



## WHITE PAPER

# Reducing Cost While Simplifying Administration: Monetizing the Benefits of SAP ASE

Sponsored by: SAP

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## EXECUTIVE SUMMARY

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In 2011, SAP asked IDC to study the total cost of ownership (TCO) for users of SAP ASE in order to determine the potential cost savings for SAP Business Suite users. Since then, a number of SAP Business Suite users have adopted SAP ASE as their relational database management system (RDBMS), and SAP asked IDC to examine the experiences of some of those users in order to validate expectations of lower costs as a result of such a move. This research effort demonstrates that SAP Business Suite users benefit from the adoption of SAP ASE as their RDBMS in the following ways:

- Lower cost of both acquisition and operation
- Reduced cost and complexity of administration
- Improved user productivity as a result of increased quality of service
- Much more dramatic cost reductions than had been experienced by the custom-built application users surveyed in the 2011 study

## METHODOLOGY

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IDC conducted research with five SAP customers to assess the costs and benefits of deploying SAP Business Suite applications on SAP ASE. The purpose of the research was to refresh the SAP-sponsored IDC white paper titled *Calculating the True Cost of RDBMS Ownership and How Sybase ASE Stacks Up: A Guide for SAP Business Suite Users*. (In the time since the publication of that white paper, SAP has dropped the Sybase brand; ASE is now officially branded SAP ASE.) The analysis includes capturing the operational characteristics of each environment, including the size and nature of the deployments and the costs to maintain and support the RDBMS; frequency of system and end-user problems, system outages, and help desk calls; and time spent by IT professionals to directly support end users within the organization. We portray the information in terms of costs per 100 users of the applications supported by the databases so that organizations of various sizes can scale the results to match their organization.

Table 1 introduces the demographics of the organizations interviewed. As noted in Table 1, the commercial customers interviewed were, on average, medium-sized organizations with 500 to 5,000 employees and hailed from a variety of industries.

**TABLE 1**

**Demographics**

Employees	2,600
IT staff	44
Users per application	690
RDBMS database administrators	3.6
Database storage annual growth	22%
Industries	Energy, manufacturing, retail, technology

Source: IDC, 2013

**IN THIS WHITE PAPER**

This white paper reports on the results of a TCO study conducted by IDC, comparing the total cost of managing SAP ASE as the RDBMS for SAP Business Suite for five companies with the prior total cost of managing other competitive RDBMSs with the same SAP Business Suite installation by the same companies. IDC then compares those results with the results of a 2011 project that looked at the TCO savings for SAP ASE users who were applying that RDBMS to custom-developed applications. IDC provides analysis and conclusions based on the results of this research.

Key findings include the following:

- SAP ASE incurs a 33% reduction in staff time over the competitive RDBMS compared with a 26% reduction in the 2011 study.
- SAP ASE incurs a 38% reduction in hardware cost over the competitive RDBMS compared with a 28% reduction in the 2011 study.
- SAP ASE users experience 69% less downtime than they had using the competitive RDBMS compared with a 48% reduction in the 2011 study.
- In both this study and the 2011 study, users experienced a reduction of roughly 30% in software cost over the competitive RDBMS.

## SITUATION OVERVIEW

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SAP Business Suite runs on several major RDBMS brands, and they all can manage the application data effectively. These products do not incur the same costs, however. In addition to the cost of acquisition (software license and maintenance plus server, storage, and networking), the cost of setting up, administering, and performing routine operational tasks can vary quite significantly. In addition, another area of cost involves business disruption due to unplanned downtime. This study examined each of these areas, projecting the areas over a five-year period to calculate the true cost of ownership for SAP ASE compared with an RDBMS of another vendor supporting the same SAP Business Suite workload. These results were compared with the results of a 2011 study comparing the use of SAP ASE against that of a prior RDBMS of another vendor running a custom-built application workload. The results of this study are detailed in the sections that follow.

### Findings of the Study

As with the 2011 study, IDC found significant cost and performance advantages for SAP ASE relative to other RDBMS solutions:

- **Infrastructure cost advantages.** SAP ASE infrastructure costs averaged 31% lower.
- **IT productivity advantages.** IT costs 37% less.
- **Quality-of-service advantages.** End users of the business applications supported by SAP ASE experienced higher reliability and availability because downtime was reduced by 89%.
- **Business agility advantages.** The faster SAP ASE RDBMS improved user productivity of SAP solutions by 5%.

### *Hardware and Software Cost of Acquisition and Maintenance*

When considering the total cost of ownership, organizations need to look beyond the initial cost of acquisition plus the estimated staffing cost. Proper calculation should be done over the projected decision period (five years), taking into account data growth, application usage growth, hardware depreciation and replacement, and ongoing staffing costs associated with routine tasks such as maintenance operations and database tuning. Interviewees in the 2011 and 2013 studies estimated that they required 30-32% fewer servers to support SAP ASE RDBMS than other solutions. Initial storage requirements were consistent in the two studies, ranging from .25TB to .27TB. Annual storage growth (41%) in 2011 was twice the rate of the 2013 study. In either case, SAP ASE required 40-50% less storage than the other RDBMSs, reflecting its more efficient capacity.

## *Software License and Maintenance*

The other areas of infrastructure growth, software license and maintenance costs, will not remain stable over five years. Most RDBMS vendors charge for licenses on either a named-user basis or a per-processor basis. As demand grows, one or the other of these metrics will also grow, meaning that organizations will owe more and more license fees to the software provider. It also means that maintenance, which is usually calculated as a percentage of license cost, will grow too. Getting a sense of that rate of growth is key to understanding this cost factor. In the study, license costs for SAP ASE were 30-32% less than those of products from other vendors, averaging \$17,800 per 100 users over five years.

## *IT Productivity*

IT productivity has become a key measurement of a company's potential for innovation. Releasing IT staff assets from the role of maintaining infrastructure and software so they can contribute to business process improvements and leverage IT to increase revenue has become more important as business priorities shift from cost efficiency to revenue growth. The 2013 study found that organizations were able to free up about 1.5 FTEs' worth of time to dedicate to more productive business activities.

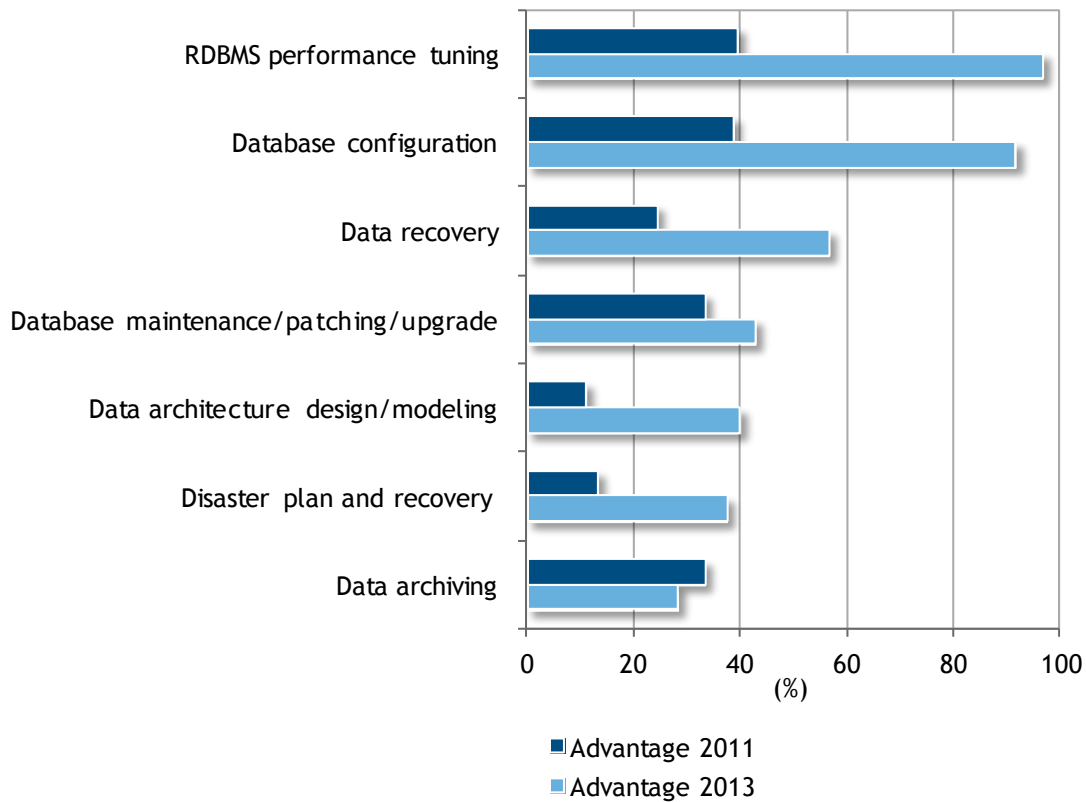
RDBMSs supporting SAP Business applications tend to be complex and require significant staff resources to manage. Such efforts typically involve making decisions about partitioning, volume assignment, buffer management, and so on. SAP ASE has an advantage in the efficiency and self-manageability of the RDBMS. Most tuning and maintenance issues are handled by a combination of sensible defaults, self-tuning functionality, and SAP reference settings for ASE support of SAP Business Suite.

Having an automated and easy-to-use solution helps elevate the DBA's time value. As one organization explained, "SAP ASE is easier to work with. Now, the administration of the database is almost reduced to only 2% of the DBA's time. Before, it was almost 30-40%. I'll give you an example why. Whenever there was a space crunch in the other database, we had to manually extend the database so that it would continue to work, or the system will just stop. This was the work of the DBAs ... which is now reduced to zero. We don't need to do that anymore."

Figure 1 shows how SAP ASE compared with other RDBMSs in terms of IT staffing by activity. The data also compares the results of the 2011 study with the results of the 2013 study to show how RDBMS IT productivity changed over two years. Most significantly, the strongest areas of advantage are RDBMS performance tuning and database configuration (97% and 92%, respectively). For example, ASE 15.7 and later releases include features that deliver such capabilities as the dynamic growing or shrinking of database storage and automated reorganization and defragmentation of the database.

**FIGURE 1**

**IT Staff Savings with SAP ASE Versus Other RDBMs**



Source: IDC, 2013

IT staffing is by far the largest cost factor, accounting for 70-75% of total costs. SAP ASE required 27% fewer IT staff resources overall.

**Quality of Service**

Business applications such as CRM, ERP, and SCM play a significant role in the success of the enterprise. The quality of service for those applications has become a key performance indicator for IT service management. IDC measures downtime as the hours that application users do not have access. For internal users, the cost is measured by the loss of productivity. The value of lost user productivity is a function of the hours lost multiplied by the salary per hour multiplied by a productivity factor (in this study, 62%), which accounts for the fact that users can still be partially productive.

Organizations reported suffering as many as four hours of RDBMS-related downtime per month for their other solutions. Four of five companies have experienced zero downtime with their SAP ASE solutions and so were able to eliminate downtime completely. This was very important to one of the interviewees: "Some of the users are zero productive when the system is down. Some people can't do anything if they are disconnected. The impact is really tough ... that's why we insisted on using SAP ASE, because we have used it for many years, and it doesn't die unless we kill it."

Overall, applications supported by SAP ASE RDBMS suffered 1.5 hours of downtime annually per user compared with an average of 13.7 hours for other RDBMSs (see Table 2).

**TABLE 2**

**The Cost of Downtime in RDBMSs**

	SAP ASE	Other RDBMSs	Savings	%
Annual unplanned downtime incidents	1.45	12.98	11.53	89
MTTR (hours)	1.02	1.06	0.04	3
Total unplanned downtime per user per year (hours)	1.48	13.72	12.24	89
Annual downtime costs per 100 users — end-user productivity (\$)	5,511	51,081	45,570	89

Source: IDC, 2013

For external users, the cost of downtime is often measured in lost revenue. In this study, only one company experienced a revenue impact from downtime when its billing and invoices application was running. The result was not so much revenue lost as revenue delayed. In this study, we focused on the downtime effect from internally focused applications only. SAP ASE also required 14% less planned downtime.

**Projecting Five Years of Cost**

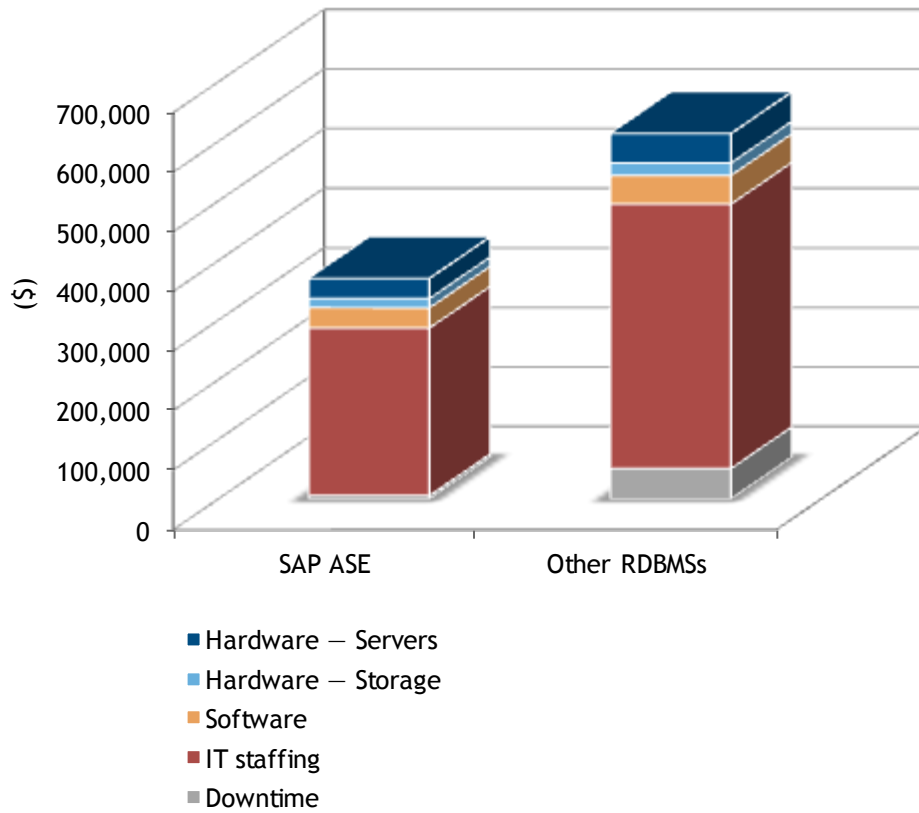
Measuring the total costs for deploying and maintaining an RDBMS in support of SAP Business Suite applications (CRM, ERP, SCM, and SRM) includes all the following cost factors:

- **Hardware.** Server and storage – 12% of total costs
- **Software license.** 8% of total costs
- **IT staffing.** RDBMS admin, server support, help desk support for database and training – 74% of total costs
- **Downtime.** Lost productivity – 6% of total costs

Over a five-year period, the total costs for deploying SAP ASE averaged \$370,000 per 100 users compared with \$613,000 for other RDBMSs (see Figure 2).

**FIGURE 2**

**RDBMS Five-Year Total Cost per 100 Users**



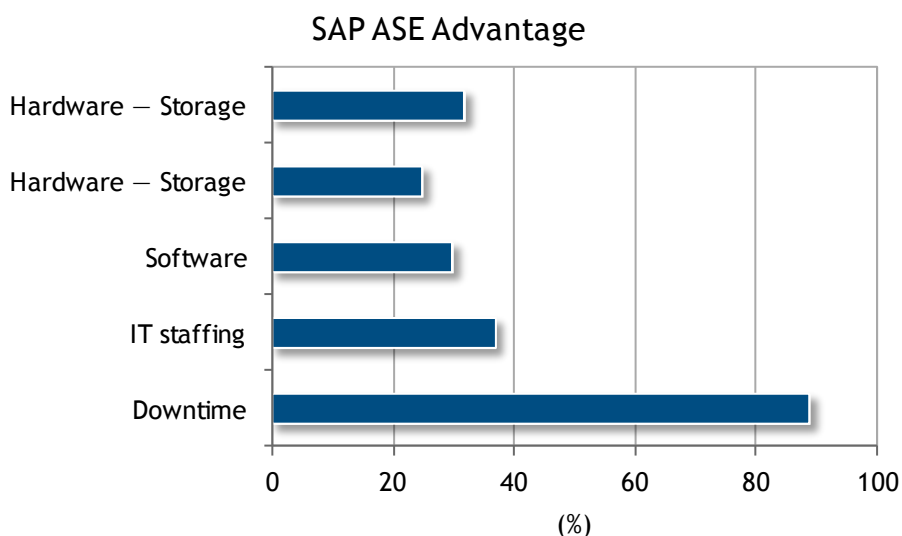
Source: IDC, 2013

On average, companies in the study estimated the total cost for SAP ASE to be 40% less than that of other systems they had deployed, saving them about \$243,000 per 100 users over five years (see Figure 3).

**FIGURE 3**

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**Five-Year Savings of SAP ASE over Other RDBMSs**



Source: IDC, 2013

***Business Benefits***

The advantages of using SAP ASE in support of these business applications led to operational benefits for the business. One of the customers noted the advantages of a more nimble database to support ERP: "Only the office people were impacted by the change when we moved from the old database to SAP ASE, because they were the poor souls that had to live with the other system. They told me that I have to take the ERP and put it in the garbage if I kept using that database because it was too slow. SAP [ASE] is a lot faster, and after we moved over, they started to save some time. I estimate that they save at least 20% of their working time." These kinds of speed benefits and the reliability benefits led to an average productivity gain of 5% over all the companies.

Because SAP ASE also supported CRM for some of these companies, the benefits also extended to the customer experience, which is an important factor to the business as well. One customer explained, "As part of the selection process, we tested data loading, education, and reporting. SAP ASE was far faster than other solutions and that performance difference affects our end users. We are working with customers who are coming to our offices to be a subscriber. If you complete the whole transition in four minutes, it is good. But if you make it in three minutes, it's great. We are working with these types of margins ... that performance on the customer's side is essential for us."



## Analysis of the Findings

The findings in the 2013 study are stunning on their own and make a clear and convincing case for considering SAP ASE as the database technology of choice for SAP Business Suite. They are all the more impressive when compared with the figures from the 2011 study. Since the prior study looked at SAP ASE users supporting mainly in-house-developed applications, the database management activities tended to be more complicated and varied, so some difference may be attributed to that difference in usage models. Another factor is the newer version of SAP ASE used in the 2013 study, which has a number of relevant improvements.

Still, it cannot be denied that part of the benefit that the 2013 study users found in applying SAP ASE to the SAP Business Suite workload derives from the fact that these two products have been engineered to work together, and optimizations both in the technology and in SAP-recommended RDBMS configuration and management settings have enabled SAP users to derive impressive benefits from the combination of SAP Business Suite and SAP ASE.

## FUTURE OUTLOOK

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The RDBMS industry is evolving rapidly toward memory-optimized (or "in-memory") database management, and SAP is a leader in that evolution. As SAP Business Suite users look forward, they will be considering migration to the SAP HANA platform, which includes in-memory RDBMS capability. Adoption of SAP ASE at this juncture would seem to enable a smooth transition to that platform.

## CHALLENGES/OPPORTUNITIES

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Several other RDBMS vendors have either released or promised memory-optimized RDBMS technology to challenge SAP HANA. These are not application execution platforms but discrete RDBMS products. Nonetheless, they represent an alternative for SAP Business Suite customers, especially since many SAP customers are not yet ready to make the platform transformation to SAP HANA. They are, however, ready to move to SAP ASE at any time. SAP can solidify success for both SAP and SAP users by enabling a smooth transition of users onto SAP ASE and then using that technology to enable a further transition to SAP HANA, which will, no doubt, incorporate the in-memory capability already present in SAP HANA with the flexibility, scalability, and ease of use in SAP ASE.

## CONCLUSION

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There may be a great many people who assume that the dominant use of RDBMS technology in relation to SAP Business Suite is a result of that RDBMS product's superiority. They would be wrong in that assumption. Back in the 1990s, certain technical issues prevented the product then known as Sybase ASE from being certified as a supported database platform for SAP ERP products. As a consequence, other vendors' database technologies have prevailed with respect to SAP ERP software support. Since that time, SAP ASE not only has overcome those issues but also has been developed aggressively to the point of introducing leading-edge innovations before other major competitors;

ASE In-Memory Database (IMDB) and Sybase RAP (the Risk and Trade Analytics Platform), which includes ASE IMDB and in-memory complex event processing capabilities for financial services customers, are two such examples.

To those who are unaware of these developments, the results of the studies detailed in this white paper might seem surprising – even startling. For those who have followed the progress of SAP ASE over the past decade, however, the results are not surprising in the slightest. The conclusions to be drawn from the results of these studies are simple and clear:

- The 2011 and 2013 studies demonstrate clearly that for the subjects interviewed, SAP ASE delivered clear and impressive five-year cost reductions that are beyond dispute.
- The 2013 study shows even stronger results than the 2011 study, probably because of the somewhat simpler nature of SAP Business Suite data management and the improvements in SAP ASE (two major releases) since the 2011 study was done.
- Anyone who is using SAP Business Suite with some other RDBMSs and who has seen these results must feel compelled to consider SAP ASE as a replacement for whatever RDBMS is currently in use. The alternative defies logic.

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