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## Dirac-based solutions for JUNO production system

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The Jiangmen Underground Neutrino Observatory (JUNO) is a multipurpose neutrino experiment, which plans to take about 2PB raw data each year starting from 2021. The experiment data plans to be stored in IHEP and have another copy in Europe (CNAF, IN2P3, JINR data centers). MC simulation tasks are expected to be arranged and operated through a distributed computing system to share efforts among data centers. The paper will present the design of the JUNO distributed computing system based on DIRAC to meet the requirements of the JUNO workflow and dataflow among data centers according to the JUNO computing model. The production system to seamlessly manage the JUNO MC simulation workflow and dataflow together is designed within the DIRAC transformation framework, in which data flows among data centers for production groups are managed based on the DIRAC data management infrastructure which uses DFC as File Catalogue, request manager to interface with FTS and transformation system to manage a bundle of files. The muon simulation with optical photon which has huge memory and CPU time problems would be the most challenging part. Therefore, multicore supports and GPU federation are considered in the system to meet this challenge. The function and performance tests to evaluate the prototype system would be also presented in the paper.

### Consider for promotion

Yes

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