



WG3

Software Management Recommendations

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- Addressing WG issues with two proposals
 - R3.1: Software deployment via CVMFS
 - Moderate impact for both sites and experiments
 - R3.2: Application software configuration Cmake
 - Moderate impact for sites, disruptive for experiments

- Addressing experiment software deployment issues
 - Manpower intensive for deployment and monitoring
 - Many different technologies for sites “common software areas”
 - Delays in deployment until experiment software reaches a site
- Cvmfs provides
 - Centrally managed Cern IT Service for hosts
 - One place to deploy experiment software with automatic replication
 - At sites it can be used together with Frontier Squids
 - Faster software deployment (no extra grid jobs)
 - Comes with nagios probes for clients (the service itself)
 - Replication of servers (1 Cern, 4 at T1s)

- Currently in production
 - Atlas
 - Grid deployment
 - Nightly builds
 - Conditions data
 - LHCb
 - Grid deployment
 - Cern interactive usage (Q1 2012)
- Possible future uses
 - Distribution of detector conditions for LHCb
 - Chaining of volumes (extra volume for AA SW)
- Volumes exist also for Alice and CMS

- For sites
 - Effort needed for many T2 sites (most T1 and some T2 are migrated).
 - With the help of a “migration plan” effort is little
 - Transition can happen gradually, with the goal in mind to migrate all sites
 - Only then full gain for experiments is achieved
- For experiments
 - Seamless migration, experiments don't realize when the software area was migrated
 - (e.g. for LHCb via setting one environment variable)

- Testing reliability (Stratum0/1 failure)
- Expanding the Cvmfs infrastructure to all T1/2 sites to reduce manpower for experiments
 - We need some “driving” entity for this
- Establish it as an “official” WLCG service
- Move “Release manager” machines to Cern/IT ?
- Cvmfs client deployment “crash course” for smaller sites
- Handle disk-less sites
 - Current development
- Announce Cvmfs also to “non LHC users”
 - That way sites may need to provide only one type of shared software area

- Addressing experiment applications configuration
 - Better setup of the runtime environment
 - Speed up of software build time
- CMake provides
 - Open source, license free configuration / build tool
 - Available on different operating systems (Linux, Mac, Windows)
 - Integrated with other tools from the same provider for
 - Testing: CDash
 - Packaging: CPack
 - Integrated with different IDEs (Eclipse, Xcode, ...)
- In the context of LHC experiments
 - Automatic conversion scripts exist for migration from CMT
 - 100s of packages need to be converted
 - Either builds against LCG Applications Area software stack or “local system packages”

- Alice using it in production
- LCG/AA partly using it
 - Geant4, Root
- LHCb will move after AA is completed
- Atlas is considering moving to a new build tool, CMake being one of the options

- For sites
 - No extra transition effort needed
 - The setup of the runtime environment will be handled differently (debugging?)
- For experiments
 - Disruptive, software developers, physicists, librarians, ... need to be trained on the new tool
 - Good documentation available
 - Similar to CVS -> SVN move

- Convert all remaining AA projects
 - CORAL (started), COOL
- LHCb will start using CMake after this step
 - Automatic conversion (CMT->CMake) can be used
- Tool for runtime environment setup
 - Will address current issues with slowness on grid sites