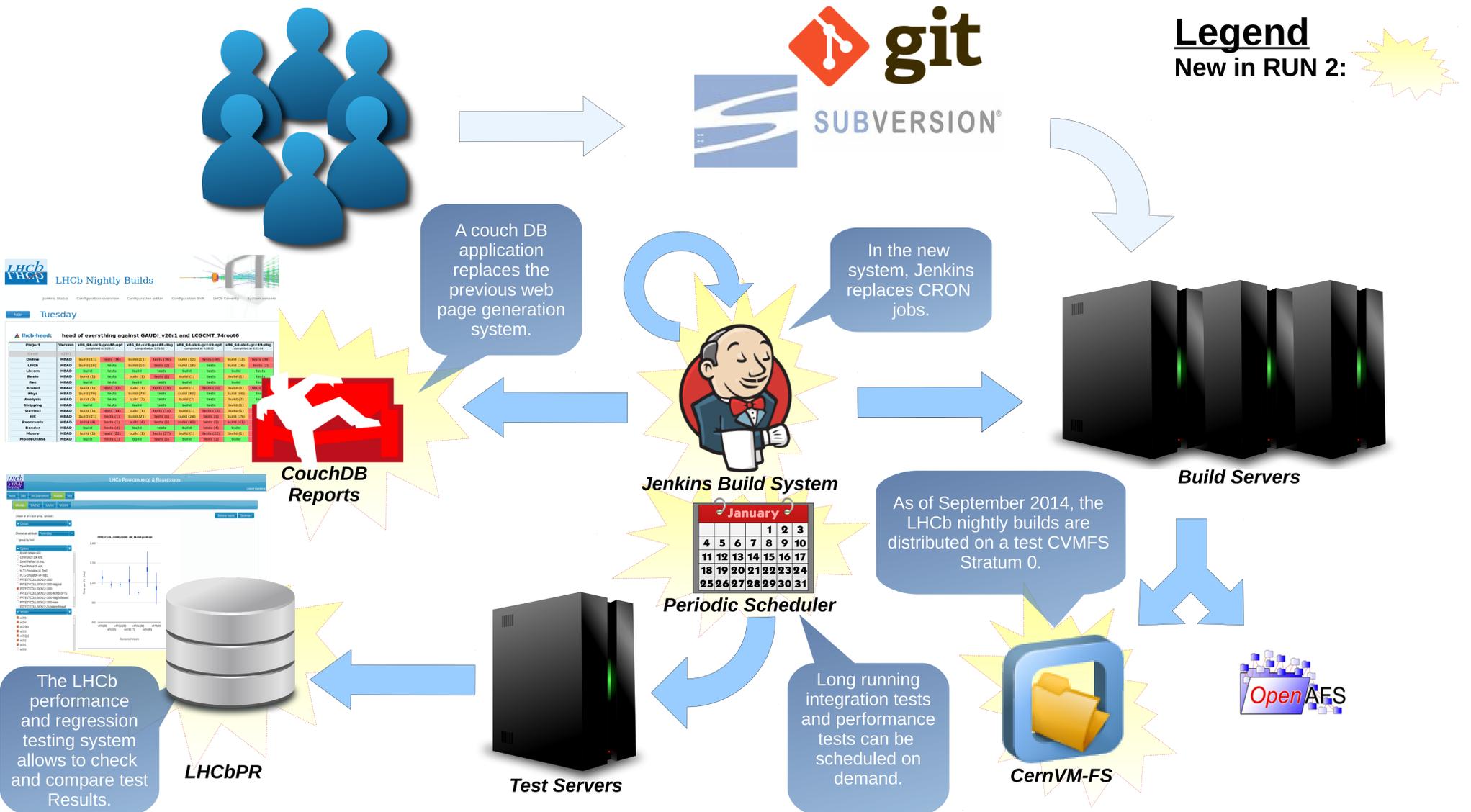


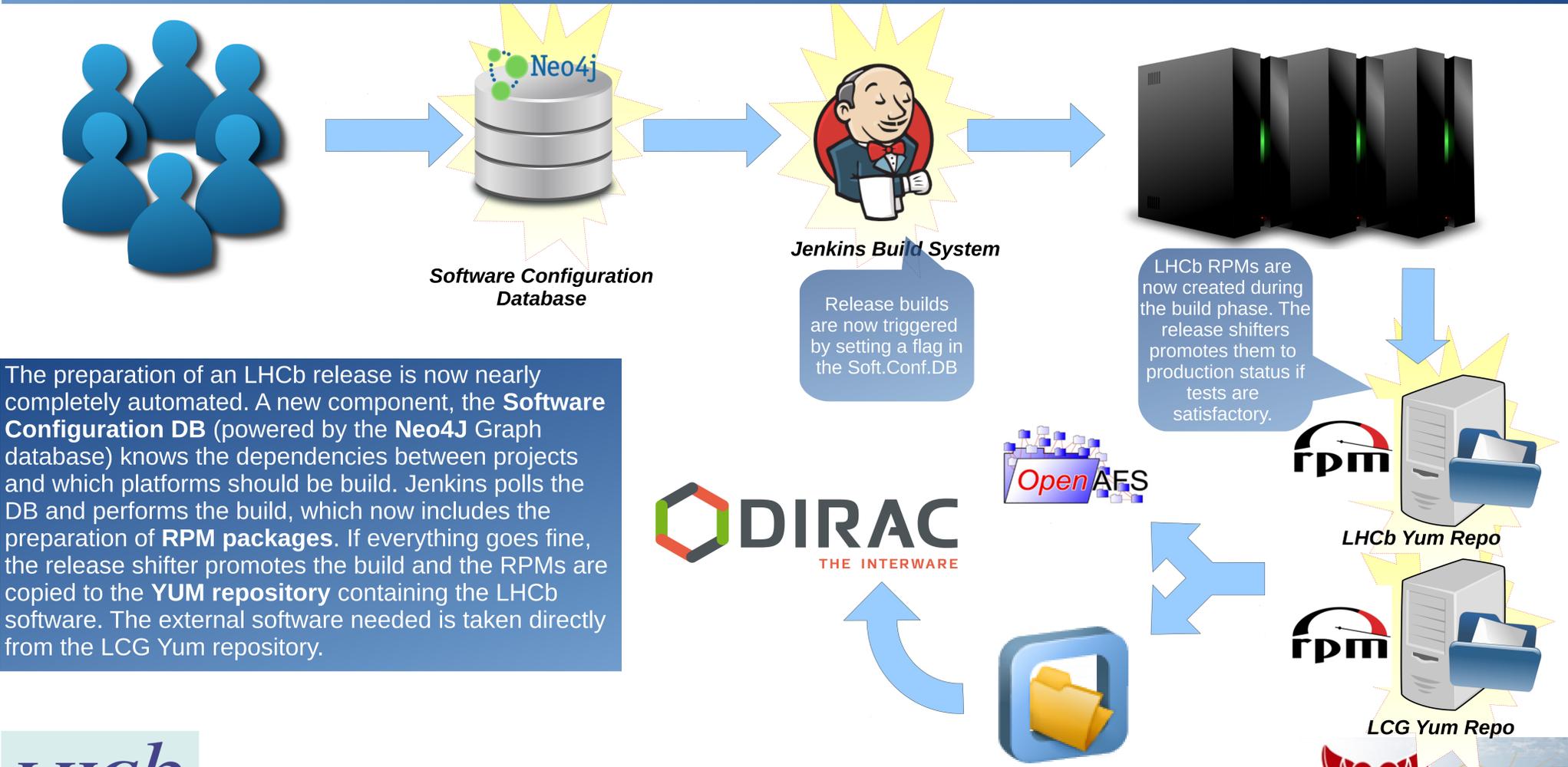
The LHCb Computing Team took advantage of the long shutdown to improve the experiment's software build and deployment infrastructure. A new build system using the Jenkins continuous integration server and many new features have been added to improve the process, leading to a better automation of the release process.

## Software Development Tools



The LHCb nightly build system has been refactored and is now fully **modular**. The build resources are managed by the **Jenkins Continuous integration** system that triggers the builds on various systems. The organization of the builds (in build slot, projects and platform) is identical to the previous LHCb system but it is now configured via JSON files committed in Subversion. As well as unit tests, long running **integration tests** can now be scheduled and their results viewed in the new **CouchDB** Report system or in the LHCb Performance and Regression testing application (**LHCbPR**). A new Dashboard to check the state of the system is also available (c.f. poster "Improved interface for the LHCb Continuous Integration System").

## Software Release Tools



The preparation of an LHCb release is now nearly completely automated. A new component, the **Software Configuration DB** (powered by the **Neo4J** Graph database) knows the dependencies between projects and which platforms should be build. Jenkins polls the DB and performs the build, which now includes the preparation of **RPM packages**. If everything goes fine, the release shifter promotes the build and the RPMs are copied to the **YUM repository** containing the LHCb software. The external software needed is taken directly from the LCG Yum repository.

### References

- CHEP 2015 "Implementing a Domain Specific Language to configure and run LHCb Continuous Integration builds"
- CHEP 2015 "Improved interface for the LHCb Continuous Integration System"
- CHEP 2013 "A New Nightly Build System for LHCb"
- CHEP 2013 "Systematic profiling to monitor and specify the software refactoring process of the LHCb experiment"