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## HEPCloud: Provisioning 160,000 Compute Cores for Science

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The High Energy Physics (HEP) community is facing a daunting computing challenge in the upcoming years, as upgrades to the Large Hadron Collider and new technologies such as liquid argon detectors will require vast amounts of simulation and processing. Additionally, the stochastic nature of research suggests that leveraging elastically available resources would increase efficiency and cost-effectiveness. At the same time, the decreasing cost of renting commercial cloud resources and the increasing scale of High Performance Computing (HPC) facilities make them attractive targets for HEP workflows. The HEPCloud program aims to seamlessly integrate grid, cloud, and allocation-based facilities into a single virtual facility, as transparently to the user as possible. In the last year, we have integrated Amazon Web Services, Google Cloud Platform, and the Cori supercomputer at the National Energy Research Scientific Computing Center (NERSC). Results from these studies will be discussed.

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