



RESEARCH ARTICLE

Backfilling Strategies for Computational Grid System Load Balancing

Prakash Kumar¹, Pradeep Kumar², Vikas Kumar³

¹CSE Department, MTU, India

²CSE Department, MTU, India

³Eurus Internetworks, India

¹ Prakashkumar.ce@gmail.com; ² pradeep2345in@gmail.com; ³ vikas.kumarsec@gmail.com

Abstract— Grid is distributed computing infrastructure for advanced science and engineering that runs over the internet, potentially world-wide. Grid is highly controlled, with resource providers and consumers defining what is shared and the conditions of sharing. The goal of Grid computing is to create the delusion of a simple but large and powerful self-managing virtual computer out of a large collection of connected heterogeneous systems sharing various combinations of resources. Backfill is a scheduling optimization which allows a scheduler to make better use of available resources by running jobs out of order. Backfill locates jobs to run from throughout the idle job queue, it tends to moderate the influence of the job prioritization a site has chosen and thus may negate some desired workload steering attempts through this prioritization. Essentially filling in holes in node space, backfill tends to favor smaller and shorter running jobs more than larger and longer running ones.

Key Terms: - Grid computation; Load balancing; Scheduling; Cluster; Throughput; Conservative Backfilling algorithm; GAP Search

Full Text: <http://www.ijcsmc.com/docs/papers/August2013/V2I8201309.pdf>