



Towards a hybrid relational and XML benchmark for loosely-coupled distributed data sources

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Highlights

- Designed heterogeneous data sources for a hybrid version of the TPC-H enterprise.
- Developed hybrid LINQ queries over the relational and XML data sources.
- Evaluated the hybrid benchmark for loosely-coupled distributed data sources.
- Assessed query performance for two database products with various options.

Abstract

There are known benchmarks for the performance evaluation of relational and XML databases. However, there is an increasing demand for database applications that require access to heterogeneous loosely-coupled distributed data sources. This paper presents a hybrid benchmark based on TPC-H where the data sources are heterogeneous. Specifically, the paper describes the design of the relational and XML data sources as well as the query redesign in the LINQ query language, which supports queries over heterogeneous data sources. The results of a performance evaluation of the hybrid benchmark over various database products is included for untyped and typed XML with and without clearing the database cache.



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Keywords

Benchmark; Heterogeneous; LINQ

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Mahesh B. Chaudhari is currently a Sr. Software Engineer at Zephyr Health Inc. His primary responsibilities involve data modeling and enterprise integration, ontology development, algorithm design and incorporation into Zephyr Platform. Before Zephyr, he was a postdoctoral fellow at Arizona State University. He also has a Ph.D. in Computer Science from Arizona State University. His academic research interests focus on incremental view maintenance, condition monitoring over distributed heterogeneous data sources, and multiple query optimization. He has 2 years of teaching experience and is a recipient of PFF Emeriti Fellowship for excellence in research, teaching and mentorship.

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