



HAL
open science

Application Benchmark

Denilson Barbosa, Ioana Manolescu, Jeffrey Yu Xu

► **To cite this version:**

Denilson Barbosa, Ioana Manolescu, Jeffrey Yu Xu. Application Benchmark. Ling Liu and Tamer Ozsü. Encyclopedia of Database Systems, Springer, pp.99-100, 2009, 978-0-387-35544-3. inria-00431405

HAL Id: inria-00431405

<https://inria.hal.science/inria-00431405>

Submitted on 12 Nov 2009

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



A

Application Benchmark

DENILSON BARBOSA¹, IOANA MANOLESCU², JEFFREY XU YU³

¹Department of Computer Science, University of Calgary, Calgary, AB, Canada

²INRIA Future, Le Chesnay, France

³Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong, Hong Kong, China

Synonyms

Benchmark; Performance benchmark

Definition

An application benchmark is a suite of tasks that are representative of typical workloads in an application domain.

Main Text

Unlike a MICROBENCHMARK, an application benchmark specifies broader tasks that are aimed at exercising most components of a system or tool. Each individual task in the benchmark is assigned a relative *weight*, usually reflecting its frequency or importance in the application being modeled. A meaningful interpretation of the benchmark results has to take these weights into account.

The Transaction Processing Performance Council (TPC) is a body with a long history of defining and published benchmarks for database systems. For

instance, it has defined benchmarks for Online Transaction Processing applications (TPC-C and TPC-E), Decision Support applications (TPC-H), and for an Application Server setting (TPC-App).

Other examples of application benchmarks are: the OO1 and OO7 benchmarks, developed for object-oriented databases, and XMark, X Bench and TPoX, developed for XML applications.

Cross-references

- ▶ Micro-Benchmarks
- ▶ XML Application

Recommended Reading

1. Carey M.J., DeWitt D.J., and Naughton J.F. The OO7 benchmark. In Proceedings of the ACM SIGMOD International Conference on Management of Data, WA, USA. ACM, New York, NY, USA, pp. 12–21, June 1993.
2. Gray J. (ed.). The Benchmark Handbook for Database and Transaction Systems, (2nd edn.). Morgan Kaufmann, San Francisco, CA, USA, 1993, ISBN 1-55860-292-5.
3. Nicola M., Kogan I., and Schiefer B. An XML transaction processing benchmark. In Proceedings of the ACM SIGMOD International Conference on Management of Data. ACM, New York, NY, USA, 2007, pp. 937–948.
4. Schmidt A., Waas F., Kersten M.L., Carey M.J., Manolescu I., and Busse R. XMark: a benchmark for XML data management. In Proceedings of the Very Large Database Conference. Hong Kong, China, 2002, pp. 974–985.
5. Transaction Processing Performance Council. Available at: <http://www.tpc.org/default.asp>
6. Yao B.B., Özsu M.T., and Khandelwal N. X Bench benchmark and performance testing of XML DBMSs. In ICDE. Boston, MA, USA, 621–633, 2004.