

The metadata management system based on MongoDB for EAST experiment

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EAST experimental uses MDSplus database for various data storage. The user accesses the data through the API it provides. MDSPlus stores abundant experimental data, but lacks a resource directory, which makes it difficult for users to have a quick overview of experimental data.

This paper proposes a solution to the Metadata Database based on MongoDB. Firstly, the system uses C++ language to scan the whole database and extract and integrate all the metadata. Then, based on the basic document in the BSON format, the system uses the form of document nested document array to gather all the metadata of each shot in the same document, and a single metadata is constructed using a stream document to establish metadata database. Next, encapsulates interfaces for typical queries and cross-shot statistics, and optimizes performance based on indexes. Finally, based on SpringBoot + MyBatis, metadata front-end display service is provided to provide users with navigation service of database resources.

Through the design and implementation of the meta-database, it can help users quickly understand the general situation of database resources, and realize the efficient and simplified access to experimental data.

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