

Measuring the Performance and Reliability of Production Computational Grids

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Abstract: In this work we report on data gathered via a deployment of a monitoring and benchmarking infrastructure on two production grid platforms, TeraGrid and Geon. Our result show that these production grids are rather unavailable, with success rates for benchmark and application runs between 55% and 80%. We also found that performance fluctuation was in the 50% range, expectedly mostly due to batch schedulers. We also investigate whether the execution time of a typical grid application can be predicated based on previous runs of simple benchmarks. Perhaps surprisingly, we find that application execution time can be predicted with a relative error as low as 9%.

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