

Pegasus Workload Management System Evaluation Report

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The TIS team performed an evaluation of the Pegasus workload management system (WMS).

Pegasus WMS is grid middleware that plans and executes workflows composed of many interrelated jobs and data files. Pegasus requires Python 2.4 or higher, Java 1.6 or higher and local access to a Condor pool, version 7.6 or higher. Pegasus uses the Globus GRAM job manager to launch jobs on remote resources.

Pegasus uses XML directed acyclic graph (DAX) files to specify an abstract workflow. This format is shared by many workflow tools. While the DAX files can be hand edited, we followed Pegasus' recommendation and tested DAX file creation through its API. We also tested its command line tools for planning and executing workflows locally on a single machine, in a Condor pool and on remote XSEDE resources. We tested a number of simple error conditions.

We found Pegasus met the requirements for running workflows across grids and that it works reliably if everything is configured correctly. The evaluation team recommends that Pegasus be supported on XSEDE via the already supported Globus GRAM job launch facility. Pegasus will be of most use to experienced users who are familiar with Condor, Globus job submission and job queues.