



Contribution ID: 72

Type: Oral

Belle II distributed computing

Tuesday, 2 September 2014 16:35 (25 minutes)

The existence of large matter-antimatter asymmetry (CP violation) in the b -quark system as predicted in the Kobayashi-Maskawa theory was established by the B -Factory experiments. However, this cannot explain the magnitude of the matter-antimatter asymmetry of the universe we live in today. This indicates undiscovered new physics exists. The Belle II experiment, the next generation of the B -Factory, is expected to reveal the new physics by accumulating 50 times more data ($\sim 50\text{ab}^{-1}$) than Belle by 2022. The Belle II computing system has to handle an amount of beam data eventually corresponding to several tens of PetaByte per year under an operation of the SuperKEKB accelerator with a designed instantaneous luminosity. Under this situation, it cannot be expected that one site, KEK, will be able to provide all computing resources for the whole Belle II collaboration including the resources not only for the raw data processing but also for the MC production and physics analysis done by users. In order to solve this problem, Belle II employed the distributed computing system based on DIRAC, which provides us the interoperability of heterogeneous computing systems such as grids with different middleware, clouds and the local computing clusters. Since the last year, we performed the MC mass production campaign to confirm the feasibility and find out the possible bottleneck of our computing system. In parallel, we also started the data transfer challenge through the transpacific and transatlantic networks. This presentation describes the highlights of the Belle II computing and the current status. We will also present the experience of the latest MC production campaign in 2014.

Primary author: KROKOVNY, Pavel (Budker Institute of Nuclear Physics (RU))

Co-author: HARA, Takanori (on behalf of the Belle II computing group)

Presenter: KROKOVNY, Pavel (Budker Institute of Nuclear Physics (RU))

Session Classification: Computing Technology for Physics Research

Track Classification: Computing Technology for Physics Research