

HOW THE DBA ROLE DEVELOPED IN 2022

Organizations are experiencing the effects of rapid technological advancement across every sector and industry, causing them to rely on secure and efficient data storage solutions. Effective data management is now important to the ability of an organization to stay compliant with government regulation. It also gives rise to additional needs for protection for employee and customer data. The strategy and role of a database analyst or database administrator (DBA) grows as the technology that both creates and interacts with databases develops.

One issue facing DBAs and their organizations is the increase of cyberattacks, with a focus on ransomware attacks. The analysis by IBM of the 2022 Ponemon Institute Report found the average cost of a data breach was USD 4.35 million. This is a 13% increase from the findings of the report in 2020. The driving force behind the increased cost of attacks and the value of proper data storage combines:

- More remote workers
- Faster and more powerful technology
- The growing reliance on this technology.

Safer and more efficient data storage solutions are going public, which gives DBAs from any sized organization access to a secure database environment.

HOW THE DAILY LIFE OF A DBA HAS CHANGED

The need to keep pace with rapid changes in application and software development spurred by stronger and more accessible tools has repositioned the role of the DBA. DBAs have worked to optimize a single database structure by learning where to balance ease-of-use with query performance. This balance may create an additional amount of work in terms of forms or applications. Even then, the increase in optimization when pulling specific queries from a normalized schema created enough value to warrant the accommodation.

Today, organizations observe new database architectures entering the space at a faster pace than ever, sometimes rendering previous iterations obsolete only a year into their lifecycle. This rapid expansion of database varieties is driven by a need to get applications to market fast, regardless of how. Under these conditions, organizations must now compile data as quickly as possible. DBAs thus optimize databases less and spend more time working with developers to collaborate on database calls and structures to get as close to zero latency as possible.

The increase in collaboration and pace of change encourages companies to migrate to cloud-based databases. Once they do, the DBA must review the offerings of each service provider to determine which one provides the most value and security while still considering future scaling needs. The list of providers continues to grow as well, with some of the bigger names, including Google Cloud Services, Microsoft Azure, Amazon Web Services, and Oracle Cloud Infrastructure. These providers assume the more traditional DBA role of automation and completion of daily tasks.

THE IMPACT OF AUTOMATION ON DBAS

Due to machine learning and artificial intelligence, automation has taken over many of the administration tasks that have fallen to DBAs in the past. The DBA often meets this with mixed feelings. On the one hand, automation frees up time to spend on other projects. On the other, there is the fear that automation could take over too many tasks and a DBA will lose control of their data.

Organizations still need DBAs to fulfill the role of managing the data of the organization. However, the DBA can now achieve this goal in a more proactive manner compared to the previous reactive approach of fixing problems as they arose. Today, automation can apply hot fixes and resolve complex issues that would have created full-time work for a DBA in the past. Given this, the DBA role has shifted to the architecture and platform integration side of data management.

DBAS NEED MORE SKILLS IN 2022

The modern DBA skill set required to make these platform and design decisions at an enterprise level has not replaced traditional experience and knowledge. Instead, the DBA role developed to where it has compounded knowledge demands. The value of a DBA now considers platform familiarity, vendor management skills, risk and cost assessment capabilities, and the ability to migrate between various providers of data services.

A DBA can no longer silo their expertise into a single platform or database structure if they want to succeed in the current market. Experience must lie across multiple database environments. This includes legacy systems that organizations have yet to migrate from. This requires proficiency with storage systems that organizations may only use for a single migration.

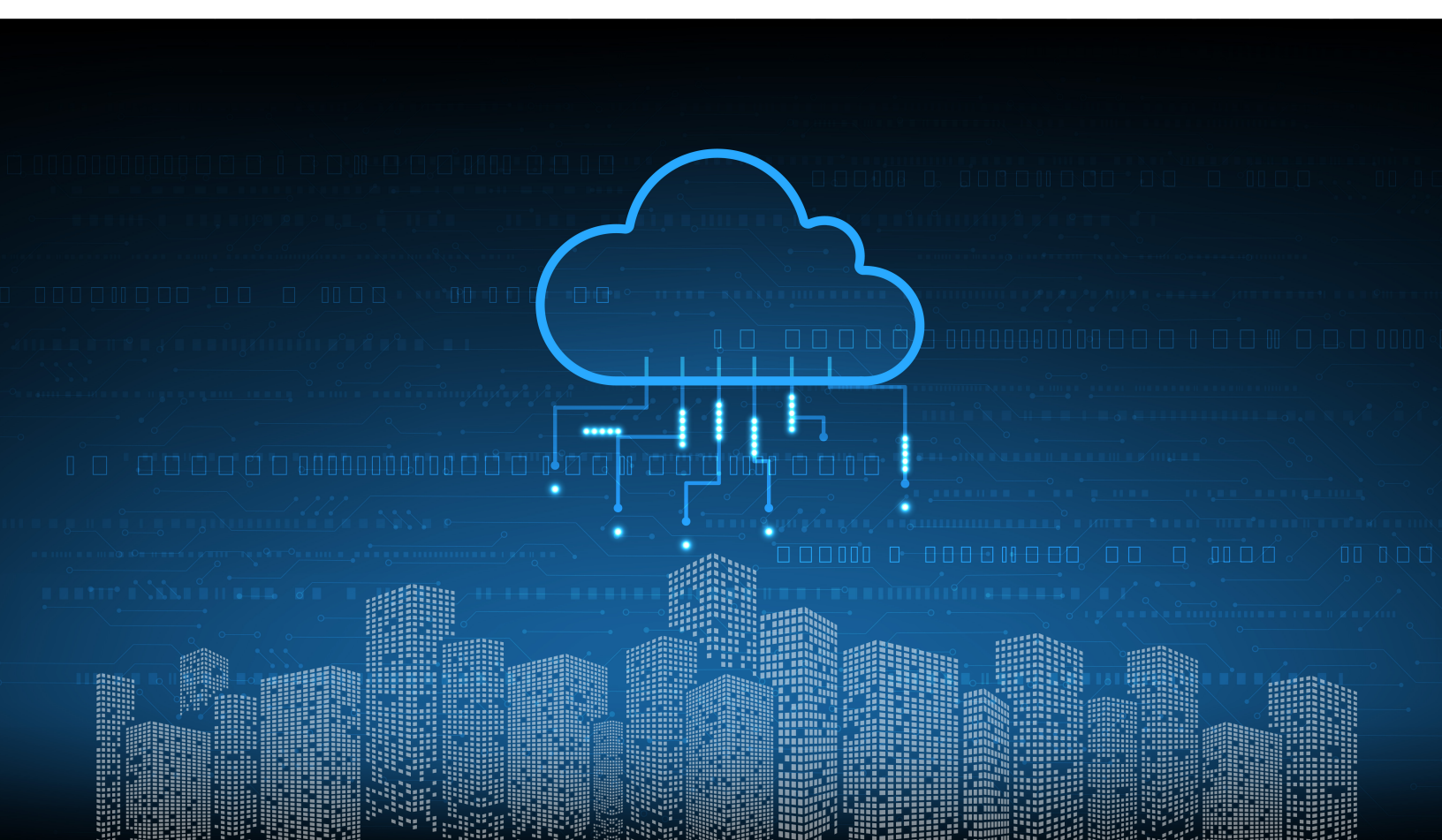
THE MIGRATION TO REMOTE ACCESS HAS CREATED ADDITIONAL RISKS

Parallel to the migration to cloud and hybrid database structures is a growing need for remote access to organizational data. Remote workers are now commonplace, both as employees and independent contractors. This is due in part to the COVID-19 pandemic and the Great Resignation. Organizations must now migrate data to different platforms based on the technology introduced to grant and manage remote access.

Migration is the period when databases are most vulnerable to breaches. Yet organizations cannot delay migration. So, data breaches are now an assumed risk when calculating migration costs. Organizations do not underestimate these risks, with the top data management companies responding fast to tools developing to increase security for future operations.

HOW CAN DBAS PREPARE FOR THE FUTURE?

Now working with a mix of local and cloud databases, DBAs are spending more time following the data pipeline. That way, they ensure that their organization meets security compliance and leverages encryption on multiple levels. Proactive DBAs will leverage managed data services to automate time-consuming tasks. This will free up their time to learn more about security, become familiar with emerging platforms and database structures, and better coordinate with their team during application design.



SQL DIAGNOSTIC MANAGER FOR MYSQL

SQL Diagnostic Manager for MySQL helps database administrators to find and fix MySQL and MariaDB performance problems in physical, virtual, and cloud environments - including managed cloud databases. Unlike its competition, it provides agentless monitoring with no additional load on servers, custom monitors, and customizable dashboard and charts. It also offers display of top 10 problematic SQL queries across servers, file-based log monitoring for Amazon RDS for MySQL, and real-time monitoring of locked and long-running SQL queries. And it allows the application of over 600 monitors and advisors, tracking and comparison of configuration changes, and display of replication.

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The screenshot displays the 'OVERVIEW' dashboard of the SQL Diagnostic Manager for MySQL. It features four summary cards at the top: '20 Total Servers', '0 Servers Down', '368 Critical Alerts', and '195 Warnings'. Below these is a table titled 'TOP 10 QUERIES FROM Copy of RDS US1, Development, Master, RDS, Slave'. The table has columns for 'COUNT', 'TOTAL TIME', and 'AVERAGE LATENCY'. The queries listed include various SELECT, SHOW GLOBAL VARIABLES, and SHOW FULL PROCESSLIST statements.

TOP 10 QUERIES FROM	COUNT	TOTAL TIME	AVERAGE LATENCY
Copy of RDS US1, Development, Master, RDS, Slave			
SELECT * FROM (SELECT 'digest' AS 'Digest' , SCHEMA_NAME AS 'Db' , 'digest_text' AS 'Query' , 'count_star' AS 'Count' , 'IFNU...	5M	01:65:07.05.000	00.132
SELECT COUNT (*) FROM 'mysql' . 'rds_history' WHERE ACTION = ? GROUP BY 'action_timestamp' , 'called_by_user' , ACTION , '...	568K	19:38:43.000	00.124
SELECT ?	11M	11:07:25.000	00.004
SELECT 'performance_schema' . 'events_waits_summary_global_by_event_name' : 'EVENT_NAME' AS 'events' , 'performance_sche...	472K	06:39:33.000	00.051
SHOW GLOBAL VARIABLES LIKE ?	115K	04:32:08.000	00.142
SHOW OPEN TABLES ;	7M	04:28:51.000	00.002
SELECT COUNT (*) AS 'count' FROM 'performance_schema' . 'events_statements_summary_by_digest'	5M	03:20:06.000	00.003
SELECT * FROM 'information_schema' . 'plugins'	7M	02:44:58.000	00.001
SHOW GLOBAL VARIABLES	8M	02:26:30.000	00.001
SHOW FULL PROCESSLIST	41M	01:53:38.000	0