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New design of tools for accessing the ATLAS CREST conditions database in Athena

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Athena is the ATLAS software framework that manages nearly all ATLAS production workflows. Most of these workflows rely on accessing data in the conditions database. CREST is a new conditions database project designed for production use in Run 4. Its primary goals are to evolve the data storage architecture, optimize access to conditions data, and enhance caching capabilities within the ATLAS distributed computing infrastructure. During the development of the CREST prototype, a new tool for interacting with the conditions database was integrated into Athena. Initially, this tool was based on the existing COOL implementation, enabling rapid testing of the new database in production workflows. However, due to maintenance challenges and the tool's limited accommodation of CREST-specific features, a decision was made to redesign it. This article describes the new design for accessing CREST data from Athena. The redesigned toolkit simplifies maintenance, consolidates numerous metadata handling methods into a single class, and introduces a class for serializing and deserializing CREST data. This approach supports flexible handling of various data storage formats in CREST.

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