

The Business Value of Adopting Amazon Web Services (AWS) Managed Databases

EXECUTIVE SUMMARY

Managed platform-as-a-service (PaaS) databases are an emerging model for data management where organizations rely on a cloud service provider to provide storage, scaling, patching, administration, and other requirements rather than internal IT staff or database environments deployed on-premises. GLG conducted a study of 100 respondents to understand the business and IT impact of adopting managed databases. Those companies migrating to managed databases report improvements across many Key Performance Indicators (KPIs): reduced costs, improved productivity, greater resilience and reliability, and improved business agility. GLG's research uncovered that, after migrating to managed databases, companies experienced:

- 13% reduction in the costs of licenses/subscriptions associated with databases
- 68% improvement in analytic query execution time
- 51% reduction in unplanned downtime
- 53% reduction in database administration
- 38% increase in developer productivity associated with database-related tasks

Migrating to AWS managed databases resulted in:



ABOUT THE RESEARCH

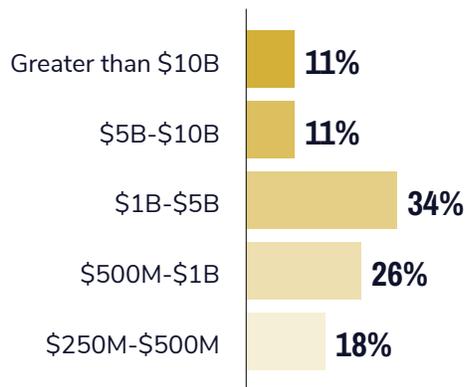
GLG, the world's insight network, brings decision makers the insight it takes to get ahead, providing meaningful connections through a network of 1 million experts, the world's largest and most varied source of first-hand expertise. In September 2022, AWS engaged GLG to conduct an online survey of 100 full-time professionals in IT or operations roles in the United States and Canada, leveraging GLG's network to provide independent perspectives on the business value of AWS cloud database services. GLG conducted the study in a double-masked manner to ensure objectivity in the study. The key goals were to:

- Identify the areas of business performance impacted by database migration
- Quantify the improvement to key performance indicators (KPIs)
- Provide anecdotes on how some successful companies achieve these benefits

Respondents in this study had decision-making authority over the selection of managed database services, and their organizations had at least 60% of their current managed database environment on AWS. The figures below show the distribution of respondents by their company's annual revenue, number of employees, industry, and average length of time using managed databases. In-depth, qualitative interviews with participants possessing similar profiles to those surveyed were conducted following the survey to help interpret the findings.

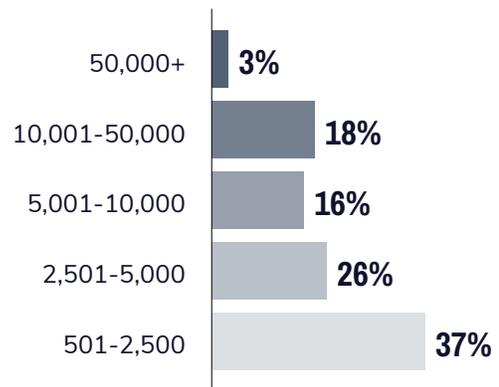
Revenue

(% Selecting Among Total Respondents)



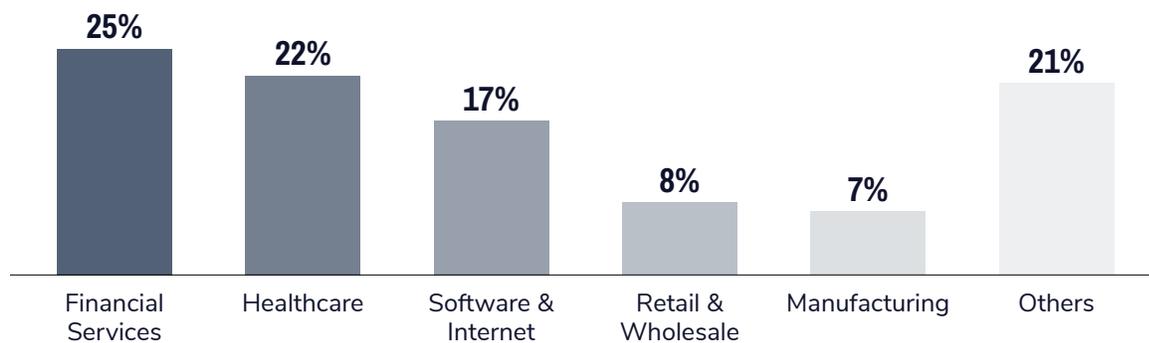
Full Time Employees

(% Selecting Among Total Respondents)



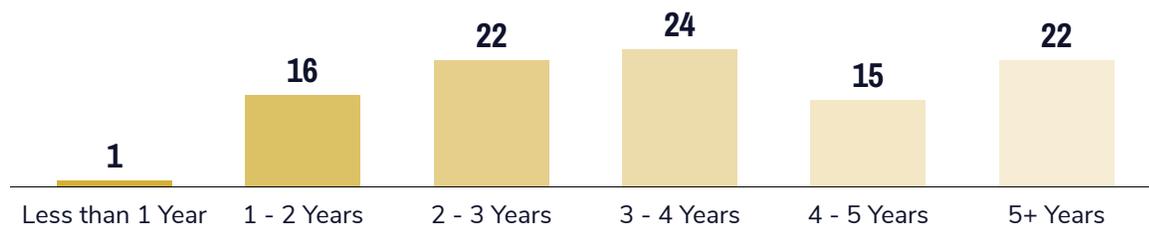
Industry

(% Selecting Among Total Respondents)



Length of Tenure with AWS

(Number of Responses)



CURRENT USE OF MANAGED DATABASES

Respondents in the study reported that 38% of their total database consumption was in the form of managed databases.¹ Sixty-one percent of survey respondents indicated that their organizations plan to migrate additional on-premises workloads to managed databases. A higher percentage of respondents (71%) indicated their intention to use managed databases for new workloads.

Almost 60% of the companies we surveyed deploy managed databases for business-critical applications, systems of record, and storage of sensitive data, while 73% use managed databases to support analytic warehouses to generate insights for essential business decisions. Fifty-nine percent also use managed databases to support other requirements, such as software development, customer engagement, productivity tools, knowledge management, and collaboration applications.



When asked about specific database technologies, 88% reported using relational databases in their managed database environments. Relational database use was more mature than other database technologies, with slightly more than half of respondents indicating they had used managed relational databases for three or more years.

Types of Managed Databases Usage

(% Selecting Among Total Respondents – Listed in Descending Order by Current Use)

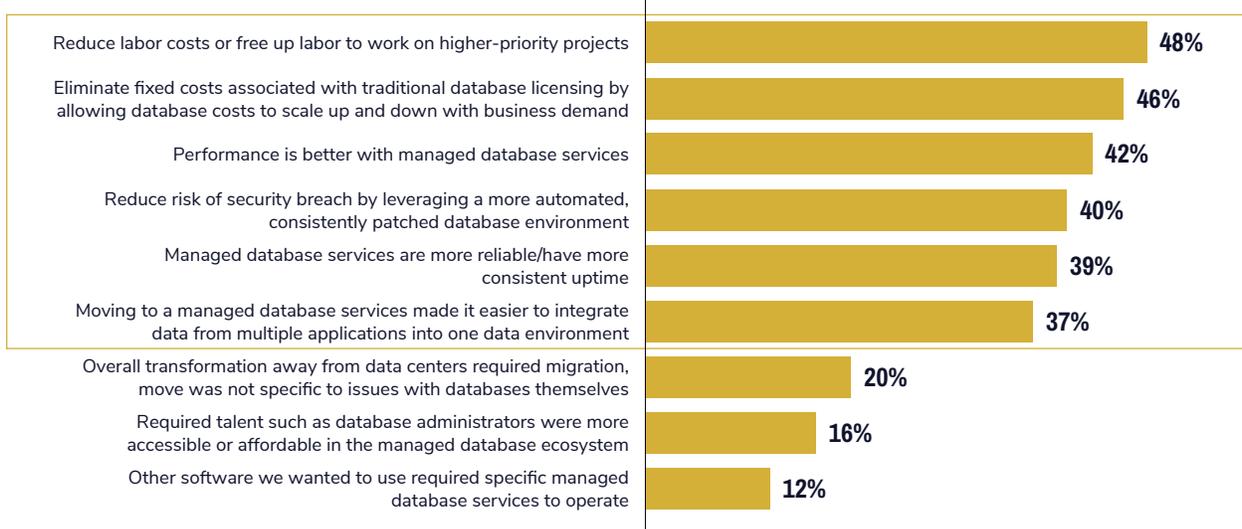


¹Respondents in the study were selected based on their high adoption of managed database services. This statement is not an indication of total managed database market size but rather a representation of the usage pattern associated with this group of respondents.

Respondents migrated to managed databases for six major reasons, as shown in the chart below:

Reasons for Migration to Managed Database Services

(% Selecting Among Respondents being migrated to managed PaaS – Listed in Descending Order)



COST SAVINGS FROM MANAGED DATABASE ADOPTION

As seen in the previous figure, the top two reasons for migration to managed databases were related to cost reduction. Respondents indicated that approximately 69% of their total database spend goes toward licenses/subscriptions, while the remaining 31% goes toward labor associated with developing, administering, and maintaining their databases. Respondents indicated that the adoption of managed databases led to a 13% reduction in license/subscription costs and a 12% reduction in the cost of labor associated with maintaining and administering databases.



Respondents' percentage of managed databases relative to total database consumption correlated to cost savings achieved. Respondents who indicated that their organizations used a greater percentage of managed databases (more than 50%) saw higher reduction of license/subscription and labor costs than respondents whose organizations had less than 50% of their database environment deployed in managed databases.

Percent of Managed Database Usage	License/Subscription Cost Change	Labor Cost Change
Less than 50%	-8%	-6%
More than 50%	-13%	-13%
Total Responses	-13%	-12%

Respondents saw a 39% decrease in operation and maintenance costs for the same databases that were migrated from on-premises environment to AWS. As the CTO of a media and entertainment company described, “Costs went down as we moved to a managed service...not just storage, but processing costs as well. We went from a very expensive environment where we were running large, dedicated instances for databases and data processing.”

Respondents saw an average 200% increase in the volume of data they could manage for the equivalent cost compared to their previous database environments. Organizations that had larger increases in data volume also realized greater cost reductions.

Increase in Data Volume Since Adopting Managed Databases	Increase in Data Volume Managed per License Dollar, Compared to Previous Environment	Increase in Data Volume Managed per Labor Dollar, Compared to Previous Environment
Less Than 50%	150%	140%
More Than 50%	280%	270%
Total Responses	200%	190%

STAFF PRODUCTIVITY IMPACTS OF MANAGED DATABASE ADOPTION

Adopting managed databases was associated with an average increase in developer productivity associated with database-related tasks of 38%.

Respondents reported that the overall time required for normal database administration was 53% shorter after adopting managed databases.

Most respondents (64%) indicated that database administrator headcount had not changed or had slightly decreased since adopting managed databases. Qualitative interviews indicated that headcount was typically redeployed to higher-value roles such as management of data DevOps pipelines.

As the CTO of a financial services company explained, “Our goal was not to disrupt our existing database developers, it was to try to keep their environment very familiar and have them continue to work with tools they already felt comfortable with. The value was really in the addition of new capabilities and integrations, which did not exist before, and more importantly, eliminating the need for one- or two-week lead times to go create a new server or virtual machine. The benefit is that DevOps engineers can now build data pipelines using low-code drag-and-drop tools, and analysts in AI/ML or reporting can now use built-in connectors instead of having to extract data and write rules around its structure, or export it to a different tool to create the right visualizations.”

OPERATIONAL IMPACTS OF MANAGED DATABASE ADOPTION

Query Performance

Adoption of managed databases increased transactional/OLTP performance by 40% because of the ease of use by which managed databases can adopt faster hardware and storage. Some companies were hesitant to migrate their transactional applications that depend on legacy systems and software that currently meet their need. Yet as a VP of enterprise architecture at a financial services company explained, “A lot of companies become cautious and say, ‘Well, things are too critical or we’re concerned about disrupting something that

we have on-premises that's very complicated,' but the reality is that if they leave it and they move other pieces of their estate to managed databases, eventually what happens is that there are ease-of-use benefits and performance benefits in the managed stuff and they're just further complicating the situation with what they've left on-premises. So, in the long run, they would be better off just migrating everything.”

Availability and Service Level

Adoption of managed databases improved uptime and service level significantly. Respondents reported:

- 40% reduction in planned downtime for key applications
- 51% reduction in unplanned downtime
- 41% reduction in critical incidents
- 39% reduction in security incidents

BUSINESS AGILITY IMPACTS OF MANAGED DATABASE ADOPTION

Respondents also indicated improvements to a range of additional KPIs associated with increased business agility as a result of adopting managed databases:

- 49% improvement in the speed with which IT could respond to business changes
- 54% improvement in time to insight from when business information becomes available
- 41% increase in ad hoc analytical analysis by non-IT users and “citizen developers”

Improvements to business agility enable customers of managed databases to focus on how their data can generate new opportunities. As the CIO of a life sciences company explained, “[Managed databases allow] better utilization of capital or better utilization of talent to focus on the areas where you can grow the business fastest. It's not just improving your net income; it's very much about growing revenue. If I can pull all of my data every night and see that I'm selling something and it's trending upward, can I then get in front of it and move the supply chain to order more of that product? If I can predict that I'm going to sell more of something, then I can be at the heartbeat of my customers and I can drive more revenue. [Managed databases] have given us a greater ability to rapidly react to dynamic changes within our industries in addition to simply making more efficient use of assets.”

CONCLUSION

Managed databases are becoming essential to how enterprises manage business-critical data and analytic warehouses. Most surveyed respondents indicated that they had not only moved a significant portion of their databases to managed database services already, but that they planned to deploy new workloads to managed environments. The desire for reduced costs, improved performance, and increased reliability are the primary drivers of these migrations. Most respondents indicated that they observed improvements in staff productivity, operation, and business agility. Respondents were generally very satisfied with the outcomes of their adoption of managed databases, with 96% indicating that their migration had met or achieved their business goals and 52% of those indicating that their expectations had been exceeded. Organizations that have not yet adopted managed databases should prioritize pilots of these technologies, especially for applications that would benefit from improvement in KPIs listed in this paper.



The survey and interview research and analysis contained in this document has been conducted by a consultant engaged by AWS through Gerson Lehrman Group's network of independent consultants and subject matter experts ("Network Members") and third-party panel providers. Network Member survey respondents and interviewees were compensated for their participation in the research. All information is as of October 13, 2022, is for informational purposes, and does not constitute legal, accounting, tax, investment or other professional advice. No representations or warranties (express or implied) are made regarding this document. Neither GLG nor any Network Member shall have any liability whatsoever in connection with the use of this document.