

EnterpriseDB: An Evolution in Scalability and Support

Judith Hurwitz





© Copyright 2009, Hurwitz & Associates



All rights reserved. No part of this publication may be reproduced or stored in a retrieval system or transmitted in any form or by any means, without the prior written permission of the copyright holder. Hurwitz & Associates is the sole copyright owner of this publication.

■ 233 Needham Street ■ Newton MA 02464 ■ Tel: 617-454-1030 ■

www.hurwitz.com





EnterpriseDB: An Evolution in Scalability and Support

It is a complicated time for companies trying to keep up with important innovations in their technology infrastructure without having to replace their existing investments in everything from legacy applications to complex databases. The reality in today's market is that companies must continue to upgrade their technology or risk falling behind their competition. Companies are taking many paths to confront this issue. Some companies are moving to a Service Oriented Architecture in order to encapsulate their existing valuable knowledge into a reusable form. Other companies are looking to sophisticated open source software to either supplement or replace aging systems. In addition, companies are looking for the right partners to support their needs for reliability. The reality is that there is no one approach that will solve all customer problems. What works for many customers is to select a hybrid solution – a combination of leveraging existing investments, a reliable support infrastructure combined with investments in emerging technologies. This hybrid approach can also strengthen the value of the technology a company has already invested in.

In this paper, we will provide insights into one solution intended to provide this type of hybrid approach to customers. EnterpriseDB is a five-year-old commercial database company that has leveraged the open source PostgreSQL platform.

While there are numerous open source database products in the market, PostgreSQL is considered one of the two leaders (along with MySQL). PostgreSQL was based on a research project sponsored by the Defense Advanced Research Projects Agency (DARPA), the Army Research Office (ARO), and the National Science Foundation (NFS) and developed by Michael Stonebraker at the University of California at Berkeley. It was designed to be an object-relational database management system. Over the next decade, the system evolved to the point where there is a vast community that supports its development.

EnterpriseDB found that it could leverage the sophistication of the open source community that had formed around PostgreSQL and add commercial elements and support to the foundation. In its most recent product release, Postgres Plus Advanced Server 8.3R2, EnterpriseDB has expanded its flagship product offerings based on two key factors:

- Scalability through new approach to distributed caching
- Enhanced support for Oracle compatibility

In this next section, we will address each of these capabilities since together they accurately reflect EnterpriseDB's most recent market focus.

Scalable Cache

Postgres Plus Advanced Server is designed to handle high transaction processing loads. To improve scalability, EnterpriseDB has made changes to the way it handles database scalability and performance through a feature it called Infinite Cache. This capability is based on the open source memcached technology. Memcached is an application neutral system that has been commonly used to improve performance of dynamic web applications by improving the database loading process.



EnterpriseDB: An Evolution in Scalability and Support

It is well understood that database performance can be dramatically improved if data can be stored in memory rather than on disk. In essence, through the Infinite Cache capability, EnterpriseDB designed a database scaling solution that caches frequently-accessed data in distributed memory, hereby keeping that data highly available to referencing applications. In addition, the system management overhead is controlled by the database to help enhance performance. Importantly, the Infinite Cache technology is invisible to applications so when customers add cache memory to their infrastructure all Advanced Server applications immediately have use of the additional resources. An additional benefit for customers is that because of the scalability, customers can use commodity hardware and can avoid specialized programming to gain performance. According to the company, Infinite Cache can improve scalability for read application loads by between 10 to 20 times performance gains.

Support for Oracle Compatibility.

Compatibility with Oracle is what put EnterpriseDB on the map. While many companies that have Oracle licenses are not in a position to move off of Oracle, there are other companies that are creating new projects that are looking seriously at PostgreSQL. The benefits of this approach are twofold: Enterprise DB has significantly enhanced its Oracle compatibility features and it enables customers to leverage their existing skills.

Oracle Compatibility.

EnterpriseDB's goal is to enable customers to run their Oracle applications without having to rewrite code. Compatibility has always been an important feature of EnterpriseDB. However, in this new release of Advanced Server Plus, EnterpriseDB has added depth to its Oracle compatibility. For example, it has strength the ability to work with Oracle's deep functions such as transaction control, support for Oracle object types and packages. It also has improved the way it helps customers migrate Oracle schema and data from Oracle to the advanced server. EnterpriseDB has added five features to help developers with Oracle compatibility. They include:

- adding some Oracle specific SQL extensions;
- supporting Oracle triggers, stored procedures, packages, and functions;
- adding utilities and tools that have the functionality, look and feel of Oracle tools
- supporting a programming framework that includes 12 programming languages and library interfaces such as the Oracle Call Interface. This makes it much easier for Oracle applications to be migrated to PostgreSQL without significant modification.
- Providing a migration studio that includes a wizard to converts schema, data, packages, triggers, stored procedures, and functions to Postgres

Leveraging Oracle Skills.

One of the most complex reasons that IT organizations resist moving to new technology is the cost of retraining developers. Simply put, organizations with complex applications and data typically do not have the time or resources to move to new technologies unless there is an overwhelming need. For example, a vendor might go out of business or the existing software is unable to meet business requirements. Forcing change is never easy. On the



EnterpriseDB: An Evolution in Scalability and Support

other hand, if IT organizations can move to a new platform and still enable developers to use the skills they already have, the process makes a lot more sense – both technically and financially. Another key issue is that companies need assurance that they will be able to find skilled developers for new projects. There is a huge amount of risk if companies decide to move to a platform where there are few practitioners. First, there will obviously be fewer developers who know the platform; second, those developers can demand a higher price for their services because they become a rare asset.

EnterpriseDB maintains an interesting set of advantages in this regard: its base technology is built on the open source PostgreSQL platform. Therefore, there are a huge number of developers who are trained to use the technology. In addition, EnterpriseDB has expanded the Oracle compatibility features so that developers with deep Oracle expertise will be comfortable with the technology.

Commercial support for customer reliability.

The advent of open source software has transformed the technology landscape. It has brought sophisticated software into a position where it can be nurtured and advanced by a community dedicated to its success. This approach to software development also means that the size of the development community grows exponentially. Clearly, this is not true of every open source environment. There are situations where an orphaned technology is placed into open source is a desperate attempt to keep it from dying. If there is not a vibrant community behind the technology, the open source platform will not be viable.

EnterpriseDB has taken an interesting path. The fact that the company provides full compatibility with the open source version of PostgreSQL gives the company credibility with customers. It is therefore in a good position to support customers that want the benefits of the support of open source but need the commercial support to ensure that their business is not at risk. EnterpriseDB has taken the further step of adding advanced functionality to the base PostgreSQL platform. These advanced functions such as Infinite Cache and Oracle compatibility features are intended to work on top of the base PostgreSQL platform. Therefore, customers can use commercial support services for the base platform or for the advanced functionality.

Conclusion.

EnterpriseDB is a company at an interesting transition point. It continues to enhance its ability to support scalability within the framework of an open source platform. It provides sophisticated support to customers that wish to leverage open source but with the type of commercial capability and enhancements that come from a commercial software company. The fact that EnterpriseDB is able to straddle open source and Oracle compatibility bodes well for the company's future.

About Hurwitz & Associates

Hurwitz & Associates is a consulting, research and analyst firm that focuses on how software solutions solve real world business problems. The firm's research concentrates on disruptive technologies, such as Service Oriented Architecture and Web 2.0, Cloud Computing, service management, information management, and social and collaborative computing. Our team focuses on how these innovations help customers meet business objectives. The team provides direct customer research, actionable strategic advice, and thought leadership. Additional information on Hurwitz & Associates can be found at www.hurwitz.com.