2018 Database DevOps Survey

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DBmaestro's annual Database DevOps Report reviews the challenges and best practices of companies using or looking to implement DevOps for databases. The results are based on responses from 244 IT professionals from around the world, collected through an online survey conducted in October 2017.

Key findings from this year's survey include:

- The majority of survey respondents (55%) are already using DevOps in at least 20% of their projects, with **33% using DevOps in more than half of their projects**. Only 17% of the companies have yet to adopt DevOps for their projects.
- While DevOps has been widely adopted to quickly deploy development changes, when it comes to databases only 14% of respondents are able to deploy database changes daily.
- **Continuous Delivery is highly adopted (54%) for Application Development, but lags behinds when it comes to Databases (36%)**.
- Looking at 2017, **12% of respondents have an impressive lead time of a day or better**. This number is expected to double in 2018, with 23% aiming to have a lead time of a day or less. Yet DBAs are the bottleneck, with 59% of companies allowing only them to make database related changes.
- The top three risks when deploying database changes account for 70% of the biggest risks, and include: Downtime (25%), Performance impact (23%) and Data loss (22%).
- **Accidental Overrides is the #1 reason for errors when making database changes**. In fact, the top 3 reasons for errors when making database changes are issues that have long been solved in the world of code development.
- **Database crashes are quite frequent. Almost a third (28%) had a problem in the past month**, and almost half (48%) in the past 3 months. Number of failures increases with the frequency of database deployments.

The majority of survey respondents (55%) are already using DevOps in at least 20% of their projects, with 33% using DevOps in more than half of their projects.

Only 17% of the companies have yet to adopt DevOps for their projects.

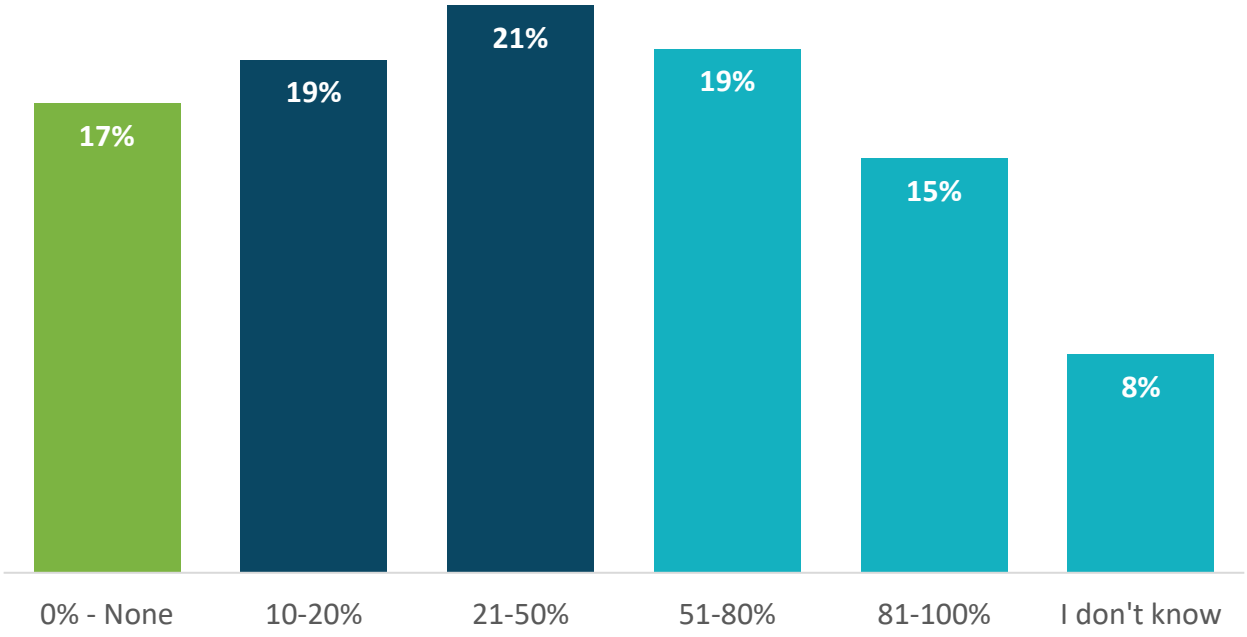

Figure 1: Percent of IT projects using DevOps approach

Most survey respondents (80%) have some level of integration between the DBA and DevOps teams, with 16% fully integrated and 64% showing “some” or “mostly” integrated teams.

Only 20% of companies have no integration between the DBAs and DevOps.

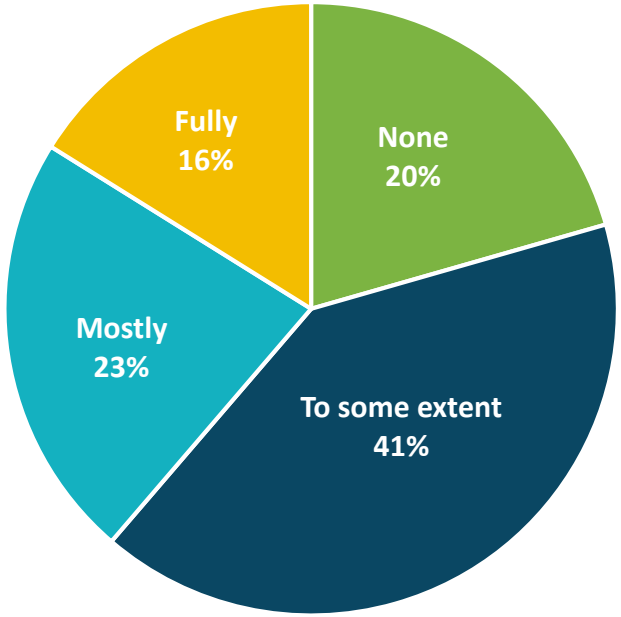

Figure 2: Integration of DBAs with DevOps Teams

We asked respondents to what extent their company has adopted continuous delivery in Application Development, Databases, Infrastructure, Security and Testing.

It comes as no surprise that Application Development leads the way with Continuous Delivery adoption rates.

When comparing those who fully adopted Continuous Delivery (i.e. in 50% or more of IT Projects), there's a gap between Application Development (54% adoption), Testing (44%) and Databases, which lags behind with 36%.

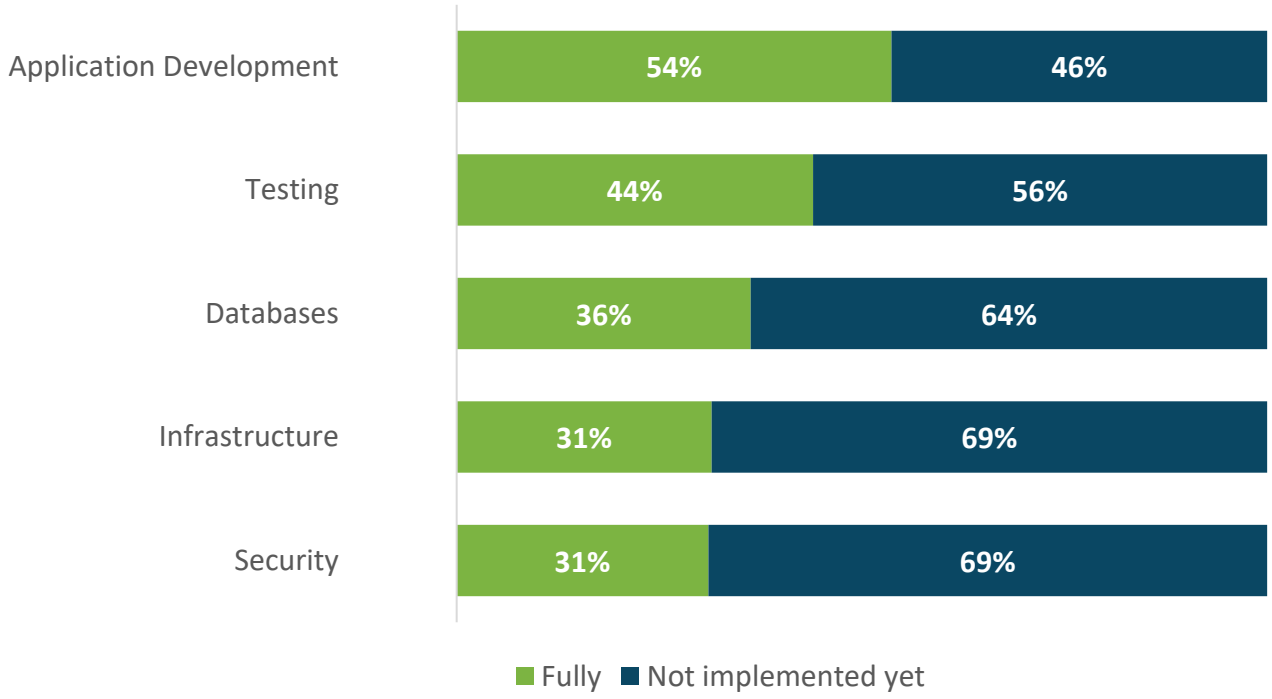

Figure 3: Continuous Delivery Adoption Rates

Most Popular Release Management Tools

Jenkins is by far the most popular release automation tool amongst survey respondents (34%). Together with Bamboo, TeamCity, Octopus and CA – these 5 release tools account for more than 50% in terms of popularity.

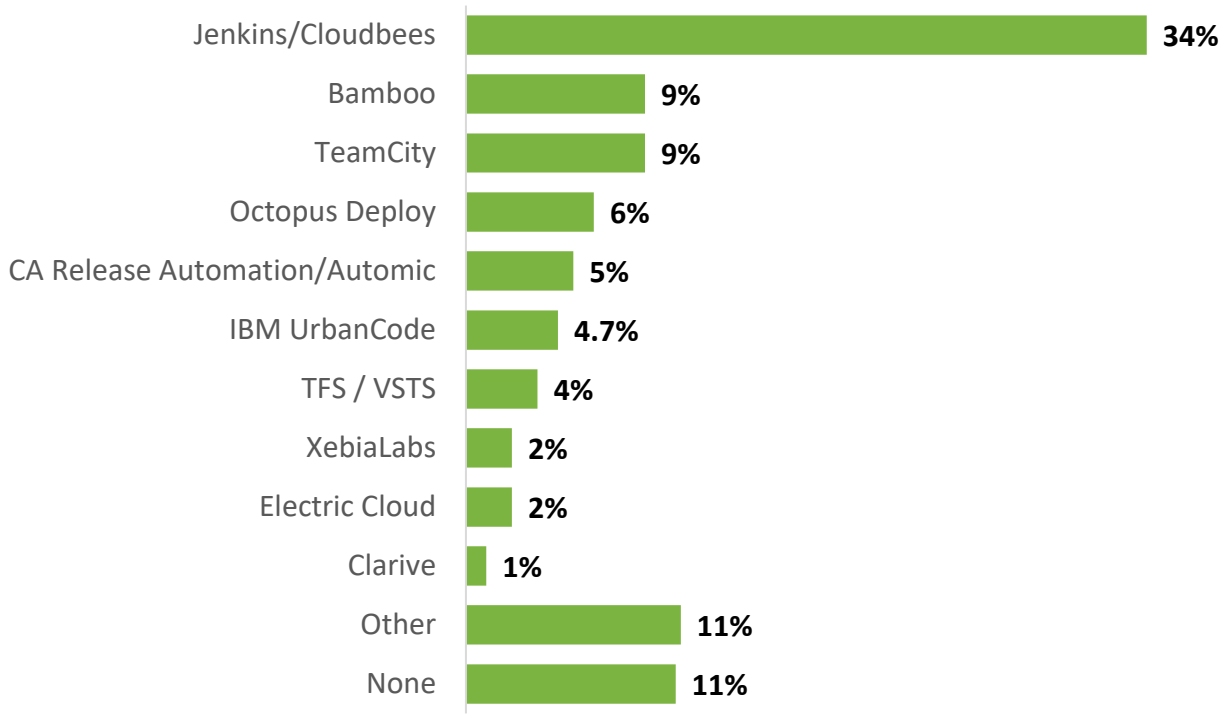

Figure 4: Most Popular Release Management Tools

We asked respondents what their development-to-production lead time was in 2017, as well as their goal for 2018.

Looking at 2017, 12% of respondents have an impressive lead time of a day or better. This number is expected to double in 2018, with 23% aiming to have a lead time of a day or less.

While 25% of respondents have a lead time of a week or better in 2017, in 2018 this number is again expected to double to an impressive 49%.

In 2017, 40% are laggards with quarterly or worse lead times, and this number is expected to shrink to 23% in 2018.

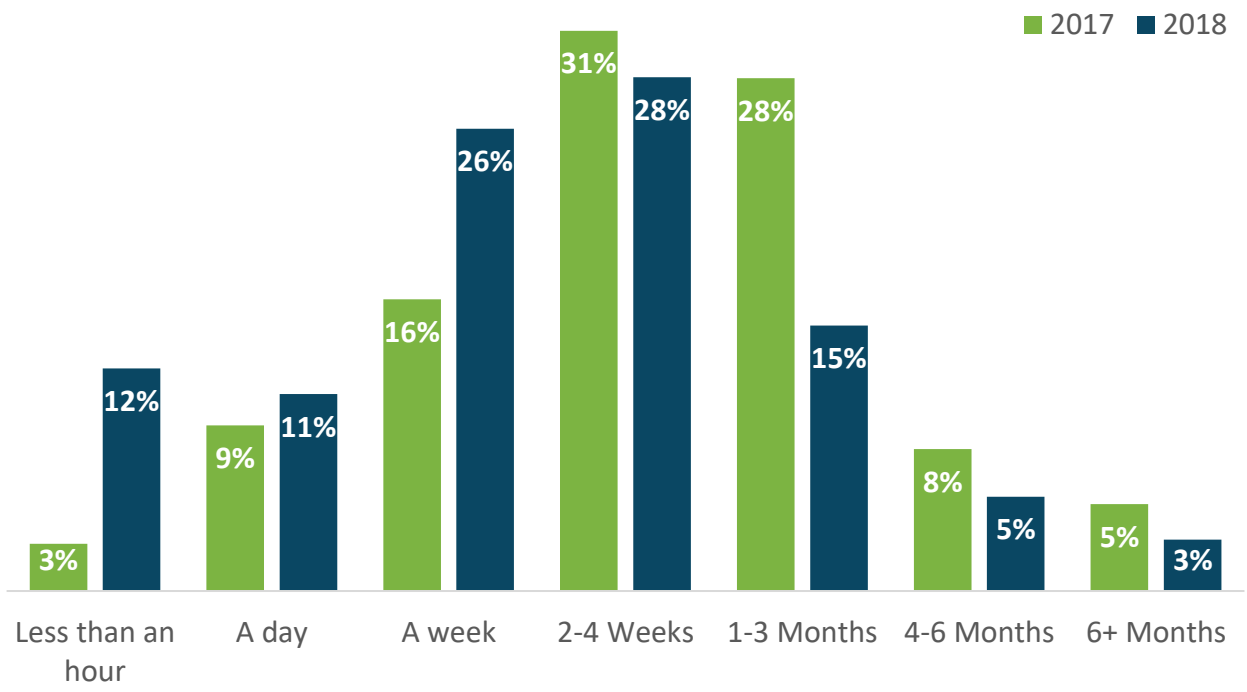

Figure 5: Development-to-Production Lead Time

We asked respondents what the frequency of their application deployments by DevOps was in 2017, as well as their goal for 2018.

Looking at 2017, 33% of respondents deploy more than once a week. This number is expected to double in 2018 to 62%.

In 2017, 80% are already deploying a couple of times a month or better, and this number is expected to grow slightly to 85% in 2018.

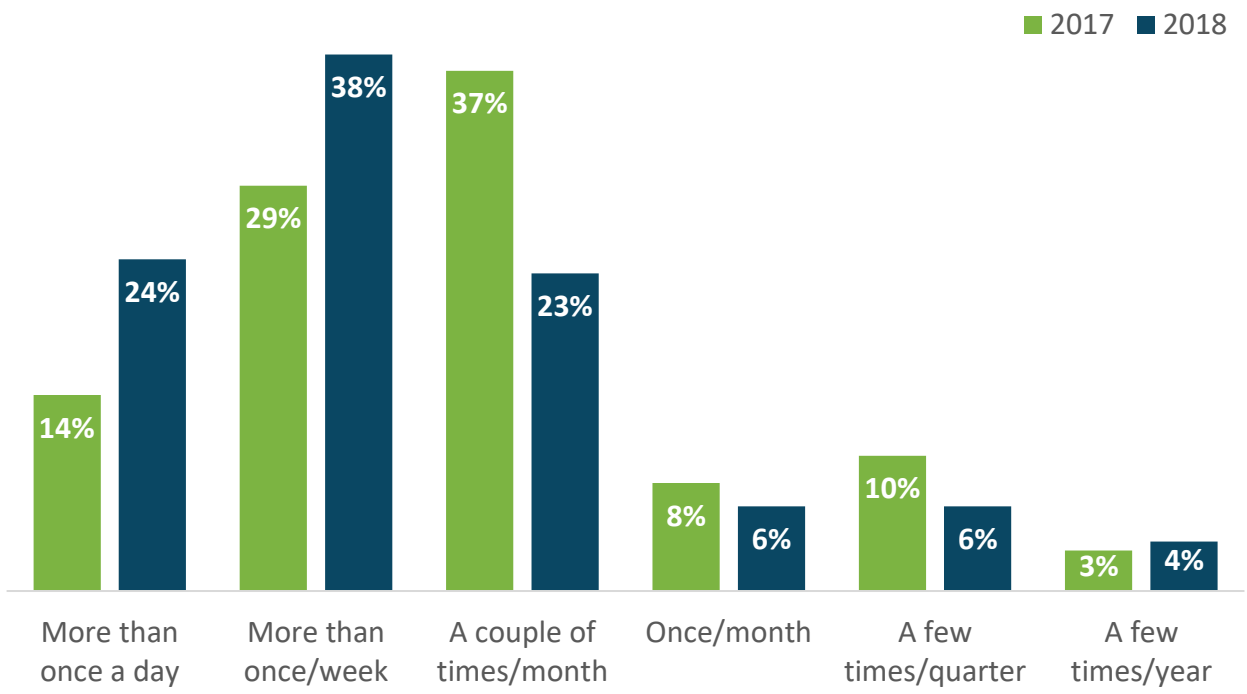

Figure 6: Frequency of Application Deployments by DevOps

Microsoft SQL Server and Oracle lead the chart when it comes to the most popular database, with each being used by 20% of respondents.

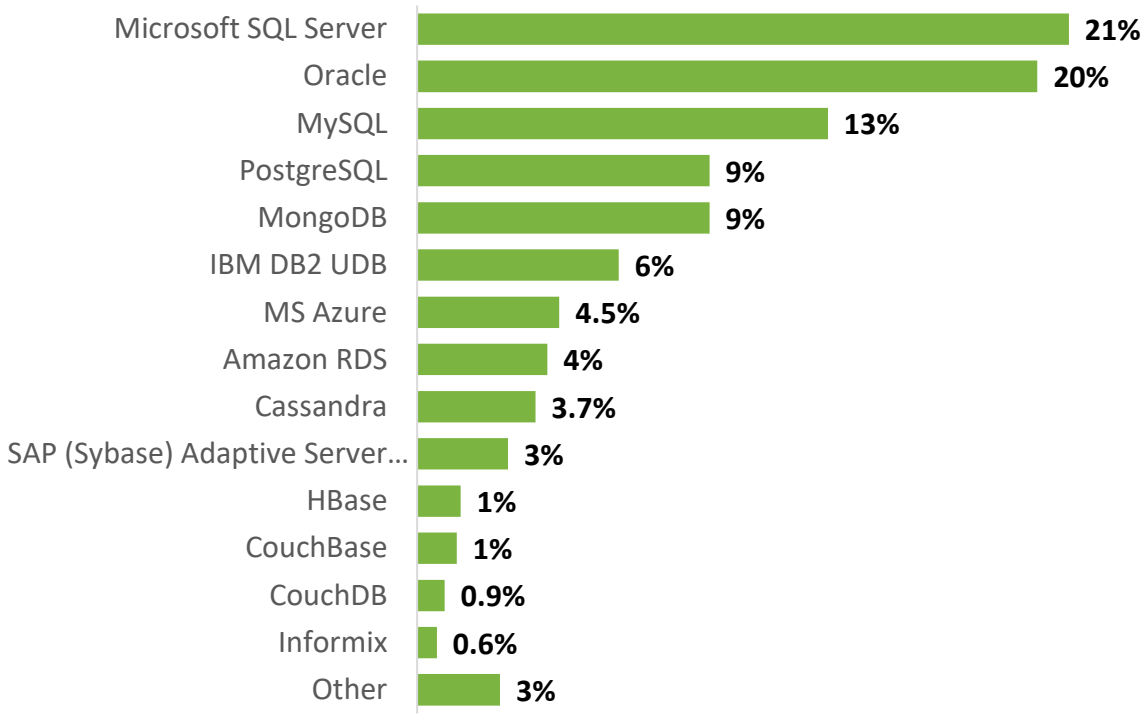

Figure 7: Most Popular Databases

What stands out when looking at how DBAs spend their time is that the pie chart is almost "equally" split between these top six activities. The top two activities, of Security and Database changes, take 23% and 22% respectively. Adding the next two activities (Optimization – 19%, Backup & Recovery – 13%) and we already account for 77% of the DBAs time.

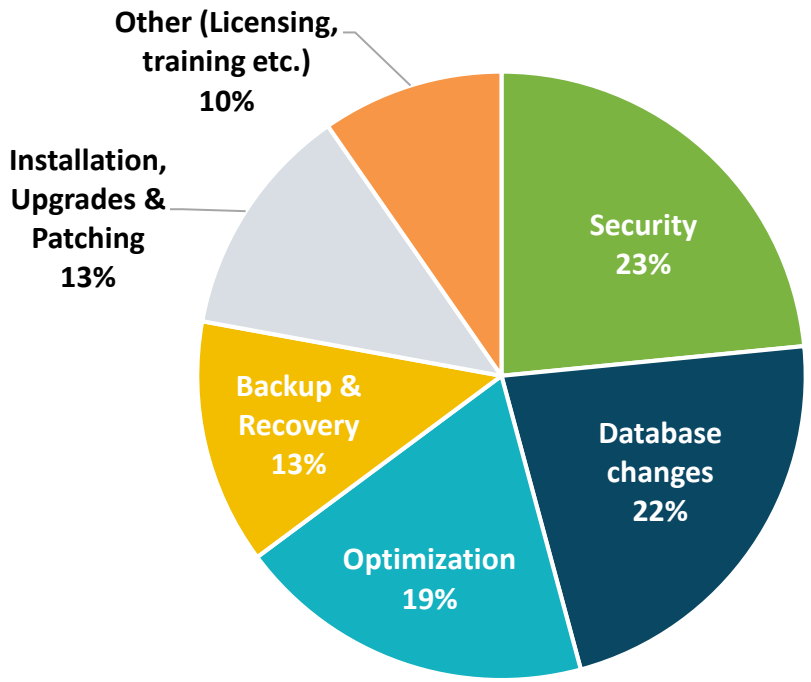

Figure 8: How DBAs Spend Their Time on Top Database Activities

The top three risks when deploying database changes account for 70% of the biggest risks, and include: Downtime (25%), Performance impact (23%) and Data loss (22%).

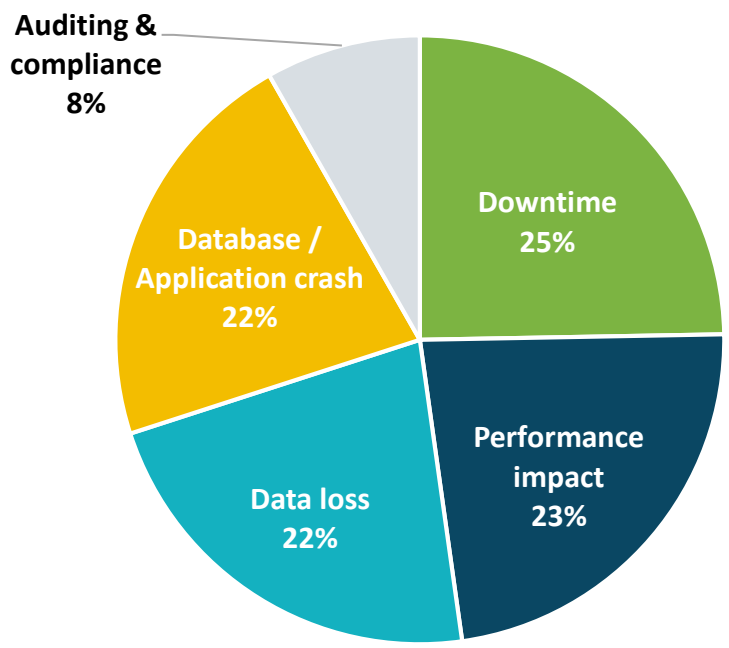

Figure 9: Biggest Risks When Deploying Database Changes

There are plenty of reasons that can cause errors when making changes to a database. The top three (accounting for over 50% of the errors) are Accidental overrides (19.3%), Invalid Code (19%) and Team Conflicts (18%).

These top 3 reasons have long been solved in the world of code development. Companies will need to find ways to introduce similar tools for the database, such as version control and testing, to help reduce, if not eliminate, the main causes of these errors.

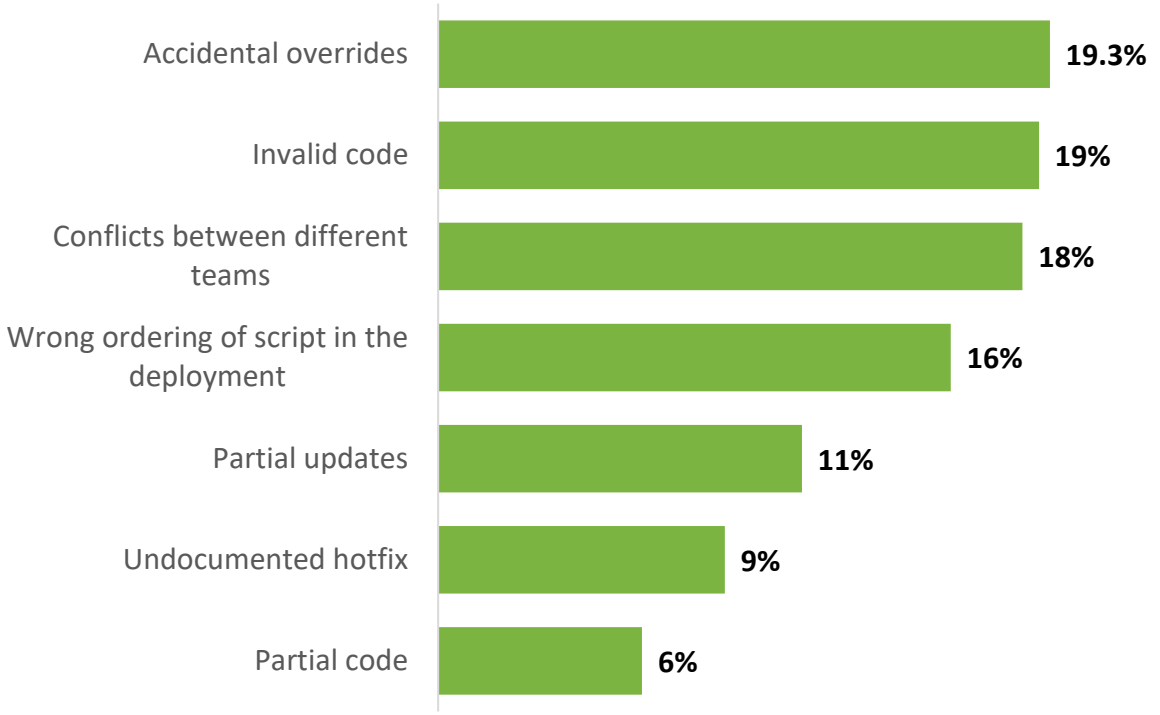

Figure 10: Top 3 Reasons For Errors When Making Changes to the Database

Database crash on a regular basis and only 23% of respondents said they didn't have a problem in at least over a year.

Almost a third (28%) had a problem in the past month, and almost half (48%) in the past 3 months.

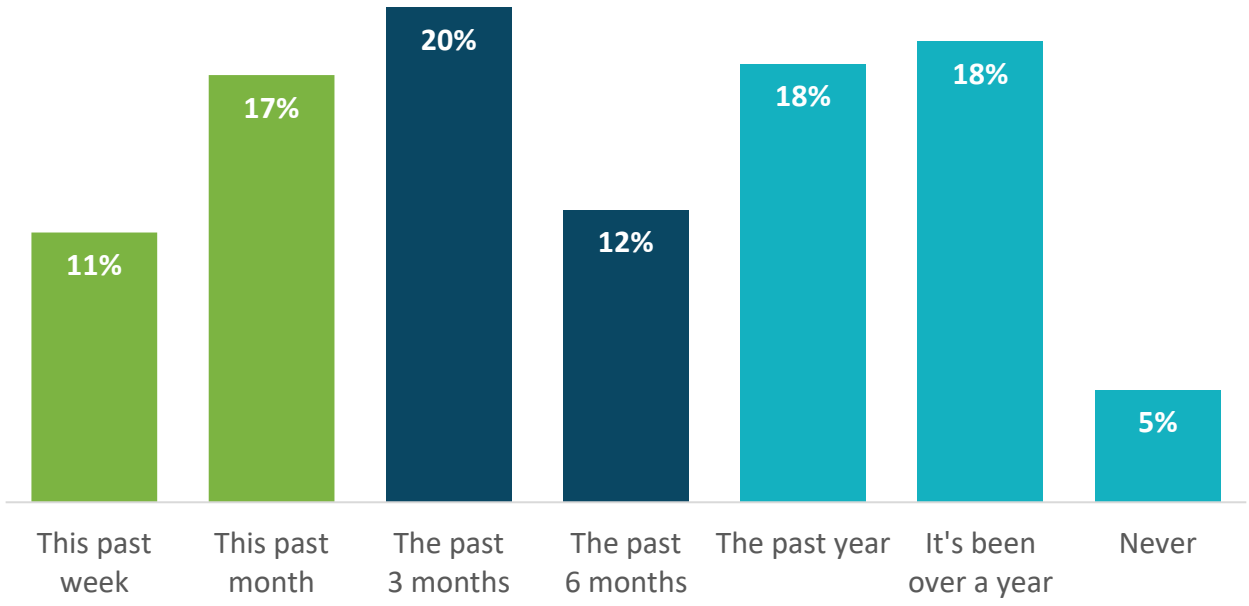

Figure 11: Last Significant Problem In Database (e.g. Downtime, Crash)

Looking at the longest time it takes to recover from database problems in the past 12 months, over half (55%) recovered within 5 hours or less, and 34% took more than 6 hours (the majority of those resolved the problem within 7 days).

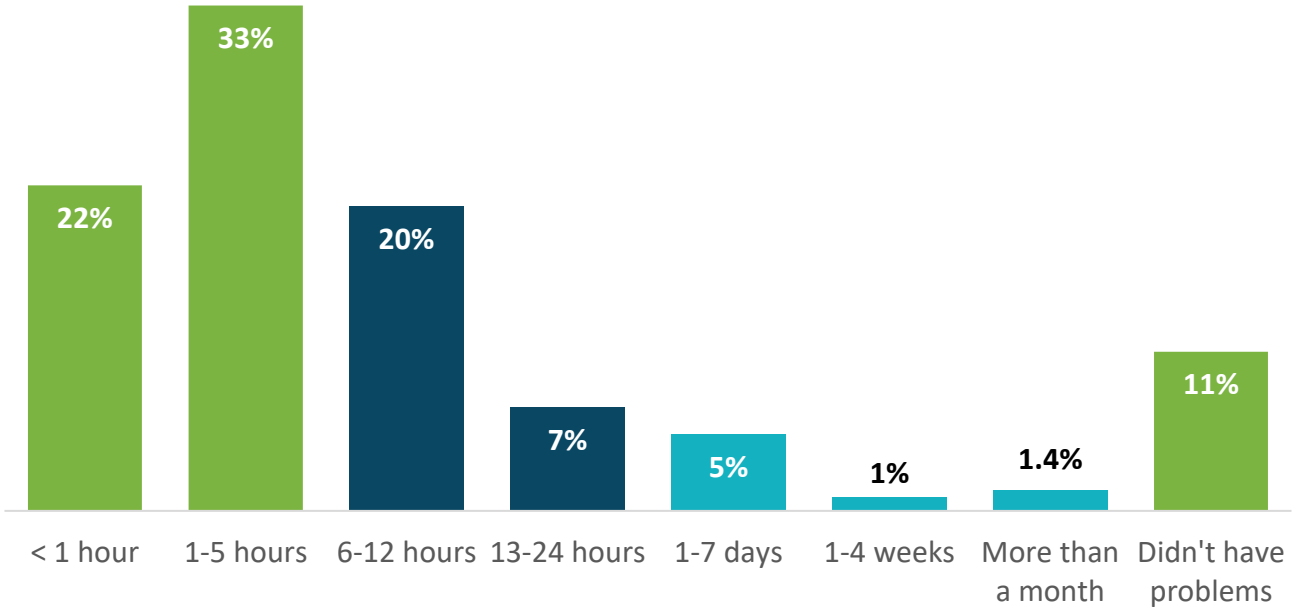

Figure 12: Longest Time to Recover From Database Problems (Last 12 Months)

After looking at the longest time it takes to recover from database problems (see page 15), we asked respondents how much time on average it takes to recover from these problems.

82% of problems were resolved within 5 hours, and only 18% took longer.

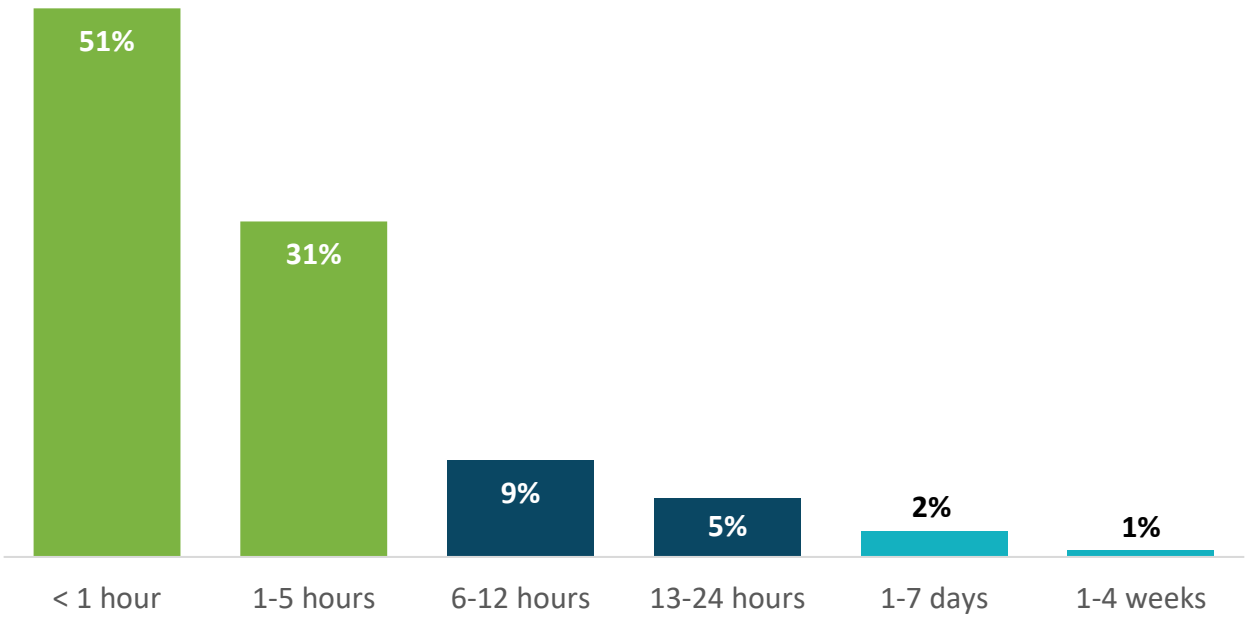

Figure 13: Average Time to Recover From Database Problems

DBAs are still king of their database, with 59% of respondents saying only DBAs are allowed to make changes to the database.

Organizations will need to find ways to solve the tension between development requirements to drive faster releases (see Page 9) and the DBAs being the bottleneck of this process.

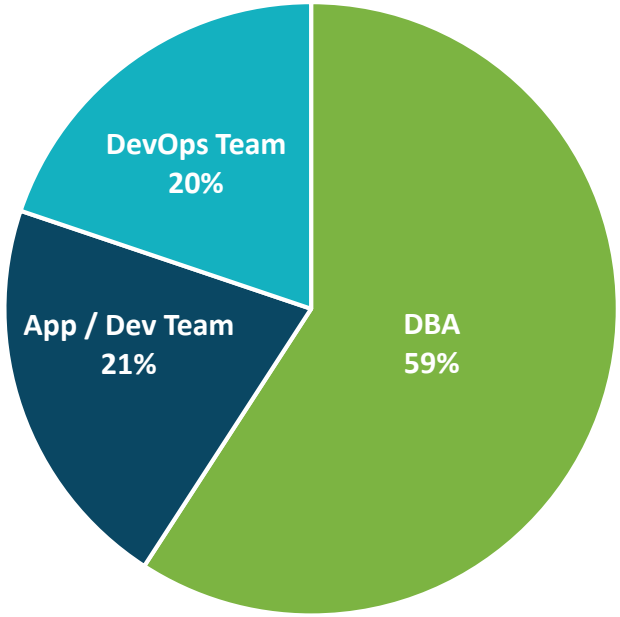

Figure 14: Access to Make Database Changes

Execution of scripts is still the main method (51%) of performing changes to the database. Automation tools are already in charge of 34% of change updates.

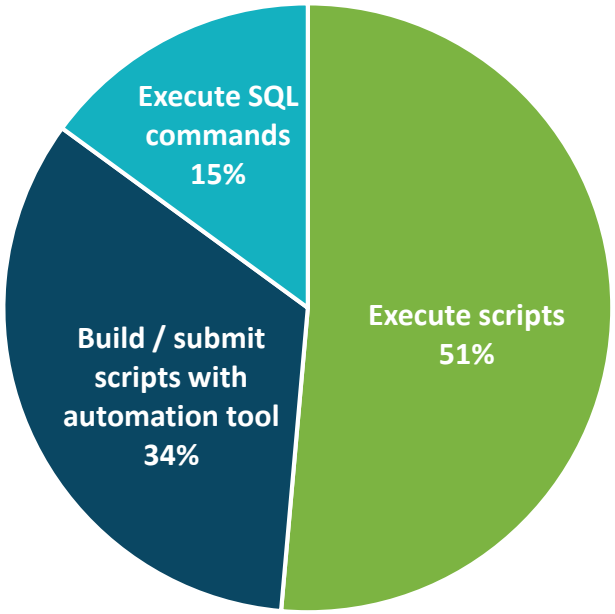

Figure 15: How Database Changes Are Performed

While DevOps has been widely adopted to quickly deploy development changes, when it comes to databases only 14% of respondents are able to deploy database changes daily.

Almost a quarter (22%) of respondents are able to deploy once a month or less.

The good news is that the majority (64%) are able to deploy database changes a few times a month or better.

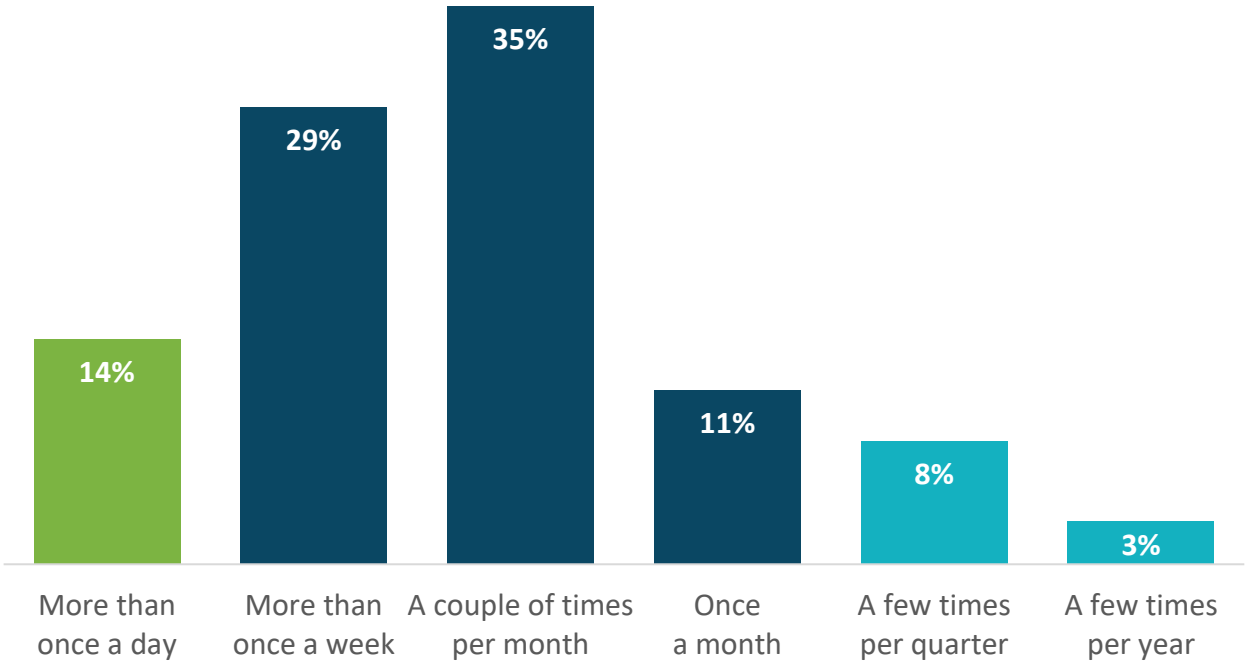

Figure 16: Deployment Frequency of Database Changes

Upon inspection, we can see that the number of failures increases along with the frequency of database deployment.

With most database changes being done manually (see Page 18), this comes as no surprise.

As companies are looking to increase deployment frequency in 2018 (see Page 9), they will need to find ways to automate their database releases and reduce the number of database-related errors.

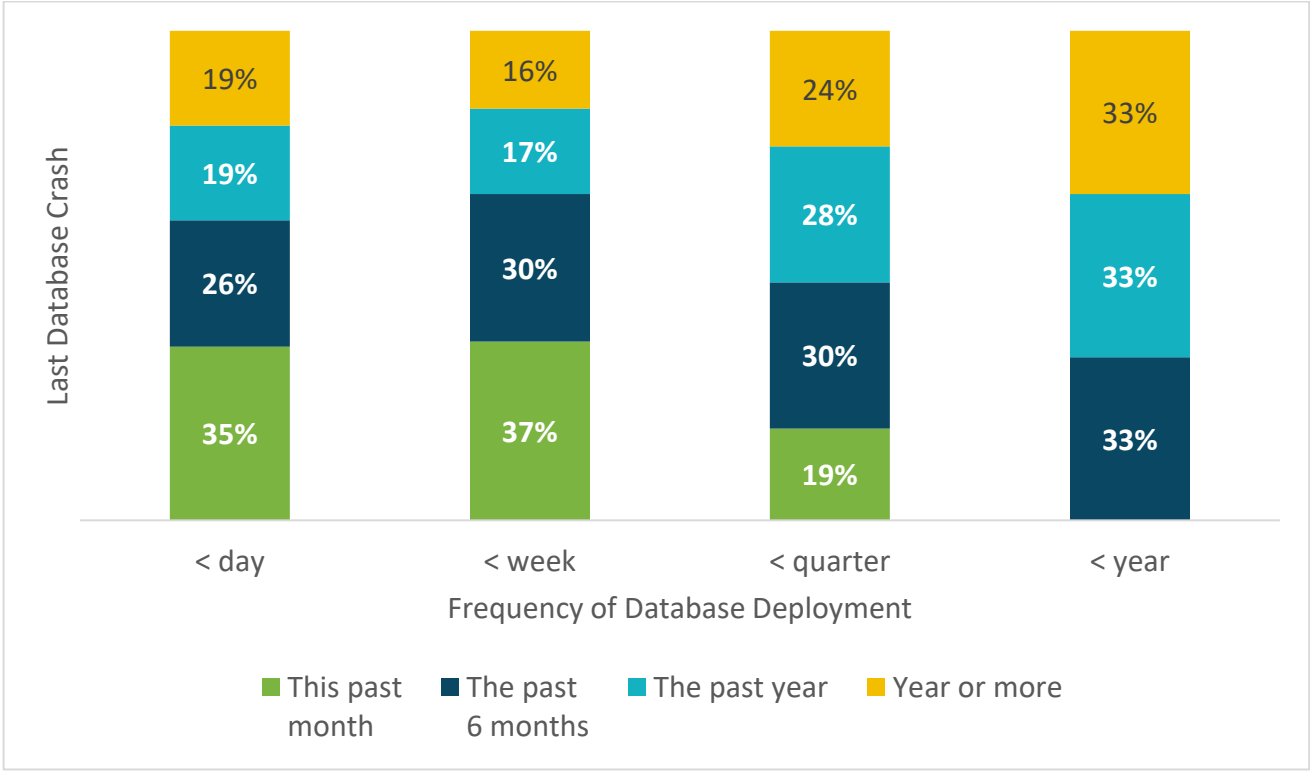

Figure 17: Frequency of Database Changes vs. Last Database Crash

Database changes can lead to errors, and only 17% feel fully confident while making changes and show “No fear.” Over a third (36%) fear making changes with at least half the changes they deploy.

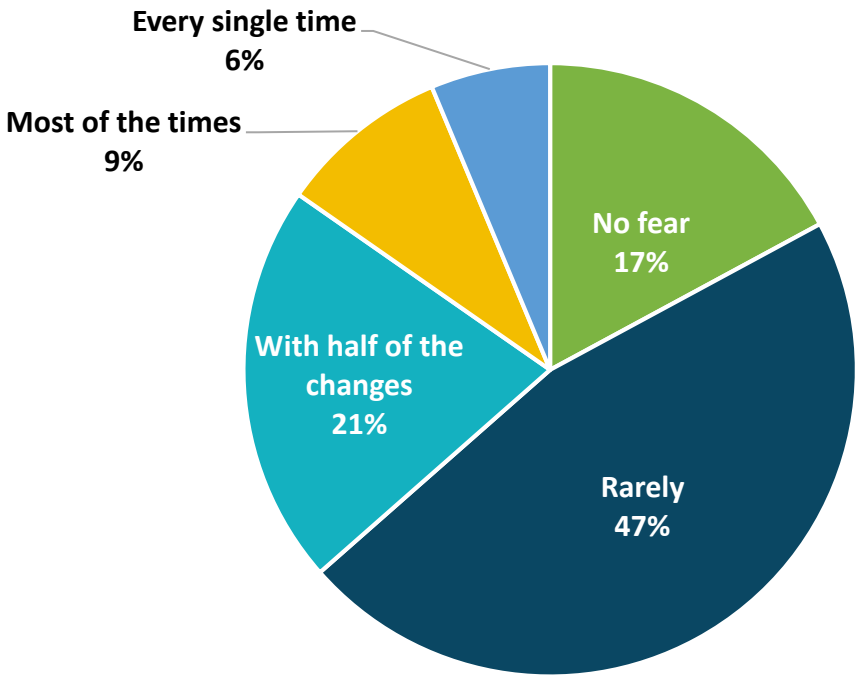

Figure 18: Fear of Making Database Changes

Over half the respondents (53%) are responsible for the database in their organizations.

Half of the respondents are managers, directors, VPs and C-level executives.

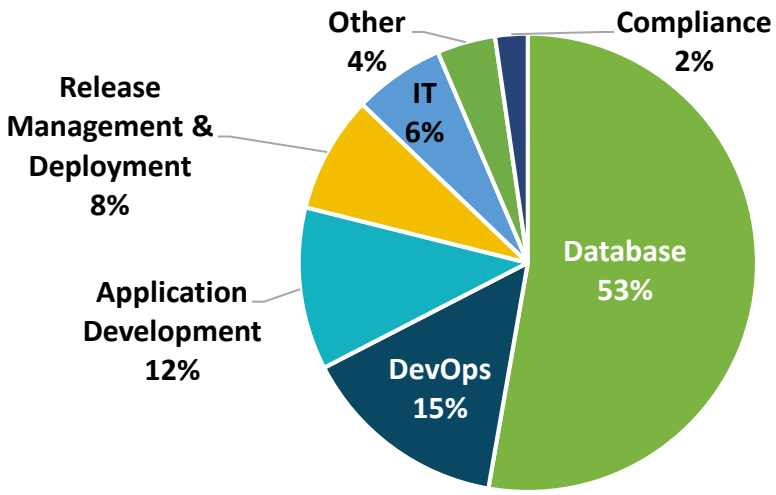

Figure 19: Job Responsibility

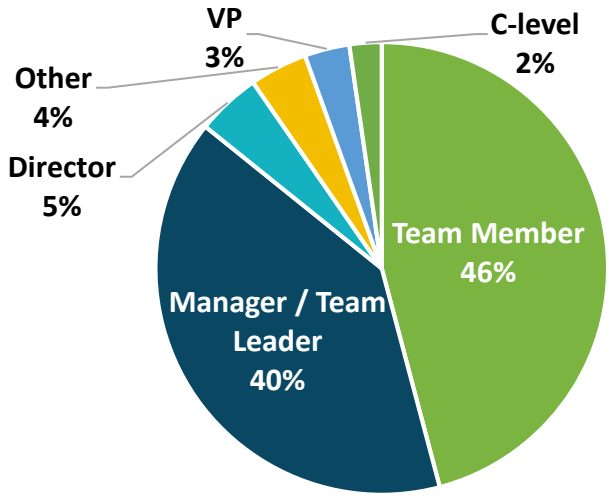

Figure 20: Position Within Organization

Over half of the respondents (55%) are from companies of 1,000 or more employees.

Financial Services, IT and Banking account for over half (57%) of the respondents.

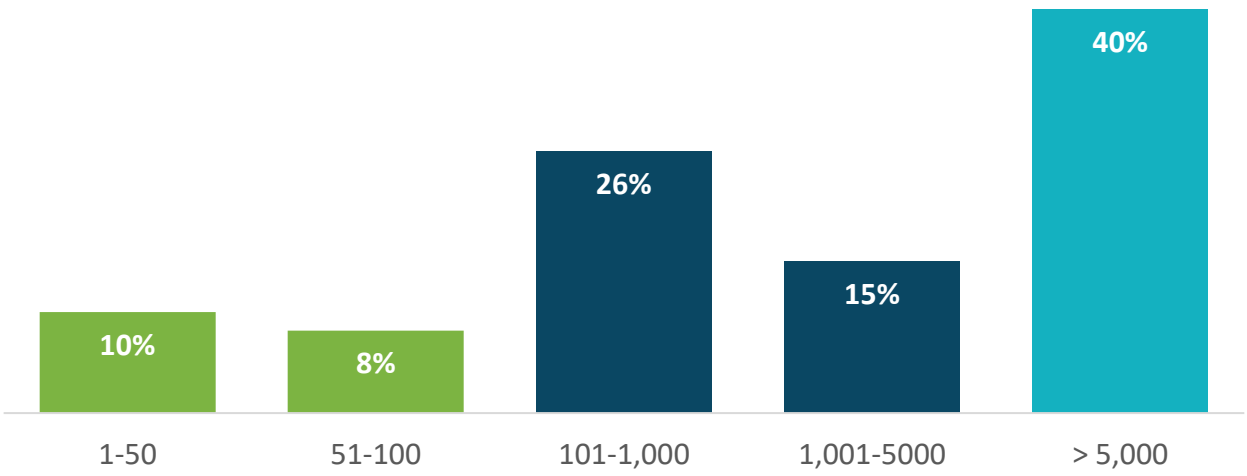

Figure 21: Number of Employees

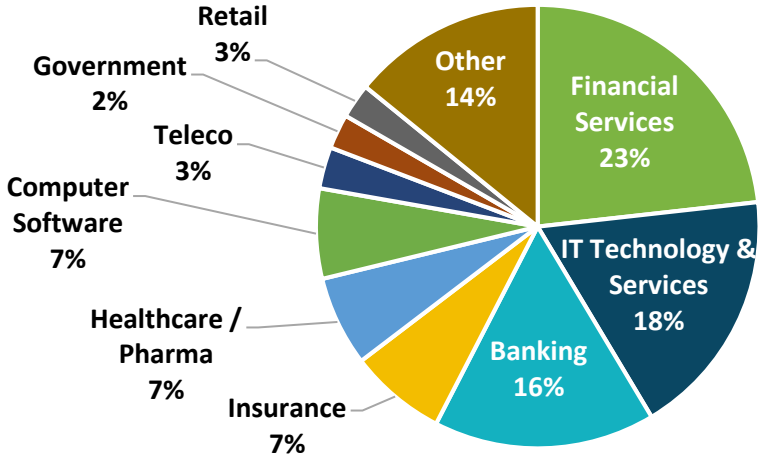

Figure 22: Industry

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About DBmaestro

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DBmaestro is a leading DevOps for database solution provider. Our flagship product, DBmaestro DevOps Suite, introduces DevOps and automation best practices to databases for the enterprise, dramatically simplifying, accelerating, and improving release processes, while modernizing database development via release pipelines, long enjoyed elsewhere in the industry.

We are providing both database source control and database release automation capabilities across the board for developers, DBAs, security, and operations in multi-database enterprise environments.

For more information, please visit www.DBmaestro.com