A Performance Data Warehouse to Support a Workload Management Test Bed

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In the Database Systems Laboratory we are developing a framework that incorporates a number of DBMS workload management techniques to automatically control the workloads concurrently running in the system to ensure desired performance. These techniques include admission control, query scheduling, query resume/suspend and query throttling. We are building a test bed that implements autonomic control that will chose and institute the appropriate workload control mechanism under different circumstances.

Much of our work is experimental in nature, involving numerous runs of the system under varying circumstances while collecting the appropriate performance statistics. The test bed, thus, must support the collection, organization and analysis of the performance data produced by the experiments. In this project, you will develop a performance data warehouse that will store the performance data as well as the properties that characterize the data such as the experiment, the run, the parameter settings for the run and the metrics collected.

Knowledge of database design will be necessary.