

Interoperability and Scalability within glideinWMS

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Physicists have access to thousands of CPUs in grid federations such as OSG and EGEE. With the start-up of the LHC, it is essential for individuals or groups of users to wrap together available resources from multiple sites across multiple grids under a higher user-controlled layer in order to provide a homogeneous pool of available resources. One such system is glideinWMS, which is based on the Condor batch system. A general discussion of glideinWMS can be found elsewhere. Here, we focus on recent advances in extending its reach: scalability and integration of heterogeneous compute elements. We demonstrate that the new developments achieve the design goal of over 10,000 simultaneous running jobs under a single Condor schedd, using strong security protocols across global networks, and sustaining a steady-state job completion rate of a few Hz. We also show interoperability across heterogeneous computing elements achieved using client-side methods. We discuss this technique and the challenges in direct access to NorduGrid and CREAM compute elements, in addition to Globus based systems.

Primary authors: BRADLEY, Daniel (University of Wisconsin); SFILIGOI, Igor (Fermilab); FREY, Jaime (University of Wisconsin); PADHI, Sanjay (University of California, San Diego); TANNENBAUM, Todd (University of Wisconsin)

Presenter: BRADLEY, Daniel (University of Wisconsin)

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