Status of the central CVS service at CERN.
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Outline:

• Background
• Selected Architecture
• Analysis of User Requirements
• Tests Results (Performance and reliability)
• Tests Conclusion
• Current Status
• Pending issues
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Background:

- Users requested the setup of Central CVS service
- User Requirements Collection (Existing CVS services)
- Architecture Proposal
- Constrain: Define a service to address user requirements within available resources (Weight Requirements).
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Selected Architecture: Cheap HA

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

Disadvantages: AFS and DNS dependency (already the case for almost everybody).
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Analysis of User Requirements (I):

• H.A. Downtime: No resources => Cheap H.A.

• CVS locks monitoring: Have to be implemented.

• # of repositories: Its Maintenance Cost will be linked to the central CVS service evolution.

• Performance: Acceptable in all proposed architectures (see tests results).

• Scalability: Load Increase => Add new nodes
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Analysis of User Requirements (II):

- **Manageability**: Have to be implemented. New Projects Registration, Access Granting to Librarians, etc.
- **Access Schemes**: pserver, kserver and SSH.
  - CVS + Kerberos debugging (Thanks Rainer + Ignacio): ISS=>krb.realms/SRVTAB
  - Restricted Shell implementation (Thanks Lionel + Jan Iven)
- **CVS data integrity**: AFS backup+cvsupd+castor
- **Migration of existing projects**: Unknown
- **Monitoring system**: CNSURE (or replacement)
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Analysis of User Requirements (III):

- UNIX and Windows Accessibility: 1 FTE (few months) for packaging + a named contact for updates and user problems.
- CVSWEB/Bonsai: Central WEB Servers.R/O. Fellow
- Bugzilla and lxr: Not CVS. Not implemented.
- Project Management features: Expensive NO-CVS features which fall out of the scope.
- LCG CVS Requirements (Torre Wenaus): Included in the original list.
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Tested Applications:

- abi-1.0.1 - 51 MB, 4699 files
- octave-2.0.14 - 18 MBytes, 3306 files
- mrproject-0.5.1 - 4 Mbytes, 434 files

- On 6 configurations:
  - KER/AFS: Kerberos IV access; AFS Repository; ISSCVS
  - KER/UFS: Kerberos IV access; Local Repository; ISSCVS
  - PRO/AFS: Kerberos IV access; AFS Repository; Production
  - PRO/UFS: Kerberos IV access; Local Repository; Production
  - SSH/UFS: SSH access; Local Repository; ISSCVS
  - SSH/AFS: SSH access; AFS Repository; ISSCVS
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Check Out Results:

<table>
<thead>
<tr>
<th></th>
<th>KER/AFS</th>
<th>KERB/UFS</th>
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<th>PRO/UFS</th>
<th>SSH/UFS</th>
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<tr>
<td>ABIWord</td>
<td>22.129</td>
<td>19.998</td>
<td>54.937</td>
<td>43.431</td>
<td>39.127</td>
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<td>MRProject</td>
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<td>7.906</td>
<td>5.091</td>
<td>5.243</td>
<td>15.46</td>
<td>9.859</td>
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</table>

[Bar chart showing check out results for ABIWord, Octave, and MRProject]
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Check In Results:

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<td>12.076</td>
<td>7.19</td>
<td>14.028</td>
<td>24.4</td>
<td>52.633</td>
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J.Manuel Guijarro
PS/Unix Infrastructure Section
October 2002

IT Division, CERN
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Tests Results:

- Sequential access: to time CO/CI
- Concurrent access: to check CVS locks creation
  
  - CVS Kerberos IV vs. SSH access: A bit faster but SSH also needed (CVS users from outside CERN).
- CVS Locks: No more in AFS than in local file system
- Transparent Fail-over takes less than 30 seconds
- Conclusion: Architecture accepted => Implementation.
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Current Status:

- Being used in Production by Anaphe
- Being evaluated by Atlas before migration
- Being tested by LCG
- Preparing IT/CO/BE migration
- CVS Locks monitoring system: Working
- CVSUP repository mirroring and Castor archive: Working
- CVSWEB for each project: Working
- CVS access monitoring system: Working
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Still pending:

- Finish Windows CVS client test:
  
  Anonymous pserver: OK
  
  Kerberos IV access will never work (since there is no K4 client for W2000)
  
  Kerberos V may work in the future (not now)
  
  Only hope for now: making it work through PuTTY (via SSH).

- Automate Project creation and Service Administration

- Provide wider choice of WEB interface(s)

- Problems resolving isscvs.cern.ch from outside CERN
  
  (under investigation with CS group)

- Write documentation