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Management System of Event Processing and Data Files Based on XML Software Tools at Belle

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The Belle experiment has been operational since 1999 and we have processed more than 700/fb of data so far. To cope with ever increasing data, complete automation of the event processing is one of the most critical issues. In addition, unified management in the processing job and the processed data files to be analyzed is very important especially to deal with ~400K data files amounting to Peta-scale data. To do this, we have implemented new application called "R&D Chain Management (RCM)". In the RCM program, we define a "work-flow" as a set of check-points related to the event processing procedures such as job submission, job log verification, output file backup and so on. The work-flow is described in the XML and it is so flexible that we can cover all of actions required in the processing stream. The RCM application automatically surveys each check-point in the work-flow and it reports failure if any. Furthermore, simultaneously the RCM tools can store any necessary information at each check-point into the own database written in the XML. The RCM system provides the web-based interface between the XML database and users for an excellent visualization. Thus, one can quickly pick up relevant information from this system. The processed data files are also taken care by this RCM, and automatic action to take a backup, for instance, can be issued from the RCM tools. We will present our experience using the RCM software tool as well as performance in the Belle data management.

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