

# ObjectStore Devises EPC Database

Database developer ObjectStore creates a solution that can collect and process in real time the vast amount of data produced by EPC networks.

By Jonathan Collins

Jan. 21, 2004—Database developer [ObjectStore](#) has announced an edition of its in-memory database designed specifically for data collected by EPC networks and that will enable its customers to collect and interrogate data from EPC networks in real time.

“As RFID technology matures, applications will gain the ability to track products throughout the supply chain, down to the item level, and the amount of data generated will overwhelm traditional software solutions,” says Mark Palmer, director of product management at ObjectStore, which is based in Bedford, Mass.

According to the company, its new EPC-compliant Real Time Event Engine database, launched last week at the National Retail Federation Convention & Expo in New York City, has the capacity and real-time processing capabilities to collect, correlate and propagate the huge amount of data produced by an EPC network. An in-memory database lets the RFID system write data to RAM—using in-memory constructs like a Java object graph—before finally committing that data to be stored on a disk. This differs from a traditional database, which is designed to take very small, atomic changes to data and commit them, one by one.

“If you committed every piece of EPC data as it came off a reader—picking an extreme example—you'd be backed up in about two seconds. You need to capture tons of data in memory, then commit to disk in a batch,” says Palmer.

The in-memory capability also enables data to be accessed and queried at a speed that far outpaces that of traditional databases and transactional systems, according to ObjectStore. “Data accessed from memory is about 1,000 times faster than data accessed from disk, and we have been granted a patent on our Virtual Memory Mapping Architecture (VMMA) that powers this,” says Palmer.

Although there are other in-memory databases on the market, including the Real-Time Event Processing System from [TimesTen](#), ObjectStore maintains it has the only one with a patented architecture like VMMA. The new software, which is expected to be available by the end of March, was adapted from ObjectStore's existing Real Time Event Engine, which the company launched for applications in the financial and telecommunications industries. Users of the ObjectStore Real Time Event Engine platform include Amazon.com, Nomura Group, Shell Global Solutions and Delta Airlines.

ObjectStore says its core Event Engine captures, caches and queries data close to the edge of network. The goal is to keep and process the bulk of that data, eliminating frequent accessing of back-end databases and the huge amount of network traffic that would be required to send that data back to centralized querying applications.

“This database enables companies to consolidate information close to the EPC network, where tools such as

pattern recognition can examine the data and only then send on relevant data on to corporate ERP applications,” says Palmer.

According to the company, its EPC-compliant Real Time Event Engine is the first real time in-memory database (REID) to support EPC code and RFID Savant interfaces, which connect Savants to other applications and middleware. The Engine complies with EPCglobal Class 1 and Class 0 protocols as defined by the Version 1.0 specification, as well as the required elements of the EPCglobal Savant standard interfaces. EPC support includes optimizing the storage mechanism to work with the EPC numbering scheme.

ObjectStore says that when companies implement an RFID network, it’s critical that they deploy an EPC-compliant relational database management system. Otherwise, the database couldn't handle the load of data without extreme EPC filtering and would be restricted from using tags integrated with sensors (temperature, location, time, etc.) that would burden the system with even more data. Palmer says that companies could try to build a layer on their existing relational database system to simulate EPC compliance, but such a solution would be extremely difficult to create and scale.

ObjectStore has priced its new EPC database offering at \$8,000 for a single user installation.

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