

SRM-DCACHE Service: Testing and Experience

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Success Conditions

- **15 Feb (ITB): <talk>** SRM-dCache is not ready for general deployment for ITB 0.1.0. **</talk>** ;^)
- Today: SRM-dCache client shell tools have a readiness plan for deployment.
- Storage Service: Server coming in late Spring
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- Success1: SRM-dCache deployed, working at US-CMS Tier-1, Tier-2 sites. [MET]
- 2: Inter-operability with other SRMs (SRM v1.1) [Castor-YES, DRM-Detailed testing]

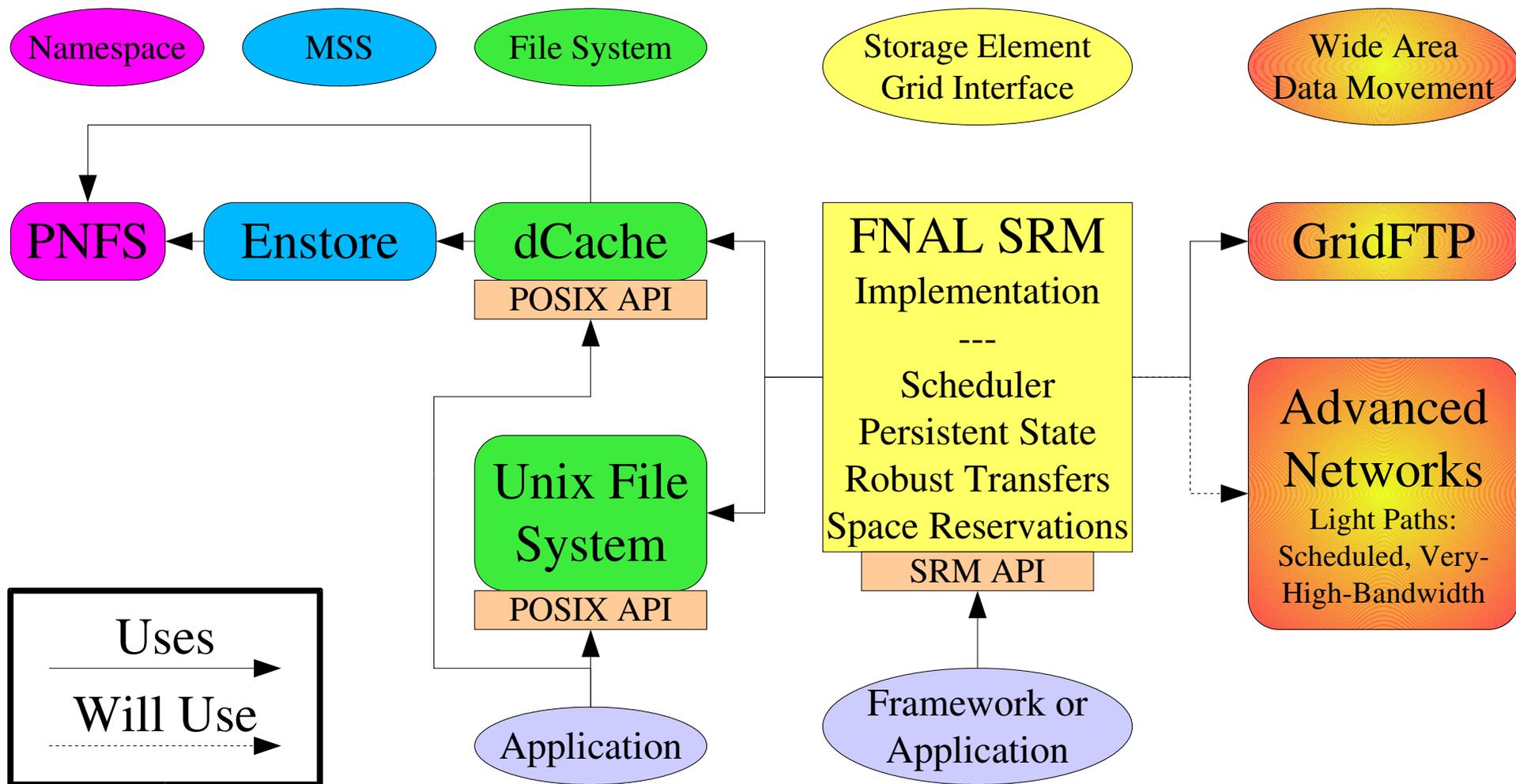
Terms and Actors: Dictionary

- Admin node: a host to dCache services
- Primary Admin node: SPOF host (single-instance services)
- Door node: a host to dCache “portals” or **doors** for clients
- Door: authenticate and authorize a client for a protocol
- Monitor node: a host performing various monitoring tasks
- Pool node: a host to dCache data file storage
- Pool: a virtual data partition in the dCache storage space
- Mover: process receiving or sending data to client.
- Restore: restoring data from MSS into cache.
- Store: storing data in cache to the MSS.
- P2P: pool-to-pool file transfers inside of a dCache system.
- PNFS: name space and replica catalog for dCache & Enstore

Service Description

- SRM-dCache: SRM as a “door” to dCache
 - SRM v1.1 interface + some SRM v2 features
 - Distributed disk storage with or without MSS
- Min: 1+ “admin” server, 0+ file servers
- CDF dCache: in production for ~ 2 years
 - 5 admins, 65 file servers, 6 “sub-caches”
 - 160 TB total, up to 60 TB/day to clients (real).
- US-CMS Tier-1 will exceed this scale, now 50+TB.

FNAL SRM: System Context



Installation, Configuration

- RPMs available from www.dcache.org
- US-CMS/Fermilab experts rolling their own
 - Rapid develop and re-deploy cycle nowadays
- Not yet integrated with PacMan, VDT
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- Most config via text files, could be easier
- Install/config challenge: networking issues
 - Private networks, NATs, internal firewalls
 - Site firewalls, local policies and restrictions

Service Status

- CMS Tier-0 to US Tier-1 robust data transfer challenge successful.
 - 500 MB/sec for days w/o intervention
- 7 Tier-2 SRM-dCache deployments
 - Working: San Diego, Florida, Purdue
 - Installed, almost working: Wisconsin, CalTech
 - Also on list: Nebraska, MIT
- Interoperability: SRM-dCache tested with/by...
 - SRM-Castor by FNAL & CERN, Wisconsin

Interoperability

- Client A/B talks to Service B/A... obviously.
- Subtlety in the midst: File SURL must be interchangeable; it is in “global” database
 - SRM-Castor SURLs “point to” service
 - SRM-dCache SURLs pointed to service WSDL
 - Overlooked because WSDL happened to be installed in same location on both services.
 - Wisconsin (Nate Mueller): tried to interchange Castor & dCache SRM meta-data, and **no go**.
 - SRM-dCache SURLs now point to service

Next Steps

- Continue the US-CMS Tier-2 deployment
- Work on robust data transfer: $T1 \leftrightarrow T1 \leftrightarrow T2$
- VO Authorization Module integration: GUMS-like svc for dCache user “paths”. Like PAMs for Unix.
- MIS: schema to support multi-VO sites.
- Adapt to OSG deployment model
 - client shell tool readiness plan, deploy to ITB separately.
 - allow some public use of maintained service with clients
 - service readiness for ITB deployment - late Spring 2005

Documentation

- <http://www.dcache.org>
 - dCache web home
- <http://grid.fnal.gov>
 - Fermilab Grid projects: dCache, SRM, OSG...
- <http://www-isd.fnal.gov/srm>
 - Fermilab SRM project page: for developers
- <http://sdm.lbl.gov/srm-wg>
 - SRM working group page
- OSG TG-Storage: For status, plans, etc.