

In Version 4.5, *eXtremeDB* Embedded Database Gains Speed, Scalability and Developer Tools

*New integration with Solace Message Router appliance accelerates communication in *eXtremeDB* High Availability deployments.*

Tamworth, Staffs & Issaquah, WA — November 16, 2011 — Phaedrus Systems, the leading supplier of tools and services to the developers of embedded safety-critical and high-integrity systems, today announced version 4.5 of the *eXtremeDB*® In-Memory Database System (IMDS) from McObject®. The upgrade improves performance in many key features, and introduces an integration option with third-party message router hardware to accelerate communication in fault-tolerant *eXtremeDB* High Availability deployments. Version 4.5 also boosts developer productivity, with enhancements including a new Java application programming interface (API), improved SQL and High Availability interfaces, more efficient and scalable versions of popular database indexes, and more.

eXtremeDB 4.5 adds a Java Database Connectivity (JDBC) driver for developing applications and accessing existing *eXtremeDB* databases in Java. The driver supports JDBC version 4, level 4 and is included with *eXtremeSQL* (*eXtremeDB*'s SQL ODBC interface). *eXtremeDB* already includes a Java Native Interface (JNI) with all editions; JDBC can deliver higher efficiency than native APIs for certain operations, such as complex queries and mass updates/deletes.

eXtremeDB 4.5 targets mission critical applications in the high performance computing sector by integrating the database system's High Availability (HA) edition with Solace Systems' Solace Message Router appliance. The integration enables the Solace device to serve as the communication channel in an *eXtremeDB*-HA deployment.

With Solace Systems' ultra-fast hardware-based messaging middleware as the "wire" between master and replica database nodes, the Solace router's guaranteed message delivery feature enables *eXtremeDB*-HA to use a streamlined HA protocol and to eliminate one part of the messaging process (namely the "message acknowledgement" step). The result is less network traffic, reduced latency and a significantly faster transaction rate.

"The new *eXtremeDB* 4.5 bundles major improvements with many new features and refinements of existing capabilities. JDBC enjoys wide familiarity among enterprise developers, and the new driver meets a growing need as *eXtremeDB*'s use expands beyond its embedded systems origins," said Steve Graves, McObject CEO and co-founder. "The *eXtremeDB* High Availability - Solace Message Router integration emerged from a successful McObject consulting project, and has applicability in low latency/high frequency trading, network infrastructure, and other uses where mission critical infrastructure applications demand both fault-tolerance and low-latency."

Additional enhancements in *eXtremeDB* 4.5 include the following:

Improved *eXtremeSQL* and *eXtremeDB* High Availability APIs. *eXtremeSQL* adds support for static virtual tables, extends the JOIN...ON clause with new operators, adds support for Patricia trie indexes via SQL, and optimizes multiple SQL statements. The *eXtremeDB*-HA API has been streamlined for more efficient development with simplified parameters and other improvements.

Better R-tree and hash indexes. Previously, developers sized hash indexes when defining a database. An overly small size estimate could lead to performance-reducing collisions. *eXtremeDB* 4.5 introduces a dynamic hash index that grows as data is added, for greater speed and scalability. *eXtremeDB*'s implementation of the R-tree index – used in mapping/geospatial applications – is faster and now includes the MCO_NEIGHBORHOOD search type, which facilitates a search for index entries within a given radius of a point, to simplify searches like “find the nearest gas station.”

New database browser capabilities. The *eXtremeDB* browser utility gives developers a view into databases and a mechanism to list and modify objects. Version 4.5 adds tools that enable developers to create browsers for end-users to explore database content and data interrelationships within the context of their applications. It includes sample code showing how to create such an application-specific browser.

Improved transaction managers. The *eXtremeDB* multiple-reader, single writer (MURSIW) transaction manager has added a “mostly read” mode to accommodate application data access patterns that write to the database only occasionally. It enables *eXtremeDB* to remove some locks, leading to better overall performance. This mode has been used in router applications to access configuration data that is frequently read but rarely modified. McObject also optimized the multi-version concurrency control (MVCC) transaction manager in version 4.5.

Faster transaction logging. *eXtremeDB* Transaction Logging edition offers significantly faster performance via improved buffering and lightweight locking mechanisms in version 4.5.

About McObject

Founded by embedded database and real-time systems experts, McObject offers proven data management technology that makes applications and devices smarter, more reliable and more cost-effective to develop and maintain. McObject counts among its customers industry leaders such as BAE Systems, Siemens, Phillips, EADS, JVC, Tyco Thermal Controls, F5 Networks, CA, Motorola and Boeing. McObject, based in Issaquah, WA, is committed to providing innovative technology and first-rate services to customers and partners. The company can be reached at +1-425-888-8505, or visit www.mcobject.com.

McObject and *eXtremeDB* are registered trademarks of McObject LLC. All other company or product names mentioned herein are trademarks or registered trademarks of their respective owners.

About Phaedrus Systems

Phaedrus Systems Limited is the UK's leading specialist in the support of engineers at all stages of embedded safety-critical and high-integrity projects. The company is IAR's distributor in the UK. Other tools available include requirements capture for IEC 61508, EN 50128 and nuclear applications; requirements tracking and competency tools; estimation software; SIL3 RTOS; hi-rel embedded database; compiler validation reports and reliability/failure software. Consultants have experience working on automotive, rail and aerospace applications, meeting standards such as IEC 61508 SIL4, and D0178B. Backing these is a wide range of other relevant embedded tools.

Independent advice is strengthened by the company's founder being an active participant in several standards bodies, including ISO C, C++ and IEC 61508-3, and a principal author of MISRA-C:2004. Phaedrus Systems is based in Tamworth, Staffordshire. More information is available on the website www.phaedsys.com

Further information

Chris Hills,
Tel: +44 1827 259546, Email: chills@phaedsys.com