



# **LCG Service Challenges: Planning for Tier2 Sites**

## **Update for HEPiX meeting**

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# Executive Summary

- Tier2 issues have been discussed extensively since early this year
- The role of Tier2s, the services they offer – and require – has been clarified
- The data rates for MC data are expected to be rather low (limited by available CPU resources)
- The data rates for analysis data depend heavily on analysis model (and feasibility of producing new analysis datasets IMHO)
- LCG needs to provide:
  - Installation guide / tutorials for DPM, FTS, LFC
- Tier1s need to assist Tier2s in establishing services

# Tier2 and Base S/W Components

- 1) Disk Pool Manager (of some flavour...)
  - e.g. dCache, DPM, ...
- 2) gLite FTS client (and T1 services)
- 3) Possibly also local catalog, e.g. LFC, FiReMan, ...
- 4) **Experiment-specific s/w and services ( 'agents' )**

1 - 3 will be bundled with LCG release.  
Experiment-specific s/w will not...

[ N.B. we are talking interfaces and not implementation ]

## Tier2s and SC3

- Initial goal is for a small number of Tier2-Tier1 partnerships to setup agreed services and gain experience
- This will be input to a wider deployment model
- Need to test transfers in both directions:
  - MC upload
  - Analysis data download
- Focus is on service rather than “throughput tests”
- As initial goal, would propose running transfers over at least several days
  - e.g. using 1GB files, show sustained rates of ~3 files / hour T2->T1
- More concrete goals for the Service Phase will be defined together with experiments in the coming weeks
  - Definitely no later than June 13-15 workshop

## Draft List of (Database) Services

- Following table shows current list of services required by experiments for SC3
  - Current assumptions: Oracle at T0/T1; MySQL at T2
  - It does not include experiment-specific applications / services such as CMS' PubDB
  - This list is currently being confirmed with the experiments
- **Next step: confirm data volumes & rates, understand resource implications and make first proposal for schedule for Service Phase**

Component	Experiments	Tier0	Tier1	Tier2
LFC	Except ALICE	Central catalog	N/A	N/A
FiReMan	Except ALICE	Central catalog	N/A	N/A
FTS	Except CMS	Client+Server	Client+Server	Client
SRM 1.1	All	Yes	Yes	Yes
COOL	ATLAS	Central DB	N/A	N/A

# Initial Tier-2 sites

- For SC3 we aim for

Site	Tier1	Experiment
Bari, Italy	CNAF, Italy	CMS
Padova, Italy	CNAF, Italy	CMS, (Alice)
Turin, Italy	CNAF, Italy	Alice
DESY, Germany	FZK, Germany	ATLAS, CMS
Lancaster, UK	RAL, UK	ATLAS
London, UK	RAL, UK	CMS
ScotGrid, UK	RAL, UK	LHCb
US Tier2s	BNL / FNAL	ATLAS / CMS

- Training in UK this Friday (13<sup>th</sup>) and in Italy end May (26-27)
- Other interested parties: Prague, Warsaw, Moscow, ..
- Addressing larger scale problem via national / regional bodies
  - GridPP, INFN, HEPiX, US-ATLAS, US-CMS, Triumpf (Canada)

## T2s - Concrete Target

- We need a small number of well identified T2/T1 partners for SC3 as listed above
- Initial target of end-May is not realistic, but not strictly necessary either...
- Need prototype service in at least two countries by end-June
- Do not strongly couple T2-T1 transfers to T0-T1 throughput goals of SC3 setup phase
- Nevertheless, target one week of reliable transfers T2->T1 involving at least two T1 sites each with at least two T2s by end July 2005

## End Executive Summary

- A more extensive (evolving) presentation has been presented at several SC meetings and at several Tier1s in the past months and is included in the following slides
  - SC meetings in February, March, April
  - Tier1 sites - all except GridKA
- Presentations on several of the above components follow
- Unfortunately, I couldn't be here this time...