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## Harvester : an edge service harvesting heterogeneous resources for ATLAS

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The Production and Distributed Analysis (PanDA) system has been successfully used in the ATLAS experiment as a data-driven workload management system. The PanDA system has proven to be capable of operating at the Large Hadron Collider data processing scale over the last decade including the Run 1 and Run 2 data taking periods. PanDA was originally designed to be weakly coupled with the WLCG processing resources. Lately the system is revealing the difficulties to optimally integrate and exploit new resource types such as HPC and preemptable cloud resources with instant spin-up, and new workflows such as the event service, because their intrinsic nature and requirements are quite different from that of traditional grid resources. Therefore, a new component, Harvester, has been developed to mediate the control and information flow between PanDA and the resources, in order to enable more intelligent workload management and dynamic resource provisioning based on detailed knowledge of resource capabilities and their real-time state. Harvester has been designed around a modular structure to separate core functions and resource specific plugins, simplifying the operation with heterogeneous resources and providing a uniform monitoring view. This talk will give an overview of the Harvester architecture, its advanced features, current status with various resources, and future plans.

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