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**THE STATE OF SOFTWARE  
AND DEVOPS OBSERVABILITY**

## Executive summary

In order to understand the latest software development observability practices, Scalyr conducted a survey. We solicited responses from 155 practitioners from a variety of sources, including third-party engineering websites, social media, and engineering or DevOps-focused events between April 2 and May 31, 2018.

Nearly half of respondents (47.7 percent) have five or more software or DevOps observability products. They prefer to use Metrics and Reporting for most DevOps observability use cases. The exceptions are cloud product operations and support and security monitoring (Log Management), and fraud detection (Alerting and Notifications).

74.8 percent of respondents are delivering some microservices, with another 12.3 percent “working on it.” More than one-third (34.2 percent) of respondents deliver more than half of their applications as microservices. That number jumps to nearly half (48.2 percent) for respondents in a DevOps role. One-quarter (24.7 percent) of respondents deploy software code into production at least once per day. That number jumps to well over one-third (37.7 percent) for respondents who deliver mostly microservices.

There are two camps when it comes to Log Management. Respondents either use the product provided by Corporate IT (40.9 percent) or they procured or built/assembled their own (40.2 percent). Those who deliver mostly microservices or push code at least once per day tilt the scales toward the latter.

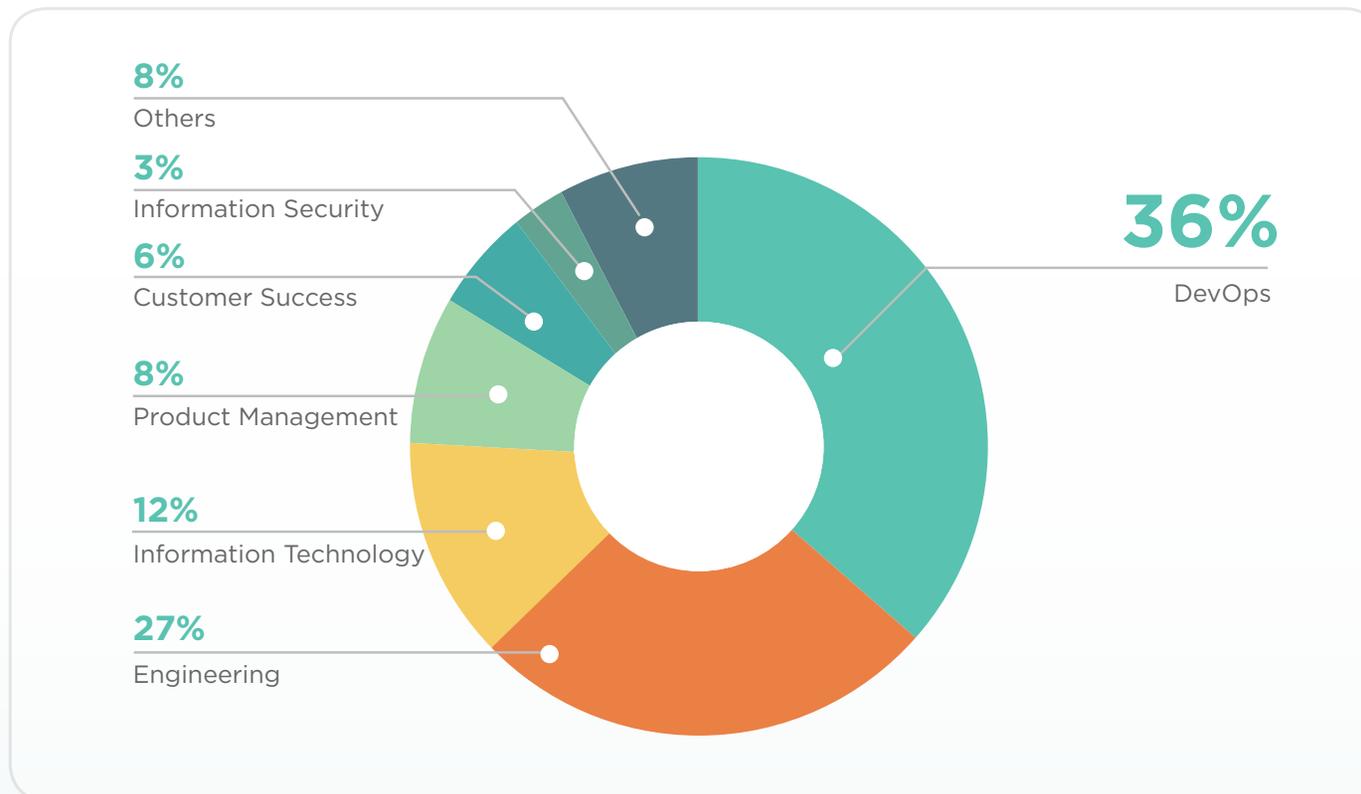
Teams sure spend a lot of time troubleshooting! 40.0 percent of respondents say at least half of their companies’ engineering time is spent on this activity. That number jumps to half for those respondents in a DevOps role, 62.3 percent for those who deliver mostly microservices, and 73.0 percent for those who push code at least once per day.

When it comes to Log Management capabilities, respondents care most about speed of ad-hoc queries, especially if they deliver mostly microservices or push code at least once per day. And yet, many respondents spend more than half of their investigation time waiting for queries to complete. This ranges from one quarter (24.7 percent) of overall respondents, to more than one third (35.7 percent) for those in a DevOps role, to more than one-half (52.8 percent) if they deliver mostly microservices. Of respondents who push code at least once per day, four out of five (81.3 percent) spend the majority of their log investigation time waiting for queries.

Taken together, these findings point to the observation that, as organizations shift from more traditional, monolithic architectures to microservices, they release software more frequently, spend more time troubleshooting issues, and the organizational toll of operational visibility increases.

## Survey methodology

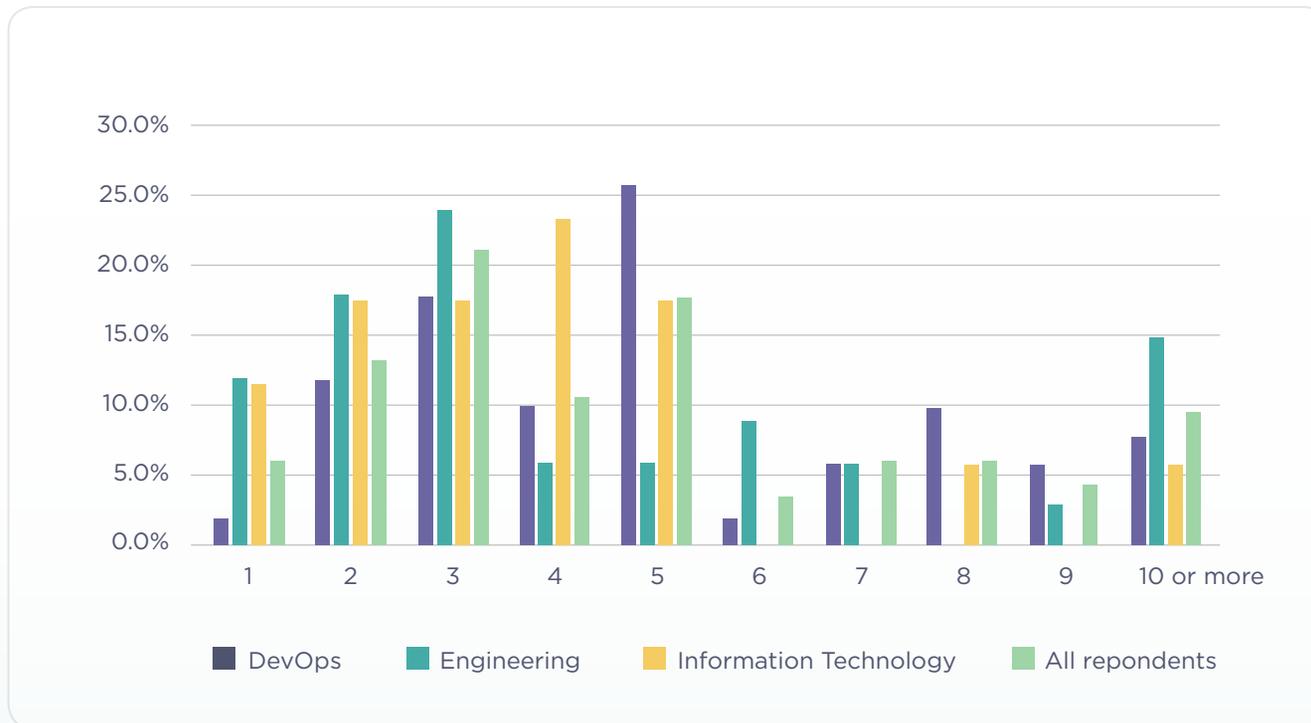
This report is based on a survey conducted by Scalyr, Inc. between April 2 through May 31. We solicited responses from a variety of sources, including third-party websites targeted at software engineers; social media; engineering or DevOps-focused events, and our own prospect and customer database. We did not limit advertising to any particular geographic area, nor did we ask respondents to identify the country in which they live or work. We received 155 respondents whom we asked to self-identify their role. These roles have not been validated. 63.2 percent of respondents self-identify in a “DevOps” or “Engineer” role. Other roles include “Information Technology,” “Product Management,” “Customer Success,” and “Information Security.” There is a small “Others” category that consists of “Marketing,” “Student,” “HR,” “Build and Release Management,” and “Operations.”



# Nearly half of respondents have five or more software or DevOps observability products

Despite the fact that many commercially-available products offer multiple capabilities, companies have a slew of software or DevOps observability products. 48.2 percent of respondents report that they have five or more products that their company uses for DevOps observability. For those respondents in a DevOps role, that number jumps to 58.0 percent. The plurality of respondents report that they have three such products (21.4 percent), while the plurality of those respondents in a DevOps role report that they have five such products (26.0 percent).

## “How many software or DevOps observability products my company uses”

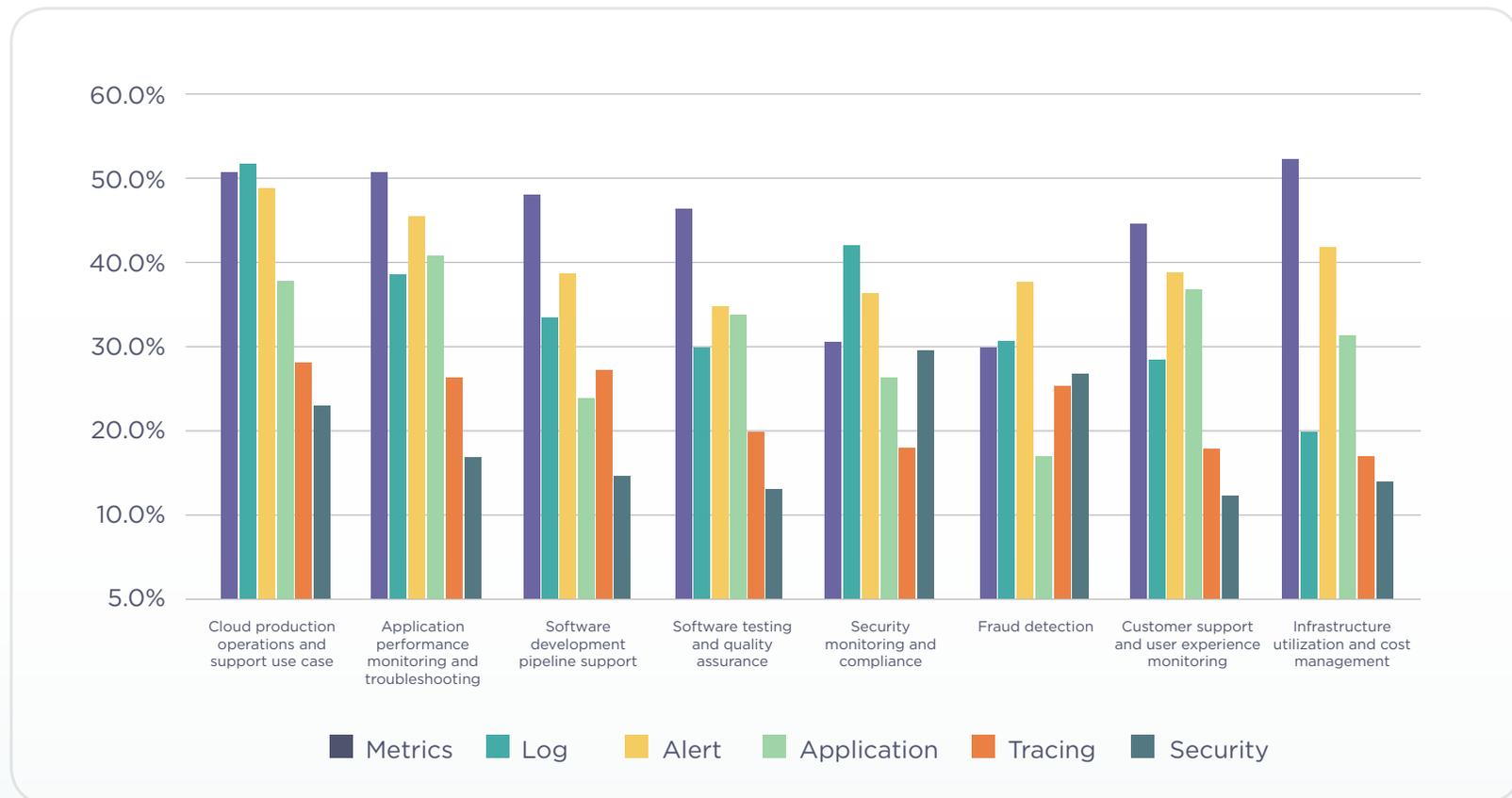


Approximately how many software or DevOps observability products does your company use today?

## Respondents use a variety of products across use cases

In identifying which product types were preferred for which use cases, respondents did not have one clear winner. Rather, they use a variety of products. The most common is metrics and reporting, followed by alerting and log management.

### “Product types in my company’s software or DevOps observability stack for each use case”

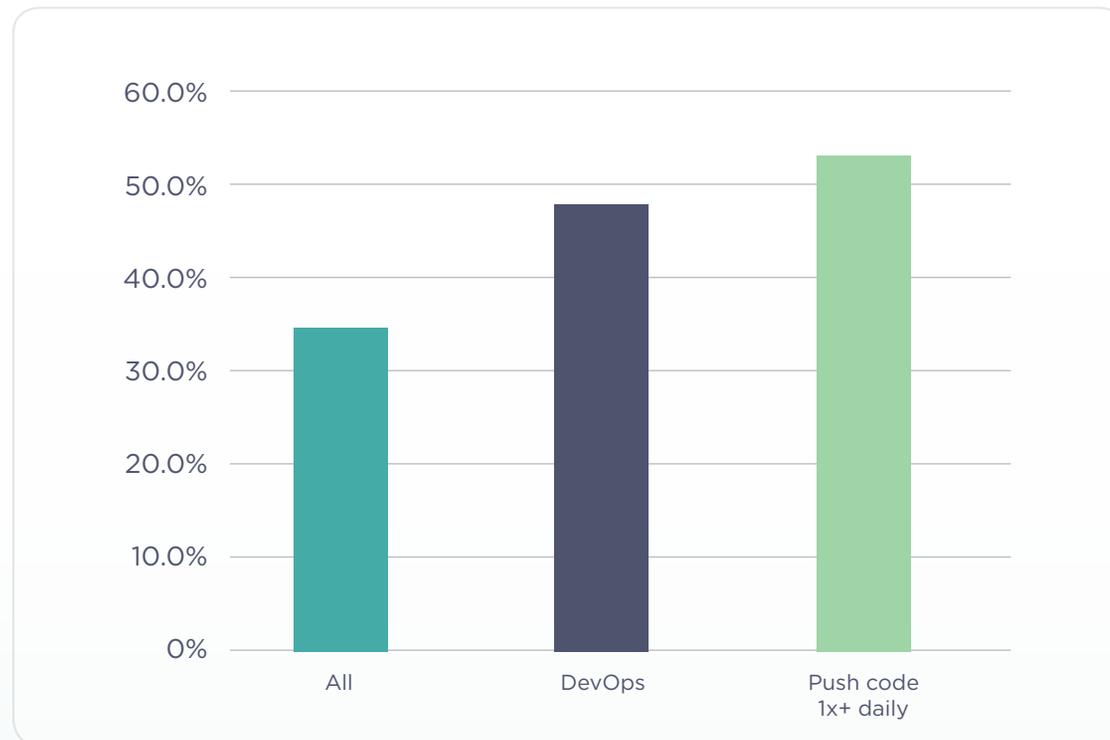


What product types do you have in your company’s software or DevOps observability stack, and for what use cases?

## Three-quarters deliver *some* and more than half deliver *mostly* microservices

Companies are getting serious about developing and deploying microservices. 74.8 of respondents report that they deliver some microservices, with another 12.3 percent “working on it.” More than one-third of respondents report that they deliver more than half of their applications as microservices. Only 9.7 percent report that they are not delivering any microservices. Nearly half (48.2 percent) of those in a DevOps role report that they deliver mostly microservices, and more than half (52.6 percent) of those who push code at least once per day deliver mostly microservices.

### “I deliver more than half of my applications as microservices”



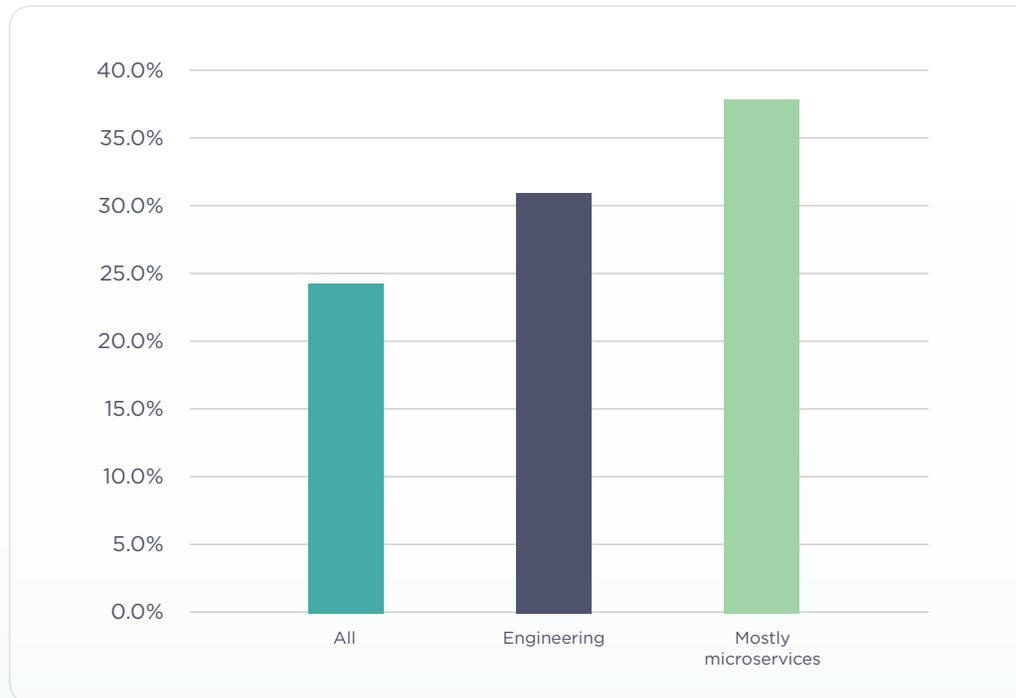
What percent of the software that you deploy is considered microservices (vs. monolithic applications)?

# One-quarter deploy software code into production at least once per day

24.7 percent of respondents report that they deploy software code into production at least once per day, with 14.3 percent selecting “several times per day.” These numbers don’t change much for those in a DevOps role, however, for those in an Engineer role, they jump to 31.0 percent and 21.4 percent, respectively. Our data set is not large enough to draw real conclusions from this, but one hypothesis is that a distinction between the two roles is that, while those in a DevOps role do more troubleshooting and debugging, those in an Engineer role do more fixing and re-deploying of software.

For respondents who report that they deliver mostly microservices, the percent who push code at least once per day jumps to 37.7 percent.

## “I deploy software code into production at least once per day”

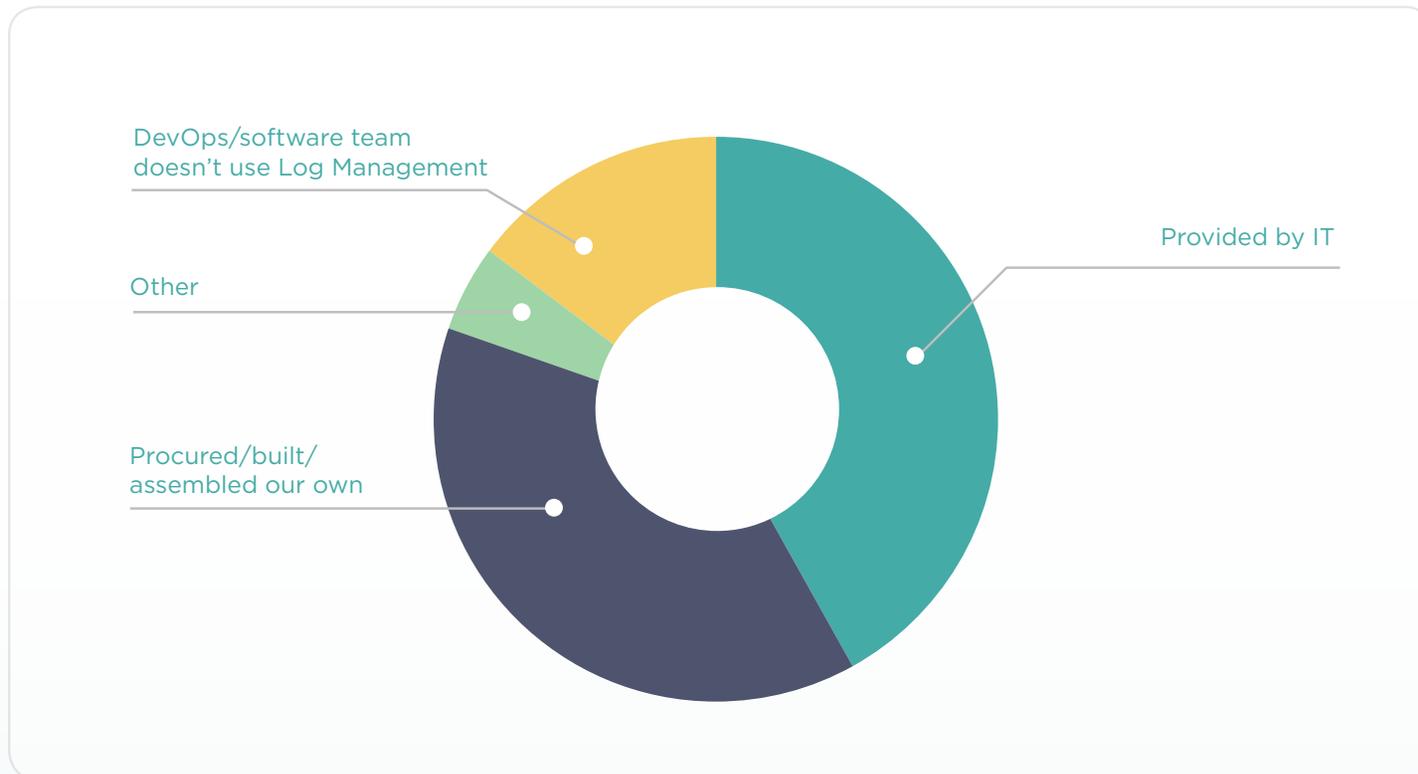


*How often do you deploy software code into production?*

## There are two equal camps: “Use IT’s Log Management” or “roll our own”

In almost equal numbers, respondents report that their software or DevOps team is using a Log Management product provided by Corporate IT (40.9 percent) or that they procured or built/assembled their own (40.2 percent). However, for those who push code at least once per day, 44.7 percent procured or built/assembled their own, and for those who deliver mostly microservices, 58.5 percent procured or built/assembled their own.

### “We use Log Management provided by...”

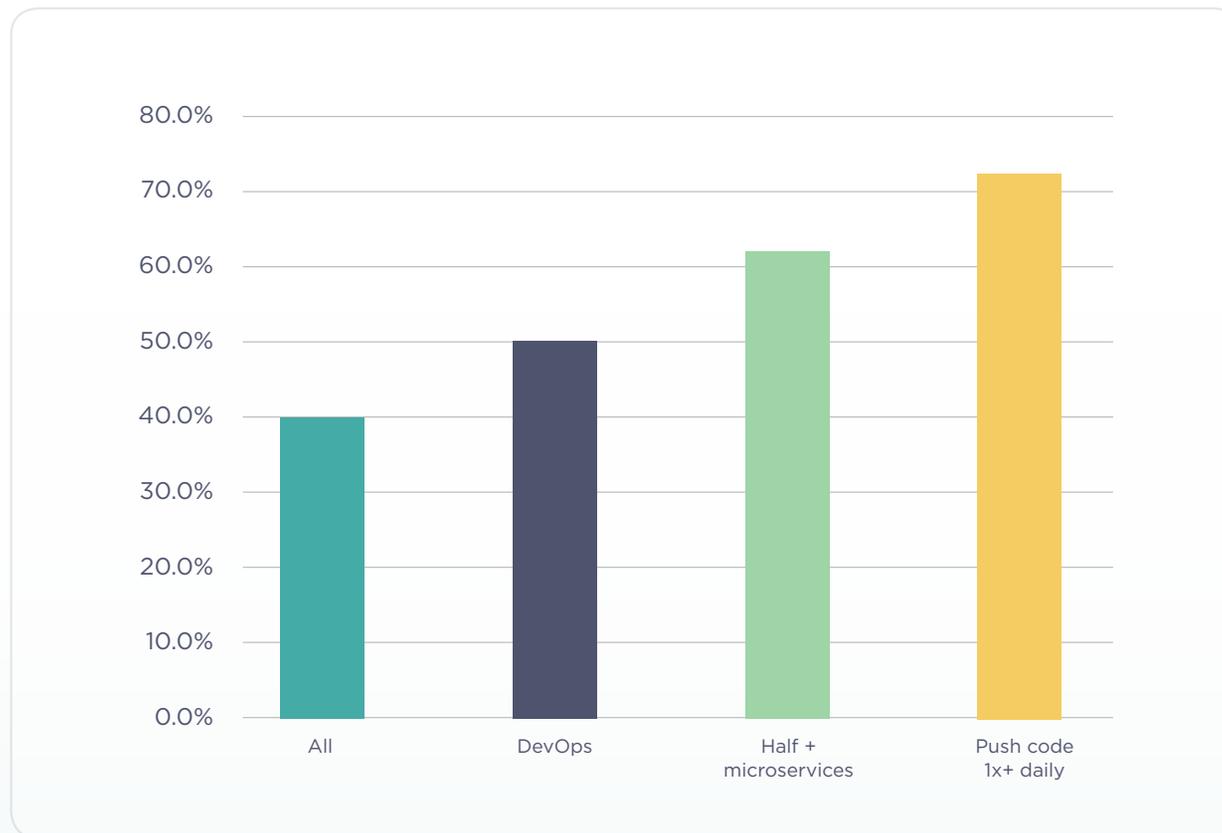


**Q.** *Is your software or DevOps team using a Log Management tool provided by corporate IT, or did you procure or build/assemble your own?*

## 40 percent say engineers spend at least half of their time troubleshooting

As expected, respondents report that the engineers in their company spend the preponderance of their time doing Development. We were surprised, however, to find that 40 percent of respondents claim that at least half of their companies' engineering time is spent troubleshooting and debugging. Related to the hypothesis above, that number jumps to 50.0 percent for those in a DevOps role, 62.3 percent for those who deliver mostly microservices, and 73.0 percent for those who push code at least once per day.

### “At least half my company’s engineering time spent on troubleshooting/debugging”



Approximately what percent of your company's engineering time is spent on the following activities?

# Applications and microservices represent the most - and the most valuable - logs

Respondents report that applications and microservices represent the highest volume of all of their log sources (32.9 percent), as well as their highest-value logs (34.7 percent). This is followed by their cloud infrastructure or PaaS provider logs (21.1 and 22.7 percent, respectively). For those in a DevOps role, containers and container environment logs are a close third (19.6 percent and 20.4 percent, respectively).

## Ad-hoc query speed is the top Log Management requirement

Respondents identify “speed in performing ad-hoc queries” as the Log Management capability they care about most (54.0 percent). This is followed by “ability to parse and operate intelligently on complex logs” (48.0 percent) and alerting speed (40.0 percent). Those numbers don’t vary much for those in a DevOps role, but query speed jumps in importance for those in an Engineer role (63.4 percent). That number is 60.5 percent and 67.9 percent for those who push code at least once per day and those who deliver mostly microservices, respectively.

### “Log Management capabilities I care about most”

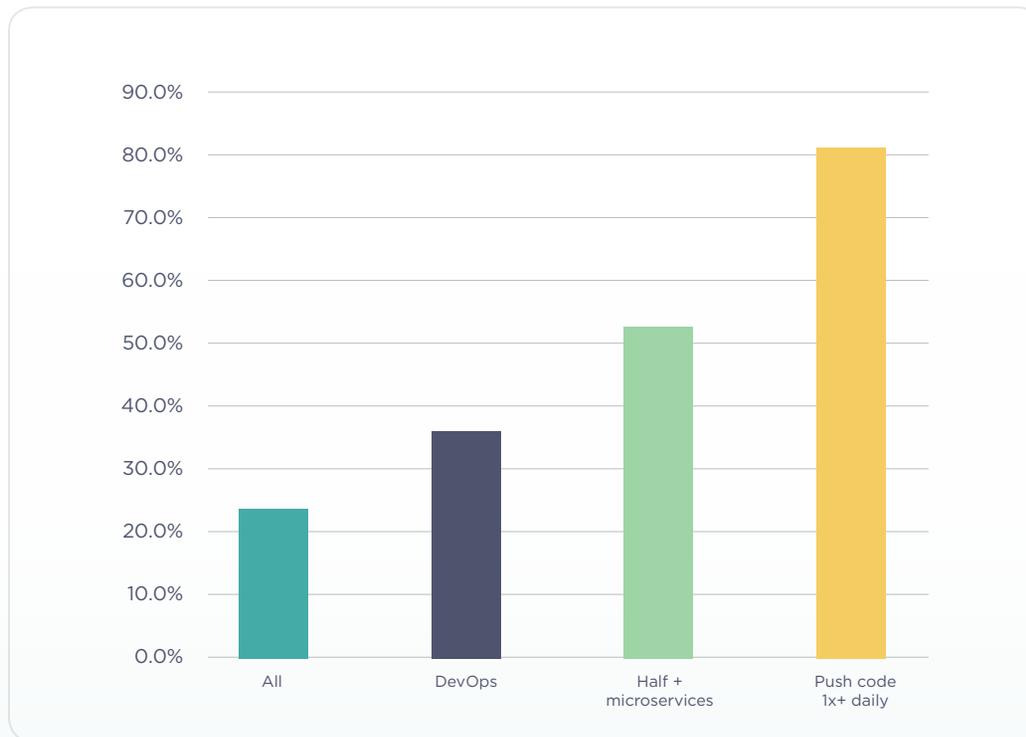


When it comes to Log Management, what capabilities do you care about? Select top three.

# One-fourth spend half of Log Management investigation time waiting for queries

Despite identifying “speed in performing ad-hoc queries” as the Log Management capability they care about most, nearly one-fourth (24.7 percent) of respondents spend more than half of their Log Management investigation time waiting for queries to complete. For those respondents in a DevOps role, that number jumps to 35.7 percent, but for those in an Engineer role, it drops to 19.0 percent. For those who deliver mostly microservices, that number goes up to 52.8 percent, and for those who push code at least once per day, it shoots up to 81.3 percent.

“I spend more than half my Log Management investigation time waiting for queries to complete”



**Q.** *If you use a Log Management tool to troubleshoot issues such as software performance, what percent of your total investigation time do you spend waiting for queries to complete?*

# Recommendations

- » If you are focused on infrastructure utilization and cost management or application performance monitoring use cases, you should have a strong Metrics and Reporting product.
- » If you are focused on cloud production operations management or security monitoring and compliance, you should have a strong Log Management product.
- » If your software deployment strategy includes delivering mostly microservices or pushing code at least once per day, you should consider a Log Management product that is architected for your own use cases rather than those of Corporate IT.
- » When selecting a Log Management product, you should prioritize the ability to perform fast ad-hoc queries, parse and operate intelligently on complex logs, and feature high-speed alerts. If you're building microservices and delivering software frequently, ad-hoc query speed is especially critical.
- » Performance expectations for customer-facing applications are on the rise! Your observability products, especially Log Management, should reduce investigation time so that teams can fix code flaws more quickly.

In summary, a common thread among the findings and recommendations in this report is the observation that, as organizations shift from more traditional, monolithic architectures to microservices, they release software more frequently, spend more time troubleshooting issues, and the organizational toll of operational visibility increases. For users and organizations that are experiencing such a shift, you should consider getting ahead of - and mitigating - this organizational cost.



Scalyr is the blazing-fast log management platform for the engineering front line. Unlike traditional log management tools built for IT cost centers, only Scalyr is architected for revenue-generating software. With Scalyr, engineers can go fast at scale, keep things simple, and share with their teams. With a purpose-built, streamlined database and the full power of its massively parallel cloud compute cluster, Scalyr is the fastest log management platform in the industry. Its search speed exceeds 1.5 TBs/second, and 96 percent of queries complete in less than one second.

