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Exploiting Opportunistic Resources for ATLAS with ARC CE and the Event Service

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With ever-greater computing needs and fixed budgets, big scientific experiments are turning to opportunistic resources as a means
to add much-needed extra computing power. These resources can be very different in design from the resources that comprise the Grid
computing of most experiments, therefore exploiting these resources requires a change in strategy for the experiment. The resources
may be highly restrictive in what can be run or in connections to the outside world, or tolerate opportunistic usage only on
condition that tasks may be terminated without warning. The ARC CE with its non-intrusive architecture is designed to integrate
resources such as High Performance Computing (HPC) systems into a computing Grid. The ATLAS experiment developed the Event Service
primarily to address the issue of jobs that can be terminated at any point when opportunistic resources are needed by someone else.
This paper describes the integration of these two systems in order to exploit opportunistic resources for ATLAS in a restrictive
environment. In addition to the technical details, results from deployment of this solution in the SuperMUC HPC in Munich are
shown.

Tertiary Keyword (Optional)

Secondary Keyword (Optional)

High performance computing

Primary Keyword (Mandatory)

Distributed workload management

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