

*dCache*

*LCG Review 2006*

*Patrick Fuhrmann  
for the dCache People*

# Roadmap

## Organisational Overview

The Team

The Funding

Agreement with LCG deployment

dCache support

## Technical Overview

Automated Packaging

Installation and configuration (YAIM)

VOMS support

Extended Protocol Support

Support of huge installations

## Short/Medium term plans

## Organisational Overview

## *The Team*

### *Responsibility, dCache*

Patrick Fuhrmann    Rob Kennedy

### *Core Team (Desy and Fermi)*

Jon Bakken

Ted Hesselroth

Alex Kulyavtsev

Birgit Lewendel

Dmitri Litvintsev



Tigran Mrktchyan

Martin Radicke

Owen Syngé

Elena Tews

Vladimir Podstavkov

Patrick Fuhrmann

### *Responsibility, SRM*

Timur Perelmutov

### *External*

#### *Development*

Nicolo Fioretti, BARI

Abhishek Singh Rana, SDSC

#### *Support and Help*

Maarten Lithmaath, CERN

**Development and support**

Fermi Lab.	3 FTE	(includes operation)
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OSG	2.5 FTE	(In preparation)
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SOURCE : Eileen Berman, FNAL

DESY Lab.	2	FTE
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D-Grid	1.5	FTE
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LCG	0.5	FTE
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Stable dCache release in CERN apt repository  
Evaluation dCache release in DESY apt repository

LCG Deployment group performs dCache installation verification

gLite interoperability verification by LCG deployment against  
dCache instance at DESY

dCache contact person at CERN (in LCG deployment group)

- 1 full FTE responsible for dCache support

means

Support ticket system behind : support@dCache.ORG

User mailing list : user-forum@dCache.ORG

Contact to LCG and grid PP

Near future : The Book

- dCache source code available at dCache.ORG

Special license

Support only for RPM from dCache.ORG

Focus on automated testing and packaging

code in cvs

compilation (triggered by 'cvs commit')

RPM generation (Still manually triggered)

Automated Test Suite (Partially done)

into APT (unstable, testing)

web page

dCache.ORG  
dCache.ORG  
dCache.ORG

Significantly improved YAIM installation

Customization and tuning in just one setup file (dCacheSetup)

(for experts : no need to change XXX.batch files any more)

First goal reached :

Single host installation and configuration in 10 minutes

(including all necessary LCG components and info provider)

Next Step :

Installation and configuration part of dCache

YAIM justs points to dCache internal installation mechanisms



DCache 1.7.0 supports Extended Certificates (voms-proxy-init) including VO's and Roles

Migration path

dcache.kpwd on each host

**With 1.7.0**

dcache.kpwd (centrally)

extended gridmap file (centrally)

*DN may be in different VO's*

*DN may have a role*

*All DN of a VO allowed (exclude list)*

## **xRoot protocol support**

xRoot natively supported by dCache (including load balancing)  
(Has been positively tested at various sites already)

Supports ALICE security model (Catalog based authorization)  
(DESY tests ok, CERN tests will be done soon)

gsi xRoot : we need more information on this

## **passive dCap**

dCap protocol now supports passive transfers to  
handle NAT and firewalls

The feature below need to be manually configured

Multiple I/O queues (already in use at USCMS sites and IN2P3)

Handles fast and slow transfers differently

File hopping

Arrival of files triggers further transfers to other pools or HSM

Improves disk performance on HSM restore (Used by Jon Bakken)

Central Flush Management

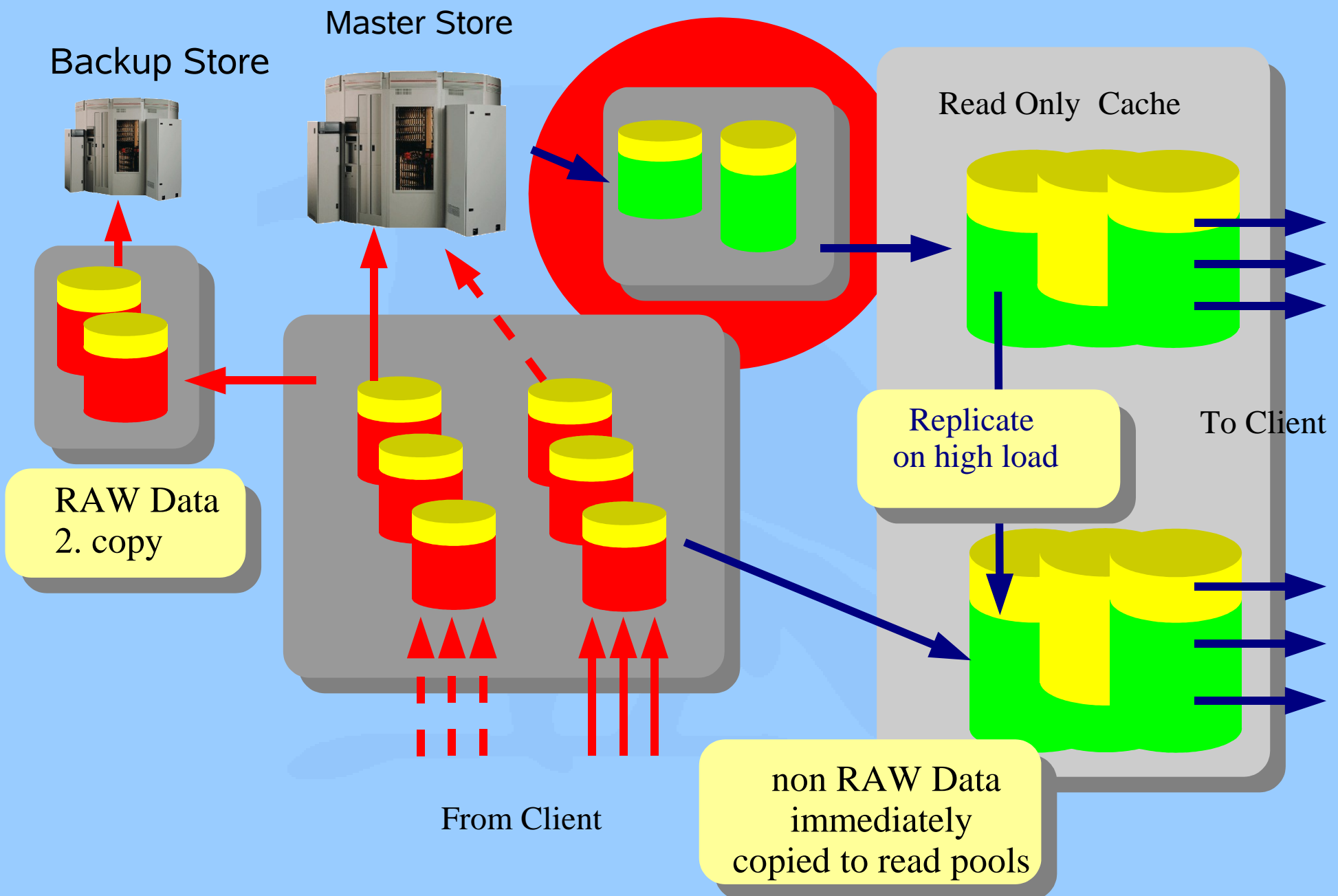
Flush to HSM is centrally managed to improve  
Tape drive throughput

Still missing : Improved HSM restore optimization

Hints to HSM before files are actually requested from HSM

See release notes at : <http://www.dCache.ORG/manuals/Book>

dCache.ORG  
dCache.ORG  
dCache.ORG



Enormous consumption of human resources

Full consequences of SPEC not clear

Significant changes in dCache kernel required

We are still in time :-)

Some space transitions are hard to implement but needed

e.g: Tape 0 Disk 1 ----> Tape 1 Disk X

For details see Maartens talk.

Allows to integrate ACLs

Allows to integrate Quotas

Chimera is in beta testing

Deployment postponed to spring 2007

FTP (2)

Hope to have this integrated soon

NFS4.1

Spec still undergoes changes

# In Use at

## Tier I centers :

- FNAI
- BNL
- IN2P3
- SARA
- Triump
- Nordu grid
- gridKa
- (still RAL)

## Tier II centers :

### Germany

LCG : Aachen, DESY, Freiburg, Dortmund, Darmstadt(GSI)

d-Grid : Juelich(ZAM), Berlin(ZIB)

### UK

30 % of gridPP, UK

### US

CMS : 7 sites

ATLAS 7 sites in preparation

### Italy

INFN : Bari, Torino

Poland, Bulgaria, Spain

Canada



dCache, the Book

*www.dCache.ORG*

need specific help for you installation or help  
in designing your dCache instance.

*support@dCache.ORG*

dCache user forum

*user-forum@dCache.ORG*