

# *dCache workshop winter 2007*

*Welcome ...*

*Patrick Fuhrmann*



# *Workshop users guide*

# Workshop Users Guide

Is dCache the right software for my lab ?

Listen to Tier I/II reports and talk to the other participants.  
Make a developer drunk after the conference dinner.

Which setup would be appropriate for my lab ?

- \* Installation and Maintenance Session
- \* Tier I/II Report Session

How many people do I need to operate dCache ?

- \* Selected Topics
- \* "In preparation" Session
- \* SRM 2.2 Session

How about the future ? Will dCache cope with upcoming protocols and requirements ?

Meet the developers session

Will dCache ever implement my special requirements ?

# Workshop Users Guide (cont.)

How are we supposed to use  
WLCG SRM 2.2 ?

- \* Tier I/II
- \* SRM 2.2 Session

Can we improve our current  
dCache operation ?

- \* Installation and Maintenance
- \* Shared Procedures



# *dCache Project Reference Manual*

*Head of dCache.ORG project*

Patrick Fuhrmann

*Core Team (Desy and Fermi)*

Jon Bakken

Forrest Christian

Ted Hesselroth

Alex Kulyavtsev

Birgit Lewendel

Dmitri Litvintsev

Dirk Pleiter

David Melkumyan

Martin Radicke

Owen Syngé

Elena Tews

Vladimir Podstavkov

Patrick Fuhrmann

*Head of Development FNAL :*

Timur Perelmutov

*Head of Development DESY :*

Tigran Mrktchyan

*External*

*Development*

Gerd Behrmann, NDGF

Abhishek Singh Rana, SDSC

Brookhaven in preparation

*Support and Help*

Greig Cowan, gridPP (monAmi)

Stijn De Weirdt (Quattor)

Maarten Lithmaath, CERN

Flavia Donno, CERN

N.N., CERN

dCache.ORG  
dCache.ORG  
dCache.ORG

Which means :

- dCache knowledge is highly distributed among people and labs
- Contributing labs rely on the software. Not an academic approach
- Involved in EGEE and OSG

**Development and support**

Fermi Lab.	3 FTE	(includes dCache operations)
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OSG	1.5 FTE	Storage in VDT
	1.5 FTE	enable dCache for OSG

SOURCE : Eileen Berman, FNAL

NDGF	1	FTE	(NO dCache operations)
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BNL	?	FTE
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DESY Lab.	2+1	FTE	(NO dCache operations)
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D-Grid	1.5	FTE	Scalable Storage Element
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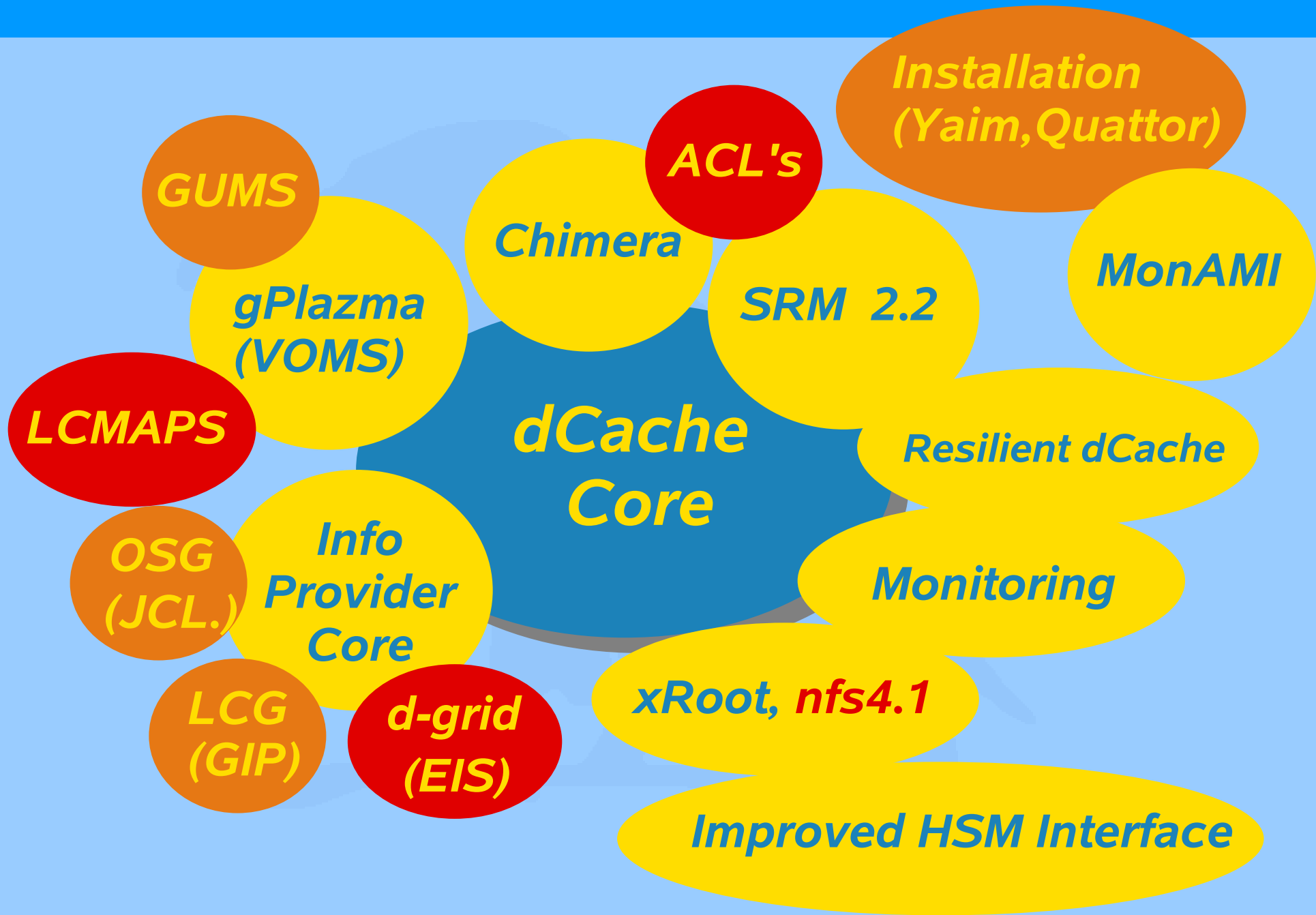
LCG	0.5	FTE	LCG Support
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# External Projects related to dCache

dCache.ORG  
dCache.ORG  
dCache.ORG

	<b>dCache (profits)</b>
<b>NDGF</b>	- Enable dCache for multi country
<b>OSG</b>	- Enable dCache for OSG - dCache part of (Globus) <b>Virtual Data Toolkit</b> * simplified installation and operation
<b>d-grid</b>	<b>The Scalable Storage Element</b> * from the very small to the very large * simplified installation and operation
<b>Community Projects</b>	
<b>HEPCG (WP1)</b> ***	<b>Co-scheduling</b> * improved interaction between the SE and the Workload Mgmt System
<b>Integration Project (DGI)</b>	<b>dCache part of German core grid</b>



Project	Background	Status
<b><i>Chimera</i></b>	Improved Name Space resp. File System Engine. Fully java and database based.	Code : done Testing : started <b>Talk by Tigran</b>
<b><i>ACL's</i></b>	Access Control Lists for Chimera and SRM. Very likely Posix ACLs.	Development started Dec 2006. Talk by <b>Tigran or David</b>
<b><i>gPlazma</i></b>	Pluggable Authorization module for all kind of accesses. Ftp, dCap, SRM (xroot planned )	In 1.7.0 (production) <b>Talk by Ted</b>
<b><i>SRM 2.2</i></b>	WLCG SRM 2.2 implementation	Code ready : End of 2006 Production : April 2007 <b>Talk by Timur</b>
<b><i>xRoot</i></b>	dCache implementation of the xrootd protocol.	Base Code : Done Alice Authorization : Done Gsi Authentication : not yet <b>Talk by Martin R.</b>

Project	Background	Status
<b><i>Resilient dCache</i></b>	disk only based, with multiple file replicas	Version I : Production Version II : designing <b>Talk by Timur</b>
<b><i>Glue 1.3</i></b>	Glue Schema for SRM 2.2	Design proposal submitted to Glue Working. No time line discussed yet.
<b><i>Improved HSM Interface</i></b>	Optimized tertiary storage access for HPSS, TSM and others. Central HSM control and prediction mechanisms	Flush to HSM : prototype Restore : in discussion
<b><i>MonAmi</i></b>	Monitoring Tool. Fits all sizes.	Coding : DONE Testing : In Progress <b>Talk by Greig Cowan</b>
<b><i>Nfs 4.1</i></b>	Real (Name Space and Data) implementation of the nfs 4.1 protocol.	<b>Talk by Tigran</b>
<b><i>Satellite dCache</i></b>	One dCache instance Xing country borders. (Nordic Data Grid, NDGF)	<b>Talk by Gerd Behrmann</b>

**Installation** dCache in 10 minutes. Trying joined effort between LCG and OSG.

Talk by Owen

DONE : Yaim only from scratch, one head, multiple pools  
Yaim only upgrade  
Yaim only pnfs, head, multiple pools

To Be Done : Full scalable installation with each service on different node  
Installation without Yaim

**Test Suite** Automated compiling, packaging and testing.

code in cvs

compilation (triggered by 'cvs commit')

RPM generation (Still manually triggered)

Automated Test Suite (Partially done)

web page

into APT (unstable, testing)

- dCache is part of the CERN apt repository
- LCG deployment does dCache installation tests locally (CERN)
- LCG deployment does dCache gLite integration tests against DESY installations
- Dedicated Contact at CERN



## **Protocols :**

- × new Protocol : xRoot (native implementation)
- × improved feature : dCap supports passive transfer mode
- × FTP mover (Apoptosis) ftp mover kills itself after a certain idle time.

## **Authorization and Authentication :**

- × gPlazma

## **Pool Manager : Pool Selection**

- × Pools can be selected based on the requested protocol (which allows to have dedicated pools for e.g. xRoot access)



***New but only formally tested :***

- × File Hopping (implicit, explicit by PM, explicit by HM)
- × dCache Partitioning
- × Central Flush Facility
- × Maintenance Facility (Pool Draining, ...)

***Administration client access (in preparation)***

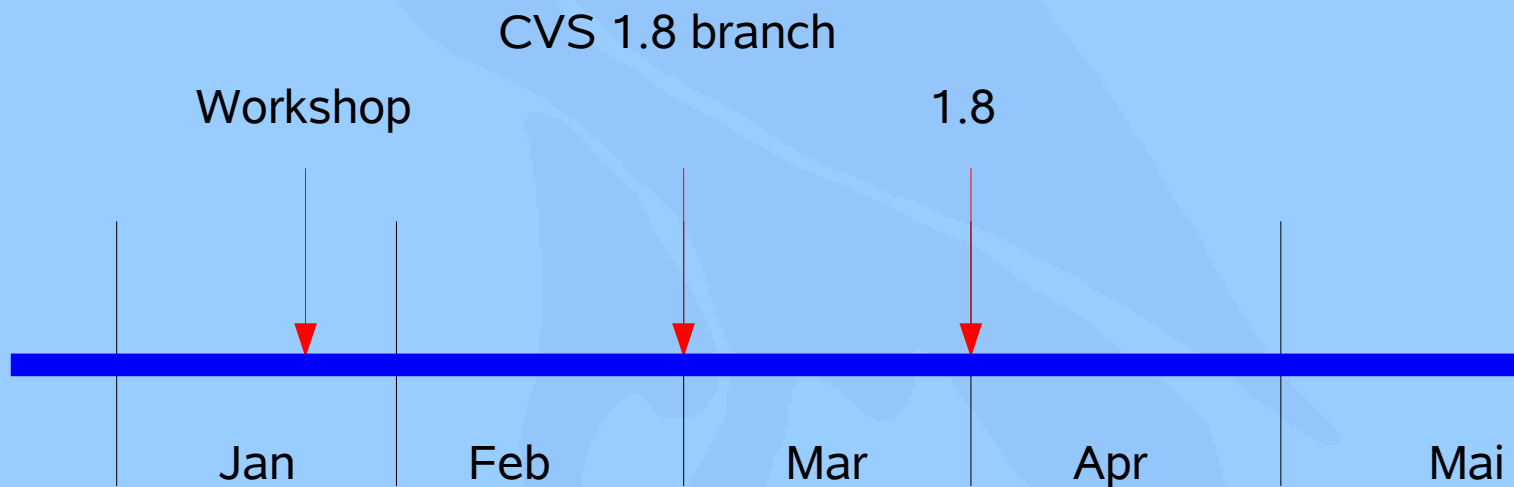
- × Improved Admin Gui
- × (J)Python Administration Client.
- × Preparation of fined grained admin command ACLs.

Please refer to the change log chapter (appendix) in *dCache, the Book* for all the mind-boggling details.

# How about 1.8

**Main goal : SRM v 2.2**

**Might come with “Chimera for Evalution”**



***Enjoy the workshop***



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*