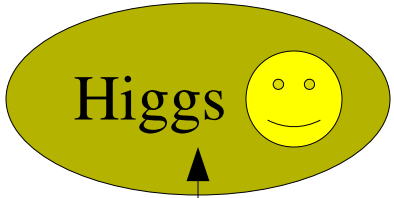




A CMS és a WLCG - különös tekintettel a magyar T2-re

Hajdu Csaba
2008. jan. 15.



CMSSW
adat

[saját PC]

crab
phedex

WLCG

T0 – CERN

T1...T1...T1...T1...

T2..T2..T2..T2..T2..T2..T2..

T3..T3..T3..T3..T3..

Alice

Atlas

CMS

LHCb

Magyar grides részvétel

EGEE – pénz is mozog – Hungarian JRU (RMKI)

RMKI, SZTAKI, ELTE, NIIF, BME

WLCG – pénz nem mozog – Hungary (NKTH)

RMKI, SZTAKI, ELTE, DE

Egyéb, nem HEP orientált gridek...

EGEE + WLCG erőforrások

(<http://goc.grid.sinica.edu.tw/gstat//index.html>)

	CPU	TB
BUDAPEST (=RMKI)	268	36.3
BMEGrid	?	0.08
ELTE	20	7
egee.grid.niif.hu	12	2.5
[DE]	-	-
[SZTAKI]	-	-

WLCG MOU magyar tagjai

RMKI, ELTE, DE, SZTAKI

Vállalások az adott évek végére:

	2007	2008	2009	2010	2011	2012
kSi2K	200	270	300	360	450	500
TB	40	70	100	120	150	200

Hardware az RMKI-ban

WN CPU	core	GB/core	kSI2k	Alice	CMS	Hungrid
AMD Athlon MP 2000+	26	0.5	0.373			9.70
AMD Athlon XP 2500+	40	0.5	0.510			20.40
Intel P4 3.0 GHz	5	2.0	0.754	3.77		
Intel PD 3.4 GHz	36	2.0	0.900	32.40		
Intel Core2Q 2.4 GHz	60	2.0	1.280	76.80		
Intel Core2Q 2.4 GHz	168	1.0	1.280		215.04	
összesen VO szerint:				112.97	215.04	30.10
összesen WLCG MoU -hoz:			358.1 kSI2k			
3 Coraid SR1521 box 3*15*1TB diszk:			36.3 TB			

Az LHC VO-k támogatása

(lcg-infosites --vo *voname* ce | grep hu)

	Alice	Atlas	CMS	LHCb
RMKI	x	x	x	x
NIIF	x	x	x	
ELTE			x	

X - 'Hello World' job lefut az adott VO tanusítványával

A kísérletekhez tartozó adatok és szoftverek jelenleg csak az RMKI – Alice és RMKI – CMS esetben érhetők el (erőforrások megosztása: Alice 1/3 – CMS 2/3).

Egy CMS T2 feladatai

MC gyártás

- MC jobok fogadása
- kész MC adatok transzfere

Analízis támogatás

- 'hivatalos' adatok és SW tárolása
- job fogadása bármely CMS usertől
- helyi userek 'nem hivatalos' adatainak tárolása

[Helyi login lehetőség, cvs, twiki, stb.]

Az RMKI, mint CMS T2

A ~50 CMS T2 egyike: T2_HU_Budapest

T1 megállapodásunk nincs, gyakorlatilag: CNAF

A helyi specifikumok két fájlban vannak:

site-local-config.xml, storage.xml

CMSSW: központilag installálva

Adatmozgatás: PhEDEx (Physics Experiment Data Export)

Cache server: FroNtier Squid

SiteDB :: Site Directory

Below are all the sites known to the CMS SiteDB. If your site is not listed [contact Simon Metson](#).

Tier 0 centres

[CERN](#)

[Tier0](#)

Tier 1 centres

[ASGC](#)

[CC-IN2P3](#)

[CNAF](#)

[FNAL](#)

[FZK](#)

[PIC](#)

[RAL](#)

Tier 2 centres

[Bari](#)

[Beijing](#)

[Belgium](#)

[Bristol](#)

[CC-IN2P3 AF](#)

[CIEMAT](#)

[CSCS](#)

[Caltech](#)

[DESY](#)

[Demokritos](#)

[Estonia](#)

[Florida](#)

[GRIF](#)

[HEPGRID_UERJ](#)

[Helsinki
Institute of
Physics \(HIP\)](#)

[Hephy-Vienna](#)

[Hungary](#)

[IASA](#)

[IFCA](#)

[KNU](#)

[LIP-Coimbra](#)

[LIP-Lisbon](#)

[Legnaro](#)

[London](#)

Tier 3 centres

[IN2P3-IPNL](#)

[IRES](#)

[Karlsruhe](#)

[Minnesota](#)

[Napoli](#)

[Perugia](#)

[Princeton](#)

[TTU](#)

[Trieste](#)

[UC Riverside](#)

[UCLA Saxon](#)

[Ulowa](#)

[Vanderbilt](#)

Hungary :: Site Details

[Hungary](#) is a Tier 2 site based in Earth. It runs the LCG grid middleware.

To view the pledged resources for Hungary click [here](#).

[Edit site information](#)

CMS Contacts

[Csaba Hajdu](#)

"Site Admin" "Site Executive" "Data Manager"

tel 1: +36 20 322 6675, tel 2: None

[Edit site contacts](#)

Software installed on Hungary

```
grid109.kfki.hu
slc4_ia32_gcc345
  • CMSSW_1_7_4
  • CMSSW_1_7_3
```

Site Configuration

GOC information

[GOCDB Link](#)

Compute Element(s)

[grid109.kfki.hu](#)

Storage Element(s)

Click to see DBS entries

[grid143.kfki.hu](#)

PhEDEx configuration

Click to subscribe data

[T2_Budapest_Buffer](#)

[Edit site configuration](#)

CMSSW

/opt/storage/exp_software/cms/...

slc3_ia32_gcc323 [slc3 WN-en nincs már!]

26 verzió: CMSSW_0_6_0 - CMSSW_1_4_12

slc4_ia32_gcc345

13 verzió: CMSSW_1_6_0 - CMSSW_1_7_4

slc4_amd64_gcc345

majd...

PhEDEx

Minden CMS site egy dedikált gépen futtatja

Lényegesebb részei:

- Transfer management database (TMDB)
- Transfer agents - manage the movement of files
- Management agents - assign files, manage routing info
- Tools to manage transfer requests
- Local file handling agents
- Web monitoring tools



PhEDEx – CMS Data Transfers

Info [Activity](#) [Data](#) [Requests](#) [Components](#) [Reports](#)

| [Overview](#) | [About](#) | [Documentation](#) | [Presentations](#) | [HyperNews Forum](#) | [Support Tracker](#) | [Developers](#)

Info

[Overview](#)
[About](#)
[Documentation](#)
[Presentations](#)
[HyperNews Forum](#)
[Support Tracker](#)
[Developers](#)

Activity

[Rate](#)
[Rate Plots](#)
[Queue Plots](#)
[Quality Plots](#)
[Routing](#)
[Transfer Details](#)
[Deletions](#)
[Recent Errors](#)

Data

[Replicas](#)
[Subscriptions](#)
[LoadTest Injections](#)
[Verification](#)

Requests

[Overview](#)
[Create Request](#)
[View/Manage Requests](#)

Components

[Status](#)
[Processes](#)
[Links](#)

Reports

[Daily Reports](#)
[Daily Report](#)
[File Sizes](#)



PhEDEx – CMS Data Transfers

DB Instance: **Production** ***
Csaba Hajdu | [Sign out](#)
Logged in via Certificate

[Info](#) [Activity](#) [Data](#) [Requests](#) [Components](#) [Reports](#)

[Replicas](#) | [Subscriptions](#) | [LoadTest Injections](#) | [Verification](#)

[Show Options](#)

Name	Blocks	T2_Budapest_Buffer Files
>> /PhotonJets_Pt_15_20/CMSSW_1_4_4-CSA07-1979/GEN-SIM	7	6
>> /PhotonJets_Pt_20_30/CMSSW_1_4_4-CSA07-1980/GEN-SIM	12	64
>> /PhotonJets_Pt_30_50/CMSSW_1_4_4-CSA07-1981/GEN-SIM	8	20
>> /QCD_Pt_1000_1400/CMSSW_1_4_4-CSA07-1971/GEN-SIM	17	58
>> /QCD_Pt_3500_inf/CMSSW_1_4_4-CSA07-1977/GEN-SIM	24	5
>> /ReVal143QCD_pt80_120/CMSSW_1_4_3-ReVal-1181409183/GEN-SIM-DIGI-RECO	1	4
>> /ReValQCD_Pt_80_120/CMSSW_1_6_0-ReVal-1188839688/GEN-SIM-DIGI-RECO	1	-
>> /SingleElectron-Ene0To50/CMSSW_1_1_1-1163086297/GEN-SIM-DIGI-RECO	1	4
>> /Z0jet-alpgen/CMSSW_1_4_6-CSA07-2138/GEN-SIM	27	49
>> /Z1jet_0ptw100-alpgen/CMSSW_1_4_6-CSA07-2139/GEN-SIM	8	32
>> /minbias/CMSSW_1_1_1-1164410273/GEN-SIM	3	314
<<< /ppMuX_pt10/CMSSW_1_4_6-CSA07-3428/GEN-SIM	20	15
<<< /ppMuX_pt10/CMSSW_1_4_6-CSA07-3428/GEN-SIM#4b7079eb-85c6-4ad2-9b6a-ca172e27d3ef		6
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/28A712C2-4B9B-DC11-8579-001517357DFE.root	-	y
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/94C20E78-6C9B-DC11-8E42-001517357DC2.root	-	y
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/CCE3E2F3-4A9B-DC11-BAB7-001517357DC2.root	-	y
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/D6B712C2-4B9B-DC11-8E49-001517357DFE.root	-	y
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/F291D291-7F9B-DC11-B0A3-001517357DC2.root	-	y
/store/mc/2007/10/31/CSA07-ppMuX_pt10-3428/0005/F0461C99-6C9B-DC11-877A-001517357DFE.root	-	y



PhEDEx – CMS Data Transfers

DB Instance: **Debug** ***
Csaba Hajdu | [Sign out](#)
Logged in via Certificate

[Info](#) | [Activity](#) | [Data](#) | [Requests](#) | [Components](#) | [Reports](#)

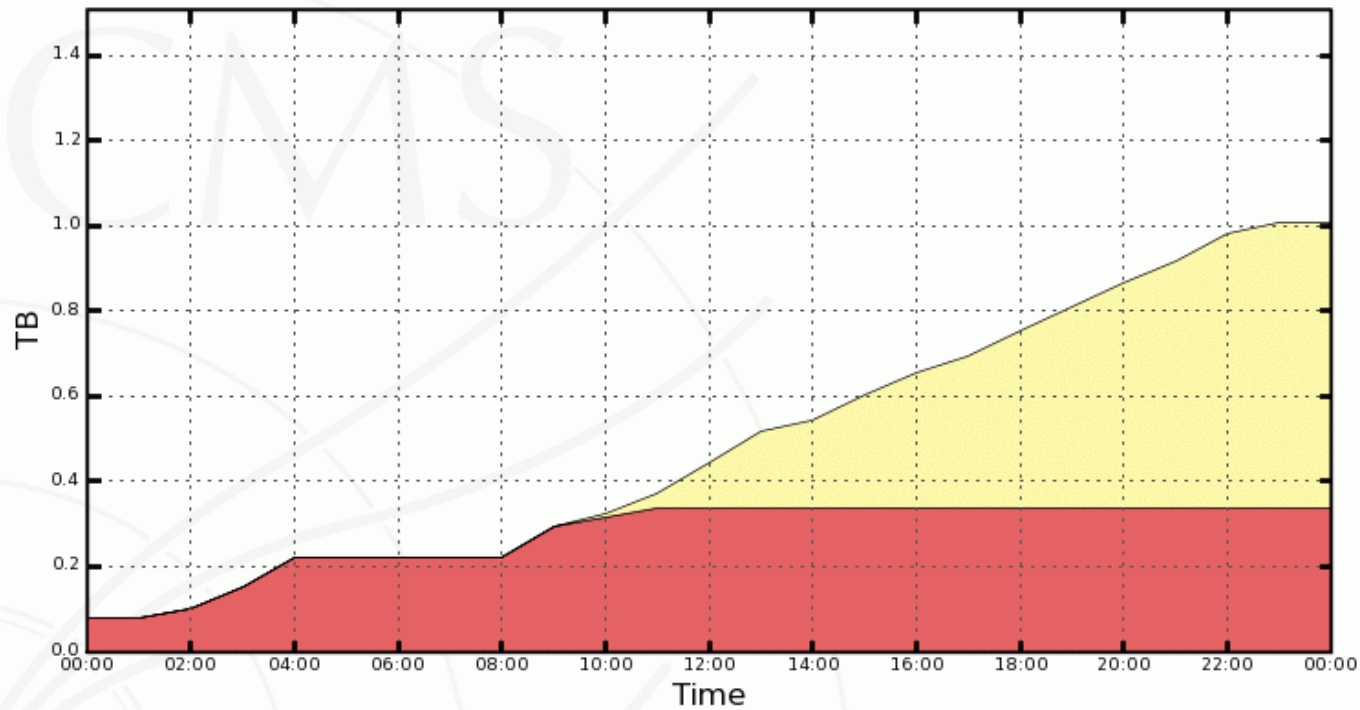
[Rate](#) | [Rate Plots](#) | [Queue Plots](#) | [Quality Plots](#) | [Routing](#) | [Transfer Details](#) | [Deletions](#) | [Recent Errors](#)

Graph by filter source destination

Period up to

CMS PhEDEx - Cumulative Transfer Volume

24 Hours from 2007-12-19 00:00 to 2007-12-20 00:00 UTC



T1_CNAF_Buffer

T2_Budapest_Buffer

Commissioned link

Jelenleg:

>300 GB/day for at least 4 days out of 5 in a row
total transfer volume in excess of 1.7 TB (for these 5 days)

kipottyanás: have 7 days in a row with <300GB/day

Hamarosan:

T1 -> T2: >20 MB/s egy napig (1728 GB/nap)

T2 -> T1: > 5 MB/s egy napig (432 GB/nap)

kipottyanás: u.ez nem megy 3 napig napi 12 órán át

T1 – T1 és T0 - T1: szigorúbb

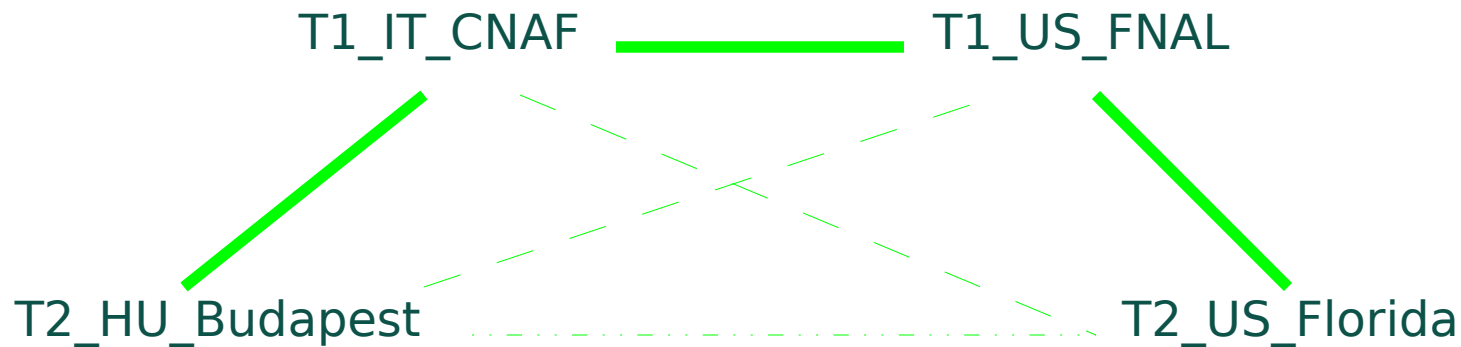
Adatmozgatás

T1: FTS szerver, T2: FTS kliens

kötelező linkek: T1 <-> T1

T2 <-> saját T1

bárhonnan bárhova max. 3 lépés kell:



CMS "Debugging Data Transfers" Commissioning Information

Legend located at bottom of page

Tier 1 to/from Tier 1 Transfer Table

	ASGC	CERN	CNAF	FNAL	FZK	IN2P3	PIC	RAL
ASGC	Grey	Green	Red	Green	Light Blue	Light Blue	Light Blue	Green
CERN	Green	Grey	Green	Red	Green	Red	Green	Red
CNAF	Red	Green	Grey	Green	Red	Red	Light Blue	Green
FNAL	Green	Red	Green	Grey	Red	Red	Green	Red
FZK	Red	Green	Red	Red	Grey	Light Blue	Red	Green
IN2P3	Red	Green	Red	Green	Light Blue	Grey	Green	Red
PIC	Light Blue	Green	Light Blue	Green	Red	Red	Grey	Light Blue
RAL	Light Blue	Red	Light Blue	Red	Red	Red	Light Blue	Grey

Tier 1 - Tier 1 Link Counts

- There are 18 T1->T1 links in state 'PROBLEM-RATE'
- There are 9 T1->T1 links in state 'PENDING-COMMISSIONING'
- There are 29 T1->T1 links in state 'COMMISSIONED'

Commissioned T2 site

Még nincs bevezetve, csak javaslat:

- commissioned uplink to associated T1
- commissioned downlink from at least two T1s
- SAM and JobRobot success >95% in the last month
- pass the „two day test“
 - 50% of CMS disk space can be filled
 - 100% of CMS batch slots can be run jobs
 - 95% CRAB job success rate (real jobs on real data)

Teendők

- hw + LCG sw installt mielőbb befejezni
- --> commissioned links
- --> commisssioned site
 - aztán ezeket meg is kell tartani
- február: CCRC08 functional tests
- május: CCRC08

*** A nemzetközi helyzet fokozódik! ***

Linkek

- p.10. <https://cmsweb.cern.ch/sitedb/sitedb/sitelist/>
- p.11. <https://cmsweb.cern.ch/sitedb/sitedb/site/?site=2>
- p.14. <http://cmsdoc.cern.ch/cms/aprom/phedex/debug/Info::Main>
- p.19. <http://io.hep.kbfi.ee:8889/app/>

Jövő hétre

- mire van igény?
- előadó gépe látható lehet?
- cms-es account Ixplus-on
- érvényes cms certificate