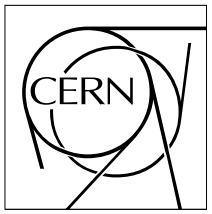

Options for a Central CVS service

Options for a Central CVS service at CERN.

IT/PS/Unix Infrastructure.

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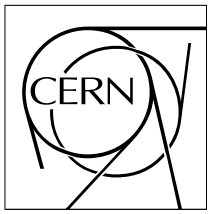

Options for a Central CVS service

Outline:

- Why do we need a central CVS service?.
- What are the user requirements?.
- What are NOT user requirements?.
- Constraints.
- Proposals.

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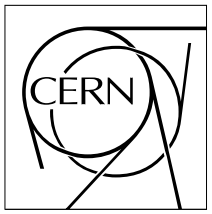
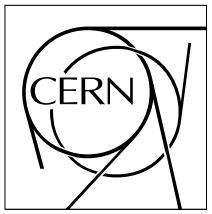


Options for a Central CVS service

Why?:

- More than 30 CVS servers at CERN. 5 CVS services in IT.
- Managing a CVS service is a resource consuming activity.
- An IT request to rationalize CVS services.
- Triggered by Helge's presentation on Atlas' CVS Services

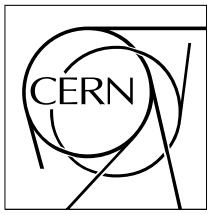
  http://wwwinfo/seminars/2001/2001-OtherFormats/t-011024.pdf
- Scope: A robust central CVS service (for IT and others).



Options for a Central CVS service

Experts (thanks to):

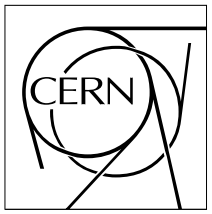
- Helge Meinhard: Atlas CVS service. 21/1/2002.
- Gunter Folger: Geant 4 CVS service. 5/2/2002.
- Andreas Pfeiffer: Anaphe CVS service. 6/2/2002.
- W.Jank and H.-P. Wellisch: CMS CVS service. 8/2/2002
- Arash Khodabandeh: FrameWork CVS service.13/2/2002
- Sergei Sadilov: Bonsai interface to Geant 4 CVS service. 13/3/2002.



Options for a Central CVS service

User requirements (I):

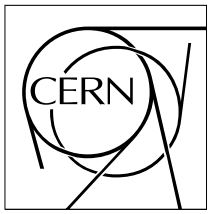
- H.A. Downtime: Few hours/year, 0 for CMS.
- CVS locks monitoring.
- Over 100 repositories (CVSROOT's).
- Performance
- Access control: Kserver, Pserver* and SSH.
- Scalability: dynamically expandable.
- Manageability: Zero administration (other than Librarian)



Options for a Central CVS service

User requirements (II):

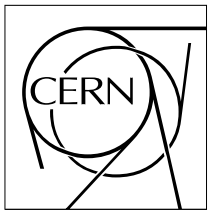
- No CVS repository data loss permitted.
- Easy migration of existing projects.
- Monitoring system <-> CNSURE
- Accessibility from both UNIX and Windows
- CVSWEB, Bonsai and tinderbox (Security holes, Development and Maintenance!!!)
- Bugzilla and lxr
- Direct administration access (login) for Librarians



Options for a Central CVS service

User requirements (III):

- Project Management features:
  - Automated, versioned, WEB Documentation system
  - Official and unofficial tagging
  - Hierarchical Access Control Lists
  - Associates Modules with Development tasks
  - Standardization of directory structures for packages and projects
  - Ensures uniqueness of package-names
  - ....Lots of development behind these features.....



Options for a Central CVS service

Central CVS service WILL NOT provide:

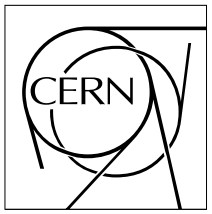
- CVS client distribution on UNIX and Windows platforms at CERN. Strong dependency between CVS server and client software (not all versions are compatible). Use standard channels.
- Librarian duties for each development project:

  Defines access rights for each developer in his/her project

  Defines who can tag and who can check-in

  Takes actions on CVS locks

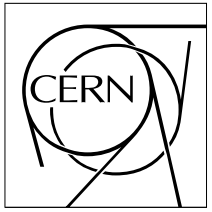
  ....etc.



Options for a Central CVS service

Constraints:

- Hardware: 2 * (800MHZ Elonex PC + 3ware IDE)
- Performance and Reliability: Serious testing
- In production during the course of 2002
- Resources: 18 man-weeks (delivered by Philippe, Ignacio and I)



Options for a Central CVS service

Objectives

Version Objectives	Description
O1 SVC definiton	Take input and requirements for a central CVS service. Define service mapping requirements onto resources
O2 Implementation	Implement the service validating the implementation on a small pilot.
O3 Deployment	Put the CVS service in production

Milestones

Milestone	Description	Date planned	Date delivered	Delivery review by GL and DDL	Comments
M1	Requirements Presented	1 March			Post C5 presentation?
M2	Service definition presented	1 April			Post C5 presentation?
M3	Pilot implementation available for test	1 June			Some testers required
M4	Pilot implementation accepted	1 July			Somebody should do acceptance
M5	Service in production	15 July			

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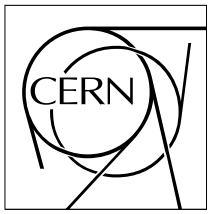

Options for a Central CVS service

Personnel (Staff, Fellows, Paid and Unpaid Associates, Technical and Doctoral Students)

				Year		Q1		Q2		Q3		Q4	
				Alloc	Used	Estim	Actual	Estim	Actual	Estim	Actual	Estim	Actual
Activity Description	**SPPA**	**Name**	**Grp**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**	**pers-weeks**
Collect technical input		Manuel Guijarro	PS	1		1							
Collect requirements		Manuel Guijarro	PS	1		1							
Write service definition		Manuel Guijarro	PS	1		1							
Service Implementation		Manuel Guijarro	PS	4				4					
Pilot test and validation		Manuel Guijarro	PS	2				2					
Roll Out		Manuel Guijarro	PS	2						2			
CVS Consultancy		Philippe Defert	PS	5		2		3					
Project Support		Ignacio Reguero	PS	2		1		1					

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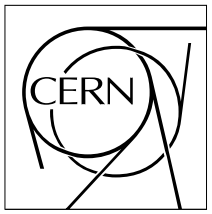


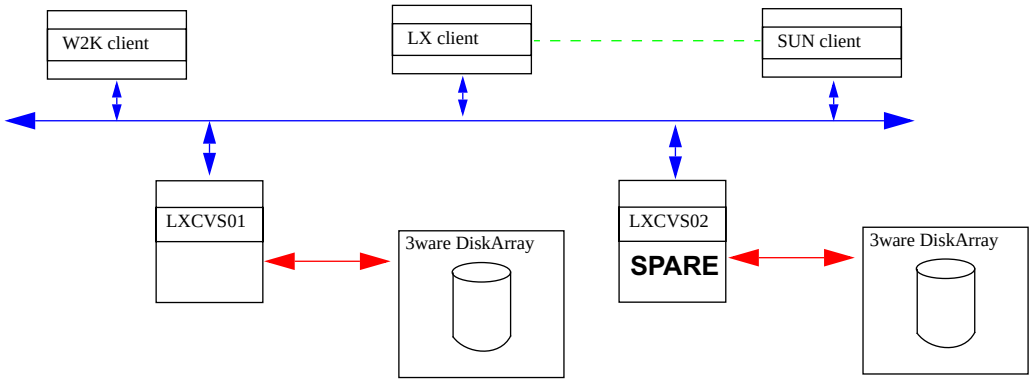
Options for a Central CVS service

Implement all User Requirements?:

- All mentioned requirements will be assigned a given priority and cost following project constraints.
- Not everything will be implemented (at least initially).

Options for a Central CVS service

Proposal I: Hot Spare



Requires: Keeping up-to-date repository copy. Switch via a written procedure

Advantages: Fastest Access, No AFS dependency, Hardware already available

Disadvantages: Not Scalable, Manual Procedure to switch, Several Single points of failure, Disk controller failure=> Data loss, Disk Array Maintenance

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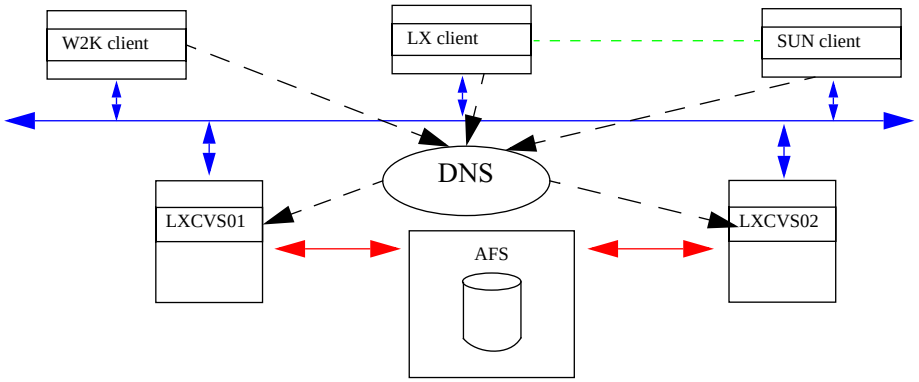
Options for a Central CVS service

Proposal II: Cheap HA



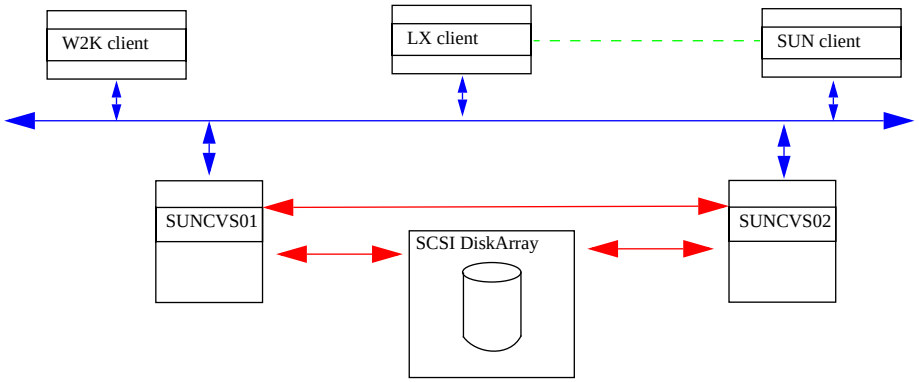
Requires: Real Reliability Testing, ISS and impersonal AFS accounts (to protect).

Advantages: No single point of failure, Scalable, No human intervention, No DiskArray, High Manageability, Hardware already available

Disadvantages: AFS and DNS dependency (which is already the case for eveybody).

Options for a Central CVS service

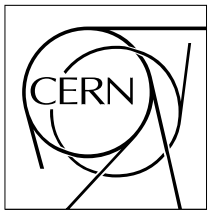
Proposal III: Expensive HA



Requires: New Hardware and Clustering software

Advantages: No single point of failure, Scalable, No human intervention, High Manageability, No AFS dependency, CMS tested for CVS.

Disadvantages: DiskArray and Clustering Software administration, Expensive hardware and expensive Sun Maintenance cost.



Options for a Central CVS service

Other concerns:

- CVS Setup: locking policies and others
- CVSUPD: is it a real requirement?
- CVSWEB, Bonsai, etc.: to public WEB servers?