Contribution ID: **70** Type: **Oral Presentation**

ZeroMQ Based Online ROOT-Output Storage and Express-Reconstruction System for the Belle II Experiment

Monday 1 August 2022 14:00 (20 minutes)

The Belle II experiment started to take data of electron-positron collisions provided by the SuperKEKB accelerator, with all subdetectors from March 2019. The Belle II detector consists of 7 subdetectors and data from each subdetector are serialized by event builders. The maximum trigger rate at the detector is designed to be 30 kHz. The collected data are filtered by a software-based trigger system and stored on online storage. After the online storage, an express-reconstruction system is provided for semi-realtime data quality monitoring and event display. In this presentation, we present ZeroMQ based online storage and express- reconstruction framework to achieve stable data flow during operation. Furthermore, a new storage system, capable of storing data directly in ROOT format, is introduced which is helpful to reduce the network bandwidth of output file transfer from online to offline storage and the overhead of offline computing resources.

Minioral

Yes

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No

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Session Classification: DAQ System & Trigger - I

Track Classification: Data Acquisition System Architectures