15/09/2010

LCG-France Tier-1 & AF

Réunion mensuelle de coordination

Pierre Girard

Pierre.girard@in2p3.fr

dapnia

cea

saclay

CENTRE NATIONAL
DE LA RECHERCHE
SCIENTIFIQUE

Plan

- Pledges
  - 2010
  - 2011
- Fonctionnement
  - Effectifs
  - Allocation du disque
- Nouvelles de LCG
  - CR du GDB et MB
- Résultats du site
  - Disponibilité Mai 2010
  - Point de vue des VOs LHC
- Avancement des chantiers
- Evénements

Pledges

Pledges 2010

CPU
Quelques ajustements à faire.

Tier-1

FR-CCIN2P3, Lyon		ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU [HEP-SPEC06]		3 779	21 600	9 065	9 742	44 185
Disk [TB]	xrootd	708				708
	dcache		2 464	1 209	728	4 401
	total	**708**	**2 464**	**1 209**	**728**	**5 109**
MSS [TB]		1 069	1 598	2 102	531	5 300

Serveurs
27 thors en cours d'installation

DCACHE:
Impossible de distinguer T1 et T2.

Tier-2

France, CC-IN2P3, Lyon		ALICE	ATLAS	CMS	LHCb	SUM 2010
CPU [HEP-SPEC06]		1 469	4 807	4 704	4 674	15 655
Disk [TB]	xrootd	207				207
	dcache		418	296	80	794
	total	**207**	**418**	**296**	**80**	**1 001**

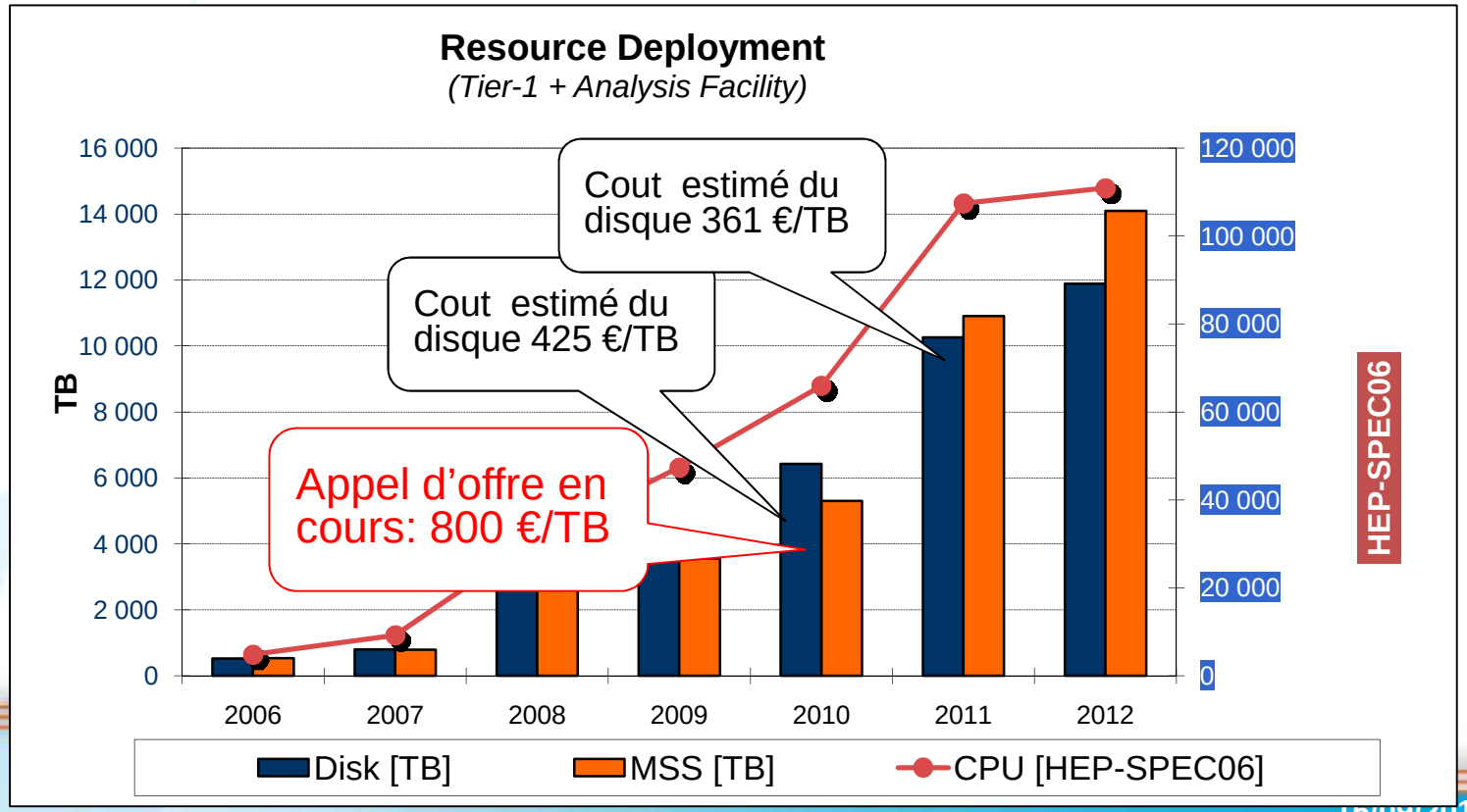
Tier-3

France, CC-IN2P3, Lyon		ALICE	ATLAS	CMS	LHCb	SUM 201
CPU [HEP-SPEC06]		0	4 145	2 016	0	6 161
Disk [TB]	LAF		92			
	dcache		?	?		
	GPFS		?	?	0	
	total	**0**	**188**	**127**	**0**	**315**

GPFS:
Reste à évaluer pour connaitre le volume restant à allouer en disque

Pledges 2011

- Attendu fin septembre par WLCG
- Budget prévisionnel LCG France de 4,6 M€
  - Restriction budgétaire attendue



Fonctionnement

Effectifs

- Dcachemaster
  - Recrutement de Nicolas Bernard
- Xrootd : critique
- Syslinux : flux tendu
  - Recrutement d'Aurélien Gounon
- Sysunix (AFS/Serveurs de disque) : flux tendu
- Sysgrid
  - Recrutement en cours
- User Support
  - Départ annoncé de Damien Mercier (CMS)
  - Recrutement en cours

Allocation du disque

- En 2 étapes
  - Avril (officiel) et Octobre
- Chaque allocation
  - Implique différents acteurs
    - Responsable du projet LCG
      - Définit et vérifie l'allocation des volumes
    - Support de chaque VO
      - Précise où il faut allouer en fonction des besoins de la VO
    - Administrateur Dcache/Xrootd/GPFS
      - Demande le matériel et le configure en fonction des demandes
    - Administrateur Unix
      - Réceptionne et installe le matériel en fonction des demandes
  - Demande beaucoup d'interactions

⇒ Réflexion à mener pour améliorer le processus

Nouvelles de LCG

GDB du 08/09/2010

GDB meetings in 2011

GDB

- Propose second Wednesday of each month
- Rooms booked
- Do these dates clash with anything?
- Offer from Lyon to visit in March

Réunion T1/AF le jeudi de la semaine suivante. Ok ?

Science & Technology Facilities Council

- January 12
- February 9
- March 9
- April13
- May 11
- June 8
- July 13
- August 10
- September 14
- October 12
- November 9
- December 14

4

Source: http://indico.cern.ch/conferenceDisplay.py?confId=72061

GDB du 08/09/2010

Milestones

- Pilot jobs, glexec, SCAS, etc (1st July)
  - Maarten's summary on agenda
  - http://litmaath.home.cern.ch/litmaath/GDB/

IN2P3	LCMAPS error	AuthZ error	OK (some CEs)

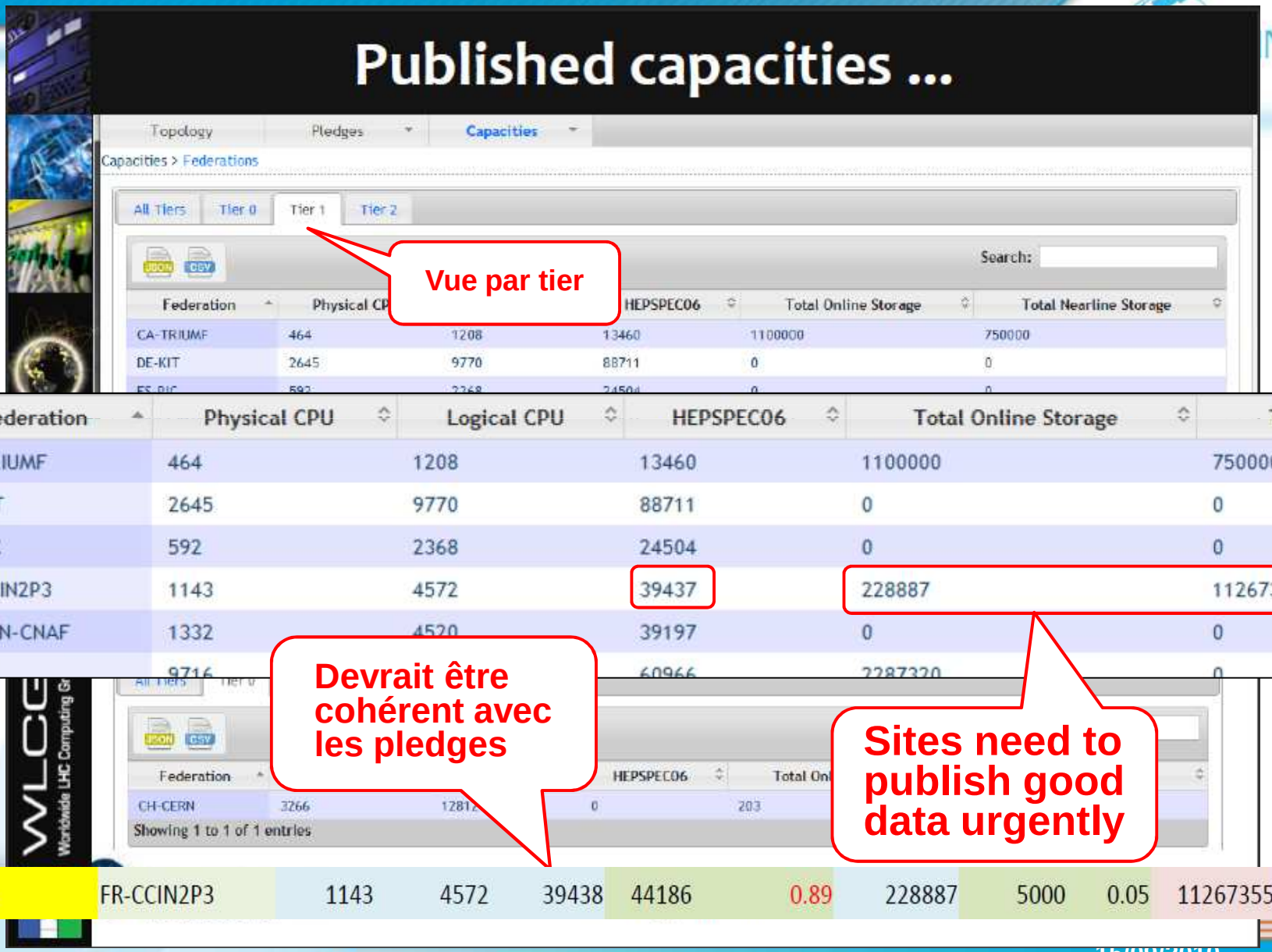
		capability in BD
		OK
CNAF	LCMAPS error	
FNAL	OK for CMS	OK
IN2P3CC	CE AuthZ error or LCMAPS error	OK
KIT	OK	OK
NDGF	n/a	n/a
NIKHEF	LCG-CE OK, CREAM connection error	OK
PIC	LCMAPS error	OK
RAL	OK	OK
SARA	OK	OK
TRIUMF	OK	

Progrés annoncés depuis au dernier CAF

CREAM deployment:

- >100 sites have a CREAM CE,
  still missing job submission from condor-g (needed by ATLAS)
- Stability and reliability of CREAM still not good enough to replace LCG-CE, many open tickets

GDB du 08/09/2010

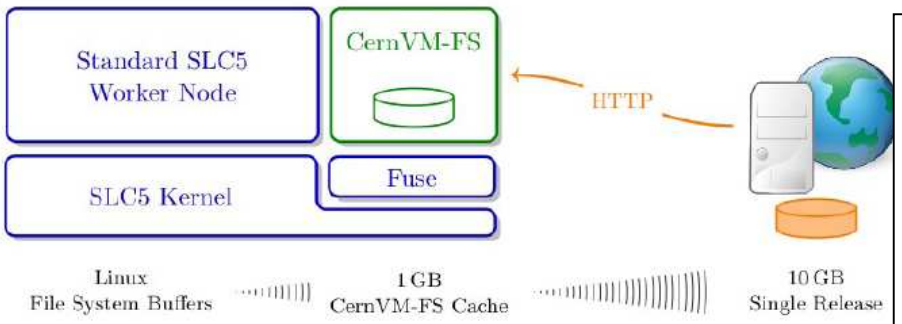


GDB du 08/09/2010

- Shared Software Areas: tests à PIC et RAL

An alternative model based on CVMFS

- CernVM-FS is a network file system developed in the framework of CernVM project
- Repository of applications: contains the result of a make install
- Can be mounted on the WN and accessed as read-only file system, through http protocol
- Complemented by local site proxy for web caching



GDB 08/09/2010

Tests effectués en collaboration avec Atlas et LHCb

So far it looks very promising.

Some more detail:
https://cernvm.cern.ch/project/trac/cernvm/export/1693/cvmfs-tr/cvmfstech.preview.pdf
and
http://indico.cern.ch/getFile.py/access?contribId=36&sessionId=3&resId=0&materialId=slides&confId=89681

GDB du 08/09/2010

Cu

- APEL Publisher
  - glite-APEL released into production in June
  - glite-APEL to replace glite-MON
  - Transport of records based on ActiveMQ (replacing RGMA)
  - ActiveMQ broker currently installed at RAL
  - No changes to functionality
  - One update to glite-APEL released

Gros changements dans l'infrastructure d'accounting du projet.

Volonté d'arrêter RGMA en fin d'année

<u>Dossier à suivre</u>: quelles implications pour la publication du CC ? Actuellement, on publie en injectant directement des données synthétisées dans la base données du RAL.

GDB du 08/09/2010

gLite services after EGEE

Grid Technology

CERN IT Department

- Almost all gLite services are covered after EGEE
  - Most of them are supported within EMI
  - See https://twiki.cern.ch/twiki/bin/view/EGEE/PostEGEE#gLite_after_EGEE
- This is not true for the batch system integration node types:
  - glite-TORQUE_server, glite-TORQUE_client and glite-TORQUE_utils
  - glite-SGE_utils
  - glite-CONDOR_utils
  - glite-LSF_utils
- These node types will be covered by WLCG on a best effort basis:
  - glite-TORQUE_* -> Nikhef
  - glite-SGE_utils -> LIP
  - glite-CONDOR_utils -> PIC
  - glite-LSF_utils -> INFN + CERN
- New SUs in GGUS are going to be crea…er support.

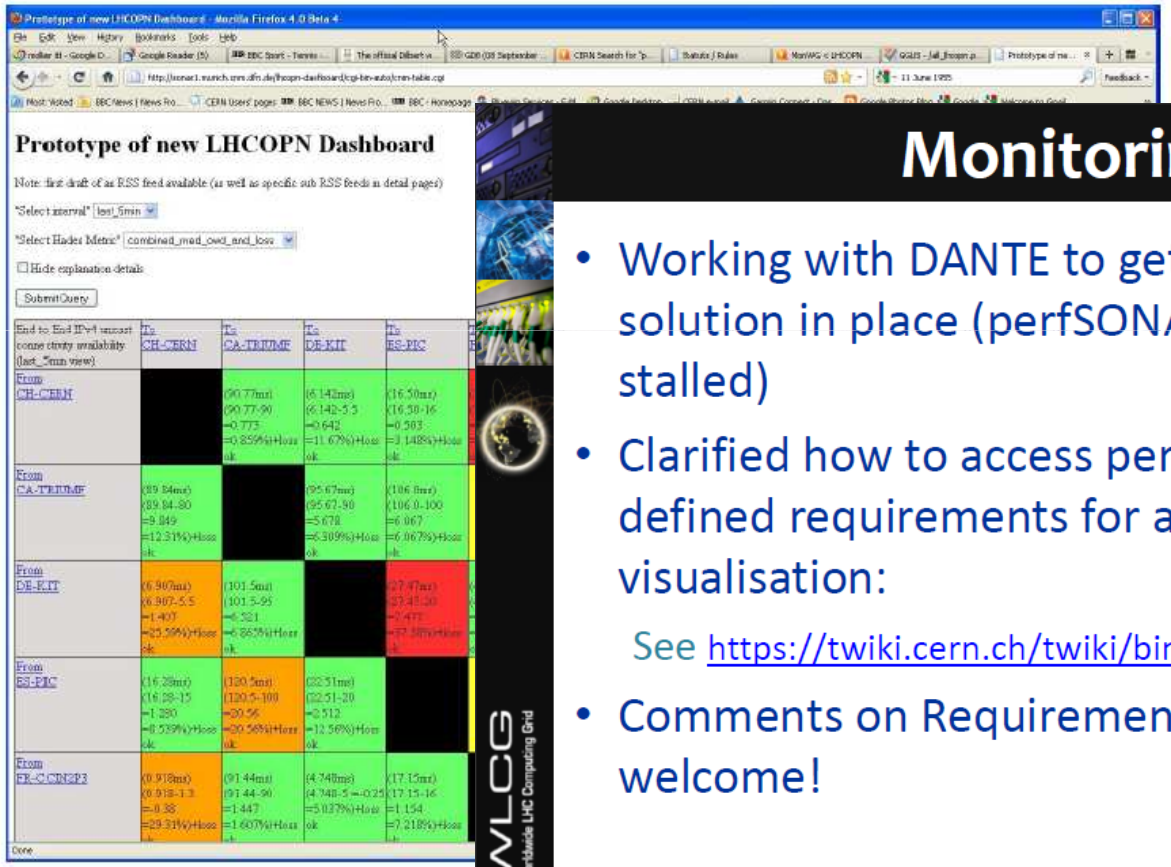
Pour ne pas subir, il faudrait participer.

Middleware Update - M. Alandes Pradillo

GDB du 08/09/2010

URL de test: http://sonar1.munich.cnm.dfn.de/lhcopn-dashboard/cgi-bin-auto/cnm-table.cgi

Prototype Dashboard



Monitoring

- Working with DANTE to get a robust MDM solution in place (perfSONAR rollout had stalled)
- Clarified how to access performance data, and defined requirements for a dashboard for visualisation:

  See https://twiki.cern.ch/twiki/bin/view/LHCOPN/MonWG
- Comments on Requirements document are still welcome!

GDB du 08/09/2010

- Session « Experiment Operations »
  - ALICE
    - Latchezar Betev/CERN
    - http://indico.cern.ch/materialDisplay.py?contribId=0&sessionId=1&materialId=slides&confId=72061
  - LHCB
    - Roberto Santinelli/CERN
    - http://indico.cern.ch/materialDisplay.py?contribId=1&sessionId=1&materialId=slides&confId=72061
  - CMS
    - Ian Fisk/FNAL
    - http://indico.cern.ch/materialDisplay.py?contribId=2&sessionId=1&materialId=slides&confId=72061
  - ATLAS
    - Simone Campana/CERN, Stephane Jezequel/LAPP
    - http://indico.cern.ch/materialDisplay.py?contribId=3&sessionId=1&materialId=slides&confId=72061

GDB du 08/09/2010

- LHCB/IN2P3
  - CREAM CE
    - GGUS:61223 There was an error in the library paths.
    - GGUS:61358 service unresponsive- restarted
    - GGUS:61605 Network backbone intervention
    - GGUS:61766 glexec failing to load some required libraries
  - Software Area
    - Shared area at IN2p3 preventing to install software and affecting performances of all jobs (most of them timing up
    - Close interaction between SW-manager in LHCb and Lyon people.
    - GGUS:59880 (July the 8th) still open.
    - Looking at other sites solutions and also involved CERN experts handling shared area via AFS.
    - Required a WLCG coordination perhaps.

GDB du 08/09/2010

LHCB news

- CREAM used in production: evaluating now direct submission.
- xroot: used at CERN for reading (lhcbmdst, serving mainly user analysis). Contributing to improve the QoS with close interaction with sys-managers.
- Run distribution (rather than per files) : "**A run == a single site**".
- gLExec: LHCb dedicated Nagios probes now in place to allow MUPJ to invoke it when available (and working) at the site !
- First prototype of LHCB HC: it could give possibility to sysadmins to run LHCb application whenever required and operations team to gather complementary metrics!

GDB du 08/09/2010

- CMS/IN2P3
  - Issues (voir les slides pour + de détails)
    - Lot of SRM issues;
    - Problems with their AFS area
      - Jul. 9: timeout when accesing the CRLs file in the AFS volume onsite. Impacted all import transfers for several hours.
      - Jul. 29: problem installing new CMSSW releases. AFS connection timeouts.
    - Some memory troubles with dCache head node
  - News
    - CMS requested a Savannah-to-GGUS bridging. it works and CMS is happy
    - All WMSs in use by CMS (INFN + CERN) were updated.CREAM CEs were put back in normal production operations
    - Condor->CREAM submission was known to have problems with the current. Fixes should have been made available in Condor 7.5.3 (Development release, released on Jun 29, 2010)

GDB du 08/09/2010

- Atlas/DDM

Disk space from SRM

CERN IT Department

Example for CERN-PROD_DATADISK

From SRM

```
[atlddm16] /tmp > lcg-stmd -b -e httpg://srm-
atlas.cern.ch:8443/srm/managerv2 -s ATLASDATADISK
+ Space Token: atlas:ATLASDATADISK
   - Owner: (null)
   - Total Size: 956661451997184
   - Guaranteed Size: 956661451997184
   - Unused Size: 351091464821760
   - Assigned Lifetime: 0
   - Left Lifetime: -1
   - Retention Policy: OUTPUT
   - Access Latency: UNKNOWN
```

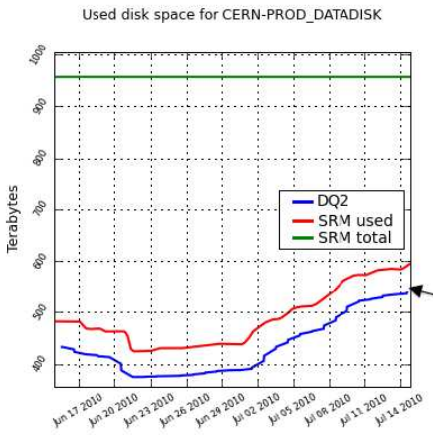
Total space considers **both online and offline** disks

Unused (FREE) space considers **only online** disks

Calculating Used=Total-Unused is considering the offline disks as used

Discrepancy from SRM

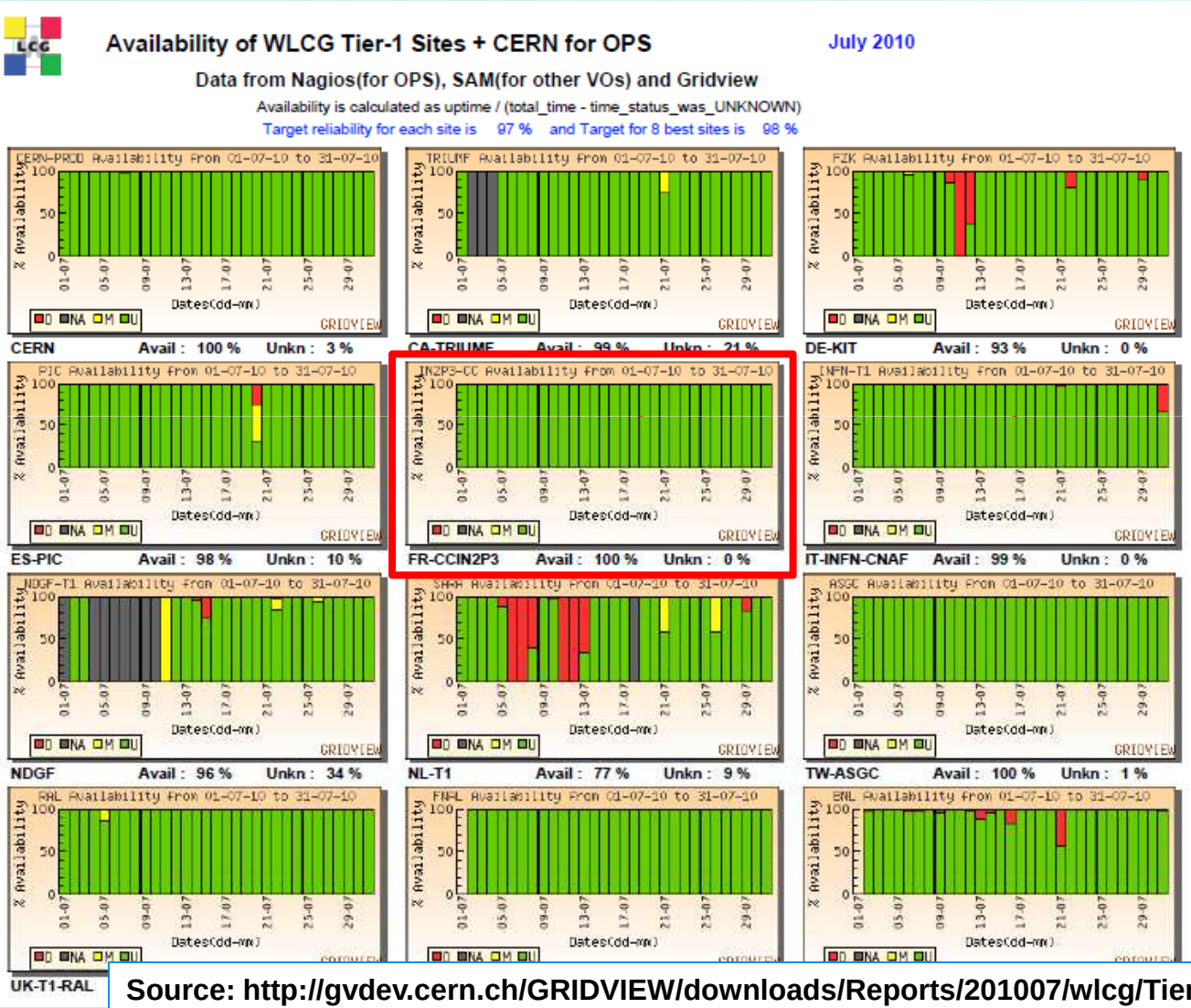
CERN IT Departr



DQ2 confirms the value obtained from the pool dump

Résultats du site

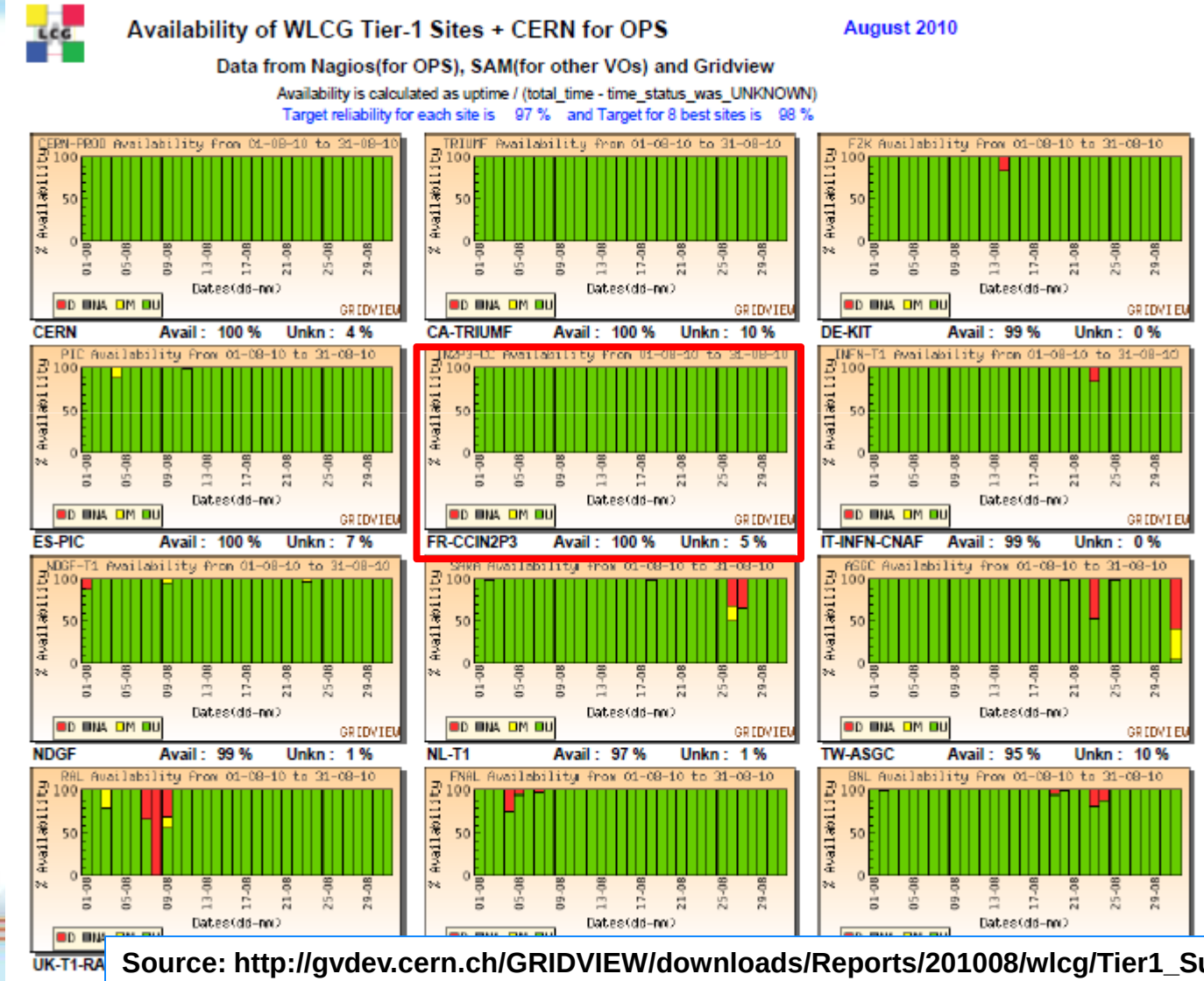
Disponibilité Juillet/Nagios



ALICE: 92%
ATLAS: 96%
CMS: 98%
LHCB: 90%

Source: http://gvdev.cern.ch/GRIDVIEW/downloads/Reports/201007/wlcg/Tier1_Summary_Jul2010.pdf

Disponibilité Août/Nagios



ALICE: 95%
ATLAS: 95%
CMS: 98%
LHCB: 59%

Source: http://gvdev.cern.ch/GRIDVIEW/downloads/Reports/201008/wlcg/Tier1_Summary_aug2010.pdf

Disponibilité LHCB/Août: comparaison

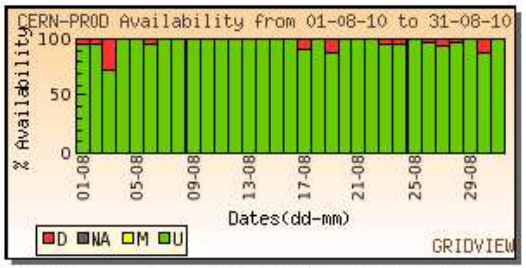
Availability of WLCG Tier-1 Sites + CERN for LHCb

August 2010

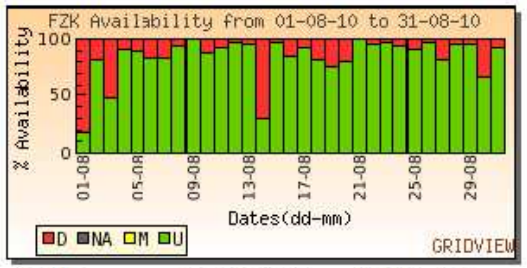
Data from SAM and Gridview

Availability is calculated as uptime / (total_time - time_status_was_UNKNOWN)

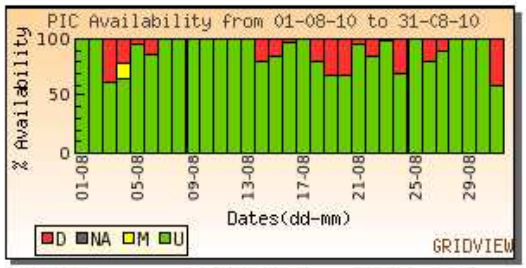
Target reliability for each site is 97 % and Target for 8 best sites is 98 %



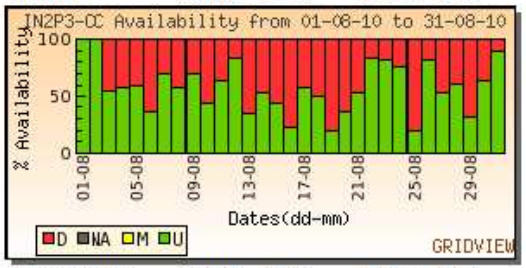
CERN Avail : 97 % Unkn : 0 %



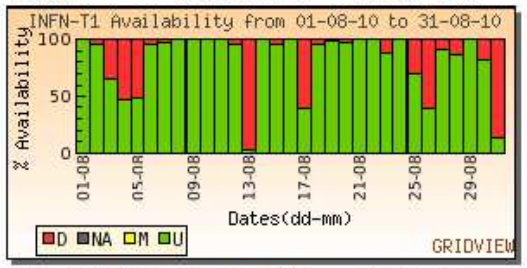
DE-KIT Avail : 88 % Unkn : 9 %



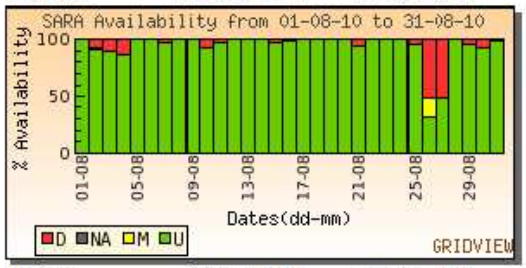
ES-PIC Avail : 89 % Unkn : 0 %



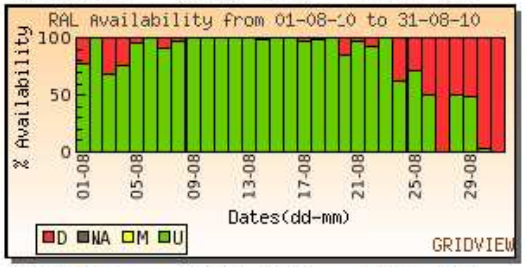
FR-CCIN2P3 Avail : 59 % Unkn : 0 %



IT-INFN-CNAF Avail : 85 % Unkn : 7 %



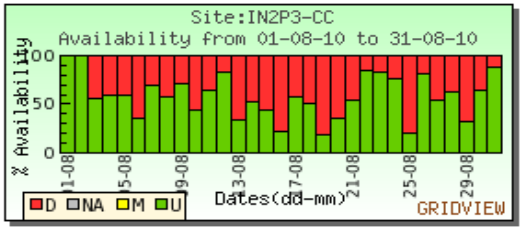
NL-T1 Avail : 94 % Unkn : 0 %



UK-T1-RAL Avail : 79 % Unkn : 0 %

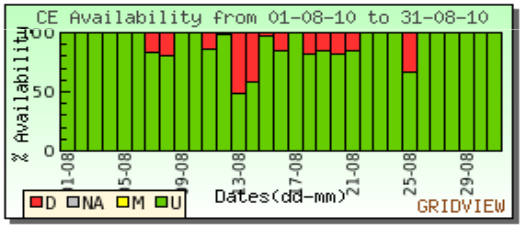
Disponibilité LHCB/Août: détails

Overall Service Availability for Site:IN2P3-CC VO:LHCb (Daily Report)

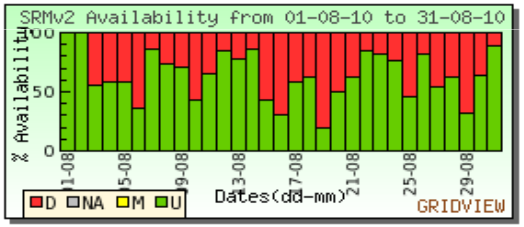


Individual Service Availability for site:IN2P3-CC VO:LHCb (Daily Report)

CE



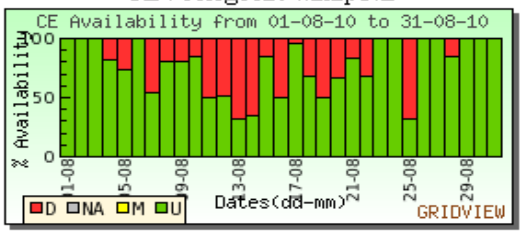
SRMv2



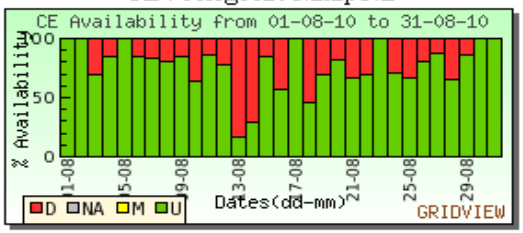
Service Instance Availability for site:IN2P3-CC VO:LHCb (Daily Report)

Site Services

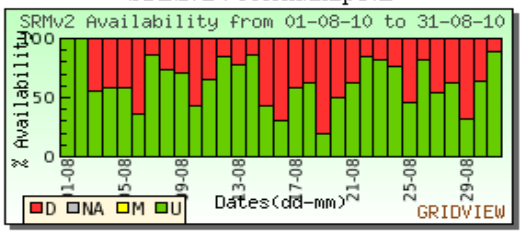
CE : cclcgceli04.in2p3.fr



CE : cclcgceli08.in2p3.fr

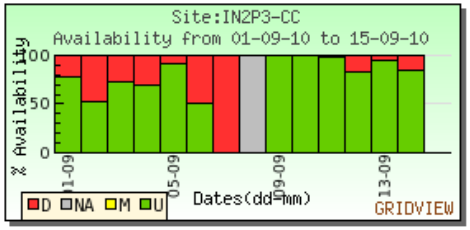


SRMv2 : ccsrm.in2p3.fr



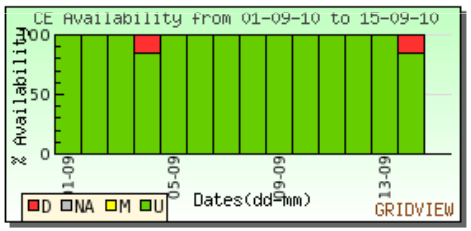
Disponibilité LHCB/Sept.: détails

Overall Service Availability for Site:IN2P3-CC VO:LHCb (Daily Report)

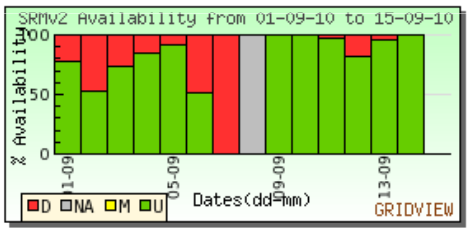


Individual Service Availability for site:IN2P3-CC VO:LHCb (Daily Report)

CE



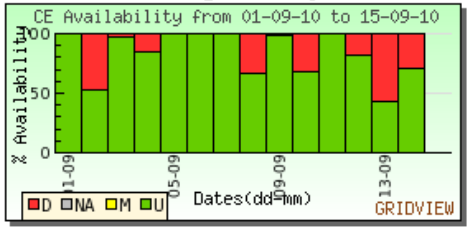
SRMv2



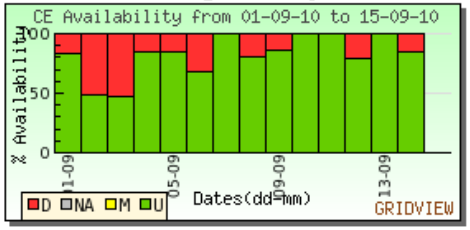
Service Instance Availability for site:IN2P3-CC VO:LHCb (Daily Report)

Site Services

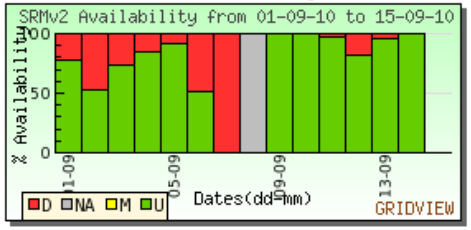
CE : cclcgceli04.in2p3.fr



CE : cclcgceli08.in2p3.fr



SRMv2 : ccsrm.in2p3.fr



Avancement des chantiers

Chantiers en cours

- Problèmes à résoudre
  - WNs SL5 + AFS
    - Paramètre limitant le plantage des WNs
    - Temps de latence importants
    - SW Area lhcb, tests SAM, …
      - Des avancées (?) sous l'impulsion de Luisa, cf. présentation de David
  - Installation du soft. d'Atlas sur AFS
    - Problème de timeout sur AFS release compris
    - Manque de temps car expert surchargé
  - Monitoring/Supervision/Reporting
    - Alertes manquantes, recettes « grille » incomplète
    - Demandes d'histogrammes sur l'utilisation des ressources (par Atlas) nécessaire pour réguler leur production
  - Problèmes AFS récurrents
    - Compris ?
  - Saturation du réseau
    - Réorganisation du réseau le 21/09

Chantiers en cours

- Problèmes à résoudre (suite)
  - Glexec / Argus
    - Tests de LHCb et de OPS en erreur
    - Plus de temps à accorder à ce dossier
  - Dernier CREAM CE au comportement suspect
  - LFC Atlas
    - Saturé
      - Manque un monitoring des sessions ouvertes
      - Ajout de serveurs derrière le load-balancing
    - Indisponibilité
      - Dépendances inutiles à AFS
  - Taux de transferts vers BNL (et autres)
    - Résolu par nouveau paramétrage (pile TCP) des serveurs Solaris

    ⇒Intéressant de communiquer sur le sujet ?!

Chantiers en cours

- Gros oeuvres
  - Xrootd Alice
    - Interfaçage avec HPSS fait
    - Ajout de 8 nouveaux serveurs de disque
    - Pb de software Xrootd/Alice pour Solaris
  - Migration vers (S)GE
    - Planning, CREAM CE, etc.
  - Installation des ressources (Pledges 2010)
    - En cours
  - Ferme d'analyse (LAF)
    - Etat de l'infrastructure
      - Problème avec le matériel Dell
    - Enregistrement des utilisateurs via VOMS
      - En cours
  - Infrastructure de virtualisation de production
    - Licences Vmware acheté
    - Infrastructure installée
      - 4 serveurs / 2 racks
      - Serveur de disque
    - Doit encore faire ses preuves

Nouveaux chantiers

- Publication du site
  - Capacités installées
- Infrastructure d'accounting
  - Doit-on publier via ActiveMQ ?
  - Qui suit ce dossier
- Monitoring Grille
  - Déploiement de machines pour étendre l'infrastructure Nagios local
    - UI-NRPE, MyProxy
  - Intégrer NRPE à l'installation des nœuds de grille pour monitorer l'état des machines et de services
  - Collecte de données de la « Nagios Box » française

Evénements

- **Passés**
  - **Data Management and Storage Jamboree,** Amsterdam, 16-18 June
  - **EGEE III Final Review,** Amsterdam, 23-24 June
  - **LHC OPN,** Barcelona, 28-29 June
  - **WLCG Workshop,** London, 7-9 July
- **A venir**
  - **EGI Technical Forum,** Amsterdam,13-17 September
  - **LHCOPN,** CERN, 7-8 October
  - **CHEP 10,** Taipei, 17-22 October
  - **HEPiX Fall Meeting,** Cornell, 1-5 November