Contribution ID: **333**   Type: **Poster**

Microservices for systematic profiling and monitoring of the refactoring process at the LHCb experiment

Thursday 13 October 2016 16:30 (15 minutes)

Any time you modify an implementation within a program, change compiler version or operating system, you should also do regression testing. You can do regression testing by rerunning existing tests against the changes to determine whether this breaks anything that worked prior to the change and by writing new tests where necessary. At LHCb we have a huge codebase which is maintained by many people and can be run within different setups. Such situation leads to the crucial necessity to guide refactoring with a central profiling system that helps to run tests and find the impact of changes.

In our work we present a software architecture and tools for running a profiling system. This system is responsible for systematically running regression tests, collecting and comparing results of these tests, so changes between different setups can be observed and reported. The main feature of our solution is that it is based on a microservices architecture. Microservices break a large project into loosely coupled modules, which communicate with each other through simple APIs. Such modular architectural style helps us to avoid general pitfalls of monolithic architectures such as hard to understand and maintaining of a large codebase and ineffective scalability. Our solution also allows to escape a complexity of microservices deployment process by using software containers and services management tools. Containers and service managers let us quickly deploy linked modules in development, production or in any other environments. Most of the developed modules are generic which means that the proposed architecture and tools can be used not only in LHCb but adopted for other experiments and companies.

Tertiary Keyword (Optional)

Visualization

Secondary Keyword (Optional)

Monitoring

Primary Keyword (Mandatory)

Software development process and tools

Primary author: MAZUROV, Sasha (University of Birmingham (GB))

Co-author: COUTURIER, Ben (CERN)

Session Classification: Posters B / Break

Track Classification: Track 5: Software Development