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CS498

Artificial intelligence and grids: workflow planning and beyond
Gil, Y.; Deelman, E.; Blythe, J.; Kesselman, C.; Tangmunarunkit, H.;
Intelligent Systems, IEEE
Volume 19, Issue 1, Jan-Feb 2004 Page(s):26 - 33
Digital Object Identifier 10.1109/MIS.2004.1265882
Summary: A key challenge for grid computing is creating large-scale, end-to-end scientific applications that draw from pools of specialized scientific components to derive elaborate new results. We develop Pegasus, an AI planning system which is integrated in.....
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This paper is trying to use the power of grid computing and make it more user friendly for end-users. Grid computing significantly multiplies the impact of scientific research via large scale, end to end scientific application that uses specialized scientific application to derive new results. This is where their Pegasus system comes in, it is a planning system that integrates into the Grid environment, and takes in as input the desired results from the user and generates workflows to assess the required resources, and then submits the workflow for execution on the Grid. Before, most of this burden would fall on the users; this required them to have detail knowledge about the components of the Grid environment. This is great news for researches that are try to tackle projects that manipulate large quantities of data. Having a system that will automate the finer details of Grid Environment operations will greatly lighten the burden on researchers. Risks of workflows on Grid computing is that the system is dynamic, therefore some resource will be available sometimes, and optimal workflows changes.

Automatically composed workflows for grid environments
Blythe, J.; Deelman, E.; Gil, Y.;
Intelligent Systems, IEEE
Volume 19, Issue 4, Jul-Aug 2004 Page(s):16 - 23
Digital Object Identifier 10.1109/MIS.2004.24
Summary: Once the realm of high-performance computing for scientific applications, grid computing is rising as a key enabling infrastructure for resource sharing and coordinated problem solving in dynamic multiinstitutional virtual organizations. Grids build .....
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They are trying to take high level requirements and create workflows out of them, which are later submitted for execution on a grid environment. This requires the user to map what files are used, what code needs to be ran, give the file location including replicas, specify on what host it should be ran, and so on. This is typically an insurmountable burden for users who want to use the power of grid computing. The approach of this paper is a move forward automation, because it is not only desirable but also necessary for five key reasons: usability, complexity, solution cost, global cost, and reliability of execution.