

Highlights of the Belle II Computing

Tuesday 11 October 2016 11:45 (15 minutes)

The Belle II is the next-generation flavor factory experiment at the SuperKEKB accelerator in Tsukuba, Japan. The first physics run will take place in 2017, then we plan to increase the luminosity gradually. We will reach the world's highest luminosity $L=8 \times 10^{35} \text{ cm}^{-2}\text{s}^{-1}$ after roughly five years operation and finally collect ~ 25 Petabyte of raw data per year. Such a huge amount of data allows us to explore the new physics possibilities through a large variety of analyses in quark sectors as well as tau physics and to deepen understanding of nature.

The Belle II computing system is expected to manage the process of massive raw data, production of copious simulation and many concurrent user analysis jobs. The required resource estimation for the Belle II computing system shows a similar evolution profile of the resource pledges in LHC experiments. For the Belle II is a worldwide collaboration of about 700 scientists working in 23 countries and region, we adopted a distributed computing model with DIRAC as a workload and data management system.

In 2015, we performed the successful large-scale MC production campaign with the highest CPU resources for the longest period ever. The biggest difference from the past campaigns is the first practical version of the production system we introduced and tested. We also raked up computational resources such as grid, commercial and academic clouds, and the local batch computing clusters, as much as possible from inside and outside the collaboration. In this March, the commissioning of the SuperKEKB accelerator has started and the Trans-Pacific network was upgraded. Then the full replacement of the KEK central computing system is planned in this summer.

We will present the highlights of the recent achievements, output from the latest MC production campaign and current status of the Belle II computing system in this report.

Secondary Keyword (Optional)

Computing middleware

Primary Keyword (Mandatory)

Computing models

Tertiary Keyword (Optional)

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Session Classification: Track 9: Future Directions

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