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Strategy for HPC Integration in WLCG/HEP

High-Energy Physics (HEP), and particularly the sector supported by the WLCG Collaboration at the LHC experiments, is entering a new era of data-intensive research. This shift is driven by the High-Luminosity LHC (HL-LHC) that will generate exabyte-scale datasets each year. Fully realizing the physics potential of this massive volume of data will require a significant increase of resources. High Performance Computing (HPC) centers are crucial partners in this effort, offering either pledged resources or for providing additional opportunistic resources that enhance the physics output. Integrating HPC systems into HEP workflows offers transformative benefits, like expanding computational power, accelerating simulations, and enabling more sophisticated AI/ML algorithms. However, realizing these benefits demands a concerted effort to address technical, organizational, and policy-related barriers.

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