Introduction to the CopperEye DataBlade for Informix

Washington DC IIUG, January 27, 2005

Introduction

- CopperEye is an enterprise software company with corporate headquarters in Bath UK that has achieved considerable success as an IBM business partner

- CopperEye's core intellectual property is a new, patent-pending data indexing algorithm that is 100 times faster than the B-Tree for index maintenance

- The CopperEye DataBlade for IDS incorporates CopperEye indexing to deliver enhanced performance for Informix v9.x

- We enable high-performance, large data repositories required in high transaction volume environments

- Our technology complements commercial database management systems

- We provide the capability to load data fast while keeping the mission critical systems on-line and available for normal operation

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Alternative to standard B-Tree

General purpose

High performance

Large volumes

Versatile

Tuneable

Flexible queries

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Standard index
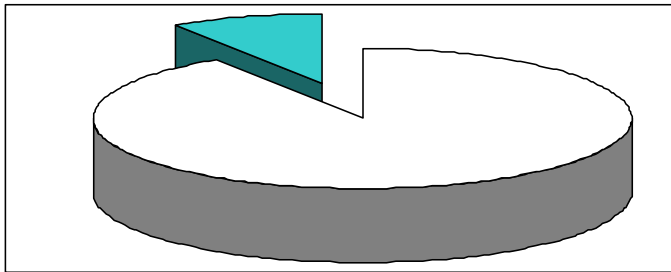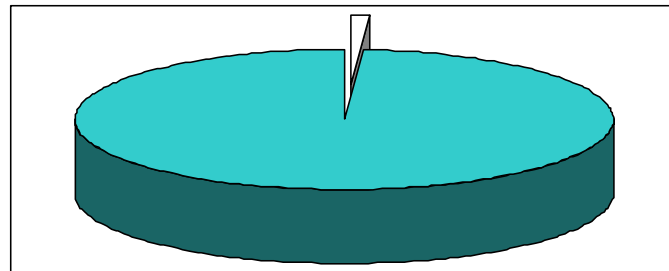
Poor data loading performance

Resource hungry

Heavy checkpointing

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Queries

- ☐ Table
- ☐ Index

Updates

- ☐ Table
- ☐ Index

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Fast for queries

- Few or no disk reads

Slow for updates

- Disk bound
- User contention
- Limited indexes
- Limited volumes

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Up to 100 times faster

Up to 90% memory saving

Up to 99% disk I/O saving

"All of the conventional indexing techniques currently in use are twenty or thirty years old. That is not to say that there is anything wrong in venerability. But it should hardly come as a surprise that modern technology should be capable of producing something that is superior."

Bloor Research

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SDK

- This is a robust, functionally complete set of software components that provide all operations necessary to create and manage a database index as part of a comprehensive database system

The CopperEye DataBlade for Informix

- This is a software product that dramatically improves the timeliness and availability of data for Informix Dynamic Server customers dealing with large data volumes.

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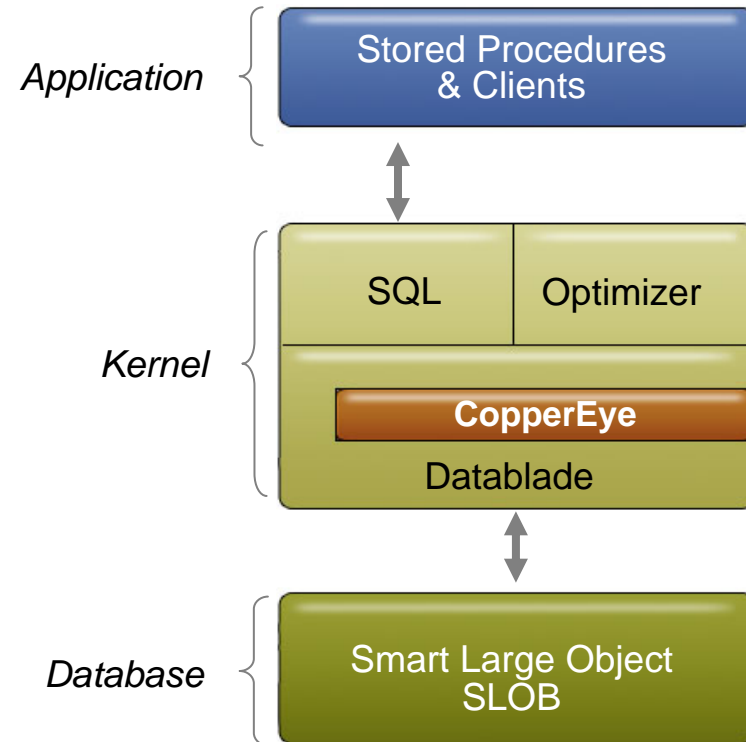
C Object code

Standard blade framework

Smart LOB storage

Lightweight or Heavyweight I/O

Cache independent

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Key Solution Characteristics

- Straightforward implementation

- Seamless integration with the Informix environment

- CopperEye indexing is completely transparent to all applications and third party tools

- Low risk solution built on proven indexing technology

- Makes full use of the features of CopperEye indexing

- Massive performance benefit

Application

Stored Procedures & Clients

Kernel

| SQL | Optimizer |

CopperEye

Datablade

Database

Smart Large Object SLOB

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Create index using…

Drop index

Transparent

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IBM® Conducted Benchmark

Performance tests conducted in November, 2004 at the Dallas pSeries Benchmark Center

Purpose was to compare B-Tree and CopperEye index performance on identical operations to discover strengths and weaknesses of the technology.

Tests were executed on p670 with 2 LPARS. Each LPAR had

- 8 (1.1 GHZ) CPUs,   64 GB RAM
- 8 x 18 GB through (2) SCSI-3 adapters (internal)
- 8 RAID 10 ESS 800 (Shark) LUNs, 512 GB per RAW LUN, 4 Fiber adapters
- Informix® Dynamic Server 9.40.UC5

© COPPEREYE

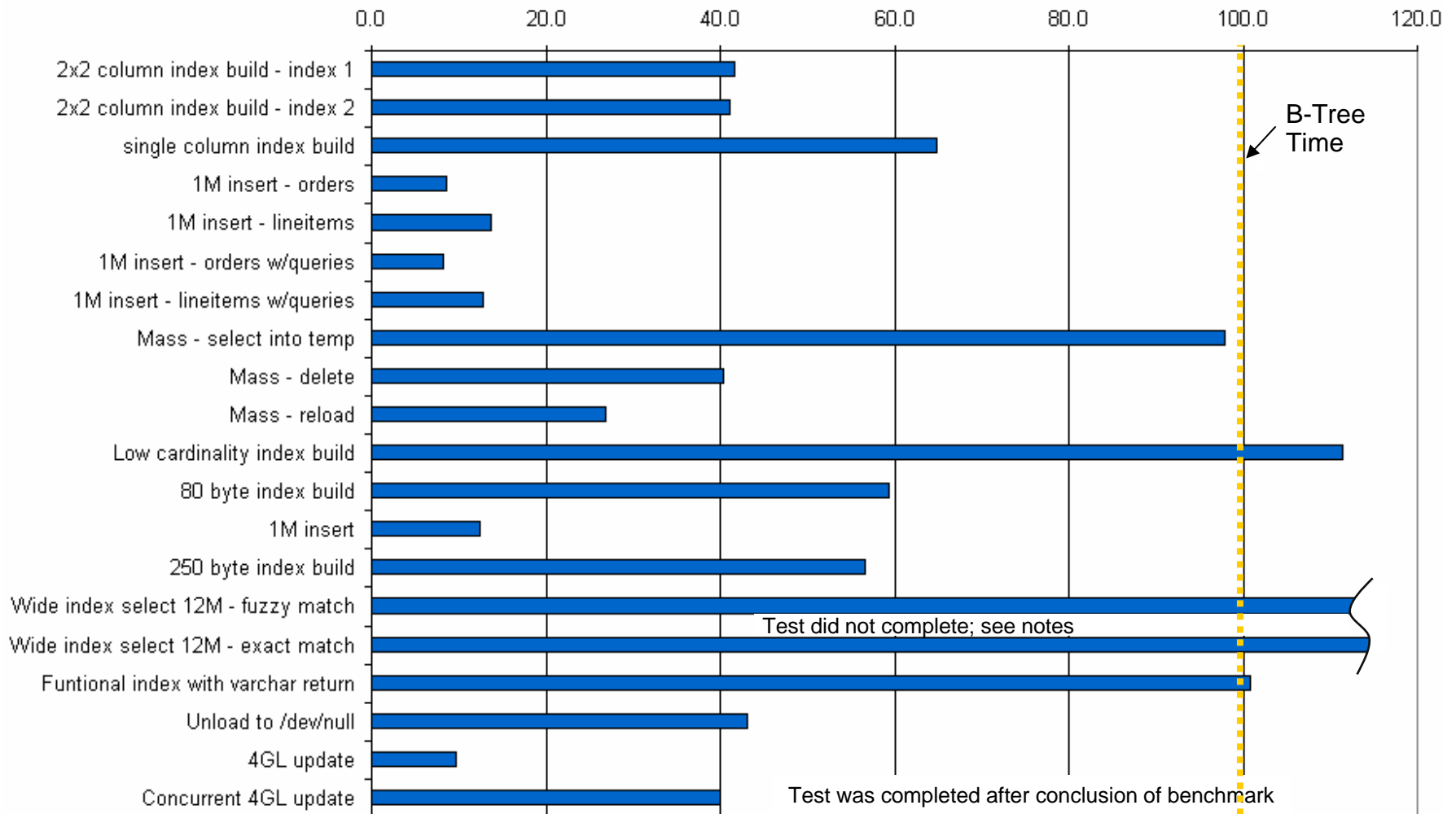Used the TPC-H benchmark schema and data generation utility

- Used the "orders" and "lineitems" tables

Tests included

- Index builds on pre-filled tables
- Incremental loads to indexed tables with and without concurrent query accesses of varying selectivity (.01 to .001% of the rows returned)
- Mass delete then re-load with different key values
- Index creation on pre-loaded "wide" character column, incremental insert
- Index build on pre-loaded low cardinality column, incremental insert
- 4GL-based random delete and inserts (different keys) in a single transaction
- 4GL-based multiple concurrent users, OLTP environment

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DataBlade Dallas Benchmark

Normalized Results; B-Tree = 100

Carlton Doe - Informix Author and IBM Technical Sales Manager, Former IIUG President and one of the founders.

The thing FLIES !!!!!!

- Significant improvements in index build and update times
- Easily supports batch loads with in-place indexes
- Little to no impact on loads while queries executing
- Generally excellent query results

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DataBlade Summary

Exceptional performance

Resource efficient

Feature rich

Operationally secure

Mature technology

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The CopperEye DataBlade is Ideally Suited to Customers Who...

- Regularly load large batches of data into an existing database

- Are having difficulty loading data within the available batch window

- May be discarding or otherwise limiting what data is loaded in order to fit within available batch window(s)

- Have an unacceptable balance between number of indexed columns and adequate support for queries

- Would benefit from having the database fully available during loads

- Want to maximize database and application performance on existing hardware

- Need to reduce the risk and uncertainty of server consolidation efforts

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Webinar

- When: February 1, 2005 11:30 EST, length: 1 hour
- To Register: Visit www.coppereye.com and click the webinar link on our home page.

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