Dcache and SRM Projects Status Report

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Effort Reporting and Project Activities Covered:	Project Activity?	Effort Activity?
DMS / UPPER STORAGE / CMS Integration	X	X
DMS / UPPER STORAGE / dCache Collaboration	X	X
DMS / UPPER STORAGE / DCAP Library	X	X
DMS / UPPER STORAGE / Doc & Packaging	X	X
DMS / UPPER STORAGE / Features	X	X
DMS / UPPER STORAGE / GridFTP	X	X
DMS / UPPER STORAGE / LCG Participation	X	X
DMS / UPPER STORAGE / OSG Participation	X	X
DMS / UPPER STORAGE / Other Caches & File Systems Investigation	X	X
DMS / UPPER STORAGE / Pin Manager	X	X
DMS / UPPER STORAGE / PNFS Related Development	X	X
DMS / UPPER STORAGE / Project Leadership	X	X
DMS / UPPER STORAGE / Resilient dCache	X	X
DMS / UPPER STORAGE / SRM	X	X
DMS / UPPER STORAGE / Support	X	X
DMS / UPPER STORAGE / Tapeless Data Path	X	X
DMS / UPPER STORAGE / VO Authorization Module Integration	X	X
DMS / UPPER STORAGE / WAN / Grid Layer 5	X	X
SciDAC / DMS SRM		X
U.S. CMS / U.S. CMS User Facility CD Other Dept Effort		X

Project Leader's Report – 06 September 2005

FNAL-Dcache and FNAL-SRM have maintained their Fermilab-based systems, coordinating with the IA group to slowly pass more administrative responsibility to them. We continue to participate in numerous collaborations: Dcache (w/DESY, LCG, US-CMS-T1), GGF (SRM), SRM, OSG, FermiGrid (FNDCA), Lower Storage and IA (PNFS), and Vanderbilt University. To date, we have been able to meet almost all of the immediate requirements of US-CMS-T1, which has led to great success in LHC SC3. One notable exception is implementation of SRM v2.1 due to personnel issues. Preparation of SRM-Dcache as a Storage Element has proceeded very slowly, as it does not yet overlap well with US-CMS-T1 work and FNAL Dcache system support. We are in the midst of preparing an acceptable SRM client package (has value in itself due to interoperability), which we work to align the packaging and distribution styles of LCG/DESY, OSG, US-CMS-T1/T2 sites, and FNAL “legacy” systems. Meanwhile, we are consulting with with Run2 experiments, the SamGrid project, the Wide Area Working Group (light paths), and FermiGrid (FNDCA expansion) to expand the application base of dCache-SRM... taking on some of the niches filled by depricated products, for instance.

Schedules/Milestones

Driver 1: Maintain FNAL dCache-SRM ***on-going***

Past: Improve processes, admin tools, monitoring, ...

Was: ***Summer 2005?***

Today: Operations have been maintained, but we have not transferred very much more support activity to the IA group. We are working on this... we must with the user base expanding. ***no estimate*** at this time. (1) formulate an acceptable mutual support plan across all customer systems, and (2) a specific sub-project to achieve it.

Driver 5: Expand FNAL dCache Services

FNDCA: overall expansion ***Sep/Oct 2005.***

While protecting Minos DAQ against high user analysis/back-up loads.

FNDCA: feature expansion (resilient/hybrid)?

Not a requirement for FemriGrid, but may be asked for.

CDF SamFarm dCache: consulting

Driver 2: Dcache, other Collaborations, ... ***on-going***

Past: SRM v3 API, apply FNAL SRM to other storage, ... ***(no timescale set)***

Vanderbilt applying FNAL SRM to IBP storage service (S. Pathek)

SRM V3 API not making timely progress IMHO...

Today: The Vanderbilt collaboration on SRM work has mostly been one way (they have been ramping up), but we are now outlining deliverables they can deliver.

Today: SRM V3 is not ready. SRM v2.1.X is focus. A staffing issue arose which has severely delayed this work. We will have to work out priorities here since US-CMS-T1 no longer considers V2.1 an immediate necessity.

Today: Dcache collaboration – evolving to include BNL developers. No progress on licensing issues, co-development of core components.

Driver 3: Develop SRM-dCache to meet the requirements of US-CMS T1 (UPDATED)

Hybrid Resilient/Classic dCache: ***DONE.***

CERN-FNAL Service Challenges 1,2,3. ***DONE.***

US-CMS integration: – Tier-2 setup help and consult.

6/7 DONE.

US-CMS integration: – Tier-2 Resilient dCache setup.

6/7 DONE.

Much work done by Jon Bakken. We are helping.

US-CMS integration: – Tier-2 Local Admin Support.

Most sites coming up to speed.

Implicit space reservation:– ***DONE.***

Most V2.1 API implementation. ***1 FTE-month?***

When it gets done depends on priorities.

Explicit space reservation. ***2-3 FTE-months***

Reservations for jobs only, interacts with accounting?

Others issues (CCF-CMS Focus). ***Unknown***

PNFS performance x10-100. ***Unknown***

PNFS*, Chimera, something else?

Driver 4: Prep/integrate SRM-dCache as SE on OSG

SRM-dCache in US-CMS T1/T2 context. ***DONE.***

Deploy SRM client V1.1 tools to ITB ***Sep 2005?***

SRM client V2.1 to ITB, prd ***Nov/Dec 2005?***

SRM-dCache service to SRM client tool testers

Now, through FNDCA data ingests.

SRM-dCache service to ITB

Interpretation w.r.t. US-CMS-T2?

SRM-dCache service to ITB/Prd ***Winter 2006?***

Issues:

Personnel... good news and bad news.

MIS schema – GRIS,GIIS works, full schema?

Explicit space reservation – Difficult. Many error cases to treat. Open interpretation.

Deployment– to OSG cache as RPM(s) with pacman jacket(s). Getting help on this (Neha).

Interoperability with ALL participating SRMs

Yes, on-going process.

Dcache interoperability with FTP clients.

Yes, on-going process.

Resources used ***(budget, effort)***

Budgeted Personnel versus Actual: Lower by 1 FTE.

Budgeted Effort versus Actual: Short by about 2-3 FTEs.

Personnel, under-budgeted for project management.

New investment project (developer test stand) is only just beginning to pay off. It was not budgeted for, but consists only of machines about to be excessed.

Acquired software tool (not budgeted)... paying off.

Outside effort has been limited (lack of recruitment, restrictive licensing atmosphere.

Actual Effort: goal was 6.5 FTEs (2.0 CMS), + modest outside effort. Short of this by 1.0 FTE right now.

Staff/Posted/Needed/Outsource = 48/18/93/3 (Dec 2004)

~2 FTE shortfall – realistically prioritize, then and reduce/move support and outside effort.

Streamline activities with defined, automated dev/build/test processes. ***Test stand in place.***

Seek common solutions (gridftp) and community support. Reduce our "built-here" code base.

Risks: Expanding/ill-defined customer requirements; Evolving environment.

- SRM-dCache and/or dCache-FTP support explosion, especially off-site. So far, not too bad.
- FNAL dCache system expansions and support on-site.
- CMS Data Handling – translate known MB/sec into FileOpens/hour. Can PNFS or Chimera handle it?
- Ill-defined task list: new requirements come in as we gain experience with higher loads and difference use patterns. Still need to keep it manageable. Example: review of ftp doors, add marker feature
- Expanding roles of "FTE"s involved. Reality: most of these "FTE"s are much less due to other projects and un-aligned collaboration work.
- Explicit space reservation – schedule risk (very hard), deliver piece-wise?

Related presentations, reports and/or documents

1) Past GDM Status Reports and WBS presentations.
2) http://www.dcache.org
3) Twiki under construction for local administrative, developer, and "not yet globally posted" talks. Not ready for prime-time yet, on a workstation at present.

Projects administrative report

FNAL-Dcache and FNAL-SRM have been treated as separate projects, but only in some venues, at some times. Otherwise, they have been collected together as the FNAL Upper Storage project. We have decided to formally split them, to make all venues consistent, into two distinct projects: FNAL-Dcache led by Rob Kennedy, and FNAL-SRM led by Timur Perelmutov.