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Improvements in the CMS Computing System for Run2

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Beginning in 2015 CMS will collect and produce data and simulation adding to 10B new events a year. In order to realize the physics potential of the experiment these events need to be stored, processed, and delivered to analysis users on a global scale. CMS has 150k processor cores and 80PB of disk storage and there is constant pressure to reduce the resources needed and increase the efficiency of usage. In this presentation we will comprehensively overview the improvements made in the computing system for Run2 by CMS in the areas of data and simulation processing, data distribution, data management and data access. The system has been examined and we will discuss the improvements in the entire data and workflow systems: CMS processing and analysis workflow tools, the development and deployment of dynamic data placement infrastructure, and progress toward operating a global data federation. We will describe the concepts and approaches to utilize the variety of CMS CPU resources, ranging from established Grid sites to HPC centers, Cloud resources and CMS' own High Level Trigger farm. We will explain the strategy for improving how effectively the storage is used and the commissioning, validation and challenge activities will be presented.

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