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AI-Powered ELK as a Service

The 2016 DevOps Pulse

Introduction

What is The DevOps Pulse?

This report is the first annual DevOps Pulse, a study published by Logz.io that researches and captures important trends in IT operations and DevOps engineering.*

DevOps Pulse 2016 Summary & Key Findings

Some of the most significant findings include:

- Open source software has become mainstream. The debate over open source is over. 57% stated that they either "heavily rely on open source" or "have an open source first culture." Only 9% said that they do not rely on open source technology at all.
- The open source ELK Stack is the top logging and monitoring platform compared to proprietary tools.
- Cloud adoption is only getting started. 40% currently have one quarter or less of their infrastructure in the cloud.
- Average salary range information for the United States segmented by experience level. Beginner DevOps engineers can earn up to $82,000 year.
- Salary data segmented into five regions: the United States, western Europe, eastern Europe and Russia, Africa and the Middle East, and eastern Asia.
- Despite the popularity of alert notification systems, 57% get alerts over e-mail.

Who Are We?

Logz.io is an AI-powered log analytics company that offers the open source ELK Stack as a cloud service powered by machine learning algorithms. We support hundreds of DevOps organizations worldwide. If you have questions, we invite you to e-mail info@logz.io.

* This report was created based on the data from a survey of 360 companies throughout the world.

The Survey Results

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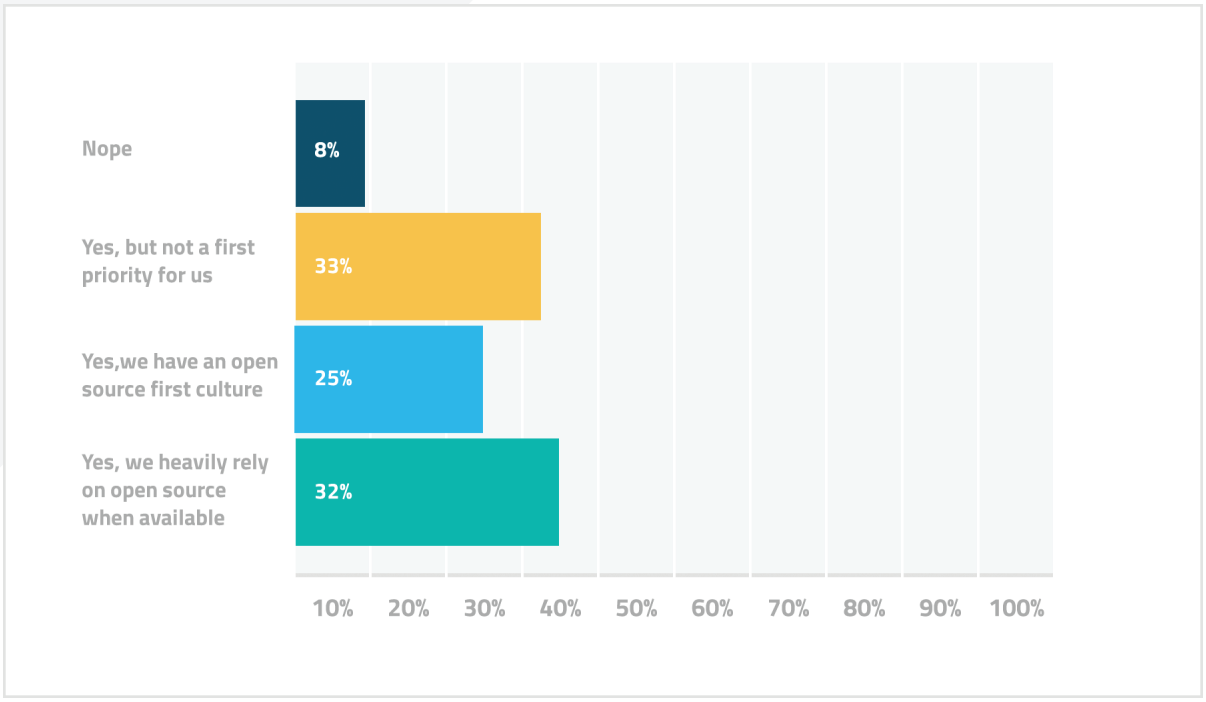
Q 1

Does your company rely on open source technology, and if so, how heavily?



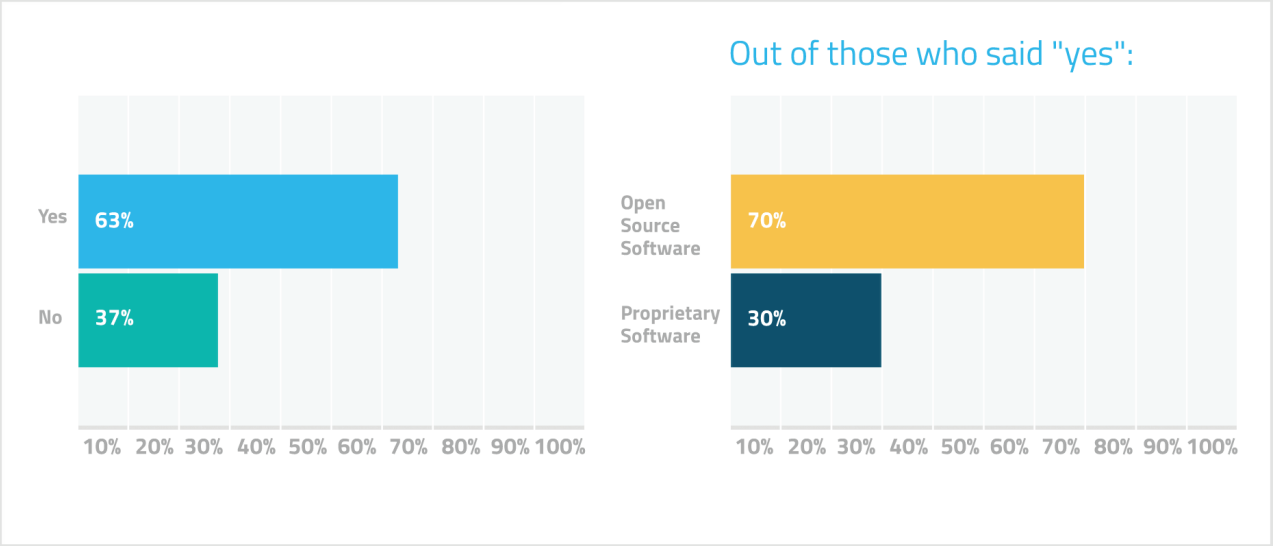
Only 9% of survey-takers said that they do not use open source technology at all. The majority of respondents -- 57% -- stated that they either "heavily rely on open source" or "have an open source first culture."

Just look at the growing number of open source devops tools that we and others use in production every single day. The amount of open source resources available in the IT operations world will only continue to increase.

After all -- as Howard Baldwin once noted in Computer World -- open source keeps costs down and the community development methodology produces better code with more business agility and less risk.

Q 2

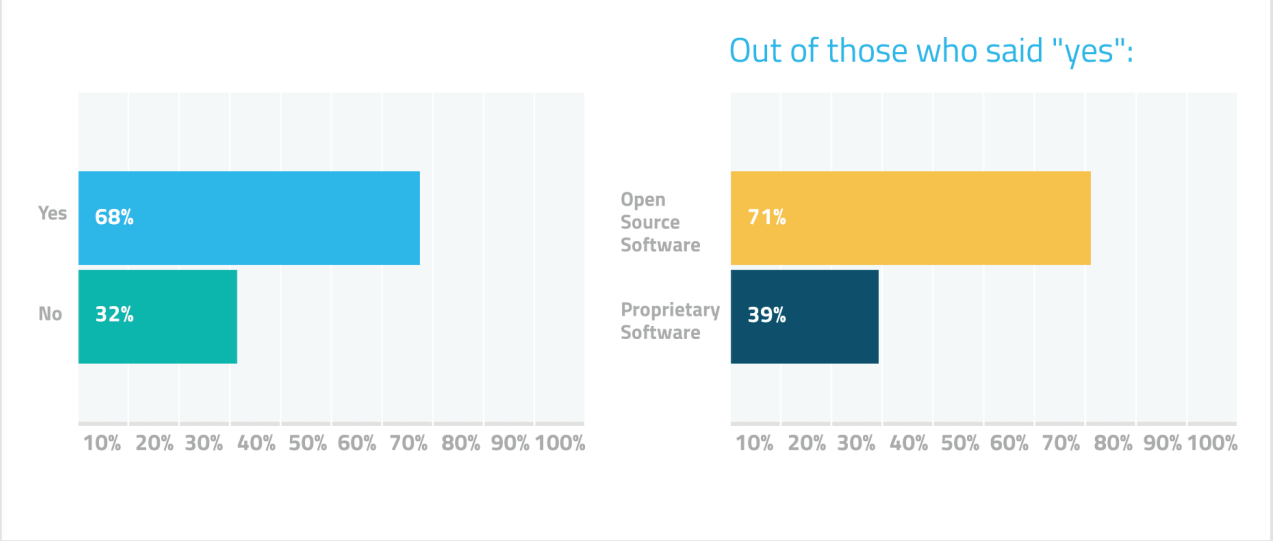
Do You Use a Metric Monitoring Tool? If so, Which One?



In light of the increasing popularity of open source, it might not be surprising to see the widespread adoption of the open source ELK Stack. But the numbers are impressive nonetheless. In this application performance monitoring data set, "open source" includes ELK-based solutions, Grafana, and Graphite. "Proprietary software" includes New Relic and Datadog.

Q 3

Do You Use a Centralized Log Management Platform? If So, Which One?



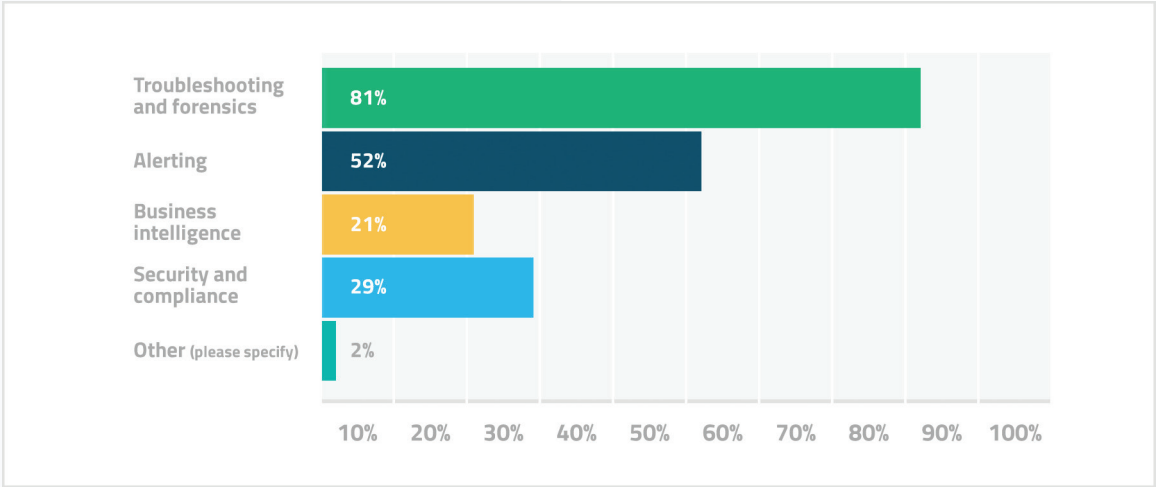
Out of those companies that do use centralized log management platforms, the open source stack of Elasticsearch, Logstash, and Kibana is far more popular than proprietary platforms. These figures makes sense in light of the industry's overall move away from the use of proprietary software and towards open source. Logz.io cofounder and CEO Tomer Levy once put it this way in the context of Google Trends and the log analysis industry:

> *Splunk was founded in 2003. The ELK Stack was mostly created in 2010. In terms of the number of people who are searching Google, the components of the ELK Stack have gained as much brand awareness as Splunk in only five years.*

In the centralized log management platform data set, "open source" includes ELK and Logz.io. "Proprietary software" includes Splunk and Sumo Logic. The few answers that mentioned other software were discarded and not included in the overall percentages.

Q 4

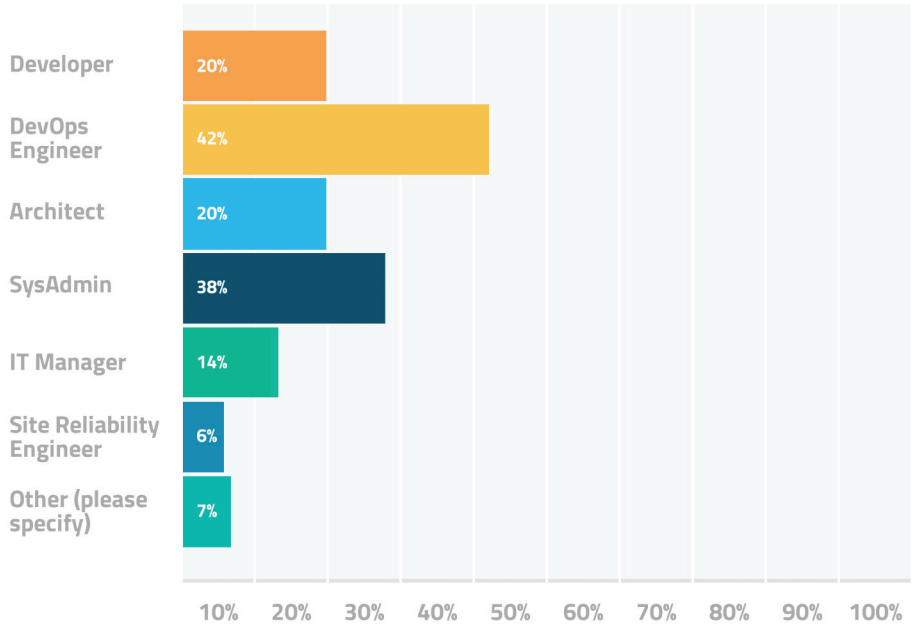
What's Your Most Common Use Case for Log Analytics?



The most prevalent use case by far is still troubleshooting and forensics as well as alerting. After all, log data is the first place to look in troubleshooting and forensics.

Q 5

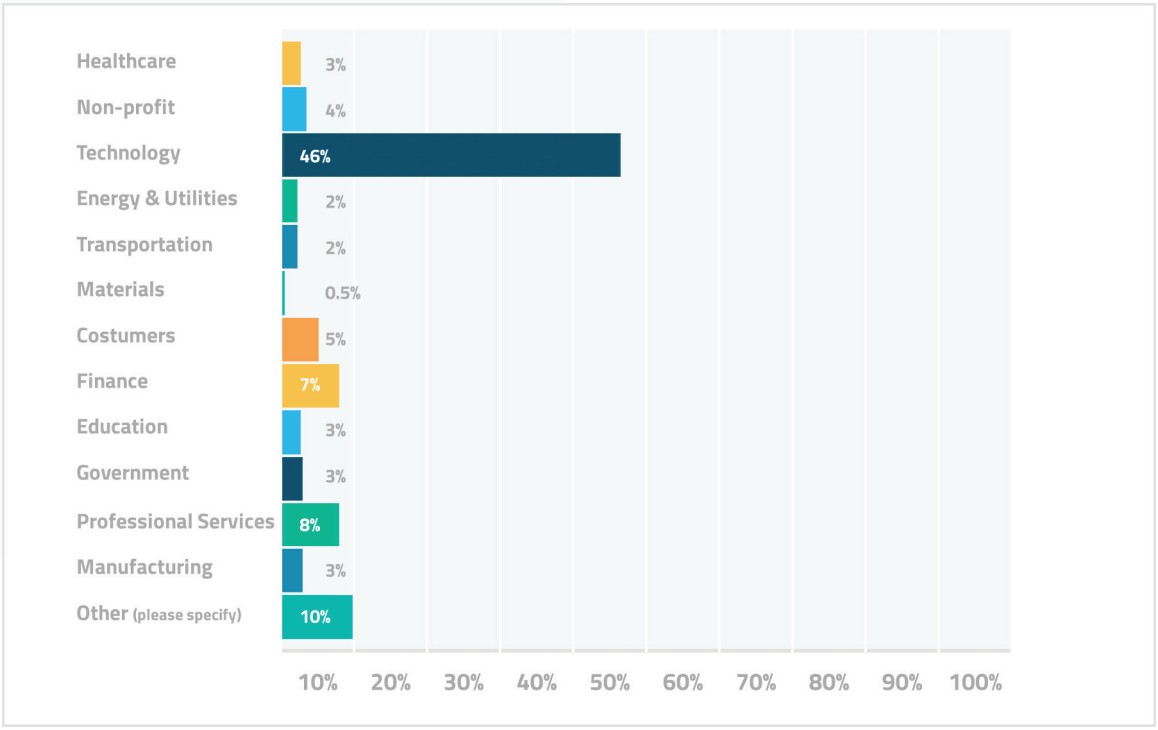
What is Your Role in Your Company?



DevOps is always evolving, so the information in this study is relevant to all of these positions. Only 20% of respondents called themselves a developer anymore even though people in almost any of these roles are or have been developers in the past.

Q 6

To Which Industry Does Your Company Belong?

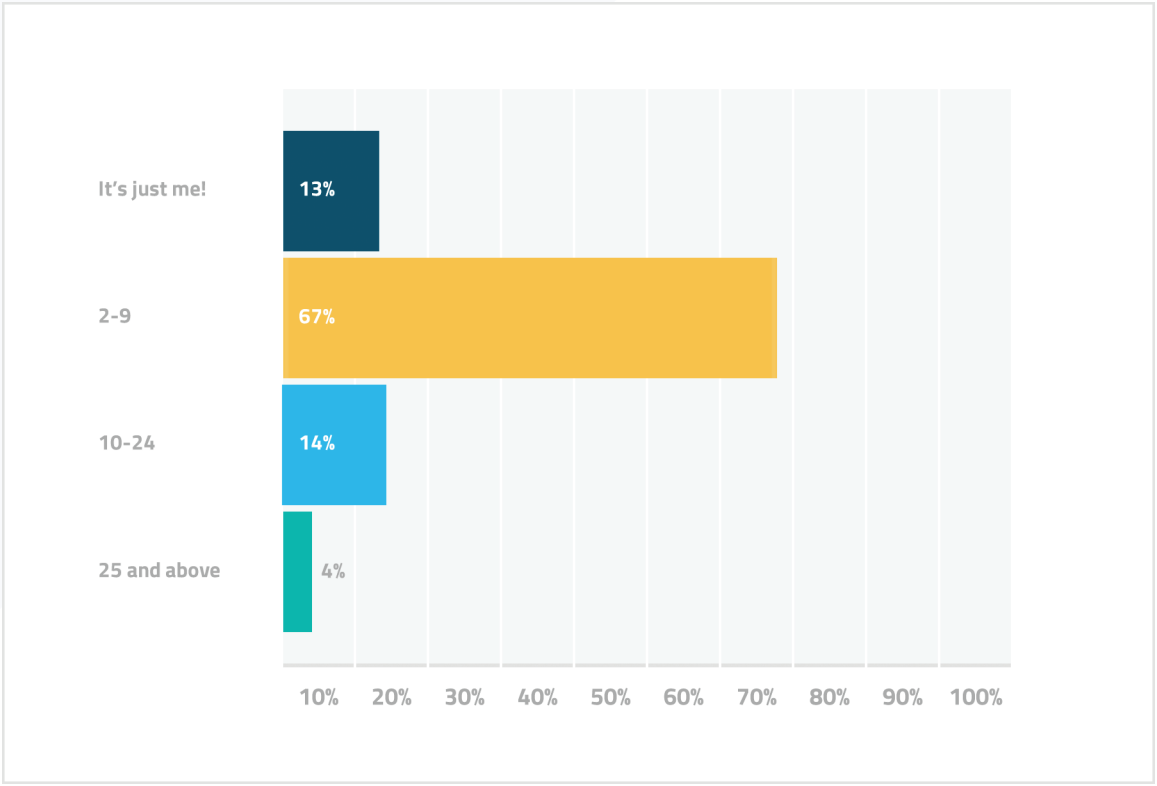


IT teams specifically at high-tech companies are more likely to use DevOps principles and tools because not every type of organization -- such as those in low-tech industries -- is going to use practices such as continuous deployment, continuous integration, and container monitoring.

However, the number of respondents in non-tech areas shows that the DevOps movement is spreading from strictly tech companies into other industries just as it's also expanding from startups and small businesses into midsize and enterprise companies.

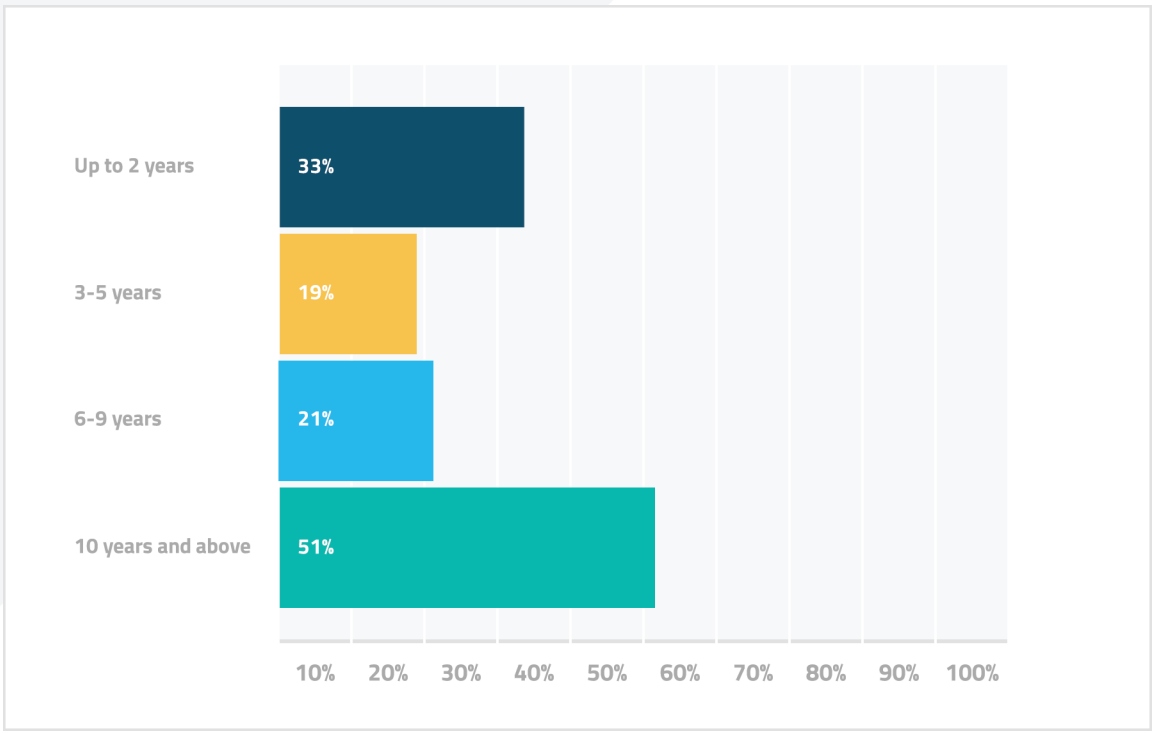
Q 7

What is the Size of Your Team?



Q 8

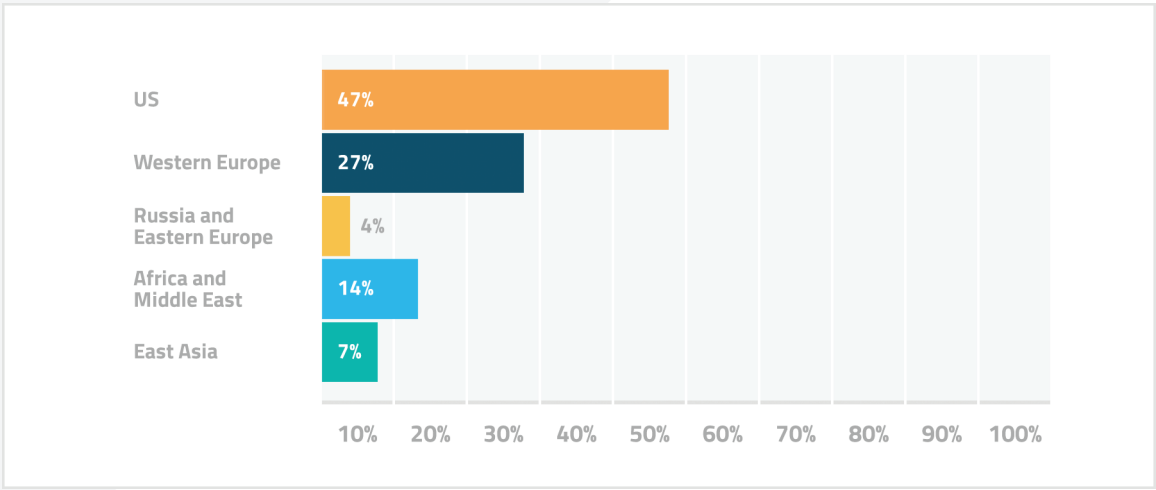
What is Your Level of Experience?



Most respondents have at least ten years of experience.

Q 9

Where in the World Do You Work?

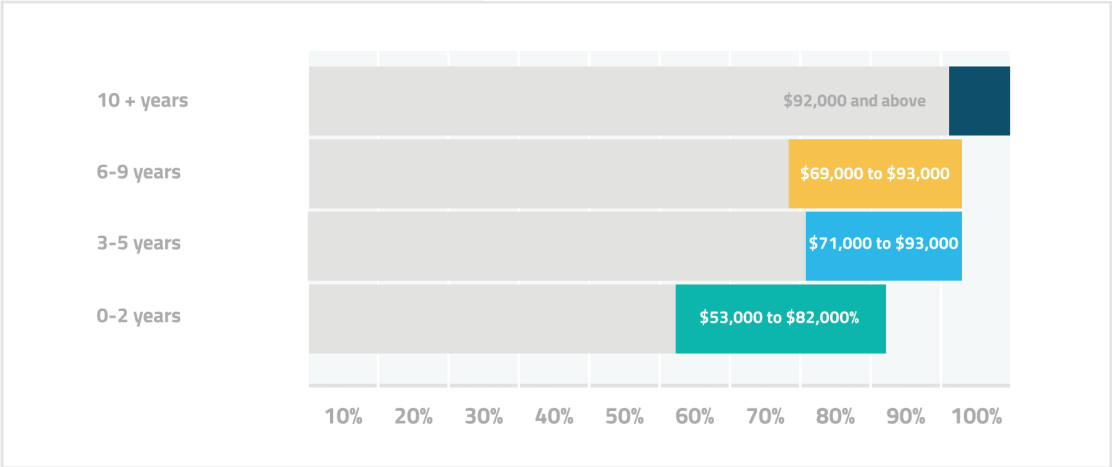


The majority were from the United States or western Europe.

Q 10- Q 14

What is Your Annual Salary?

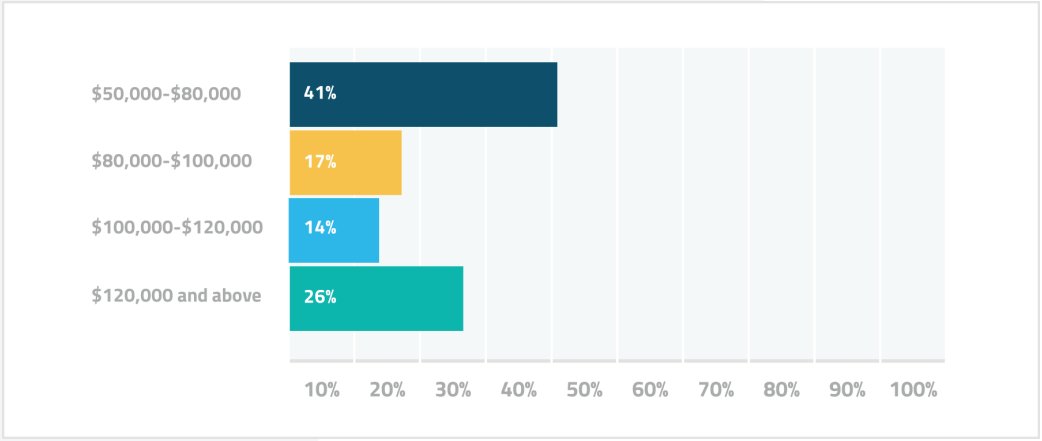
Average salary ranges based on experience for the United States



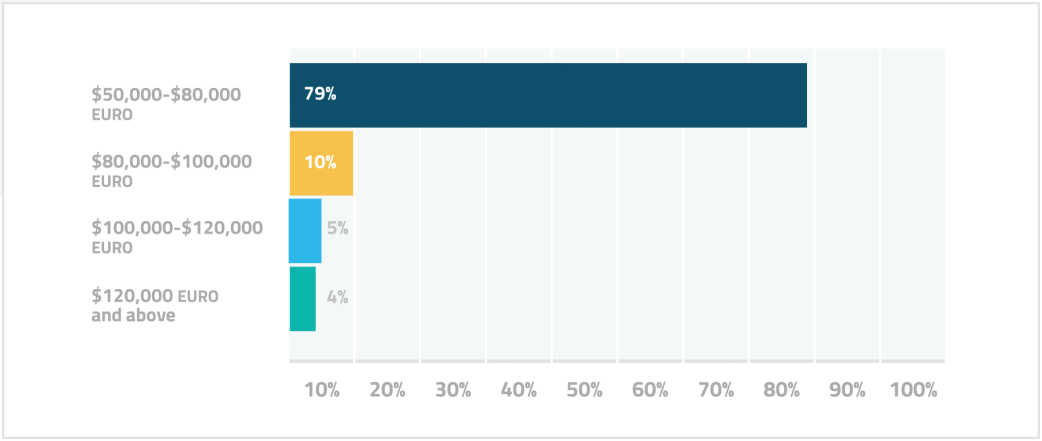
In the United States, the average salary range for people with 0-2 years of experience was from $53,000 to $82,000. For 3-5 years, $71,000 to $93,000. For 6-9 years, $69,000 to $93,000. For 10+ years, $92,000 and above.

» Q 10- Q 14

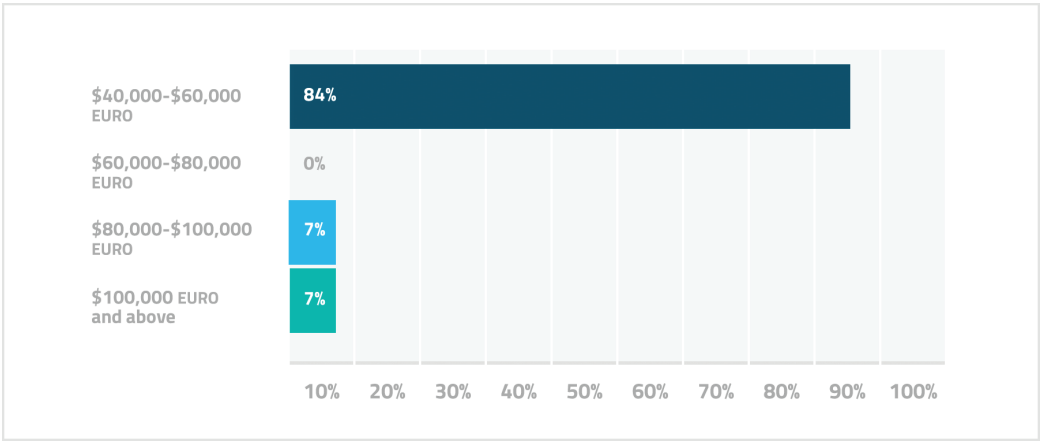
Overall U.S. salary data



Overall western Europe salary data

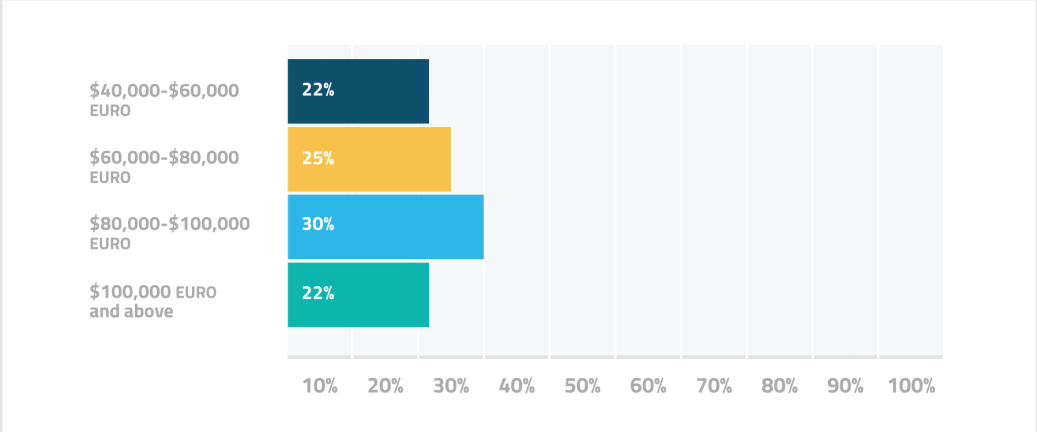


Overall eastern Europe and Russia salary data

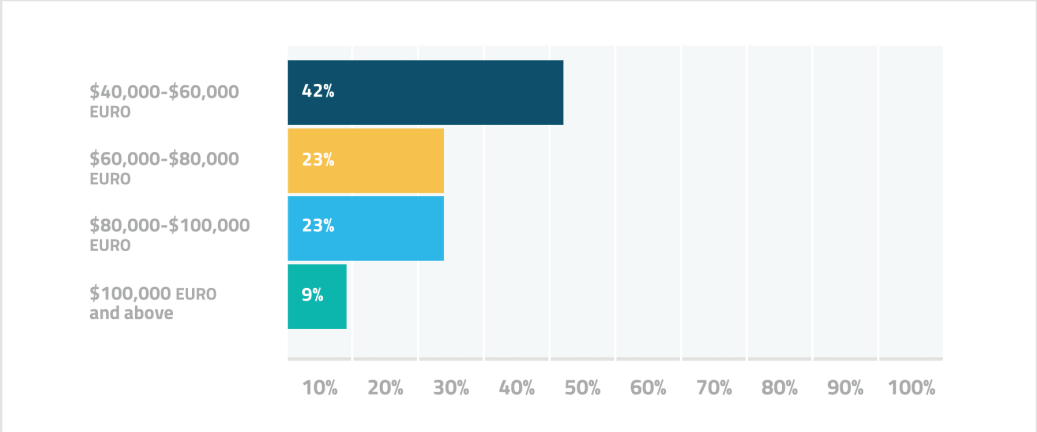


» Q 10- Q 14

Overall northern Africa and Middle East salary data

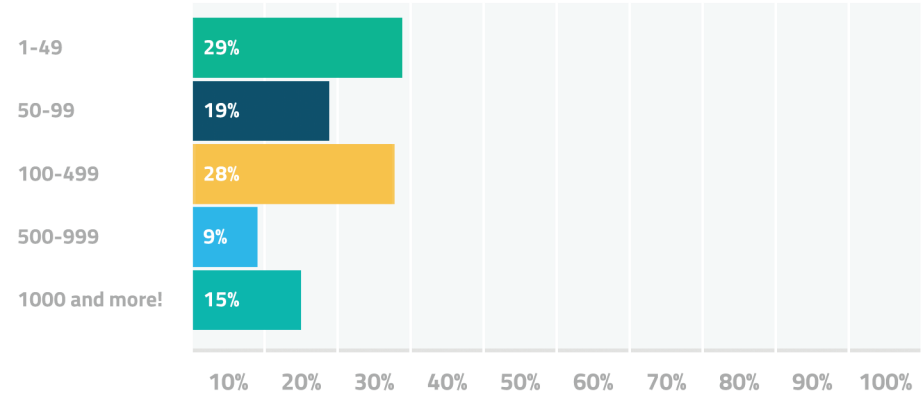


Overall eastern Asia salary data



Q 15

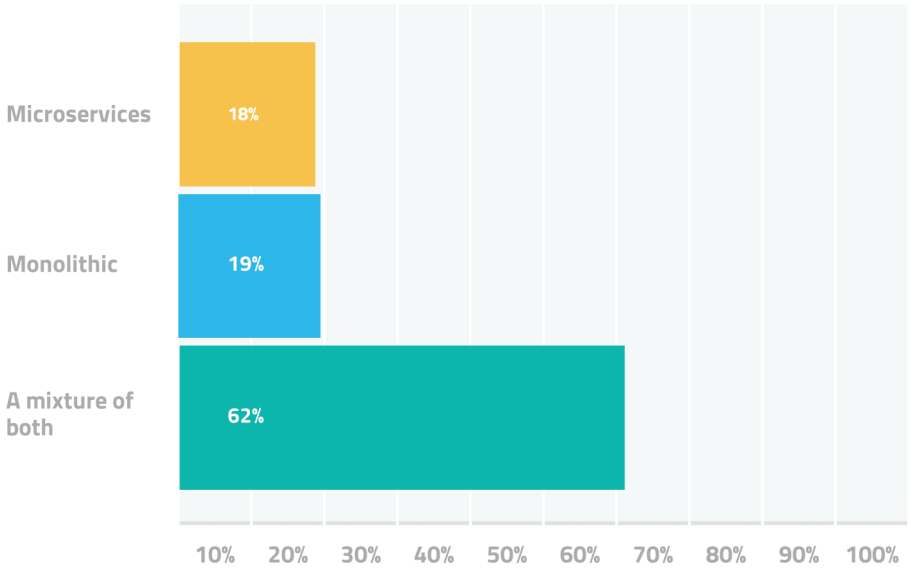
What is the Size of Your Infrastructure? (the number of servers)



Roughly 52% of people work in IT organizations today that are built on hundreds of servers.

Q 16

What Architecture Are You Using to Build Your Application?

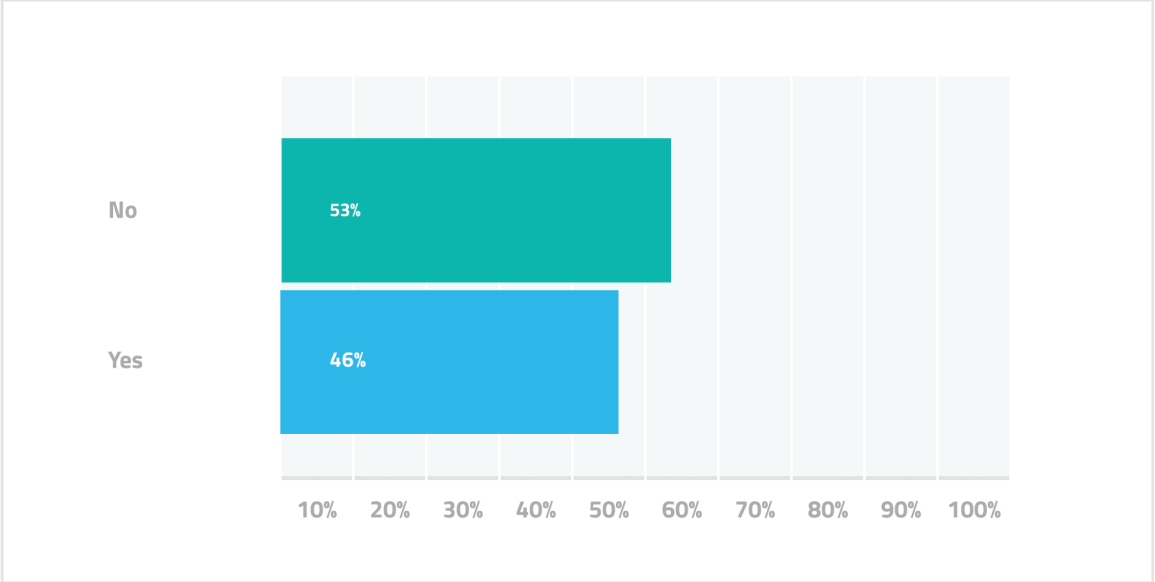


As we wrote in this introductory overview, monolithic architecture in software development is the traditional method of having one massive code base that can be run on various servers for minimal latency and maximum uptime. Microservices is the newer method of having a hive of independent processes coordinate their functions in real time.

Monolithic architecture had been the traditional practicing ever since the time of mainframe computers. However, the trend is moving towards microservices. In the DevOps Pulse 2016, 78% of responding IT organizations stated that they use microservices to some degree.

Q 17

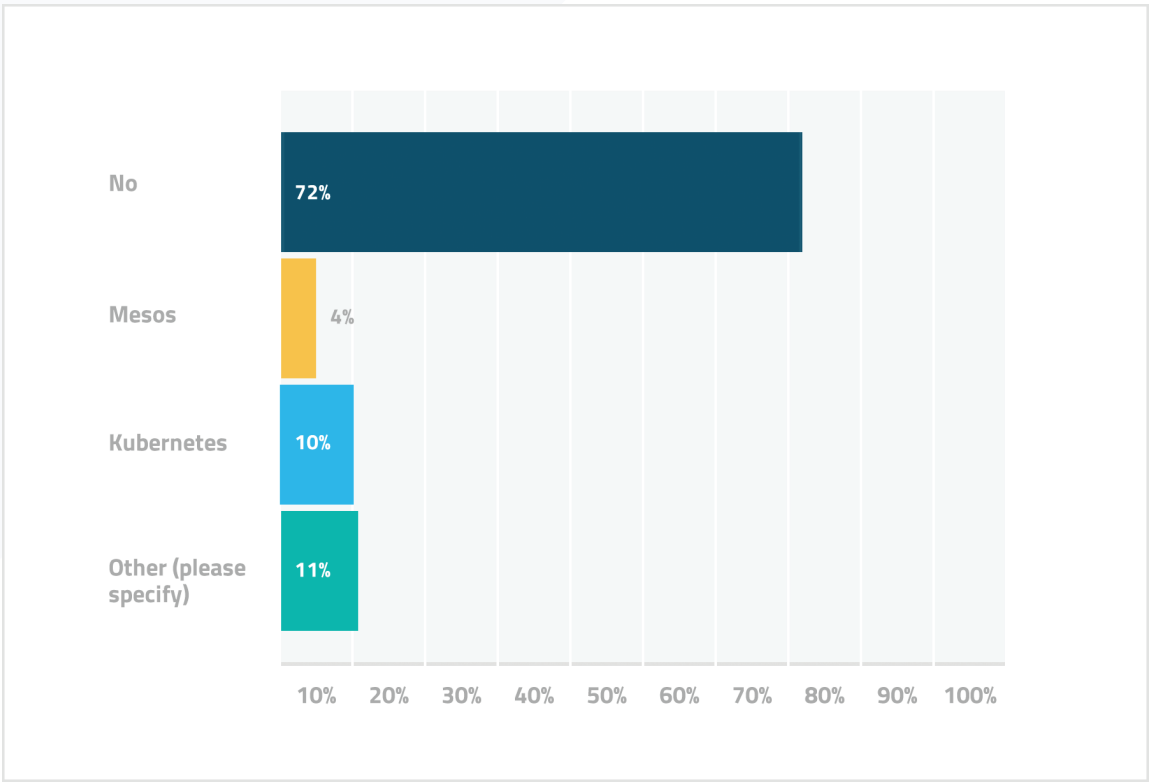
Do You Use Containers?



The popularity of container platforms such as Docker is growing quickly along with the need to monitor and log them. As the data below shows, the use of containers is more prevalent than the cloud. Transitioning to the cloud is much more difficult than transitioning to containers.

Q 18

Do you use container orchestration services, and if so - which?

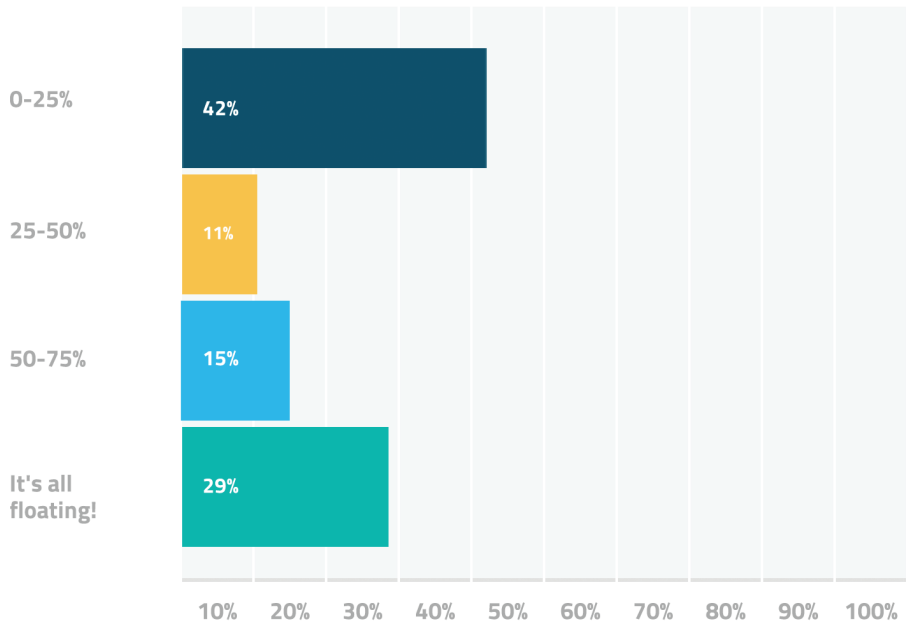


Specifically, almost 75% of the IT professionals who took the DevOps Pulse 2016 survey do not use container orchestration services at all. Most likely, many of them are likely still testing how they can manage complex, multi-container workloads that are deployed on clusters of machines. They have not settled on a specific solution.

So, will Kubernetes, Mesos, or Docker Swarm -- or anyone else -- become the market leader in time for the DevOps Pulse 2017? Only time will tell who will take advantage of this opportunity in the market.

Q 19

What percentage of your infrastructure is based in the cloud?



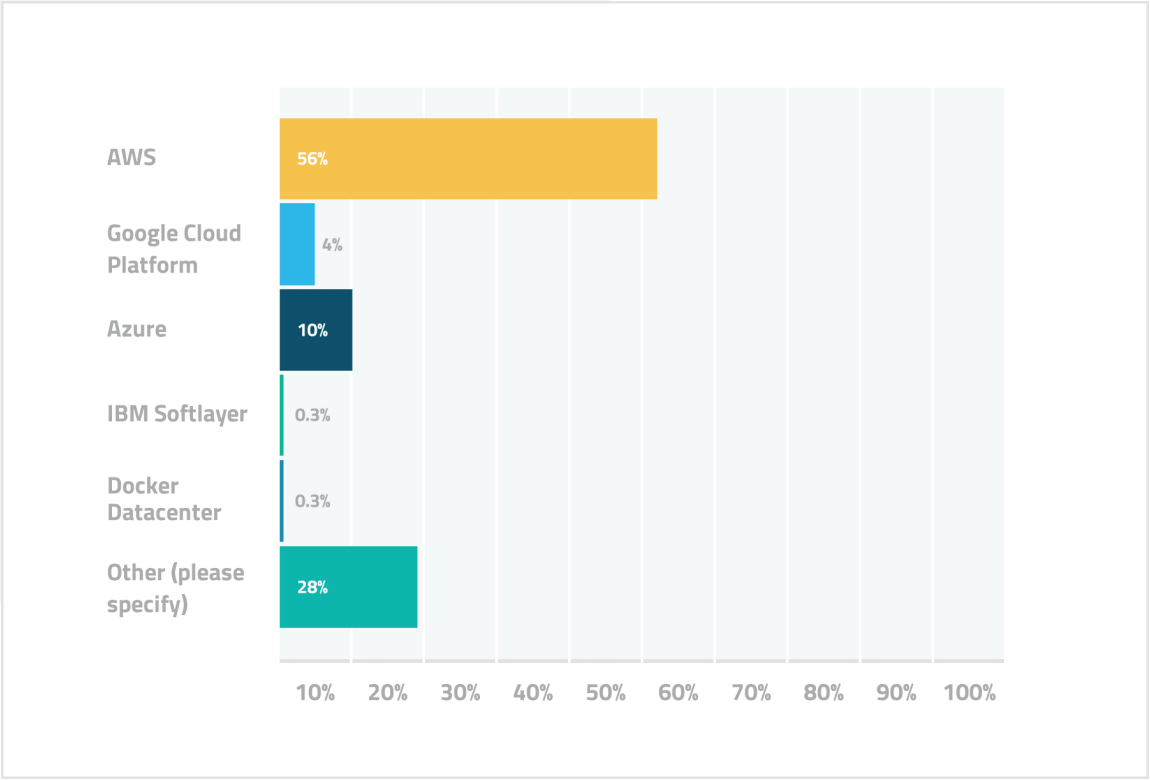
The use of cloud-based infrastructure is not as widespread as the amount of attention given to the battle between AWS, Microsoft, and Google -- and maybe Oracle in the future -- might imply.

A plurality -- more than 40% -- of those who responded to the DevOps Pulse 2016 have only one-quarter or less of their infrastructure in the cloud. Only 30% of all of it in the cloud.

A lot of companies still have on-premise data centers and are extremely cautious when contemplating moving to the cloud. Headlines aside, the move to the cloud appears to be more gradual.

Q 20

Which cloud are you using?



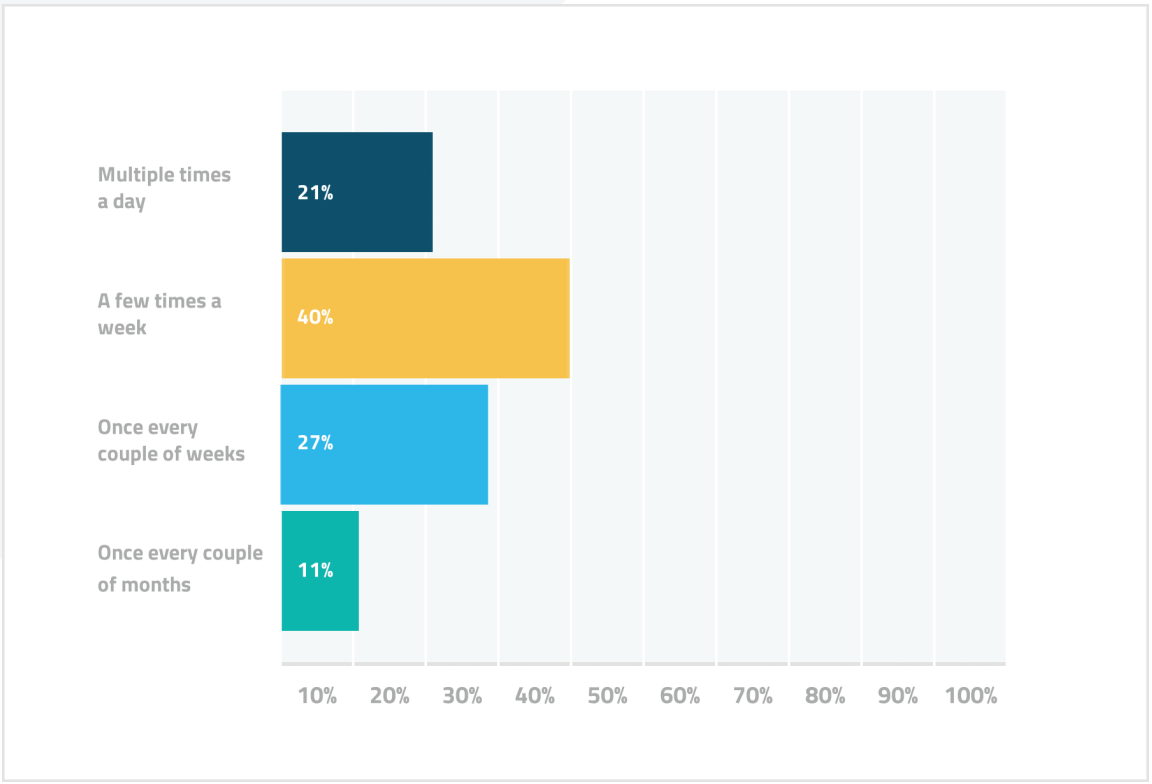
Larry Ellison might want to sit down for a moment.

The Oracle CEO spent most of his recent keynote addresses at Oracle OpenWorld claiming that Amazon Web Services is "twenty years behind" Oracle in terms of feature releases for database services and that AWS is slow, out of date, and "more closed than an IBM mainframe."

But it seems that users do not agree. In our DevOps Pulse 2016 survey, 56% of respondents use AWS while 71% use one of the top three cloud providers -- AWS, Microsoft Azure, and Google Cloud Platform.

Q 21

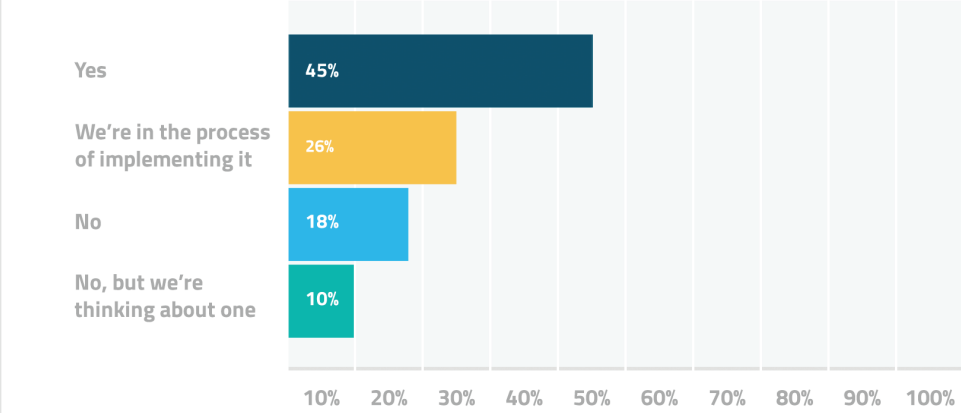
How frequently does your team deploy code to production?

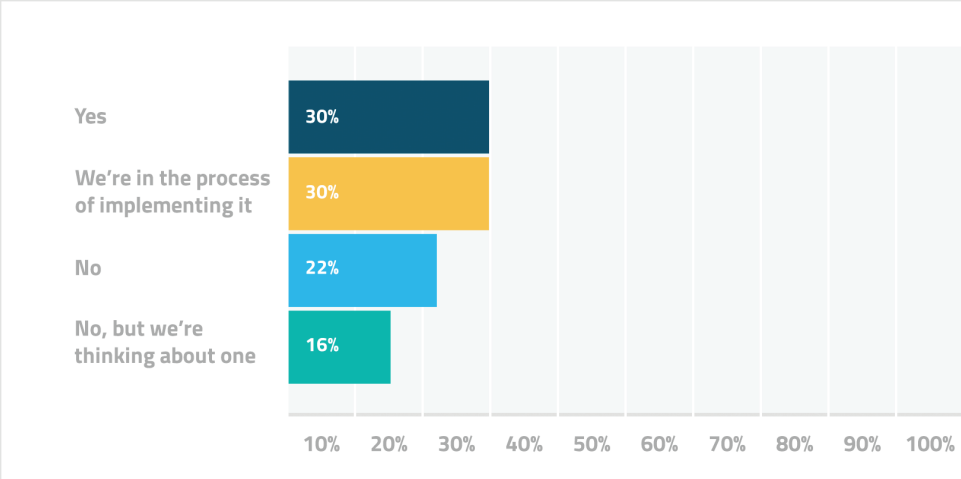


40% of respondents deploy code a few times every week. 28% deploy only once every couple of weeks. Despite the growing attention that continuous deployment is receiving, only 21% of people are deploying more than once a day.

Q 22- Q 23

Do You Have a Continuous Integration (CI) and/or Continuous Deployment (CD) Strategy in Place?

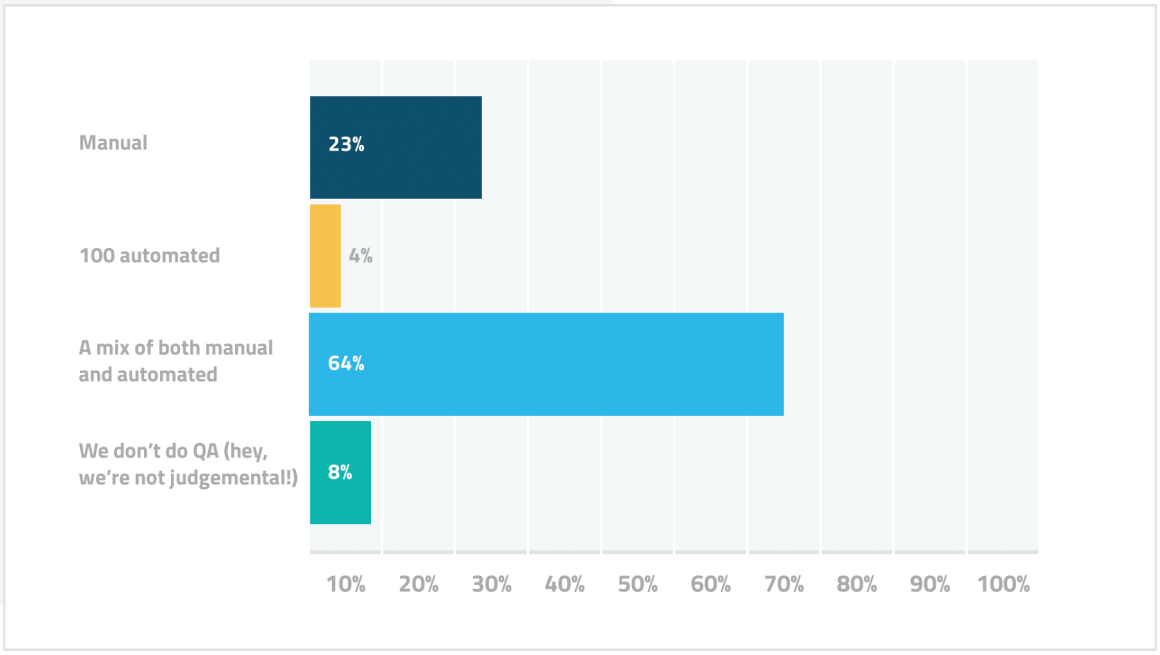




More than 80% have a CI strategy, are in the process of implementing one, or are considering the possibility. A similar number exists for a CD strategy. Clearly, continuous delivery as a whole is quickly becoming a DevOps industry standard.

Q 24

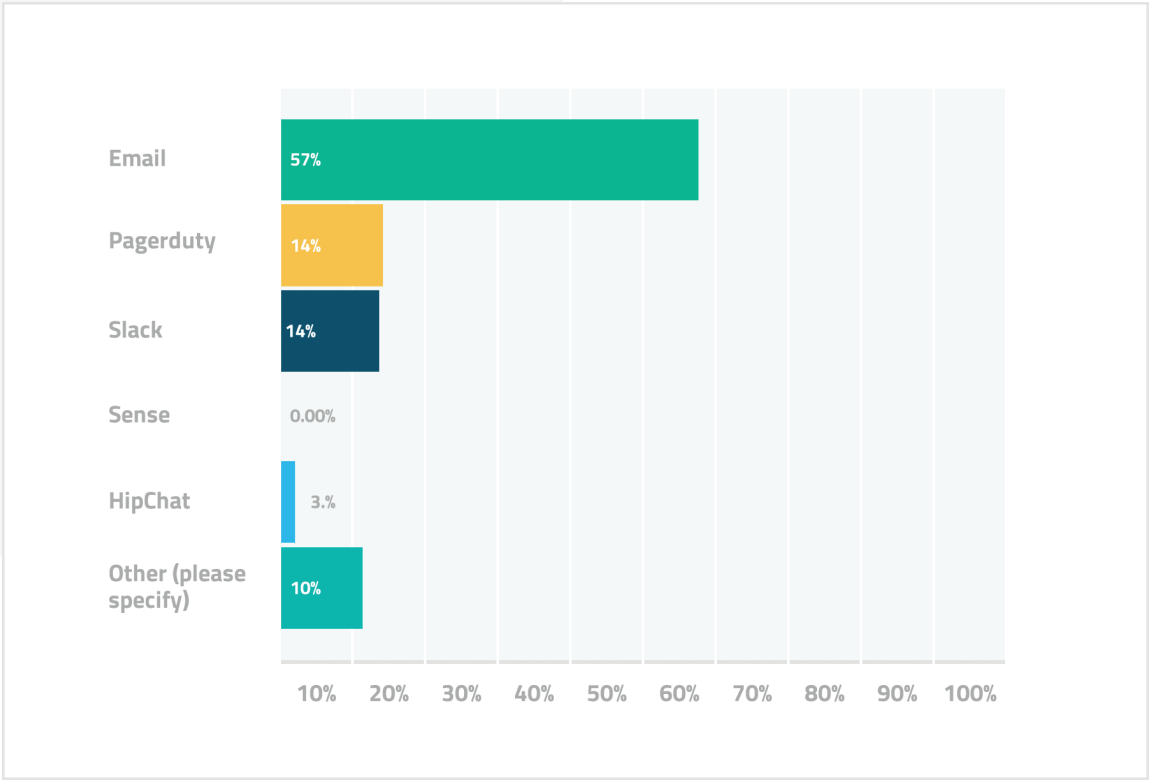
How Do You Do QA in Your Organization?



Only 23% of respondents are doing 100% manual quality assurance. The practice as a whole is becoming more and more automated.

Q 25

How do you distribute alerts in your organization?



Despite all of the hype that Slack has been receiving, almost 60% of respondents said that they prefer to receive alerts over good, old-fashioned e-mail. Slack and Pagerduty are at just 15% each.

It might be easier to scroll through a batch of e-mail subject lines rather than check each and every notification in Slack. Maybe Slack has become too popular and there are too many pings that interfere with -- you know -- doing actual work. The jury is still out.

Conclusion

The debate over open source is over. It has become a part of almost everyone's environment. As The DevOps Pulse 2016 reveals, less than 10% of people in the IT world do not use open source at all. Most likely, that number will fall further with each passing year as open source becomes increasingly popular.

The ELK Stack is proof enough. The open source platform is increasingly preferred over proprietary tools for metric monitoring and log management.

While containers in general are becoming more and more popular, container orchestration services specifically are lagging behind. DevOps engineers and others in related roles seem to be testing how to manage numerous containers on multiple clusters and have not decided on one or more of the growing number of solutions.

Still, transitioning to the cloud is much more difficult than transitioning to containers. According to The DevOps Pulse 2016, the use of containers is more prevalent than the cloud. More than 40% of respondents have 25% or less of their infrastructure in the cloud. After all, moving to a public cloud brings up issues of security and more. But for those who do use the cloud, AWS is the most popular by far.

Questions on The DevOps Pulse?

Logz.io aims for this report to become more in-depth and comprehensive every year. So, we invite feedback from the community on what you would like to see in 2017.

Are some topics less relevant? Would you like more detail on a specific subject? Is there an area that we have not covered at all? Please e-mail info@logz.io with any questions about Logz.io as well as any thoughts and ideas, and we will incorporate them into next year's report.