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Oracle Data Base

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INTRODUCTION

Oracle Database, developed by Oracle Corporation, is one of the most widely used relational databases in the world. Initially created in 1977 by Larry Ellison, along with Bob Miner and Ed Oates, Oracle Database has evolved over the years to become not only a relational database management system (RDBMS) but also, since version 8, a relational-object database management system. This evolution has allowed Oracle to meet increasingly complex needs and strengthen its leading position in the database market. The support for objects was a major step in Oracle's adaptability to diverse business needs.

Oracle Database is widely adopted by businesses around the world, in sectors as diverse as finance, healthcare, retail, and public administration. According to recent statistics published by "Enterprise App Today," Oracle Database supports approximately 70 million users daily and handles nearly 33 billion daily transactions. It holds 11.31% of the market share in its field and is ranked 3rd out of 40, according to 6sense.com.

According to various forums (like the subreddit r/oracle and Quora), many professionals working with databases prefer Oracle Database due to its impressive features, often ranking it above its competitors. However, some users point out that although Oracle excels in certain areas, it doesn't always offer all the features provided by other database management systems. For many, Oracle Database is well-suited for small projects, but its paid model can be a constraint depending on the type of business. Nonetheless, most users recognize its speed and the richness of its core features.

These strengths make it a favored database management system across many industries. The success of Oracle Database can be attributed to its robustness, scalability, and advanced features. However, like any technology, Oracle Database has both advantages and disadvantages. This essay will explore these different aspects, analyzing both the positive and negative points. We will first examine the strengths of Oracle Database, such as its performance and security, before addressing its drawbacks, such as the complexity of its use and the costs it entails. This essay aims to provide a balanced overview of Oracle Database.

I. PERFORMANCE AND SECURITY

II. COMPLEXITY AND COSTS

III. CONCLUSION

I. PERFORMANCE AND SECURITY

As mentioned earlier, Oracle Database is known for its high performance and advanced security mechanisms. One of the key components that contribute to this performance is the Oracle Optimizer, a feature developed by Oracle, as explained on their official website.

The Optimizer maximizes the efficiency of SQL queries by allocating system resources in an optimized way, reducing execution time and preventing unnecessary consumption of computing power and resources.

The Optimizer evolves with each new version of the database, providing a continuously optimized and up-to-date technology. This gives Oracle a clear advantage over its competitors, which do not offer such a sophisticated alternative. This efficiency gain allows database management teams to save valuable time when optimizing their systems.

According to feedback available on specialized platforms like Reddit (r/oracle) or YouTube (Oracle's official channel), users are generally satisfied with this feature, which greatly helps them in the daily management of their databases. However, this technological advancement comes at a cost, and using Oracle can be expensive for some companies, a point we will explore further in the second part.

But performance is not Oracle Database's only strength. Its security is also widely recognized, although the company has faced notable incidents, such as the one in 2016.

In that year, a group of Russian cybercriminals managed to compromise the login page of MICROS, a company specializing in point-of-sale systems that Oracle had acquired two years earlier. By injecting malicious code, the attackers were able to access user data. Although the attack was quickly blocked, the exact extent of the damage remains unknown. Given that MICROS manages around 330,000 cash registers worldwide, the potential impact of this attack could have been significant (we still do not know the full extent of the damage to this day).

Despite this incident, Oracle remains one of the most secure database management systems on the market. According to the website Upgrade, Oracle is not even among the databases most affected by data breaches (Yahoo being first with its infamous 2013 data breach where 3 billion user accounts were compromised).

II. COMPLEXITY AND COSTS

However, Oracle Database also has its drawbacks, one of the main ones being its pricing model.

According to Oracle's official website, the company claims not to be the most expensive in terms of data storage. For example, for 50 GB of stored data, Oracle would be less costly than Amazon Web Services (AWS). However, many users disagree with these claims and find Oracle DB and AWS to be among the most expensive database services on the market.

Indeed, according to Oracle, several costs must be considered: purchasing a license, paying for technical support (about 22% of the license cost), cloud subscription fees based on resource consumption, and additional costs for certain optional modules like the Oracle Optimizer, which can be a financial burden for some companies.

In comparison, open-source alternatives like PostgreSQL are completely free, even for commercial use (free license). However, PostgreSQL does not offer built-in technical support for security or maintenance, forcing some companies to rely on paid services such as those offered by EnterpriseDB.

According to users, PostgreSQL remains the best open-source alternative to Oracle and AWS, although additional costs for maintenance and support must be considered.

Another common criticism from users is the difficulty of learning Oracle Database. On forums, professionals generally agree that PostgreSQL is easier to learn than Oracle. Many find that educational resources, such as videos and tutorials, are more abundant and accessible for PostgreSQL (as seen on forums like Reddit, Stack Overflow, or even YouTube).

Oracle's complexity is often attributed to the richness of its features and its sophisticated structure, making learning more difficult for beginners. In comparison, PostgreSQL is seen as having a simpler setup and database management process, which is ideal for beginners.

III. CONCLUSION

In conclusion, as we have examined in this essay, Oracle Database stands out as a key player in the database field. It has maintained a high level of security over the years and offers cutting-edge tools that meet the needs of companies willing to invest in premium solutions.

It does not require external services for maintenance and ensures robust security in terms of cybersecurity. However, Oracle Database is not suitable for all businesses due to its high cost and the complexity of its features. It can also be challenging for beginners because of its advanced capabilities.

Source :

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