

DB Workload Management through Characterization and Idleness Detection

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Abstract— It is difficult to handle the database (DB) workload due to the huge increase in data, the functionality demand from the user, and the rapid changes in data. It is not easy to manage the DB workload, which therefore leads to malnourishment. To get efficient results, there must be complete knowledge about the type and changes in workload. The versatility and complexity of DBMSs led the DB researchers towards new philosophy and thoughts. A novel approach is introduced for DB workload management through characterization, scheduling, and database idleness detection. In workload characterization, workload is observed, and effective workload characterization parameters are selected. After that, scheduling is performed in order to arrange the DB workload to reduce the waiting time for each workload. Lastly, database idleness is identified at run-time and exploited for system as well as user-initiated workloads to improve efficiency. The proposed approach for workload management is validated through experiments using benchmark workloads.

Keyword— Workload, Autonomic, Characterization, Idleness Detection, Scheduling.



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