Benchmarks for Mobile Database Access*

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ABSTRACT

While trying to evaluate the Cedar system in our paper, "Improving Mobile Database Access Over Wide-Area Networks Without Degrading Consistency" [1], we were struck by the absence of database benchmarks available for mobile platforms. With the increasing prevalence of mobile devices that provide access to remote data sources, we believe that a benchmark for mobile database access would be very valuable to system researchers. In response, we developed MobileSales, a benchmark that borrows heavily from TPC-App [2], the industry standard benchmark designed to model an online distributor system.

In this presentation, I will first discuss the properties of a good benchmark and the benefits of reusing or adapting available benchmarks and constructing new ones. I will then describe MobileSales and explain how a few simple tweaks adapted a server benchmark for mobile clients. This has the advantage of retaining the workload, queries, datasets, and read/write ratios of a publicly available and well understood benchmark. I will also talk about the workload used, how it can be modified for different settings, and how it is representative of various usage scenarios such as traveling salespeople and customer relationship management. Finally, I will discuss other possible applications, workloads, and traces that might be useful for the evaluation of mobile data access.

Categories and Subject Descriptors

C.2.4 [**Computer-Communication Networks**]: Distributed Systems; H.2.4 [**Database Management**]: Systems

General Terms

Performance, Experimentation

Keywords

mobile database benchmarks, relational database systems

1. REFERENCES

[1] TOLIA, N., SATYANARAYANAN, M., AND WOLBACH, A. Improving mobile database access over wide-area networks without degrading consistency. In *Proceedings of the 5th International Conference on Mobile Systems, Applications, and Services (MobiSys 2007)* (Puerto Rico, PR, June 2007).

[2] TRANSACTION PROCESSING PERFORMANCE COUNCIL. *TPC Benchmark App (Application Server): Specification*, 1.1.1 ed. San Francisco, CA, Aug. 2005.

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