CVMFS, is it Production Ready?
# WLCG GDB
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- One slide intro to CVMFS.

- Current Service Architecture
  - What's in PH, what's in IT.
  - Remaining migration steps.

- Version rollouts.
  - Server and Clients

- CVMFS software maintenance

- Can CVMFS be pervasive?
  - i.e the only software distribution mechanism.

- Summary

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- CVMFS clients:
  - Provides a /cvmfs/ filesystem area.
  - Files served from a web-server.
- File accesses are intercepted by fuse.
  - Metadata operations (ls, cd, ...) work on an sqlite database - downloaded from web-server.
  - File operations (cat, open, ...) trigger download of file from web server.
- Lot's of caching:
  - On batch workers across job executions.
  - On intermediate squid servers.
- Everything is transparent to user.

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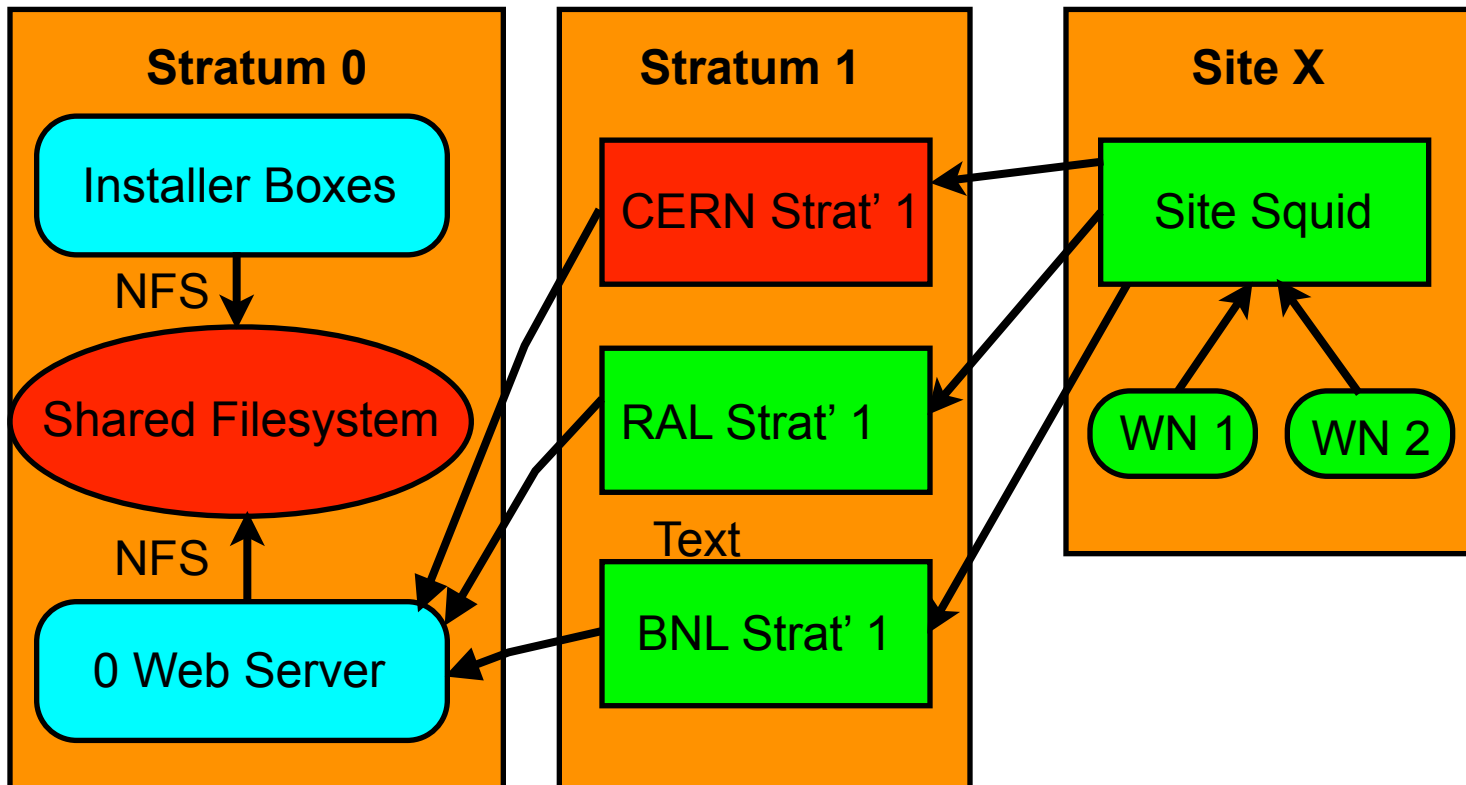
- Location - CERN IT, CERN PH, Other
- Stratum 1s fully redundant and production.
  - No more are needed, nothing to be done.
- Stratum 0 migration from PH to IT - next slide.
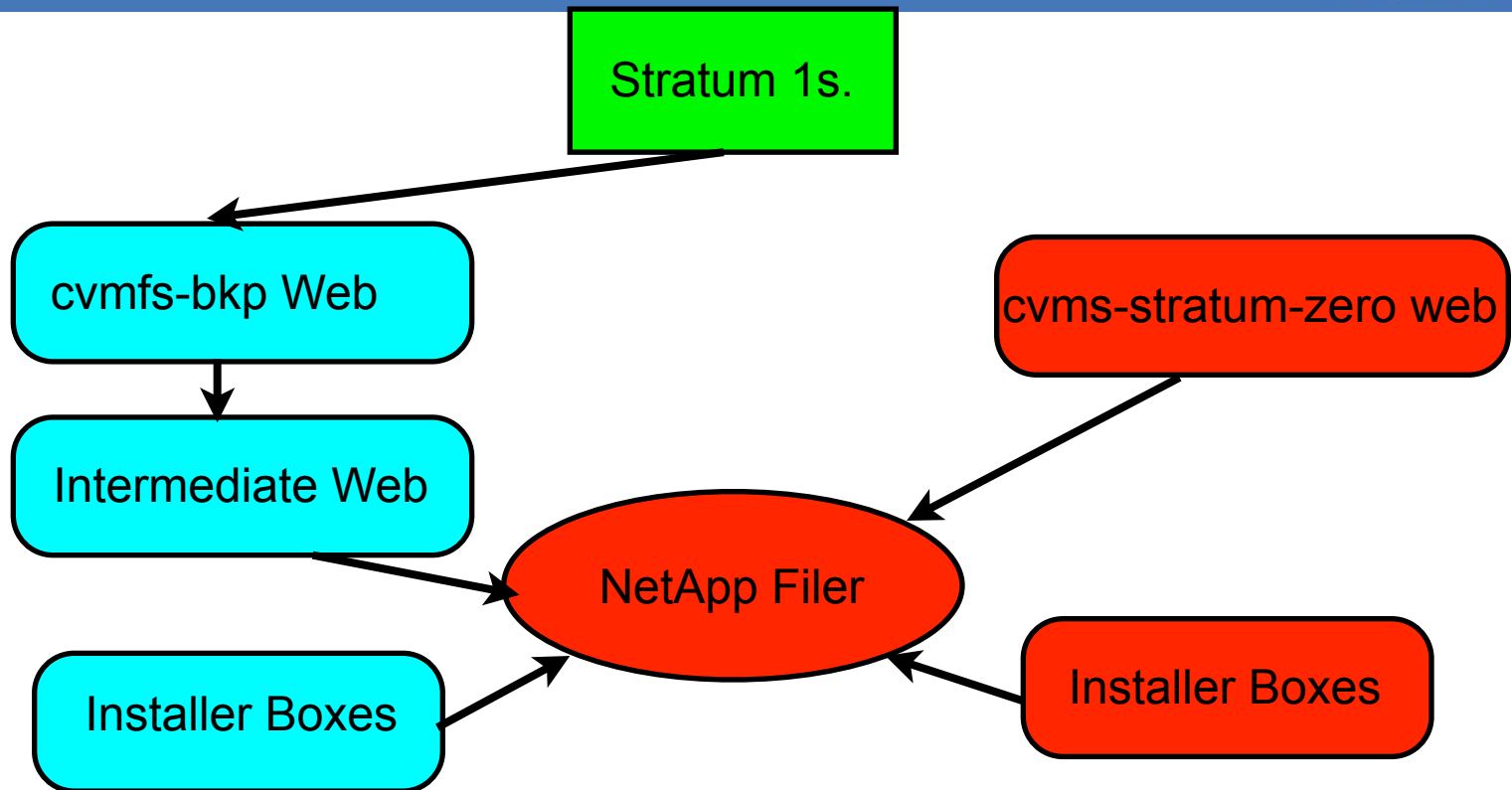
- Locations: CERN IT, CERN PH, Other
  - IT installers installing on non-production file path.
  - IT cvmfs-stratum-zero ready to be utilized now.
  - Intermediate web server will be dropped
    - not needed since very last release of cvmfs server.

- stratum-zero and IT installer boxes.
  - Migration of these is decoupled.
- stratum-zero web can be migrated tomorrow.
  - Small coordination with stratum one providers but transparent to all.
- IT installer boxes, 4 now in place.
  - Currently undergoing internal testing
    - some publishing scripts need updating.
  - Testing with experiment installers will follow.
    - atlas activity 2 months ago, CMS keen to proceed.
  - Eventual switch will be quick:
    - half a day (at most) of downtime for installers.
    - There is no requirement to reinstall all existing software.

Is CVMFS Service Production?

- All data is now hosted on IT provided NetApp.
  - This has improved reliability expectation greatly.

- Two halves:
  - File Serving:
    - Once cvmfs-stratum-zero is source for stratum ones the full chain file serving is in IT.
  - File Installation:
    - Service won't be improved much if at all by moving nodes from PH to IT.
    - Same resilience. A box dies, reinstall next working day.

- Central service is now as production as it is going to get in reality.

- (Next 2 Slides provided by Predrag Buncic)
- CernVM-FS was developed in context of an R&D Activity by PH/SFT group (WP9)
  - It provides an ideal mechanism for SFT to deliver software to clients (LHC experiments, …)
- Responsibilities for future support and maintenance of software need to be agreed (in-house product)
- SFT has been very active in support of this first exploitation phase …….
  - bug fixes; 13 releases so far in 2011
  - responding to questions and solving installation issues; ~900 mails in 2011

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- Requests for new features. In pipeline:
  - ATLAS: support for diskless servers, sharing local cache between repositories, exporting CVMFS via NFS
  - LHCb : faster turn-over for publishing updates (<1hour)
  - CMS : Mac OS X support
  - Small projects: simplified tool set to create repositories
  - Grid Sites : monitoring , security, encrypted repositories (Nordic Tier 1), extended documentation (RAL), archival of old software releases (CERN)
- Natural for SFT to continue providing software maintenance in immediate future (next 2 years)
  - Main goal will be to ensure stability and performance

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- Simplest - copy what CERN does.

- CERN is closest to developers.

- CERN always ramps up with new client versions.

  – Early sites should do the same.

- Up to now deployment schedules have been driven by bug fixes.

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- One solution can never work everywhere however:
  - CVMFS does not alter the one node installation method. i.e it does not break anything that exists.
- Sites with SUSE and Ubuntu are running CVMFS clients.
  - MacOS - code exists, not released.
- Scenarios that are still difficult:
  - Diskless batch workers.
  - WNs with software provision strictly via NFS or similar.
    - Both will require client development.

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- CVMFS publication of experiment software is production ready.
  - CERN IT under WLCG have committed to run central services in the long term in an equivalent fashion to LFC, VOMS, ...
  - Service is now as stable as it is likely to ever be.
    - IT will do no better than PH is doing for remaining items.
  - Final service layout only in place once IT installers are fully operational.

- Support lines in place , i.e GGUS, CERN SNOW system.
  - Items for CVMFS developers will be relayed just as for FTS, VOMS, apache, ..
  - Existing lines to CVMFS developers will persist.

- CVMFS discussion list.
  - cvmfs-talk@cern.ch
- CVMFS Releases, including release notes.
  - http://cernvm.cern.ch/portal/downloads
- CERN-IT CVMFS Central Services
  - A new homepage for central CVMFS service
  - https://twiki.cern.ch/twiki/bin/view/CvmFS/

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