Blink: Not Your Father's Database!

International Workshop on Business Intelligence for the Real-Time Enterprise

BIRTE 2011: Enabling Real-Time Business Intelligence pp 1-22 | Cite as

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Conference paper

Part of the Lecture Notes in Business Information Processing book series (LNBIP, volume 126)

Abstract

The Blink project's ambitious goals are to answer all Business Intelligence (BI) queries in mere seconds, regardless of the database size, with an extremely low total cost of ownership. It takes a very innovative and counter-intuitive approach to processing BI queries, one that exploits several disruptive hardware and software technology trends. Specifically, it is a new, workload-optimized DBMS aimed primarily at BI query processing, and exploits scale-out of commodity multi-core processors and cheap DRAM to retain a (copy of a) data mart completely in main memory. Additionally, it exploits proprietary compression technology and cache-conscious algorithms that reduce memory bandwidth consumption and allow most SQL query processing to be performed on the compressed data. Ignoring the general wisdom of the last three decades that the only way to scalably search large databases is with indexes, Blink always performs simple, "brute force" scans of the entire data mart in parallel on all nodes, without using any indexes or materialized views, and without any query optimizer to choose among them. The Blink technology has thus far been incorporated into two products: (1) an accelerator appliance product for DB2 for z/OS (on the "mainframe"), called the IBM Smart Analytics Optimizer for DB2 for z/OS, V1.1, which was generally available in November 2010; and (2) the Informix Warehouse Accelerator (IWA), a software-only version that was generally available in March 2011. We are now working on the next generation of Blink, called BLink Ultra, or BLU, which will significantly expand the "sweet spot" of Blink technology to much larger, disk-based warehouses and allow BLU to "own" the data, rather than copies of it.

Keywords

Business Intelligence database management system query processing main-memory multi-core data mart OLAP accelerator appliance compression memory bandwidth cache-friendly algorithms data dictionary encoded data

Preview

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About this paper

Cite this paper as:

Barber R. et al. (2012) Blink: Not Your Father's Database!. In: Castellanos M., Dayal U., Lehner W. (eds) Enabling Real-Time Business Intelligence. BIRTE 2011. Lecture Notes in Business Information Processing, vol 126. Springer, Berlin, Heidelberg

- DOI https://doi.org/10.1007/978-3-642-33500-6_1
- Publisher Name Springer, Berlin, Heidelberg
- Print ISBN 978-3-642-33499-3
- Online ISBN 978-3-642-33500-6
- eBook Packages Computer Science

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