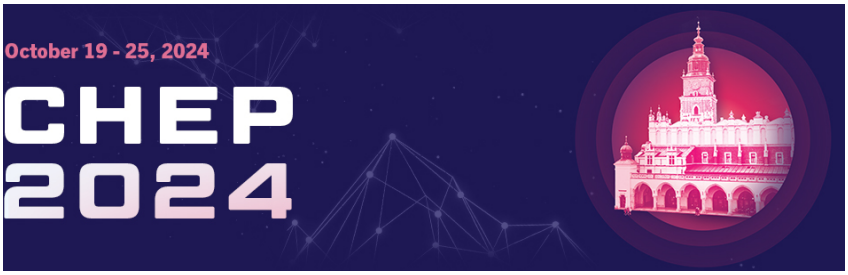

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Containerization in the ATLAS Offline Code Management System

Monday 21 October 2024 13:30 (18 minutes)

The ATLAS offline code management system serves as a collaborative framework for developing a code base totaling more than 5 million lines. Supporting up to 50 nightly release branches, the ATLAS Nightly System offers abundant opportunities for updating existing software and developing new tools for forthcoming experimental stages within a multi-platform environment. This paper describes the utilization of container technology for the ATLAS nightly jobs. By conducting builds and tests of offline releases within containers, we ensure portability across various build nodes. The controlled container environment enhances stability by removing dependencies on operating system updates. Furthermore, it sets the base and facilitates the production of containerized software across different user activity areas and pipelines. The ATLAS experiment has accumulated data since 2009. It is important to maintain access to software for processing and analyzing historical data developed on outdated operating systems. Container technology plays an indispensable role in providing secure and operationally sound environments for building and testing on such operating systems. This document provides details on the organizational support for OS containers used in software building, including methods for setting up runtime environments.

Authors: UNDRUS, Alexander (Brookhaven National Laboratory (US)); DE SILVA, Asoka (TRIUMF (CA)); LEE, Chris (Stony Brook University (US)); YE, Shuwei (Brookhaven National Laboratory (US))

Presenter: LEE, Chris (Stony Brook University (US))

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