



Sample Project: Continuous integration and testing framework

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Programme	FCT
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Title
Continuous integration and testing framework

Description
<p>The SFT group is planning to move its continuous integration, testing, software distribution and planning frameworks to integrate modern tools such as git, Jira and Jenkins. One of the major products to move is the simulation code, including the Geant4 programme and the GeantV prototype.</p> <p>The Open Source Jenkins tool will be setup and used for continuous integration for nightly builds and QA tests will allow producing regular reports.</p> <p>Combination of scheduled builds of Geant4 and GeantV with different settings will be performed on various operating system compilers and other supporting packages. Jenkins will also be used for code coverage testing, static analysis tools, regression tests and other specific tests and benchmarks.</p> <p>Jenkins will be integrated with external products such as Coverity code analyser, Intel Inspector & Intel Vtune Amplifier XE tool. Integration of Jenkins, git and Jira allows creating continuous build job flow by automatically creating tags and, where needed, issues in Jira.</p> <p>Via the creation of specialized test cases and the analysis of the results of the various performance measurement code analysis tools, the Geant4 and GeantV programmes will be constantly monitored for errors and memory leaks and optimised in terms of performance, scalability, bandwidth,</p> <p>Skills:</p> <ul style="list-style-type: none">Knowledge of various computing architectures (many core, ARM, Intel Xeon, Intel Phi, AMD, Nvidia GPUs) operating systems compilersC++ programming and bash scriptingAdministration of Unix systems (Linux/OS X)Code optimization techniques

Skills

code optimisation, vector and parallel computing

Disciplines

Information Technologies

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