

Contribution ID: 19 Type: Parallel Talk

C++ and Data

Tuesday, 4 November 2008 15:15 (25 minutes)

High performance computing with a large code base and C++ has proved to be a good combination. But when it comes to storing data, C++ is a really bad choice: it offers no support for serialization, type definitions are amazingly complex to parse, and the dependency analysis (what does object A need to be stored?) is incredibly difficult. Nevertheless, the LHC data consists of C++ objects that are serialized with help from ROOT's interpreter CINT. The fact that we can do it on that scale, and the performance with which we do it makes this approach unique and stirs interest even outside HEP. I will show how CINT collects and stores information about C++ types, what the current major challenges are (dictionary size!), and what CINT and ROOT have done and plan to do about it.

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Session Classification: Data Analysis - Algorithms and Tools

Track Classification: 2. Data Analysis