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Grid Information system for EGEE, scalability and performance assessment and plans

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Grid Information Systems are mission-critical components for production grid infrastructures. They provide detailed information which is needed for the optimal distribution of jobs, data management and overall monitoring of the Grid. As the number of sites within these infrastructure continues to grow, it must be understood if the current systems have the capacity to handle the extra load. EGEE is the worlds largest production grid infrastructure and hence puts the greatest demands on its information system.

Currently 230 sites publish 23 MBytes every 2 minutes into the system and single top level nodes have seen 2 million queries per day. We expect this to grow in the next two years by a factor 5 to 10.

This paper describes the current requirements for the EGEE information system obtained from monitoring the usage patterns. From this data, a number of test conditions are derived for determining the subsequent performance and scalability of a grid information system. The tests are then applied to the BDII, which is the information system implementation used by the EGEE infrastructure. The results are given and show the limits of the underlying OpenLDAP Server implementation used within BDII. As a consequence, new techniques and concepts for enhancing the performance are suggested.

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