WORLDWIDE LARGE HADRON COLLIDER COMPUTING GRID

Sustainable Software Lifecycle for Grid Software from Central Repositories to Open Source Distributions

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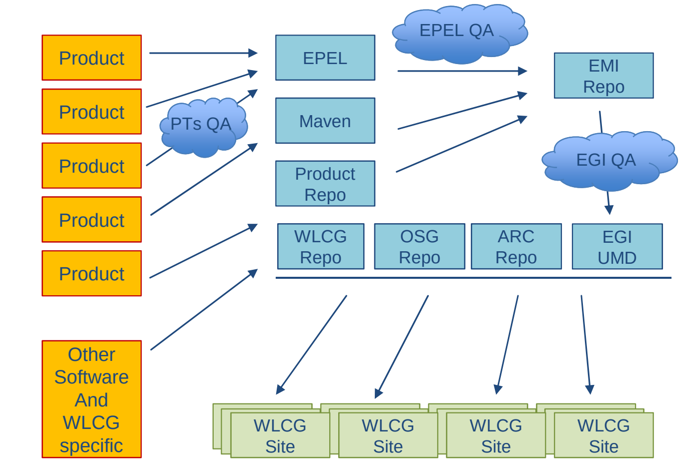
In synergy with the end of the EU Grid projects such as EGEE and EMI, the management of software development, packaging and distribution has moved from a centrally organised approach to a collaborative one, distributed across several development teams. In addition to the change of technologies also a more loosely coupled development of the different software components has emerged.

The adoption of popular public repositories (EPEL, Debian, Maven), together with their compatibility policies and packaging standards, ensures the consistency of the packages and allows a less tight synchronization of the releases of different software components. Each component can be updated at its own pace, therefore more frequent verifications with WLCG experiments' real use cases are needed.

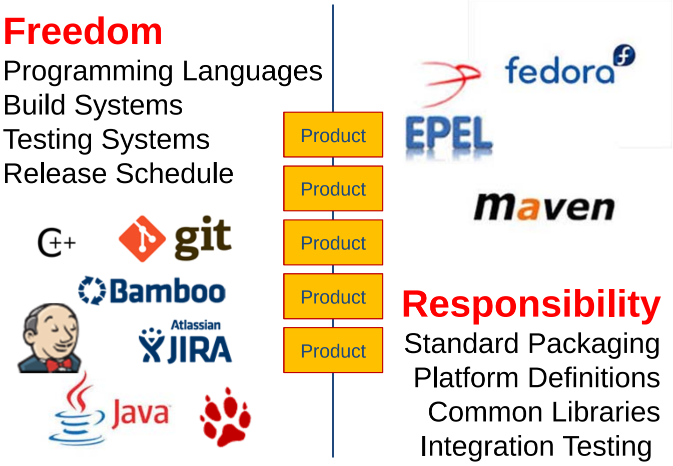
Landscape after EMI (April 2013- March 2014)

- PTs announce packages to be fit for release. Many do it via EPEL, others via MAVEN or their own repositories
- INFN updates the EMI repository periodically and announces the changes
- EMI repository is at CERN and will remain active
- No EMI QA process nor integration applied but EMI conventions still followed

- EGI produces UMD releases after QA and Staged Rollout verifications
- An additional WLCG Repository, at CERN, for all non-EPEL and non-UMD packages (HEP_OS libs, xrootd monitoring, info-xx, yaim, vobox, etc.). All packages that do not go into EPEL



Collaborative Approach across Product Teams



Freedom

Programming Languages
Build Systems
Testing Systems
Release Schedule

Responsibility

Standard Packaging
Platform Definitions
Common Libraries
Integration Testing

After EMI, PTs have more freedom and more responsibility

- Follow FEDORA/EPEL process, tools and repository
- EPEL-incompliant packages go into other repositories (MAVEN, WLCG, etc.)

Coordination between Product Teams (PT)

- Agreement on standards to support
- Agreement on product roadmaps
- Concrete planning of major releases and duration of support

Coordination between Product Teams and Sites

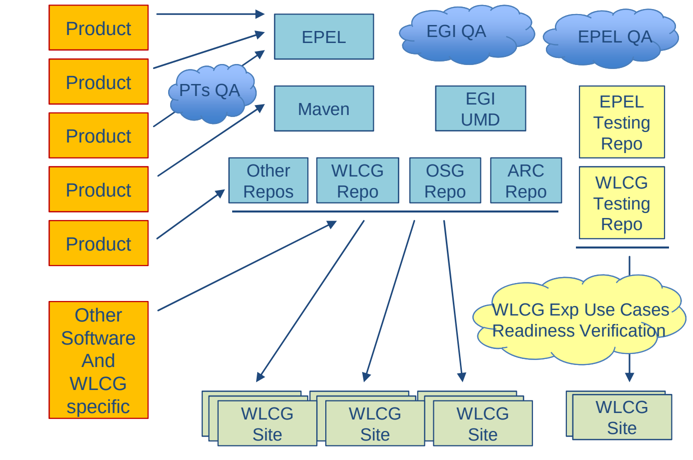
- Large scale testing and deployment need to be organised across Sites
- Sites need a single place/process for WLCG software

Proposal of WLCG Software Lifecycle

- Build, integration and testing by PTs
- Many repositories to monitor (EPEL, Maven, UMD, etc.)
- Reference OS Platforms agreed and maintained

WLCG additional needs for testing and distribution

- Meta-Packages management for WLCG
- Integration and inter-product testing for WLCG use cases at WLCG test sites
- The WLCG Readiness Verification infrastructure uses EPEL Testing and WLCG Testing where needed
- Only products that pass the WLCG Readiness Verification move to WLCG Stable
- WLCG Stable overrides the EPEL packages in case of issues with the EPEL Stable software


Product
Product
Product
Product
Product
Other Software And WLCG specific
PTs QA
EPEL
Maven
EGI QA
EGI UMD
EPEL QA
EPEL Testing Repo
WLCG Testing Repo
Other Repos
WLCG Repo
OSG Repo
ARC Repo
WLCG Exp Use Cases Readiness Verification
WLCG Site
WLCG Site
WLCG Site
WLCG Site