

A Roadmap to Continuous Integration for ATLAS software development

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The ATLAS software infrastructure facilitates efforts of more than 1000 developers working on the code base of 2200 packages with 4 million C++ and 1.4 million python lines. The ATLAS offline code management system is the powerful, flexible framework for processing new package versions requests, probing code changes in the Nightly Build System, migration to new platforms and compilers, deployment of production releases for worldwide access and supporting physicists with tools and interfaces for efficient software use. It maintains multi-stream, parallel development environment with about 70 multi-platform branches of nightly releases and provides vast opportunities for testing new packages, for verifying patches to existing software and for migrating to new platforms and compilers. The system evolution is currently aimed on the adoption of modern continuous integration (CI) practices focused on building nightly releases early and often, with rigorous unit and integration testing. This presentation describes the CI incorporation program for the ATLAS software infrastructure. It brings modern open source tools such as Jenkins and CTest into the ATLAS Nightly System, rationalizes hardware resource allocation and administrative operations, provides improved feedback and means to fix broken builds promptly for developers. Once adopted, ATLAS CI practices will improve and accelerate innovation cycles and result in increased confidence in new software deployments. The presentation reports the status of Jenkins integration with the ATLAS Nightly System as well as short and long term plans for the incorporation of CI practices.

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