

## The Top Five Reasons ISVs and Corporate IT Departments Should Consider an Embedded Database for Their Next Project

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## Executive Overview

There are numerous business benefits of using embedded databases during the lifecycle of business application development. The purpose of this white paper is to provide CIOs, IT Managers and Business Development Managers with the top five reasons to consider choosing an embedded database for their next project.

Embedded databases can lead to cost reductions in software development and software maintenance, with additional financial benefits realized during the deployment and support of the deployed application.

For the above reasons and more, IDC estimates the embedded database management system market is expected to grow to \$3.2 billion by 2009, for a compound annual growth rate of 11.4%. Some of the driving factors for the increase in the embedded database market are:

- More demand for self-contained packaged applications
- Firms will favor applications with embedded databases to avoid unnecessary RDBMS cost escalation over those that will require an increase in fees paid to their DBMS provider

Using a proven and reliable embedded database can provide application developers with a worry-free, zero administration application. Additionally, by choosing the right solution - ISVs and Corporate IT departments can reduce support costs while improving end-user performance ultimately distributing higher performance applications.


## Business Value of Embedded Databases

Embedded databases can be integrated into vertical solutions and other business applications to manage the organization of data storage. The approach is much like a car that is being assembled by a car manufacturer. The engine might come from another supplier and added during the development of the car. It makes financial sense for car manufacturers to buy external parts for their cars for the simple reason that the supplier provides the best-of-breed engine, allowing the car manufacturer to focus on what they do best. The same is true for software manufacturers. By embedding best-of-breed technology into their solution they reduce research and development and increase profits.

### ***OVERVIEW***

This document is for CIOs, IT and Business Development Managers who need to provide business solutions to the periphery of their organizations (such as work-groups or branch offices, remote employees or employees who are using lap-tops in their day to day work) and/or Independent Software Vendors (ISVs) selling business solutions to external customers. We will use the term 'customer' to

**Using embedded databases is both a cost and a positive image factor**



note either an internal or external customer using your business solution.

If you are looking for a cost-effective solution that improves end-user satisfaction, an embedded database makes good business sense. Before you make a commitment to embedded database technology, it makes sense to think about all the features, functionality and the Total Cost of Ownership (TCO) carefully. After a business solution is developed, it may be in use for several years - and maintenance costs typically outweigh the initial costs of development by 3 to 1. With that knowledge, it is best to think about the long-term impact of your decision up front, to avoid a failed project in the end.

**Installation support for a large user group can become very expensive when a complex database is chosen**

### ***Business Advantages of Embedded Databases***

Solutions utilizing embedded databases benefit in two major ways. First, the brand image of a well-known database manufacturer that shines on the application and application provider, giving end-customer a clear message of a trustworthy solution. Secondly and most importantly, the positive monetary effects of using embedded databases. This section covers why and how embedded databases help keep application development, application maintenance and application support costs as low as possible.

#### **1. Very Low Cost Saving Maintenance**

Wouldn't you like to deploy applications to end-users that are so easy they require no IT intervention? Good embedded database technology provides significant value for applications being deployed where there is little to no IT personnel available to install and maintain the application as most embedded databases require little to no IT administration, and minimal maintenance.

#### **2. Decrease Installation Support**

To get a single user up and running the effort typically would be negligible, however, as the solution begins to proliferate and deployed to larger and larger groups, installation and configuration support can become resource intensive and costly. Imagine, as the number of users increase, the volume of support calls it would require to get the application running efficiently. The cost of a large support team can be significant, and often in the case of free software, the cost of the support will outweigh the initial advantage of free software.

Another advantage is to control the versions of databases that are 'rolled out' with the end-user application. As the database is embedded in the solution – the customer's support team knows exactly the specific database version numbers, and are more able to quickly diagnose technical issues or provide known answers to version specific problems. Thus reducing support effort and costs.

Embedded databases provide a great alternative to ISVs and IT organizations looking for self-maintaining solutions that require little to no-IT intervention for end-user applications.

**End-users should not need to know that they are using a database with their solution**

### **3. Easy, Automatic Upgrades**

When looking for an embedded database for large application deployments it is important to choose a solution that has automatic upgrade capabilities, otherwise, upgrades can become a substantial hidden cost.

The main question to ask is whether the database can automatically be upgraded to a new version without human intervention? If user interaction is required, more often than not, end-users will have difficulty installing software updates and will require help from support increasing the support costs of the application provider. Another important point is that the chosen solution has the ability to upgrade without the need to do an unload/reload of data, which can be time and resource intensive.

Choosing the right embedded database is a way to future proof your investment and ensures you don't run into increased support costs as the number of users increase.

### **4. Decrease Development Time**


The right embedded databases can help you decrease development time by offering an open, easy to use IDE-integrated database connectivity. Whatever programming language or IDE you use, the embedded database of your choice should support it well. Just having an ODBC driver on Windows® is not enough for fast and cost effective software development. On Windows, embedded databases need to provide powerful OLE DB and .Net Data Providers to be well integrated into the Visual Studio.Net® IDE to take advantage of the .Net database access functionality. For the Java™ side, a powerful JDBC driver that integrates well with Eclipse and other Java-IDE's allow for fast Java application development. Some embedded database providers do provide their own Rapid Application Development tool for fast database application development. Examples are GUPTA® Team Developer® and Sybase® PowerBuilder®. These tools can save large amounts in application development of database business applications.

### **5. End-user transparency**

Embedded databases often provide applications with the power of managing and storing data. One of the benefits that extend to the end-user is the transparency of the database within the application. What this translates into is that the end-user runs their applications and they never have to manage a database or install a database. They install their application and the database seamlessly installs and works without human interaction. Typical database functions like backups can be called from within the user application by directly calling the database API (application programming language).

Due to the transparent feature of embedded databases, the embedded database vendors are often as transparent as their technology. There are vendors whose technology powers mission critical applications, but they do it behind the scenes.

CAM Commerce chose GUPTA's SQLBase® to build their Point of Sale and Inventory Management solution. CAM provides a great example of



a company understanding the importance of selecting the right embedded database to power their application. CAM chose SQLBase for its transparency and ease of administration, and due to the zero-administration requirements of SQLBase, CAM's customer base benefits as does CAM, through reduced support and maintenance costs.

Another issue facing retailers is that retail solutions currently on the market do not offer the tight integration of the front office and back-office application. By using SQLBase, CAM Commerce is the leader in their space providing a "one source solution". CAM's goal is to provide a simple, affordable and powerful "end-to-end" commerce solution for traditional as well as Web retailers to manage their businesses. In essence, a "total" solution for all primary business functions from one supplier without third party interfaces or links. This includes managing inventory, processing sales orders, point of sale, all seamlessly.

The most important part in the decision for a database should be the TCO, which takes into account not only software purchase prices, but operations of this software in a three year timeframe. We believe GUPTA's SQLBase TCO outperforms its competition such as Oracle® XE and MySQL® by far – so even though the software of the competition is free - SQLBase remains the top choice for embedded solutions and SME/workgroup databases.

### ***Who can take Advantage of Embedded Databases***

Any company or developer who is looking to build business applications that are end-user friendly, where there is little to no IT support, and/or where there are distributed users, should consider using an embedded database. Embedded databases decrease development time, decrease support, increase application reliability while improving the overall end-user experience.


#### **ISVs**

ISVs are providing vertical business solutions to their customers. Most business solutions need data storage, and using an embedded database for that makes sound business sense as embedded databases can reduce development time, application support effort and overall investments into the solution - giving ISVs more room for marketing or further development efforts.

#### **Enterprises**

Enterprises having a mobile Sales force can use laptop applications to create on customer site offers and orders. Local datastores are important for these applications because wireless access is expensive and error prone in buildings. Embedded databases store inventory, product data and order data for applications to be truly independent of the data center. Entered orders and offers can be easily replicated with the central datastore from the sales employee's home office. A good example for this type of solutions are mobile insurance or banking solutions, where Sales people need to create offers and orders based on customer input.

**ISVs and Enterprises can leverage an embedded database to reduce their development and deployment cost**



Another type of application that is made for customers of an enterprise is a procurement solution that automatically reorders when stock is lower than defined limits and allows customers to own the order process. Applications like that help to drive revenue and increase customer satisfaction. Hoffmann Group, the largest tool manufacturer in Europe, uses an e-procurement solution as a give away to their customers. The customers are using the application to maintain their stock of Hoffmann tools and to order missing items. The solution allows customers to add other providers as well, so the software has become an important part of the IT of Hoffmann customers.

## **GUPTA® SQLBase® Embedded Database**

GUPTA SQLBase is a popular embedded database that has over a million deployments worldwide. SQLBase is that transparent component powering mission critical applications and millions of people use GUPTA SQLBase every day without knowing it. Businesses use solutions based on GUPTA SQLBase as part of their core business solutions. Examples are CRM, Financials, ERP and Shipping applications.

### ***SQLBase Business Value***

The single most important business value of SQLBase is its easy installation and maintenance free operation. This enables ISVs and internal IT Departments to embed the database into applications and deploy these applications with little to no support effort. The deployed applications can run without administrators constantly monitoring the application saving a lot of money otherwise necessary for database maintenance.

### ***SQLBase Competitive Value***

For over 20 years, SQLBase has been a leader in user experiences due to its overall ease - ease of use, ease of installation and ease of maintenance. No other database, free or commercial, offers such a high value for embedded software solutions. In fact, some of our current customers have been tempted to try free database software. At first glance they feel they can cut costs, but they soon realize the purchase price is not the only cost factor and often not the largest cost factor for deploying database driven applications. Due to the nature of the product, an application, there are the hidden costs of installation support, maintenance and upgrades.

An application typically has a lifecycle of a certain number of years, and for ISVs the objective is to recruit end-users. So, when a customer considers the increase in support as the number of end-users increase, and the cost of installation and maintenance, free is no longer free. By cutting or largely reducing these factors, more savings occur than would if you go with free database software. In the end, making the right decision about commercially embedded databases can save you money and time.

There are many examples of database buyers choosing SQLBase over SQL Server or free databases because they've identified SQLBase as the better long-term solution in terms of overall total cost of ownership. In

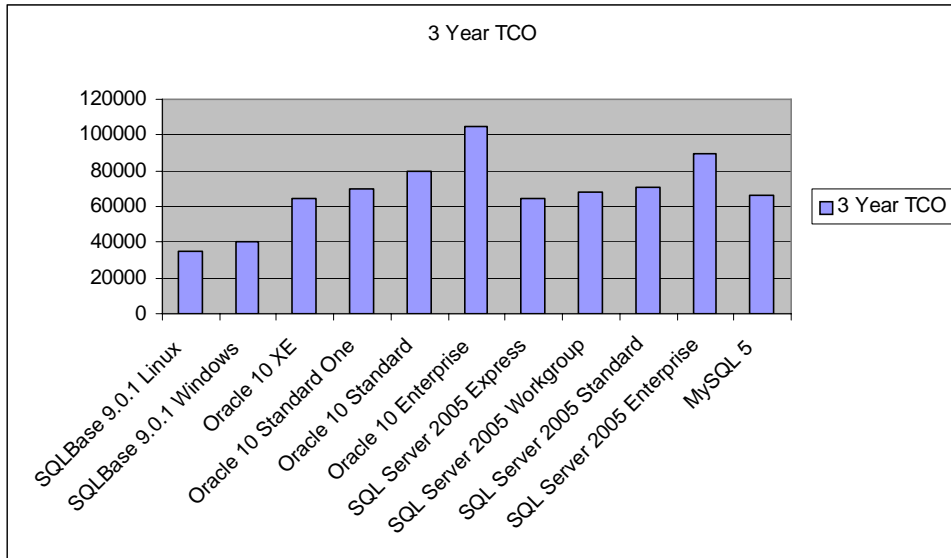
**SQLBase offers  
very low Total  
Cost of  
Ownership**

the long run, SQLBase is more cost-effective due to zero-administration, end-user transparency, flexible pricing, and automatic upgrades. The same benefits apply to workgroup servers. The key interest of workgroups is functioning applications. Workgroups don't have administrators available to install, manage and tune their database servers.

**Database TCO Analysis**

SQLBase is renowned for its DBA-less operations that reduce database administration to nearly zero. This section of the TCO analysis illustrates how much you can save by deploying SQLBase on Linux® and Windows.

**3 Year Total Cost of Ownership Details**



SQLBase remains below \$40,000 for a three year TCO calculation. The closest competitor's are above \$60,000. GUPTA SQLBase can save you more than 30% of cost during a three year period!

## Detailed SQLBase TCO Overview

	Product	License Cost	Admin Cost	System Cost	3 Year TCO
	SQLBase 9.0.1 Linux	4995	18000	12000	34995
	SQLBase 9.0.1 Windows	9995	18000	12000	39995
Linux	Oracle 10 XE	0	52500	12000	64500
	Oracle 10 Standard One	4995	52500	12000	69495
	Oracle 10 Standard	15000	52500	12000	79500
	Oracle 10 Enterprise	40000	52500	12000	104500
Windows	SQL Server 2005 Express	0	52500	12000	64500
	SQL Server 2005 Workgroup	3899	52500	12000	68399
	SQL Server 2005 Standard	5999	52500	12000	70499
	SQL Server 2005 Enterprise	24999	52500	12000	89499
	MySQL 5	1785	52500	12000	66285

Based on the above information, the most important cost factor of owning a database is the administration cost. Databases that successfully reduce or eliminate manual maintenance are the most cost effective solutions for commercial software projects that need to deploy to a larger IT un-savvy user group such as tax software for small enterprises or any other ERP and CRM solution for vertical markets like automotive, insurance, health care and others.

The assumptions for the TCO study are:

- We used the license cost or subscription for three years (MySQL).
- The SQLBase admin cost is based on a three year telephone support contract. This covers SQLBase maintenance as there is no need for constant database administration.
- For the other databases we are assuming that one DBA can manage up to four database installations. The annual DBA salary is calculated with \$70,000.
- The system cost is a high end Dell server that includes three years on site maintenance.
- The license cost is a per processor license for SQL Server and Oracle and a per server license for SQLBase and MySQL.

For more information visit <http://www.guptaworldwide.com>.