stack overflow ENGAGEMENT

The Incredible Growth of Amazon RDS

Sponsored by **Amazon Web Services**

The popularity of Amazon Relational Database Service (RDS) has grown year-over-year since its release in October of 2009. In 2015, Matt Asay of TechRepublic referred to it as "an instant winner, even before it hit general availability." At the same time, Asay acknowledged that it was nearly impossible to find good data on Amazon RDS's growth. Today, as more developers than ever before are exchanging information about Amazon RDS on Stack Overflow, it's possible to chart its growth and adoption pathways.

Every year, Stack Overflow surveys the programming community on a wide variety of topics related to their working environments and preferred technologies. Over 50 million professional and aspiring programmers visit Stack Overflow on a monthly basis—and this year, over 100,000 respondents from around the world participated in the yearly survey.

In partnership with Amazon Web Services, Stack Overflow utilized the results of its 2018 Developer Survey to analyze the following:

- Developer types most likely to use Amazon RDS
- The relationship between experience level and use of managed databases
- Traffic to various database resources on Stack Overflow
- Technologies that correlate highly with Amazon RDS
- The industries and countries that use Amazon RDS

In terms of traffic to Amazon RDS-related content on Stack Overflow, Amazon RDS is growing at about 40% year over year from 2017 to 2018.

Table of Contents

Types of Developers Using Amazon RDS

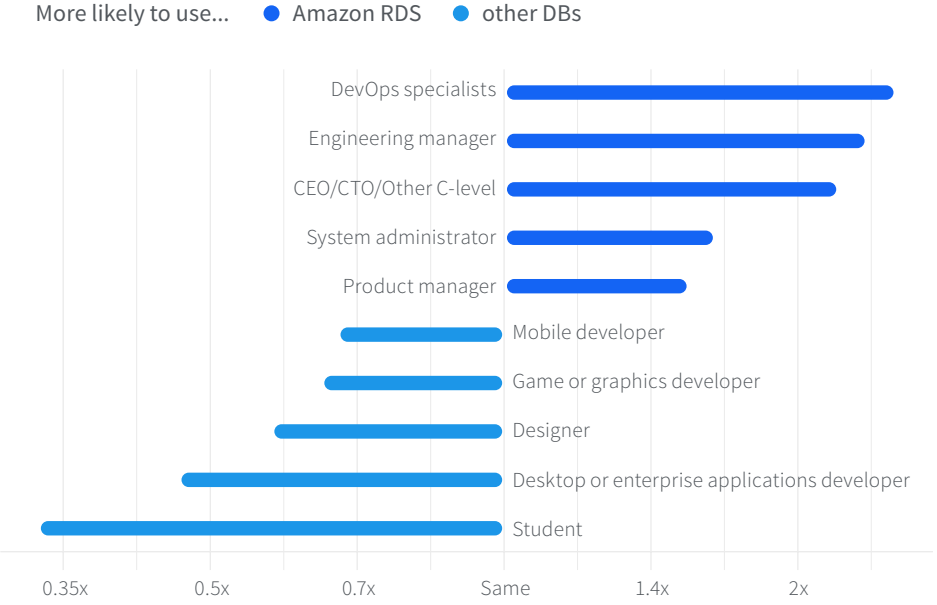
Out of more than 100,000 respondents to Stack Overflow's 2018 Developer Survey, 66,270 said that they use some form of a database for work. For this report, we looked more closely at two categories of database users. First, we looked at users of managed databases, which we've defined as databases being maintained by a third party. Then, we analyzed developer types that install and manage databases by themselves, without the help of a third party vendor. Ultimately, we sought to understand which developer types are more likely to use a managed database like Amazon RDS, which are more likely to use a different managed database, and which are more likely to install and manage a database themselves.

As part of the 2018 Developer Survey, Stack Overflow asked about the following managed databases:

- Amazon DynamoDB
- Amazon RDS
- Amazon Redshift
- Google BigQuery
- Microsoft Azure databases

Below, you'll find a graph that highlights the types of developers that are most and least likely to use Amazon RDS. DevOps specialists are the developers who are most likely to use Amazon RDS. These developers often use technologies that correlate directly with use of Amazon RDS, including Bash/Shell, Ruby, and Go. Not far behind are professionals in technical leadership roles, such as engineering managers and C-level executives.

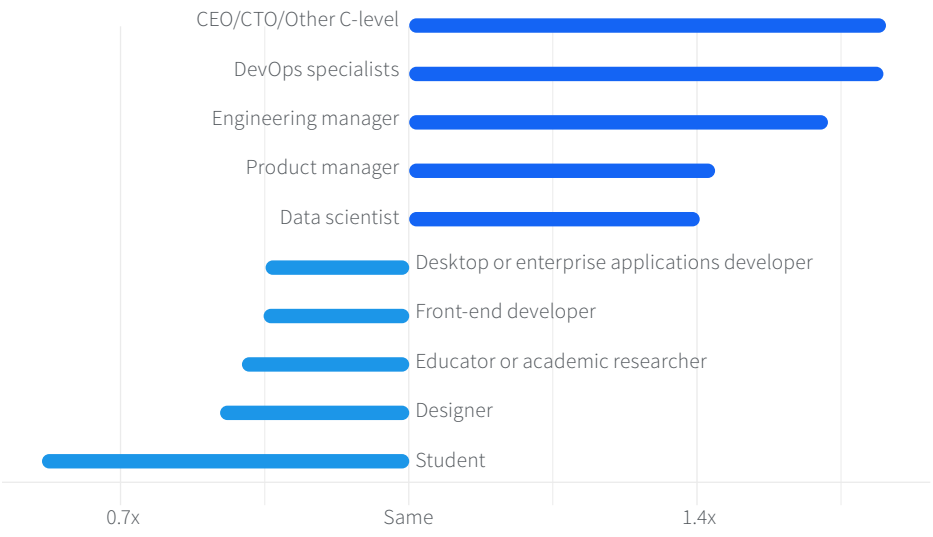
What kinds of developers use Amazon RDS?



Relatively more use of Amazon RDS

When these results are compared to the populations of respondents that are most and least likely to use any form of a managed database, we find many similarities.

What kinds of developers use managed DBs?



Relatively more use of managed databases

Similar to Amazon RDS, we see that DevOps specialists and decision makers such as C-level executives, engineering managers, and product managers are among those most likely to use a managed database. However, data scientists are the most likely to use managed databases in general.

Experience Level and Managed Databases

Developers with five (5) years or less of professional experience are less likely to say that they use a managed database such as Amazon RDS. These programmers with fewer years of experience are more likely to use databases that they maintain themselves, such as MySQL and PostgreSQL.

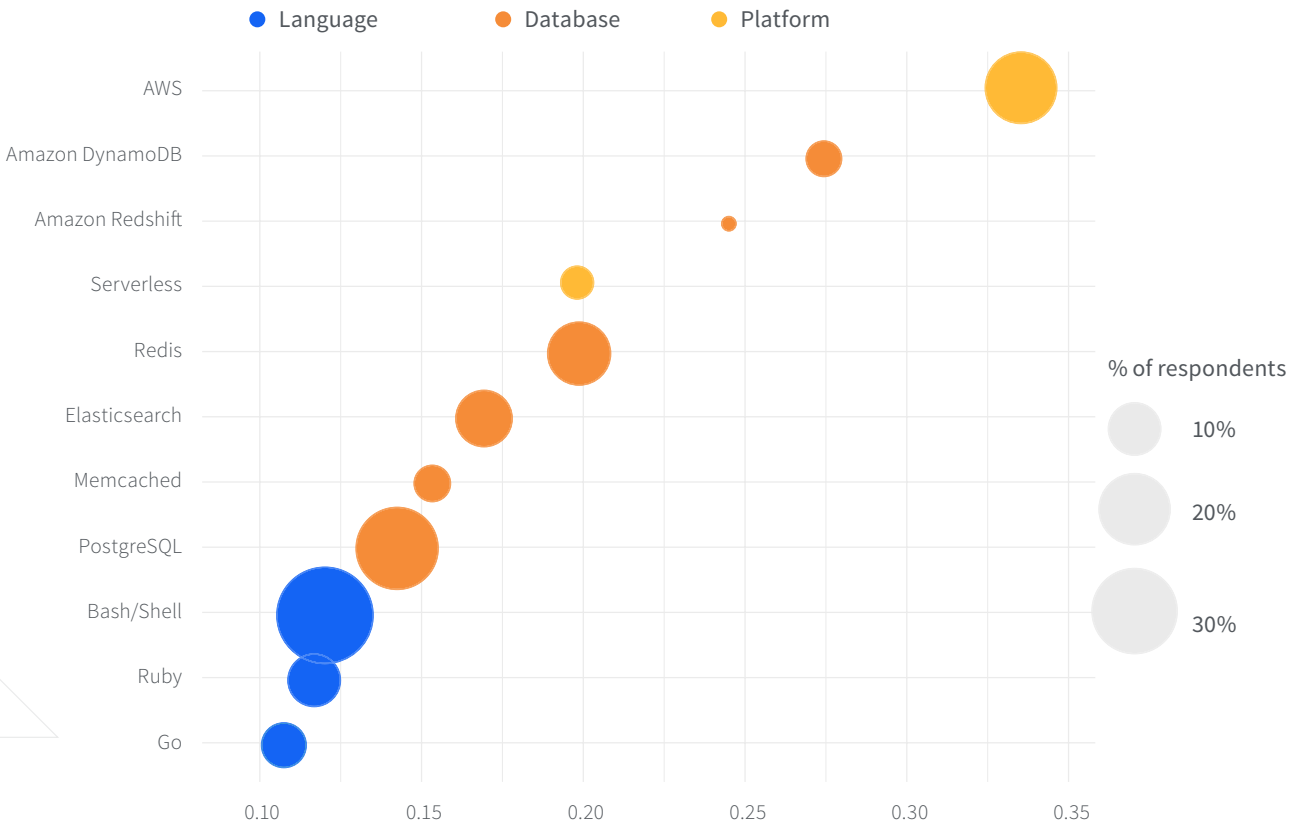
How many developers use a managed database?

On the other hand, nearly 30% of respondents with 20 years of experience said that they are using a managed database such as Amazon RDS. In addition to managed database options, SQL Server is a popular database choice among these more seasoned developers.

Managed database use is highest among developers with 10-20 years of experience.

Which Technologies Correlate With Amazon RDS?

Not surprisingly, developers that use Amazon RDS also tend to use other Amazon technologies. In particular, they lean on technologies such as AWS, Amazon DynamoDB, and Amazon Redshift.



Correlation between use of each technology and Amazon RDS

Amazon RDS users are incredibly likely to say that they use serverless architecture. Redis, PostgreSQL, and Elasticsearch - the most loved databases in Stack Overflow's 2018 Developer Survey, along with Amazon RDS - are also highly correlated with Amazon RDS use. The languages most correlated with Amazon RDS use are Bash/Shell, Ruby, and Go. These are languages often used for DevOps. Overall, this examination of technology correlations shows us how a typical Amazon RDS user is invested in the Amazon product ecosystem and is working on DevOps tasks.

We do not see that Amazon RDS users are particularly likely (compared to other developers) to use SQL Server or Oracle. In fact, these are negatively correlated with Amazon RDS use.

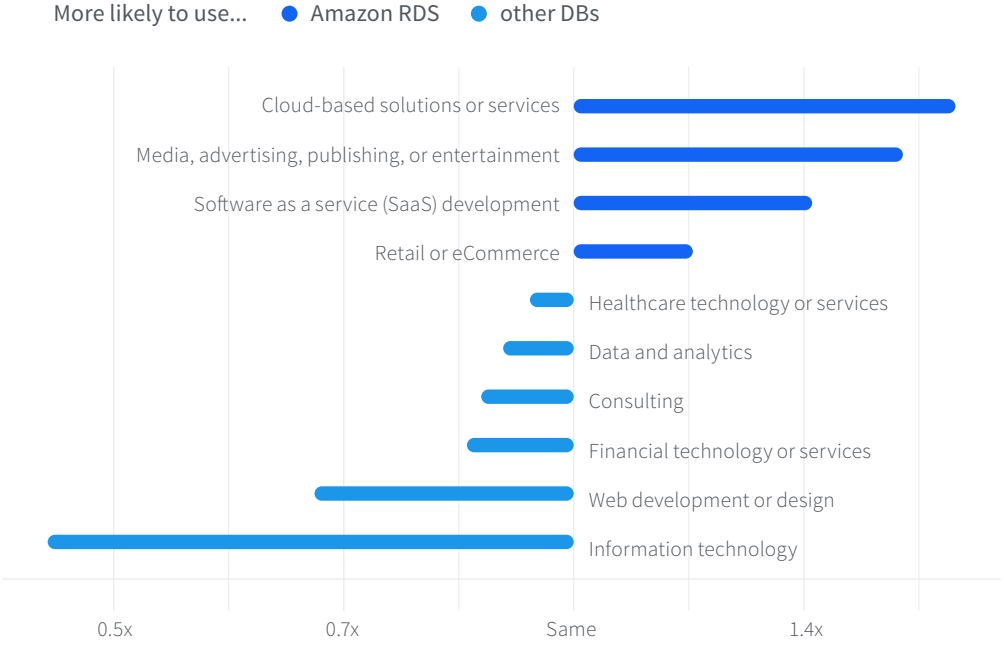
Demographic Information About Amazon RDS Users

To add additional context to our findings, we looked at the industries that are most likely to use Amazon RDS, as well as the countries in which it is most frequently used.

Amazon RDS Users by Industry

Using the data provided by survey respondents about their current jobs, we looked at Amazon RDS usage by industry. This also enabled us to compare the industries that are more likely to use Amazon RDS to those that use managed databases in general.

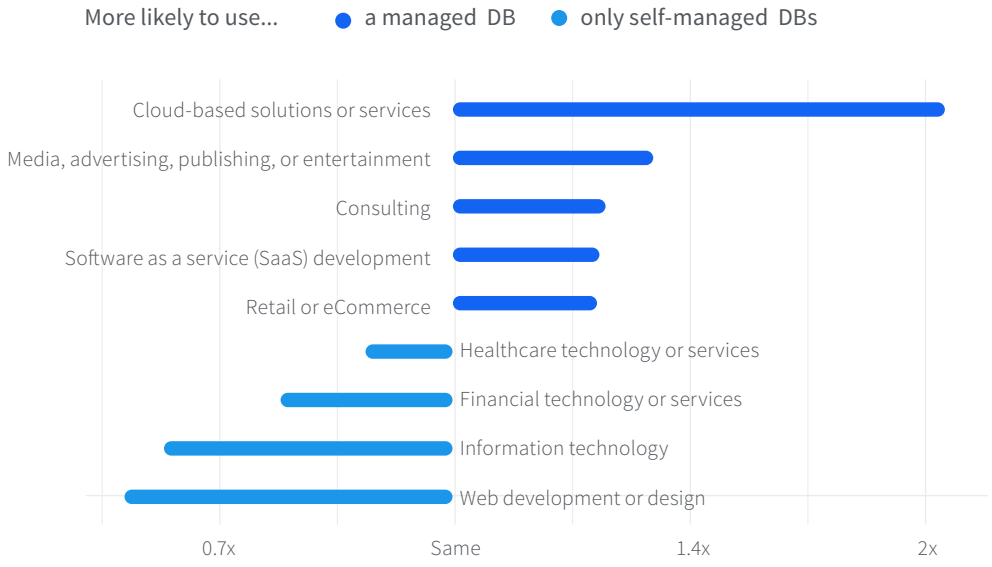
Where do developers who use Amazon RDS work?



Relatively more use of Amazon RDS compared to other databases

Developers who work at companies focused on IT or web development/design are less likely to use Amazon RDS. Meanwhile, developers working on cloud-based services or media/entertainment are more likely to use Amazon RDS.

Where do developers who use managed DBs work?



Relatively more use of managed databases

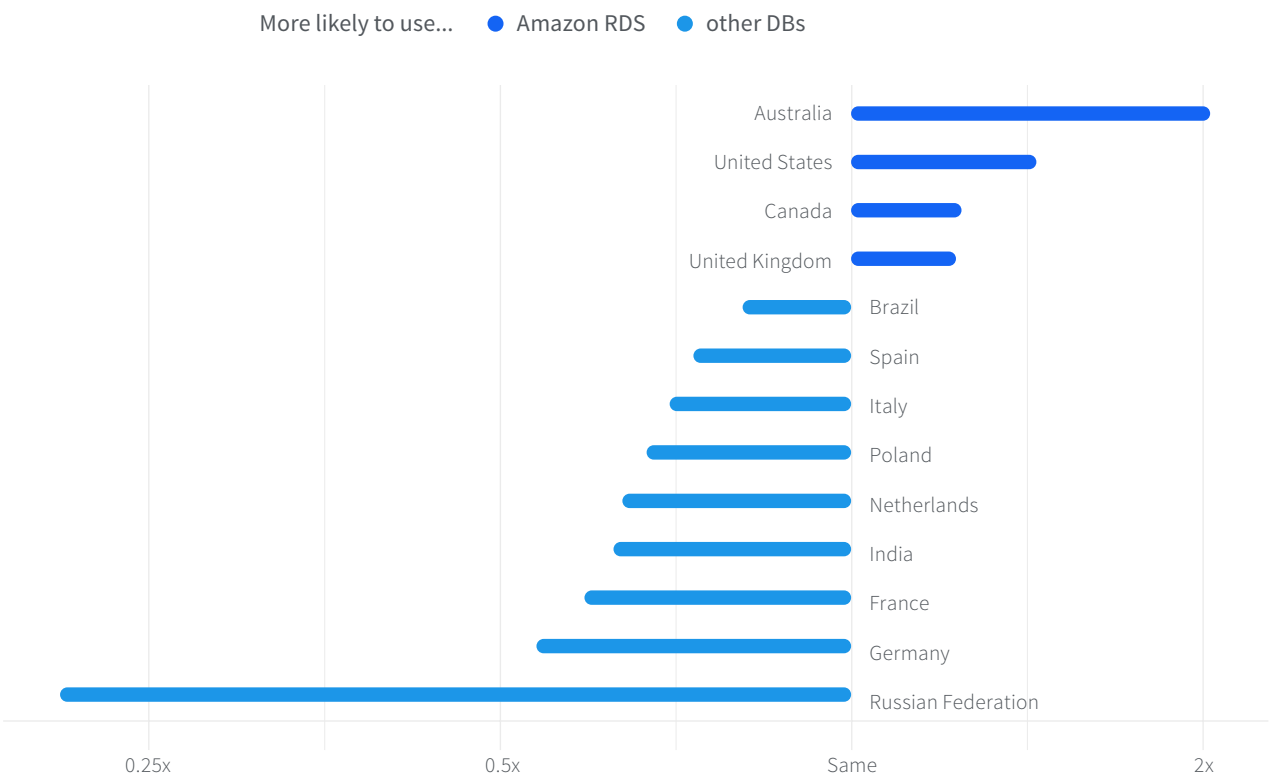
We see many of the same types of industries using high levels of managed databases in general, including cloud-based solutions and media/entertainment companies.

Developers at web development companies are less likely to use managed databases, while developers working on cloud-based services are more likely to use managed databases.

Amazon RDS Users by Country

The 100,000 developers who participated in Stack Overflow's 2018 Developer Survey are located across the globe. This allowed us to take a closer look at Amazon RDS usage by developers in over a dozen countries.

Where do developers who use managed DBs work?



Relatively more use of Amazon RDS compared to other databases

Because Amazon is based in the United States, English-speaking countries were among the first to adopt AWS. As a result, developers in countries such as Australia, the United States, and Canada are most likely to say that they use Amazon RDS.

A variety of factors seem to be influencing Amazon RDS adoption around the globe. While Australia, the United States, and Canada rank highly in BSA's 2018 Global Cloud Computing Scorecard, the same report found that Russia and India have not yet embraced the international approach to cloud computing. This likely means that public adoption of cloud computing is much lower overall in Russia and India, and indeed, adoption of Amazon RDS was relatively low in both countries. Additionally, the strict data laws in countries such as Germany and France can help us understand why they are near the bottom of this graph.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