quarter there were two service interruptions that lasted more than 96 hours and three degradations that took much longer to fully understand and resolve. A further incident involving the migration of the CMS software repository took one week to resolve and is included in the tables below for completeness (a total of 6 incidents).

An area for improvement continues to be the ability of all sites to be able to recover database services in a timely fashion. A possible target for recovery could be one shift (one day if recovery from tape is required).

In addition, the follow-up on network problems needs to be improved and made more systematic and a new procedure was introduced during this quarter to address precisely this issue. It clarifies the responsibilities and information flow and is applicable to all types of problem, from degradation to complete outage, and covers both LHC OPN as well as general-purpose network incidents.

Site	Date(s)	Duration	Service	Area	Summary
CERN	18 Dec	5 days	ATLARC DB	DB	Service interruption following power cut. DB had to be restored from tape + problems with TSM63.
CERN	18 Dec	26+ hours	Power	Infrastructure	Interruption of physics services; those with weight > 50 restored in 26 hours
CERN	16 Dec	2.5h	ATLR DB	DB	ATLR service degraded then interrupted after FC switch replacement
CERN	7 Dec	7 days	CVS	Infrastructure	Problems with migration of CMS SW repository – no files lost
CERN	Nov/Dec	8 days	ATLR DB	DB	Reboots of one node traced to rotate log script
IN2P3	-	Months	Shared s/w area	Infrastructure/ storage	Two problems related to shared area for which final analysis pending
IN2P3	-	Weeks	dCache	Storage	Final analysis pending
KIT	26 Nov	1.5h	GGUS	Infrastructure	GGUS unavailable
KIT	16 Nov	3.5h	GGUS	Infrastructure	GGUS unavailable
NL-T1	26 Oct	48h	Conditions DB	DB	Conditions data of ATLAS and LHCb partly inconsistent since SARA recovery
CERN	20 Oct	4.5h	Batch	Infrastructure	Severely degraded response
CNAF	6 Oct	5 days	CMS storage	Storage	CMS storage down due to GPFS bug
CERN	4 Oct	2.1h	Myproxy	Middleware/ Infrastructure	Outage after incorrect certificate renewal
CNAF/ BNL	-	Months	Primary circuit	Network	Final analysis pending

Table 2 - Summary of SIRs in Q4 2010

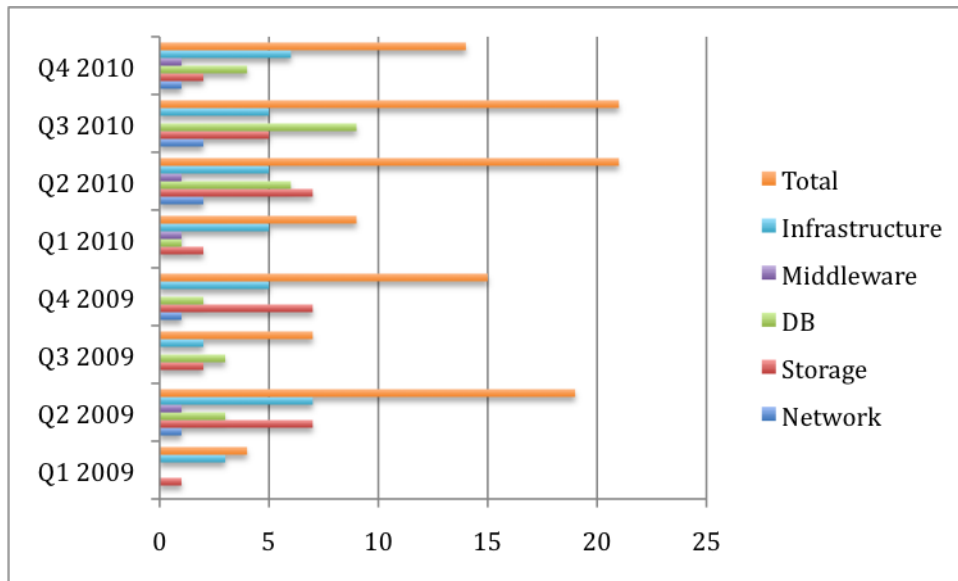


Figure 1 - Service Incidents by Area

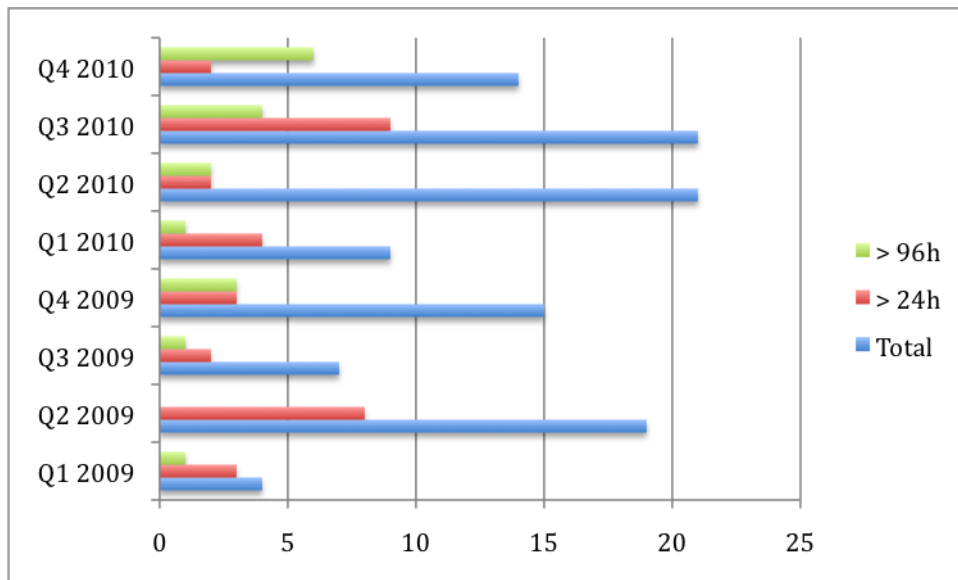


Figure 2 - Time to Resolution

Summary and Conclusions

The last quarter of 2010 was arguably the most demanding to date on WLCG services but nonetheless showed tangible improvements with respect to previous quarters. The challenge for 2011 will be to sustain this level of service with the increased load that is expected from this year's LHC data taking.