

# QUICK TAKE



January 21, 2005

## Database Administration Challenges Are Shifting

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### EXECUTIVE SUMMARY

During the past decade, database performance tuning was the most challenging administration task for most enterprises, but that has started to change. With top database management systems (DBMS) vendors rolling out new innovative features around automation and self-management, performance tuning is becoming less challenging and is requiring less effort and fewer skills. Forrester predicts that database upgrade and patch management will surpass performance and tuning to become the single most challenging activity by 2006.

### DATABASE ADMINISTRATION REMAINS A CRITICAL FUNCTION

Even though DBMS vendors continue to offer automation and simplicity in managing databases, the need for formal database management practices has not changed. Enterprises must focus on formalizing database management through planning, standardization, and best practice adoption to improve operational efficiency and lower costs. Best practices include automating administrative tasks, standardizing DBMS, formalizing administrative processes and procedures, performing database consolidation, and enforcing strong security measures.

### Administration Challenges Are Changing Through Increased Automation

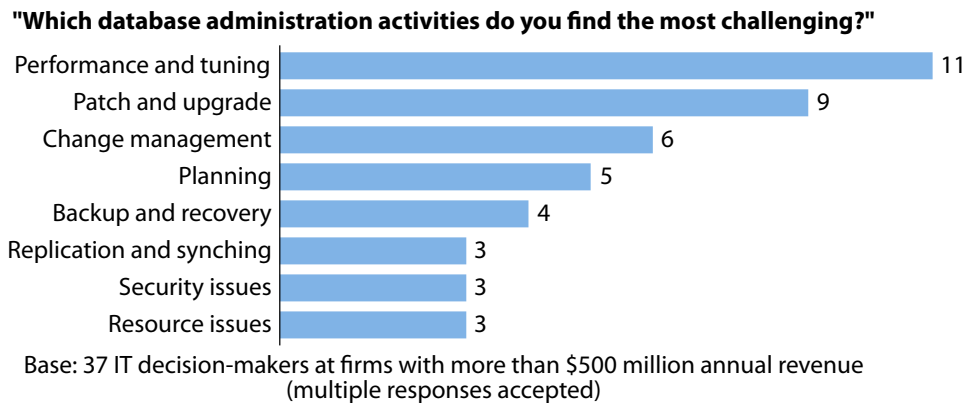
Forrester's May 2004 survey of 52 enterprises found performance tuning and troubleshooting to be the most challenging task, followed by upgrades and patch deployment (see Figure 1).<sup>1</sup> Automation is now helping to meet some of the key database administration challenges, and this trend will continue through 2010. We find that:

- **Database performance tuning is becoming less challenging.** Although performance tuning has been the most challenging task this past decade, it is becoming less challenging as vendors roll out highly automated self-management features. The key challenges are often related to poorly written SQL statements, improper configuration layout, and a lack of clear understanding of how to tune to solve performance issues. Forrester believes that in the next two to four years, top commercial DBMS vendors will deliver highly intelligent and automated administration capability to reduce administration efforts.



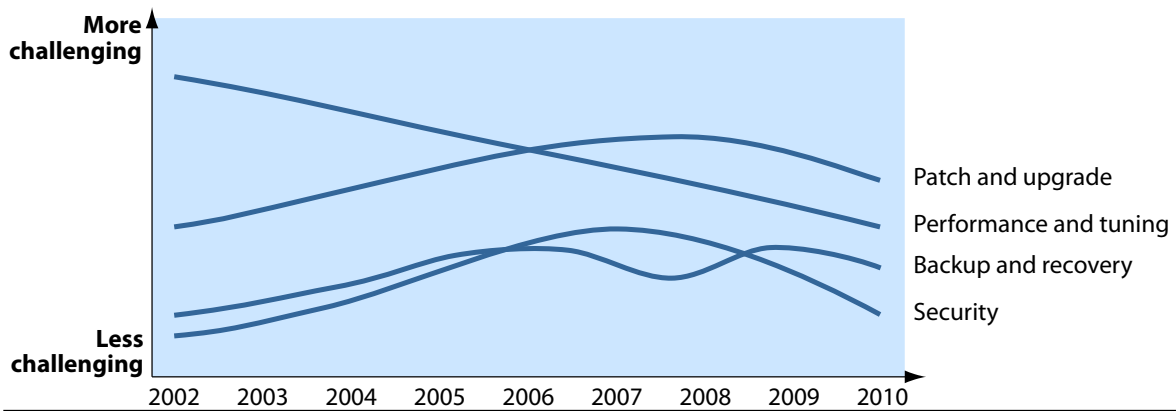
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**Figure 1** Database Administration Challenges

Source: Forrester Research, Inc.

- **Security is becoming challenging.** Forrester estimates that 80% of enterprises do not have a DBMS security plan. Many mission-critical databases are vulnerable, largely as a result of poor authentication processes, using default configurations, and having weak data access controls. The key DBMS security administration challenges include creating a robust DBMS security plan, using database encryption, protecting data from administrators, and ensuring that only authorized users access private data. In the next three to five years, DBMS vendors will introduce highly innovative and easy-to-use database security solutions that will help overcome these challenges.
- **Upgrade and patch deployment is poised to become the most challenging activity.** Most enterprises continue to struggle with upgrade and patch deployments that often take enormous amounts of time and effort. Forrester estimates that upgrade and patch deployment will become the single most challenging activity, surpassing performance and tuning by 2006 (see Figure 2). It will continue to remain challenging through 2008, when DBMS vendors will start offering real-time automated upgrades and patch deployments that will require minimal administration efforts.
- **Backup and recovery will be a challenge for the high end.** As data volumes continue to grow, enterprises are dealing with larger and larger databases. Forrester estimates that 80% of the enterprises supporting terabyte-size databases in production will encounter tremendous challenges in backup and recovery. Large database backups require a scalable solution that includes appropriate hardware infrastructure. As enterprises deploy new applications, including applications related to RFID, Web services, and content management, they are poised to support databases that run well into hundreds of terabytes. Therefore, backup and recovery administration challenges will come in phases, with enterprises pushing for higher thresholds and vendors trying to deliver scalable database backup solutions.

**Figure 2** Database Administration Challenges Through 2010

Source: Forrester Research, Inc.

## RECOMMENDATIONS

## DATABASE ADMINISTRATION REQUIRES A NEW FOCUS

To minimize database administration challenges and improve operational efficiency, enterprises should:

- **Upgrade to new DBMS releases as an ongoing initiative.** Every new DBMS release from the top commercial vendors will continue to focus on automation and self-management features. Therefore, it is important that enterprises upgrade to new releases to benefit from increased automation and improved availability, in addition to lowering administration costs.
- **Think twice before purchasing any performance and tuning tools.** With more DBMS automation features on the way at no extra cost, third-party tools are likely to become redundant. Therefore, look at third-party performance tools only when supporting heterogeneous DBMSes or in high-end or complex environments where native database tools fall short.
- **Give more focus to database-related security.** DBMS security is likely to become even more challenging in the near term; therefore, all enterprises must have a DBMS security plan that focuses on protecting private data.
- **Expect more efforts on upgrades and patches.** The industry average for a major DBMS release is four years, and the average for minor releases is between 12 and 18 months. But as vendors roll out innovative and advanced features to address market needs and stay ahead of competition, the release cycle is likely to shorten. As a result, be prepared for more database upgrades and patches in the coming years.

## ENDNOTES

- <sup>1</sup> Forrester surveyed 52 enterprises with more than \$500 million in revenue to find out about their DBMS environments. See the July 30, 2004, Market Overview “DBMS: Foundation Of Application Infrastructure.”