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The 2017
DevOps Pulse

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Introduction

Whats is The DevOps Pulse?

This report is the second annual DevOps Pulse, a study published by Logz.io that researches and captures important trends in IT operations and DevOps engineering. This year, the report was created based on the data from a survey of 700 respondents throughout the world and includes a special additional section on DevOps culture specifically because that topic is one that is not researched often enough despite being a huge part of what DevOps is.
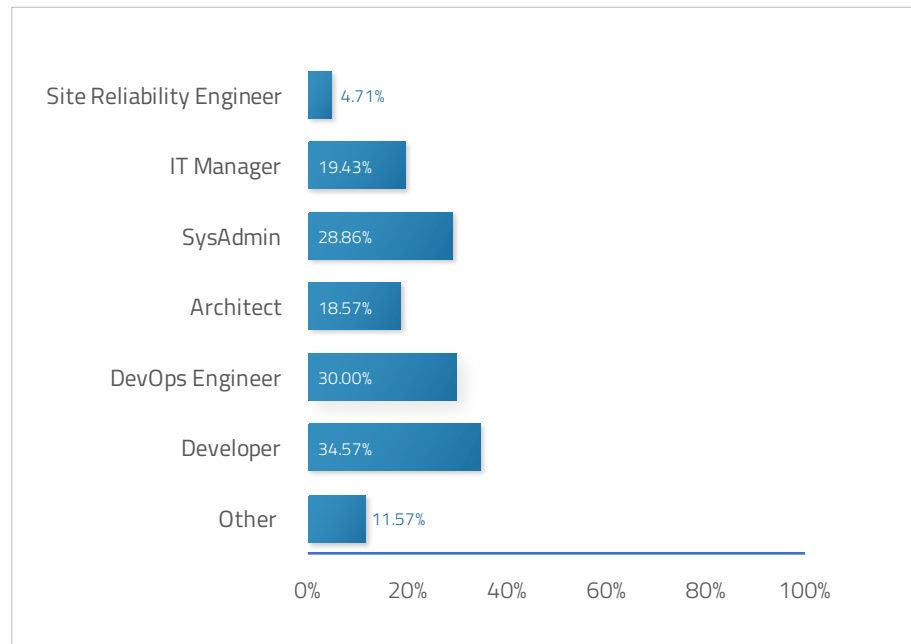
DevOps Pulse 2017 Summary & Key Findings

- **DevOps is still considered a relatively new phenomenon.** 50% of companies are still in the process of implementing DevOps or have done it within the past year.

- **The three hardest parts of establishing DevOps** are shifting company incentives to change behaviors, maintaining open communication and transparency, and having flexible processes.

- **The top problems in DevOps implementation** are a lack of time and a lack of expertise.

- 90% of respondents stated that **DevOps and increased collaboration have had a positive effect on the quality of their products.** 75% of respondents say that DevOps has shifted their perspectives on their roles and the roles of others on their teams.

- **Burnout remains a serious issue.** 70% of respondents stated that they could see themselves burning out.
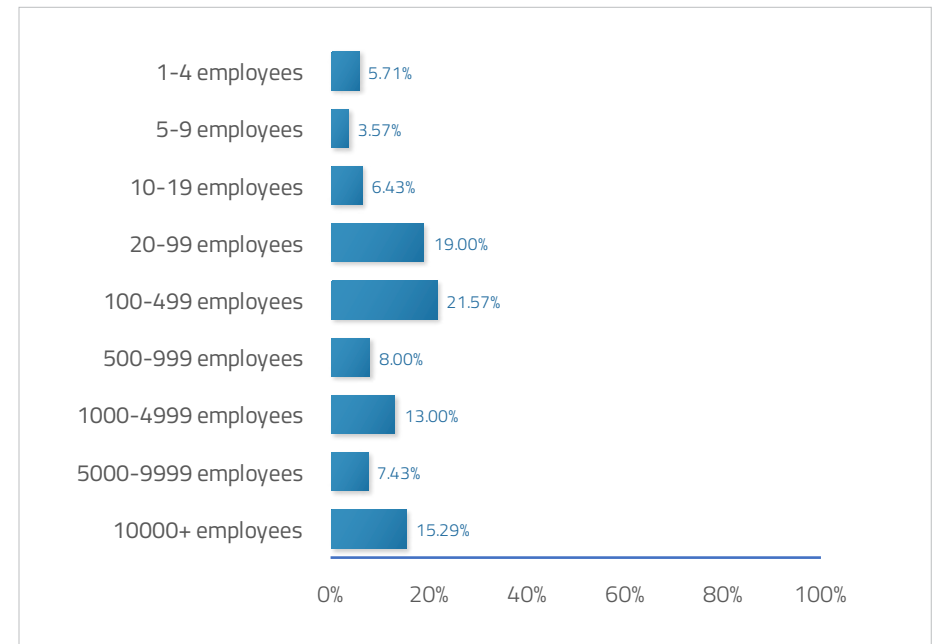
Who are we?

Logz.io is an AI-powered log analytics company that offers the open source ELK Stack as an end-to-end 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.
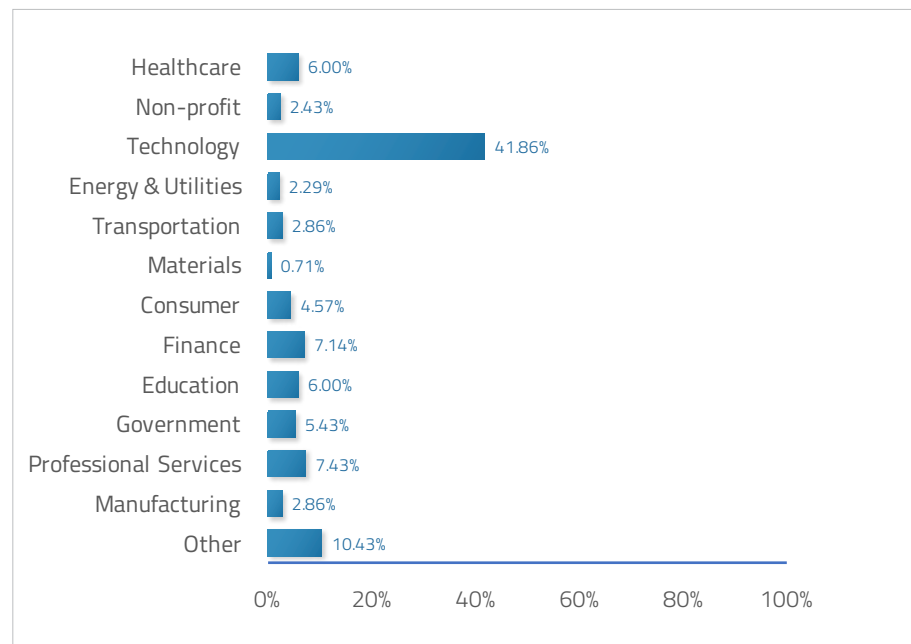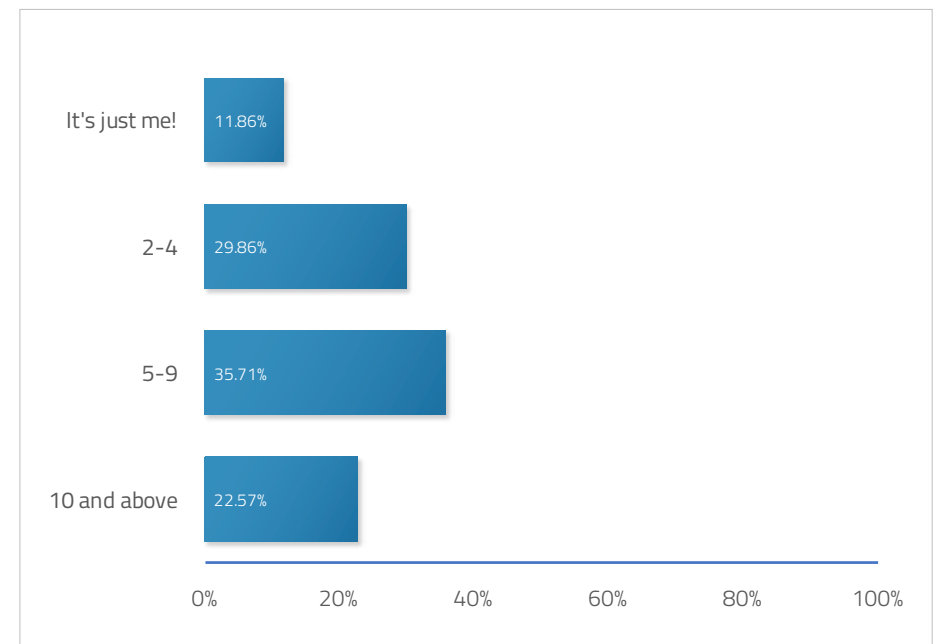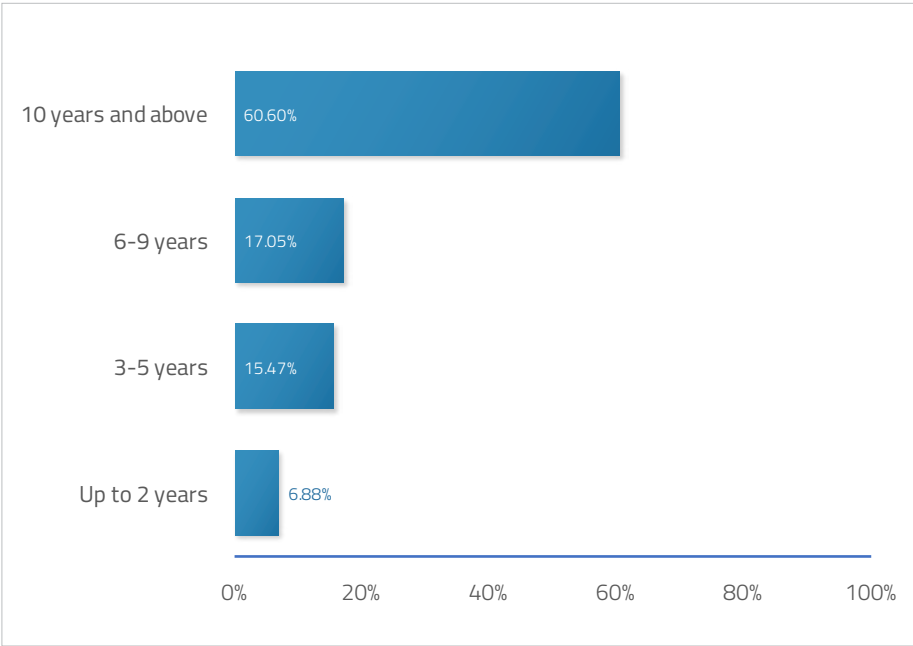
What is your role in the company?

Role	Percentage
Site Reliability Engineer	4.71%
IT Manager	19.43%
SysAdmin	28.86%
Architect	18.57%
DevOps Engineer	30.00%
Developer	34.57%
Other	11.57%

What is the size of your company?

Company size	Percentage
1-4 employees	5.71%
5-9 employees	3.57%
10-19 employees	6.43%
20-99 employees	19.00%
100-499 employees	21.57%
500-999 employees	8.00%
1000-4999 employees	13.00%
5000-9999 employees	7.43%
10000+ employees	15.29%

What industry does your company belong to?

Industry	Percentage
Healthcare	6.00%
Non-profit	2.43%
Technology	41.86%
Energy & Utilities	2.29%
Transportation	2.86%
Materials	0.71%
Consumer	4.57%
Finance	7.14%
Education	6.00%
Government	5.43%
Professional Services	7.43%
Manufacturing	2.86%
Other	10.43%

What is the size of your team?

Team size	Percentage
It's just me!	11.86%
2-4	29.86%
5-9	35.71%
10 and above	22.57%

What is your experience level?

Experience	Percentage
10 years and above	60.60%
6-9 years	17.05%
3-5 years	15.47%
Up to 2 years	6.88%

Where in the world do you work?

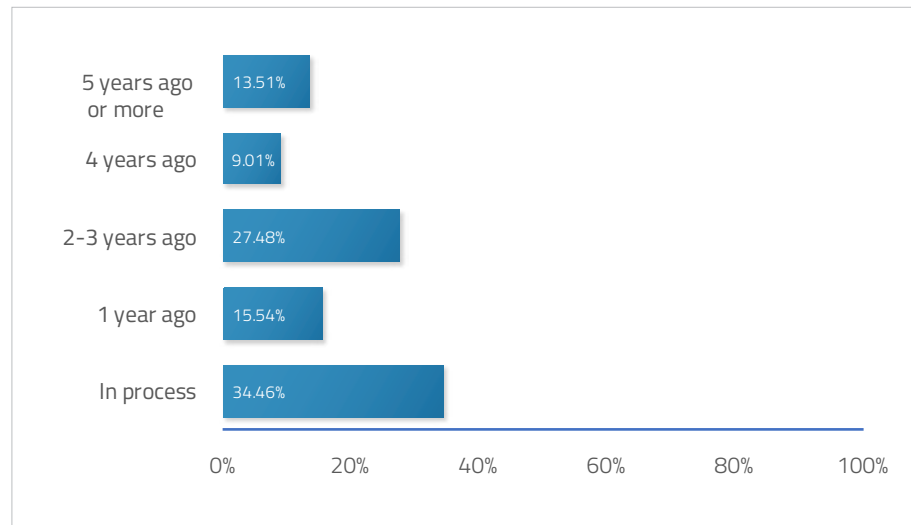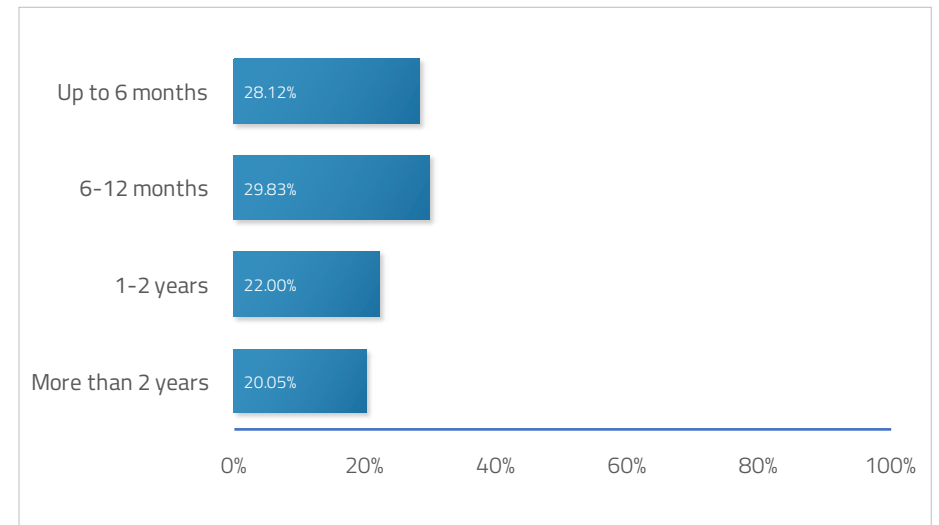| Region	Percentage
North America	58.37%
Western Europe	16.45%
Africa and Middle East	10.33%
Russia and Eastern Europe	4.08%
South America	1.46%
East Asia	9.32%
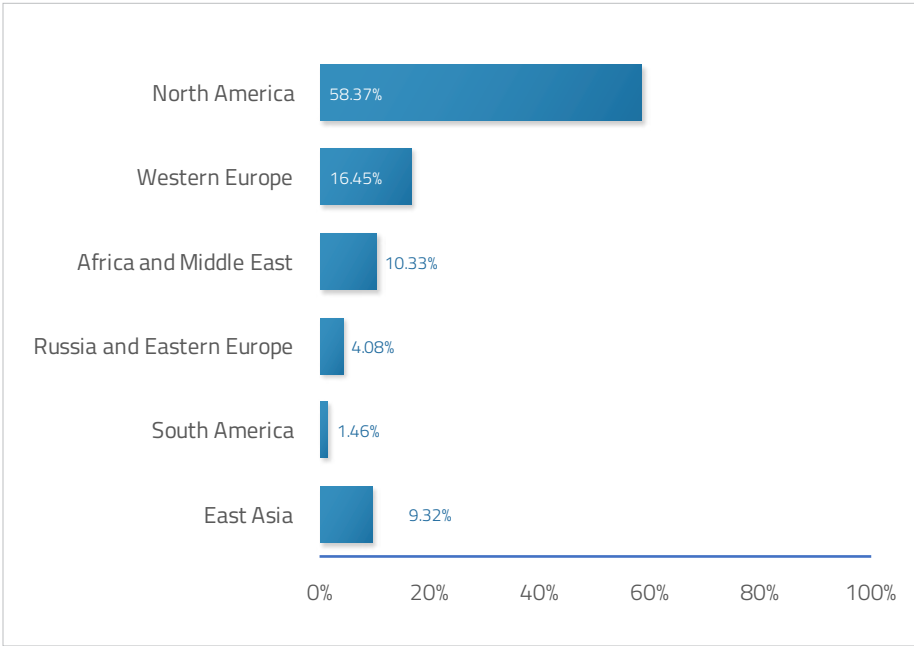
Out of the 700 people who participated in The Logz.io DevOps Pulse 2017, most were developers, DevOps engineers, or system administrators in North America who work in companies in the technology industry with up to 500 employees. Most have ten or more years of experience and work in teams of nine or fewer people.
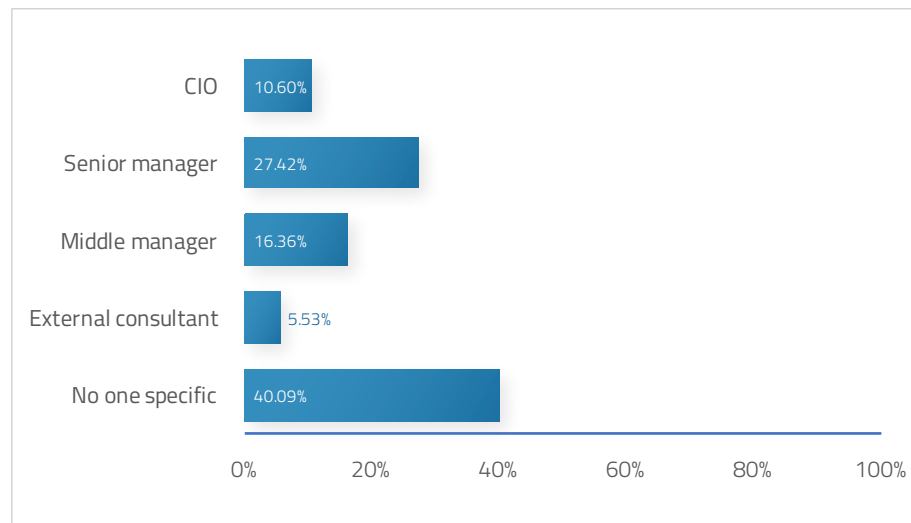
Implementing DevOps
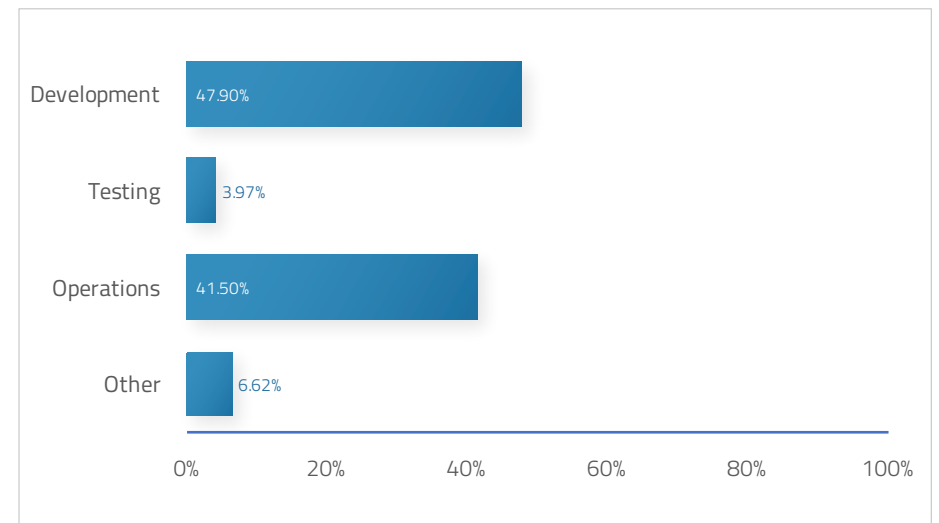
When did your company implement DevOps?

Category	%
5 years ago or more	13.51%
4 years ago	9.01%
2-3 years ago	27.48%
1 year ago	15.54%
In process	34.46%

How long did implementation take?

Category	%
Up to 6 months	28.12%
6-12 months	29.83%
1-2 years	22.00%
More than 2 years	20.05%

Who helped ensure that implementation ran smoothly?

Category	%
CIO	10.60%
Senior manager	27.42%
Middle manager	16.36%
External consultant	5.53%
No one specific	40.09%

What is your background?

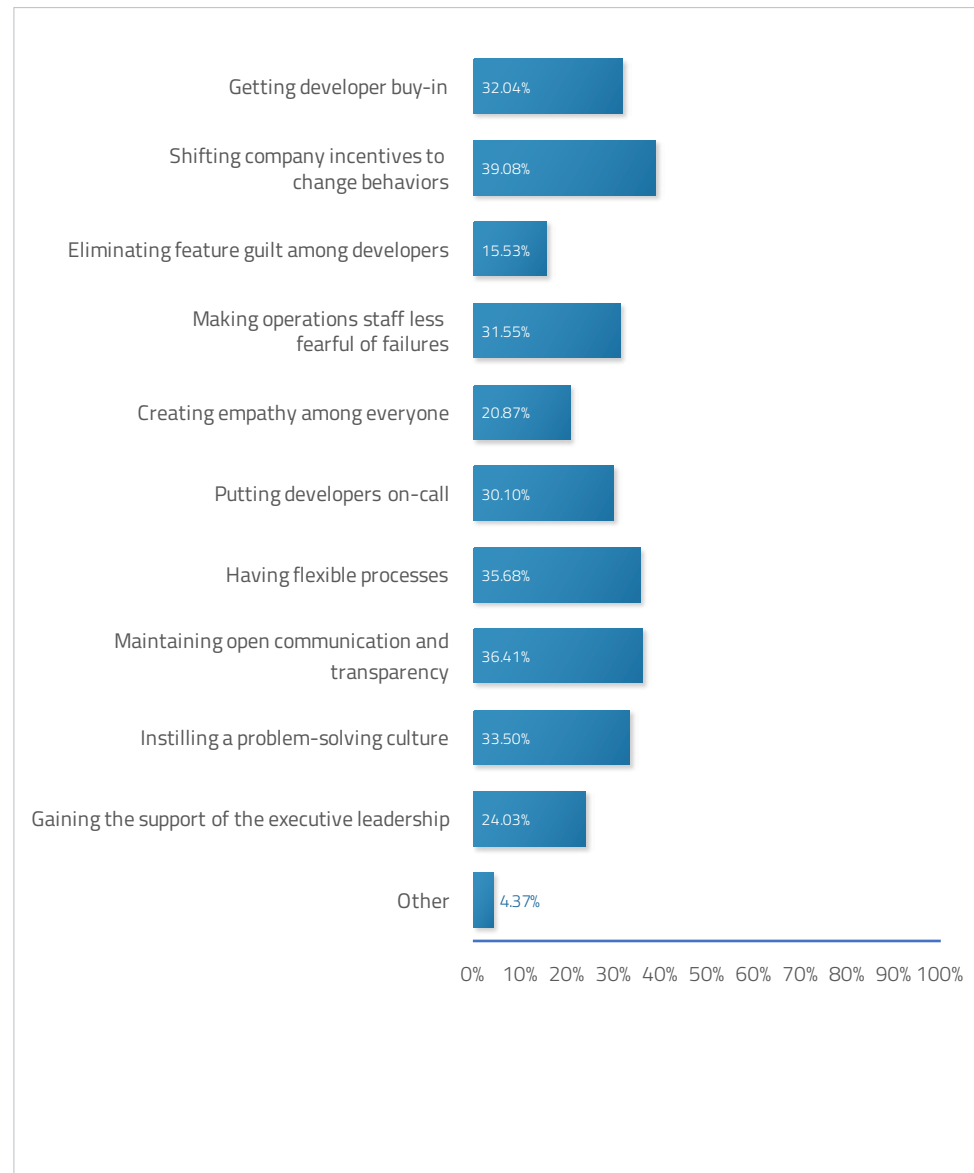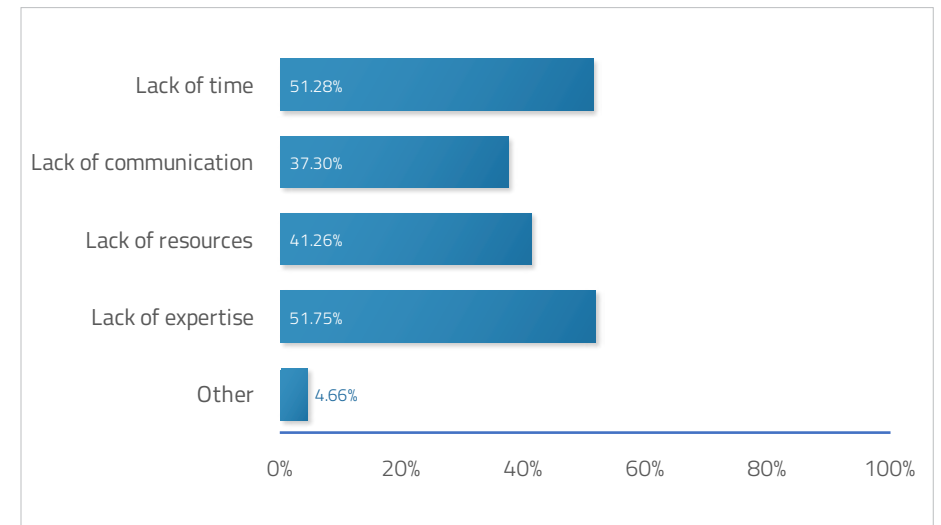| Category	%
Development	47.90%
Testing	3.97%
Operations	41.50%
Other	6.62%

DevOps is still considered a new phenomenon. 50% percent of respondents are still implementing DevOps or have done it within the past year.
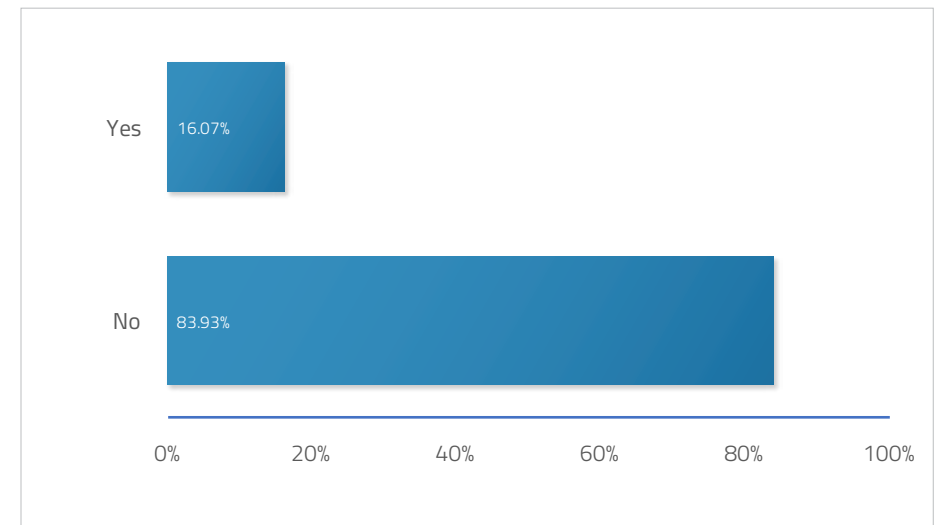
DevOps Difficulties

What are the hardest parts of establishing DevOps?

Category	%
Getting developer buy-in	32.04%
Shifting company incentives to change behaviors	39.08%
Eliminating feature guilt among developers	15.53%
Making operations staff less fearful of failures	31.55%
Creating empathy among everyone	20.87%
Putting developers on-call	30.10%
Having flexible processes	35.68%
Maintaining open communication and transparency	36.41%
Instilling a problem-solving culture	33.50%
Gaining the support of the executive leadership	24.03%
Other	4.37%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

What are the key issues you've experienced in DevOps implementation?

Category	%
Lack of time	51.28%
Lack of communication	37.30%
Lack of resources	41.26%
Lack of expertise	51.75%
Other	4.66%

0%   20%   40%   60%   80%   100%

Are you currently using ChatOps?

Category	%
Yes	16.07%
No	83.93%

0%   20%   40%   60%   80%   100%

DevOps Difficulties

How effective are you at eliminating developer-operations silos?

No silos is possible only in theory	17.88%
A little effective	29.41%
Somewhat effective	38.82%
Very effective	13.88%

0% 20% 40% 60% 80% 100%
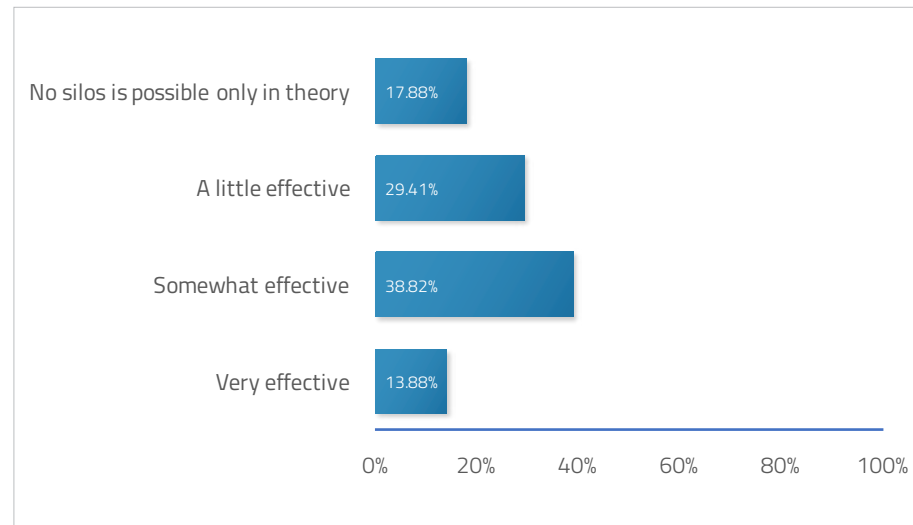
How effective are you at creating autonomous teams?

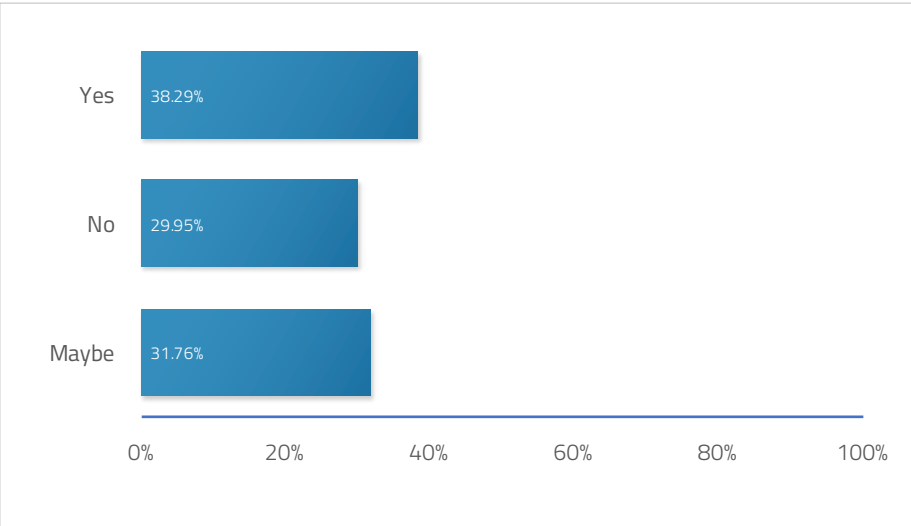|	
Possible only in theory	11.92%
A Little effective	20.79%
Somewhat effective	47.66%
Very effective	19.63%

0% 20% 40% 60% 80% 100%
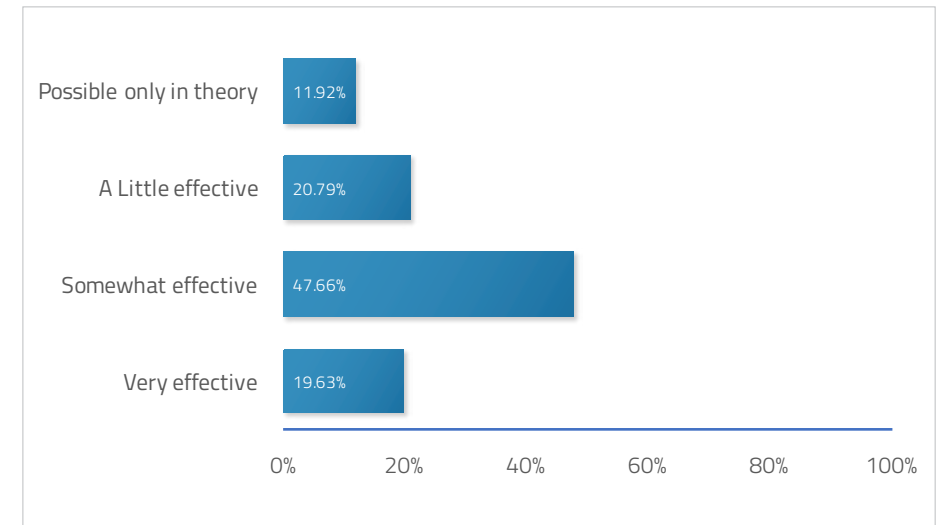
The most difficult aspects of establishing DevOps including shifting company priorities, getting developer buy-in, and maintaining open communications. These three actions -- among others -- are often tied to the fact that it is very hard to escape the typical silos that develop within companies and teams. Everyone and every team has a different way of working and a different set of priorities to address and goals to meet.

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DevOps Burnout

On the day to day, how much pressure do you feel at work?
(1 being not stressed at all, 5 being very stressed)

|	
1	6.31%
2	18.92%
3	40.54%
4	24.77%
5	9.46%

0% 20% 40% 60% 80% 100%
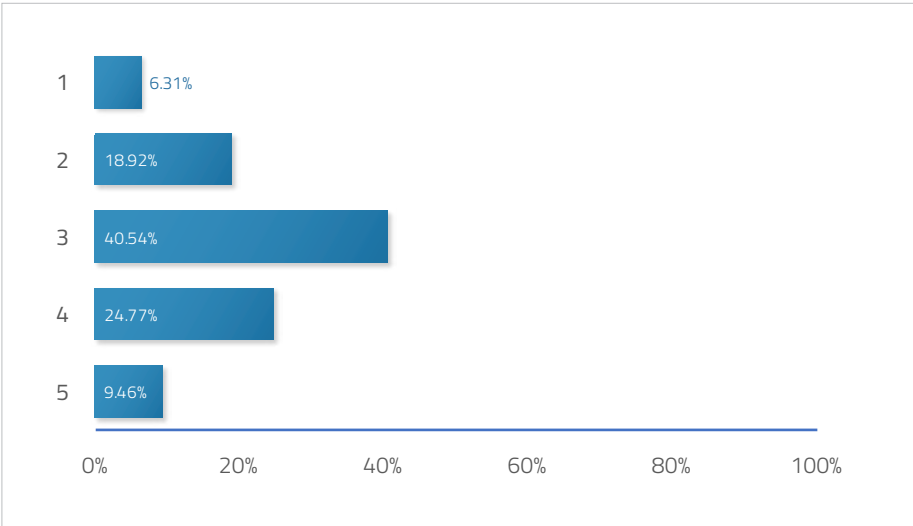
Could you see yourself burning out?

Yes	38.29%
No	29.95%
Maybe	31.76%

0% 20% 40% 60% 80% 100%

While a plurality of respondents indicated that they feel a moderate amount of pressure at work, 70% did report that they could see themselves burning out at some point.
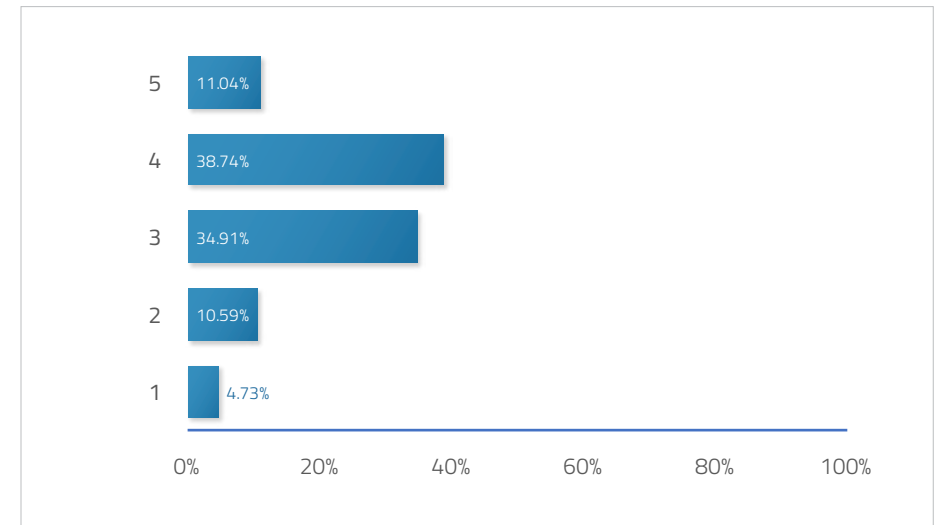
DevOps Results

## Would you say DevOps has contributed to greater overall agility?

Yes	48.97%
No	5.24%
Usually	21.18%
Sometimes	20.96%
Usually not	3.64%

0%   20%   40%   60%   80%   100%
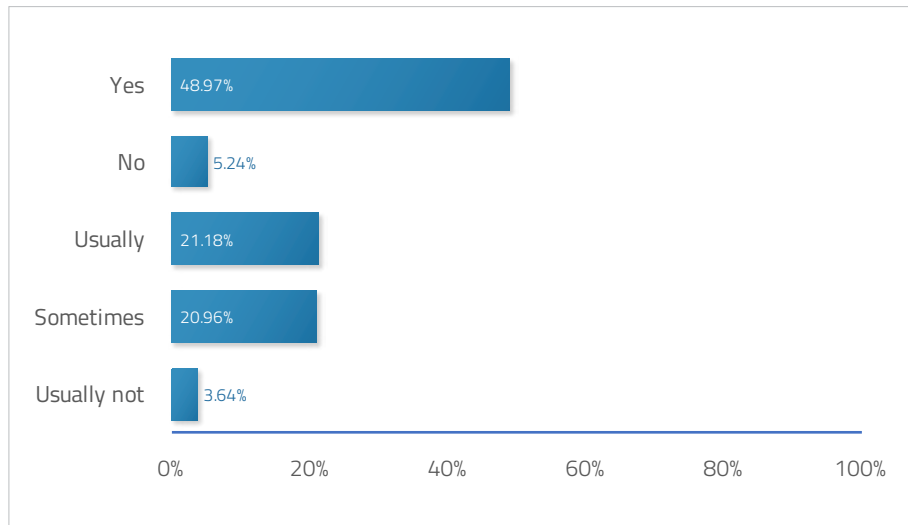
How collaborative is your work environment?
(1 being least collaborative, 5 being most)

5	11.04%
4	38.74%
3	34.91%
2	10.59%
1	4.73%

0%   20%   40%   60%   80%   100%

Has DevOps shifted your perspective on your role and the role of others within your team?

Yes	45.18%
No	25.69%
Somewhat	29.13%

0%   20%   40%   60%   80%   100%
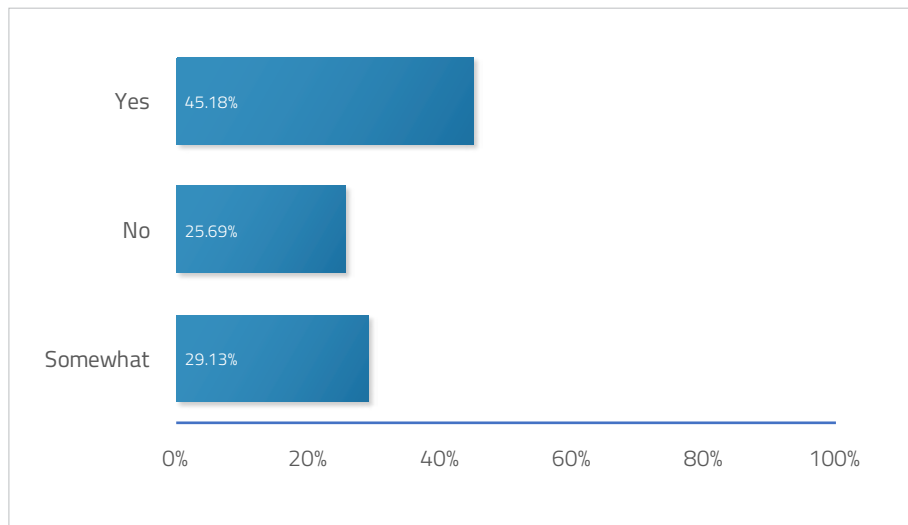
Do you and your team members (whether developers or operations staff) share common goals?

Yes	37.87%
No	4.76%
Sometimes	26.08%
Usually	27.89%
Rarely	3.40%

0%   20%   40%   60%   80%   100%
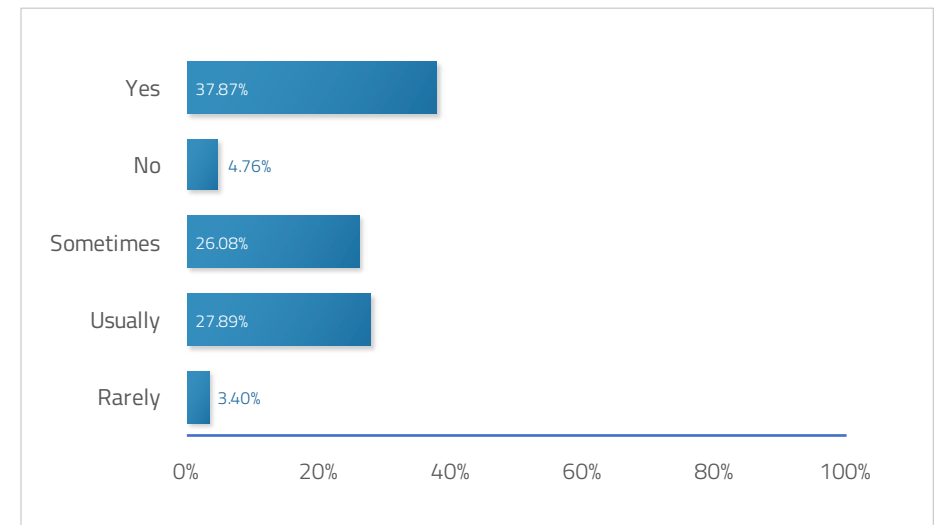
DevOps Results

Has DevOps adoption led to an increase in innovation?

Yes — 42.96%
No — 23.09%
Somewhat — 33.95%
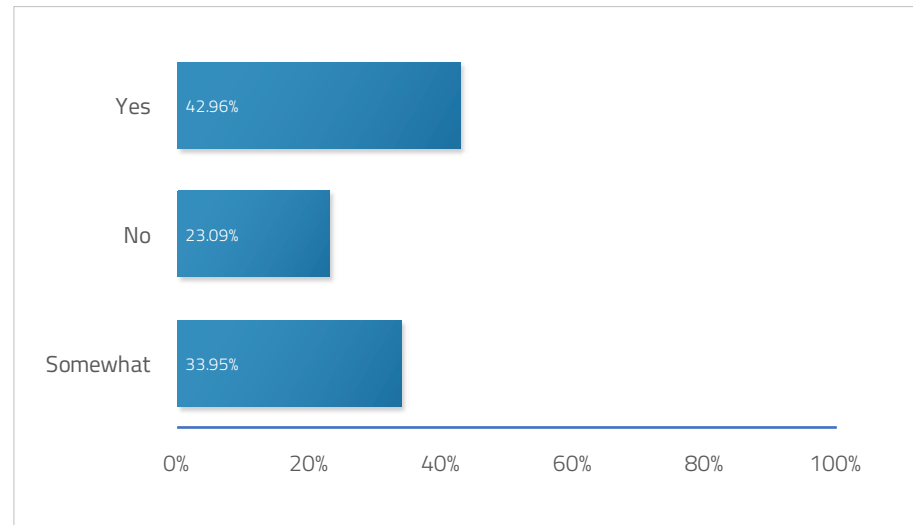
How much emphasis is placed on communication?

A lot — 29.29%
A decent amount — 46.68%
A bit — 19.68%
None — 4.35%
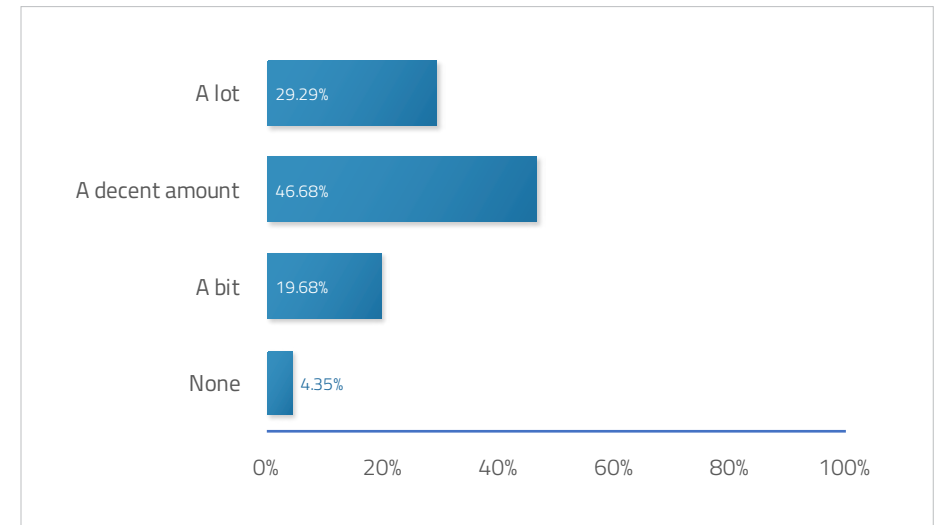
How has DevOps and increased collaboration affected the quality of products produced?

No impact — 10.47%
Small impact — 49.30%
Significant impact — 40.23%
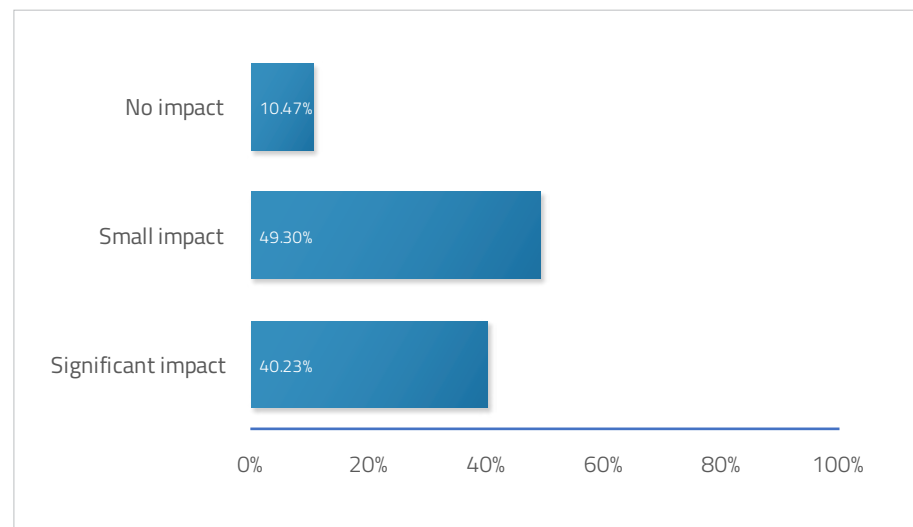
Is speed or quality more important as a result of DevOps?

Speed — 12.87%
Quality — 28.05%
Both — 51.49%
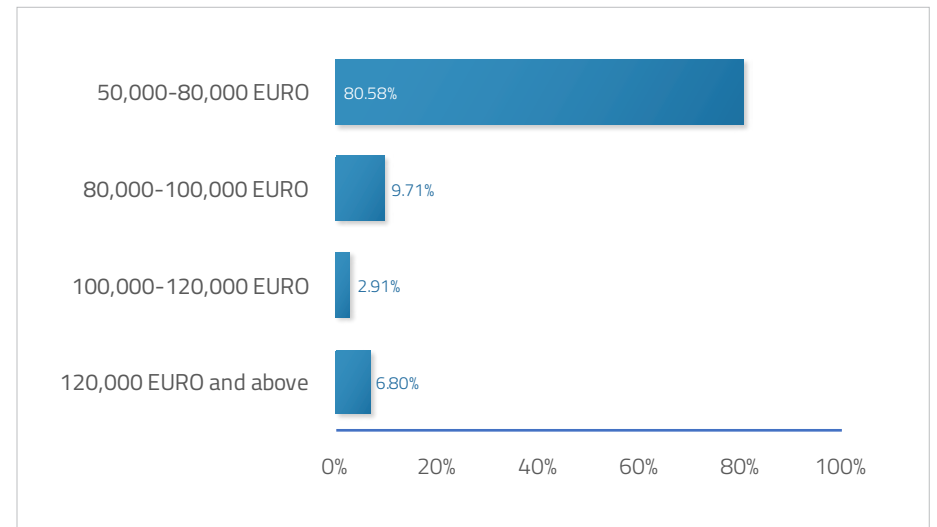Neither is more important — 7.59%
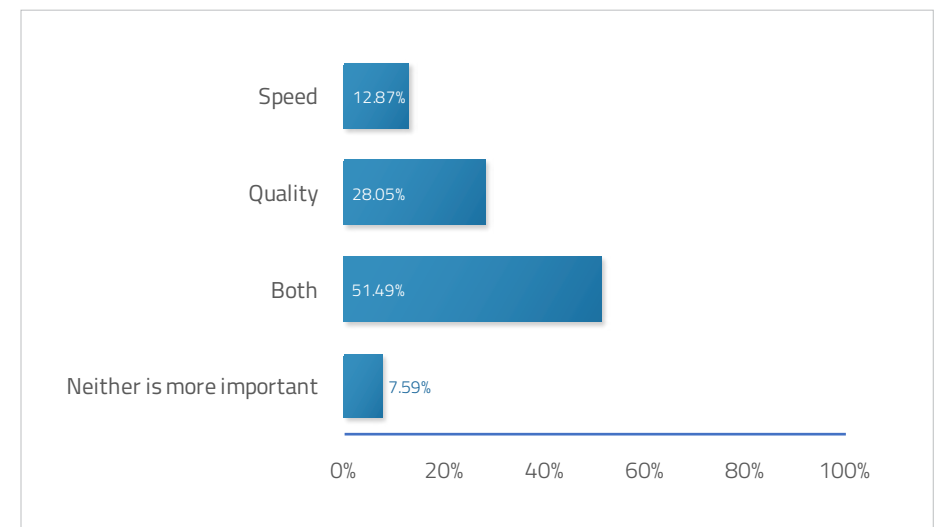
75% stated that DevOps has at least somewhat changed their perspectives of their roles and those of others on their teams. Almost everyone reported that everyone on DevOps teams, from developers to operations, shares common goals at least some of the time. 75% also responded that DevOps has led to an increase in innovation. 90% reported that DevOps and increased collaboration has had a positive effect on the quality of their products.
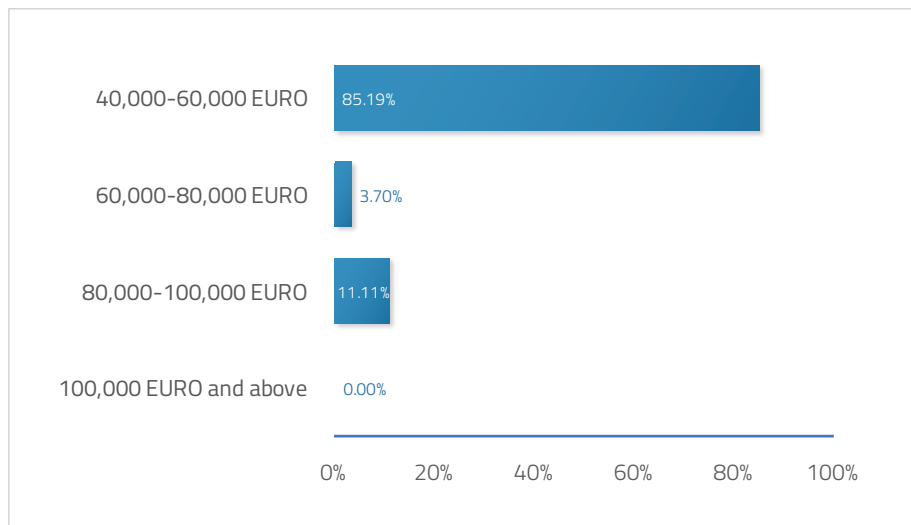
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What is your annual salary? (North America)

Range	%
$50,000-$80,000	32.83%
$80,000-$100,000	21.97%
$100,000-$120,000	21.46%
$120,000 and above	23.74%
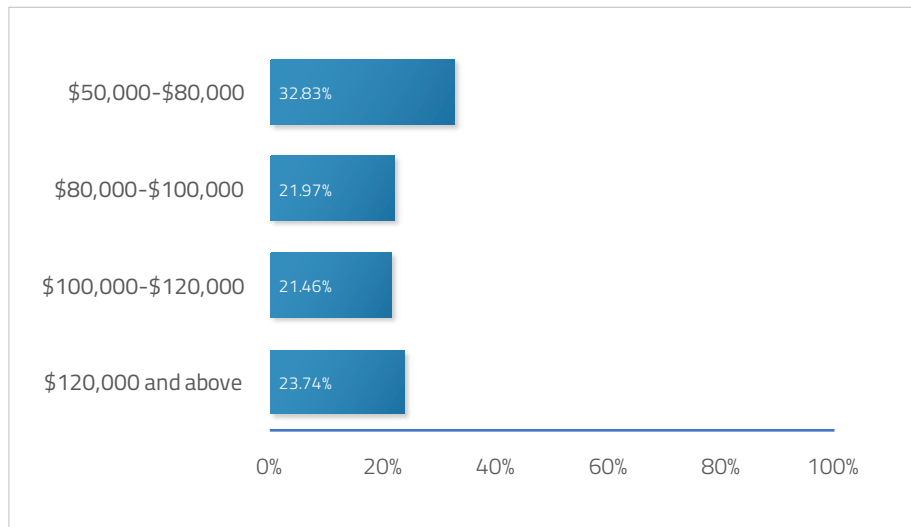
What is your annual salary? (Western Europe)

Range	%
50,000-80,000 EURO	80.58%
80,000-100,000 EURO	9.71%
100,000-120,000 EURO	2.91%
120,000 EURO and above	6.80%

What is your annual salary? (Russia and Eastern Europe)

Range	%
40,000-60,000 EURO	85.19%
60,000-80,000 EURO	3.70%
80,000-100,000 EURO	11.11%
100,000 EURO and above	0.00%

What is your annual salary? (Africa and the Middle East)

Range	%
40,000-60,000 USD	20.59%
60,000-80,000 USD	17.65%
80,000-100,000 USD	20.59%
100,000 USD and above	41.18%

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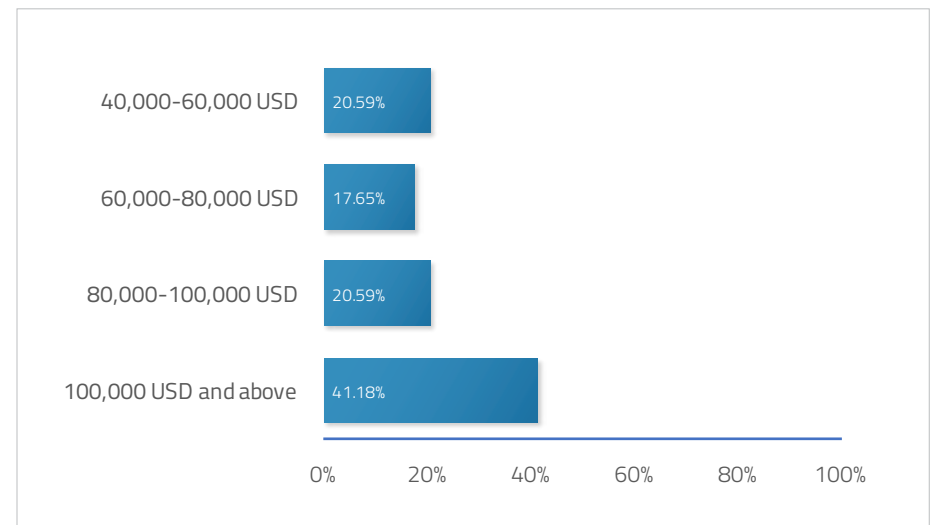
What is your annual salary? (East Asia)

Salary Range	Percentage
40,000-60,000 USD	61.11%
60,000-80,000 USD	16.67%
80,000-100,000 USD	11.11%
100,000 USD and above	11.11%
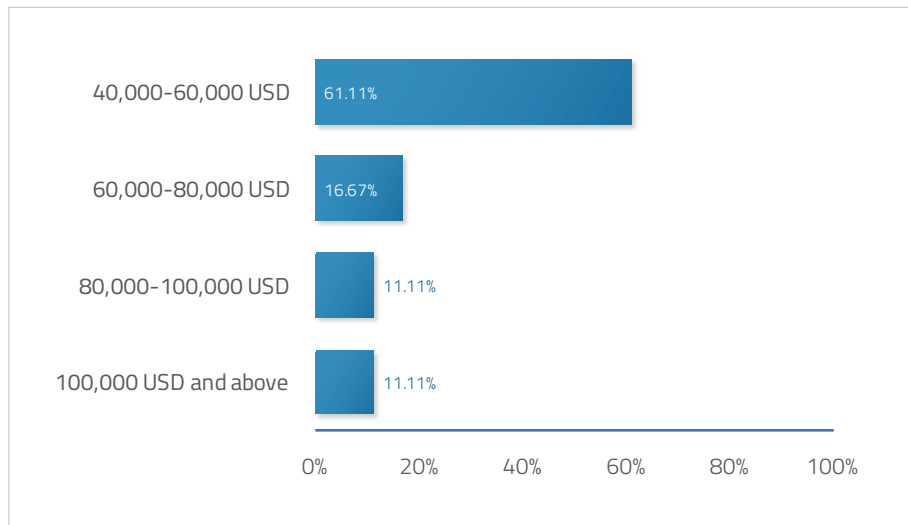
What is your annual salary? (South America)

| Salary Range	Percentage
40,000-60,000 USD	100.00%
60,000-80,000 USD	0.00%
80,000-100,000 USD	0.00%
100,000 USD and above	0.00%
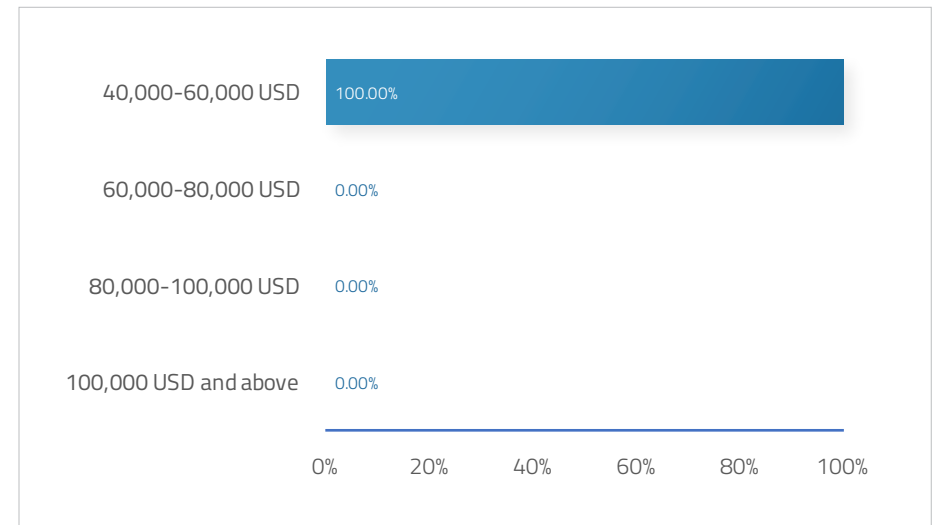
In North America, 45% of DevOps engineers now earn at least $100,000 per year. More than 65% earn more than $80,000. In western Europe, 80% make between €50,000 and €80,000 per year. In Russia and eastern Europe, 85% earn the equivalent of between €40,000 and €60,000 per year.
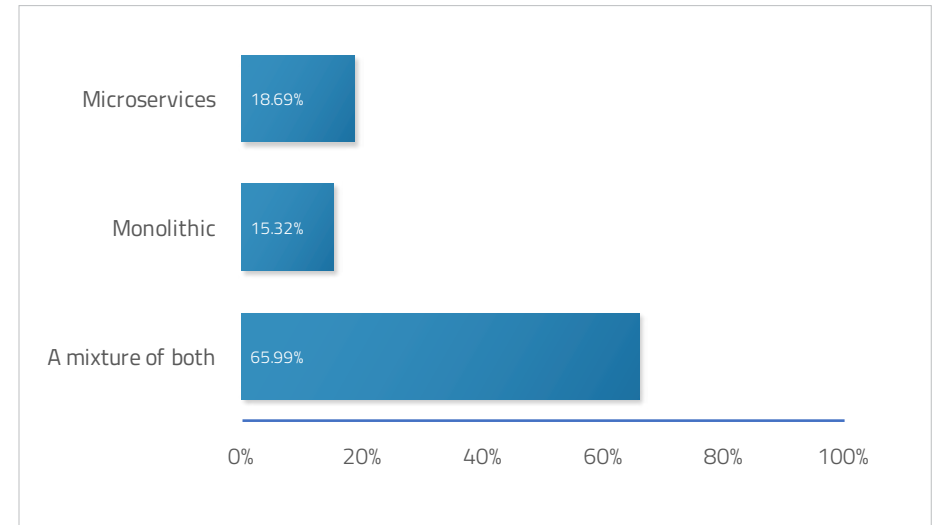
In Africa and the Middle East, the results were more uniform -- 58% reported incomes of below the equivalent of $100,000 per year and 41% reported higher salaries. In eastern Asia, 61% make between the equivalent of $40,000 and $60,000 per year. In South America, every respondent reported salaries of between the equivalent of $40,000 and $60,000 per year.
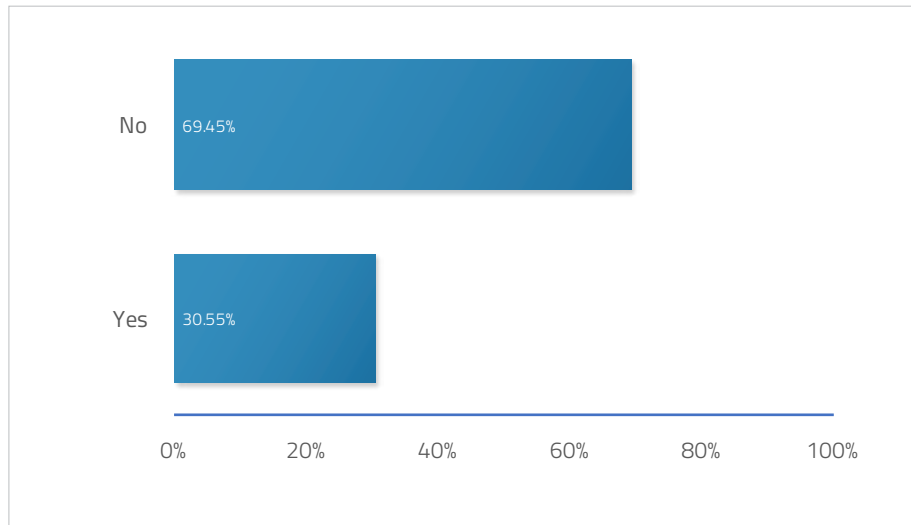
Microservices and Containers

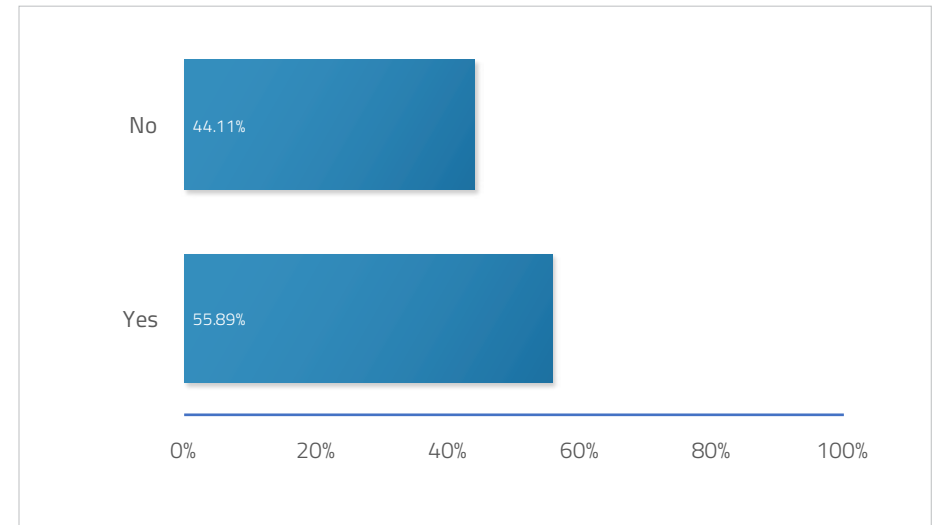## What is the size of your infrastructure? (servers/instances)

- 1-4 — 6.73%
- 5-100 — 45.62%
- 100-500 — 21.89%
- 500-1000 — 10.77%
- More than 1000 — 14.98%
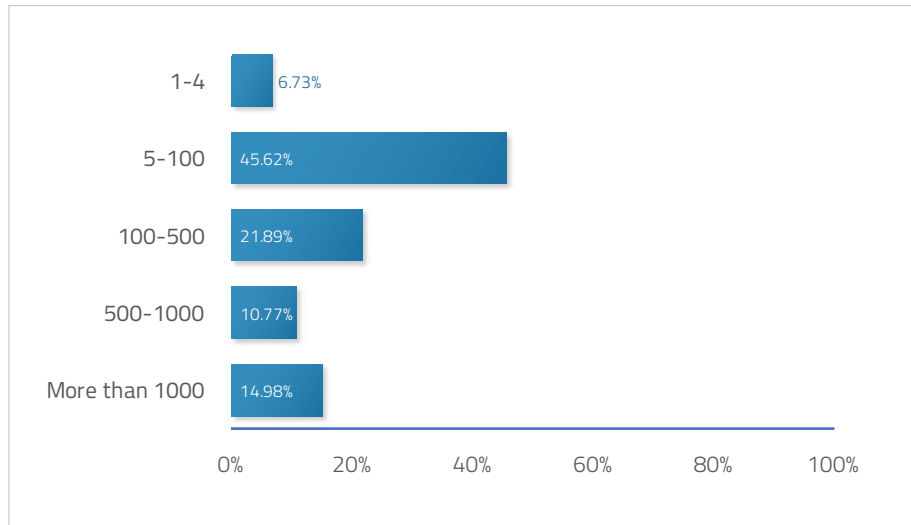
What architecture are you using to build your application?

- Microservices — 18.69%
- Monolithic — 15.32%
- A mixture of both — 65.99%

Are you using serverless in your application logic?

- No — 69.45%
- Yes — 30.55%

Do you use container services?

- No — 44.11%
- Yes — 55.89%

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

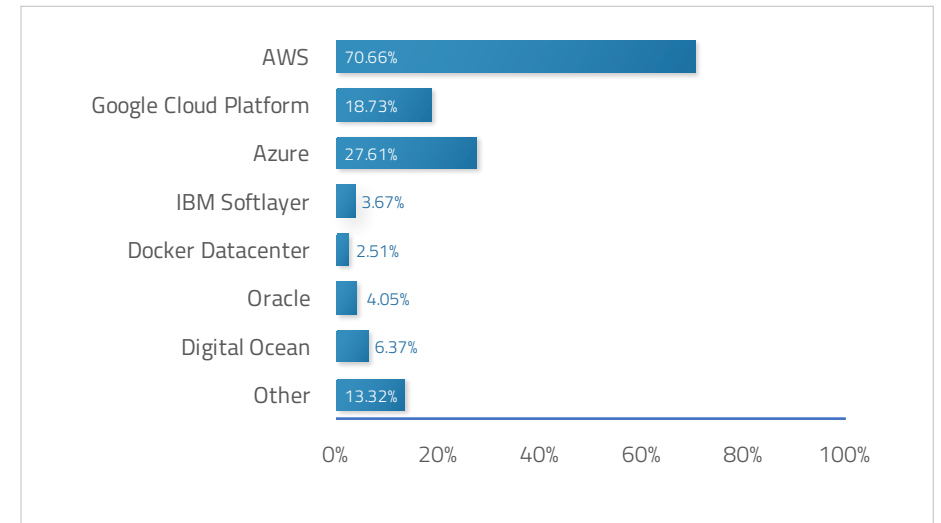| Category	Percentage
No	57.98%
Yes, Mesos or DC/OS	3.09%
Yes, Kubernetes	15.27%
Yes, Nomad	1.37%
Yes, Docker Swarm	14.24%
Other	8.06%
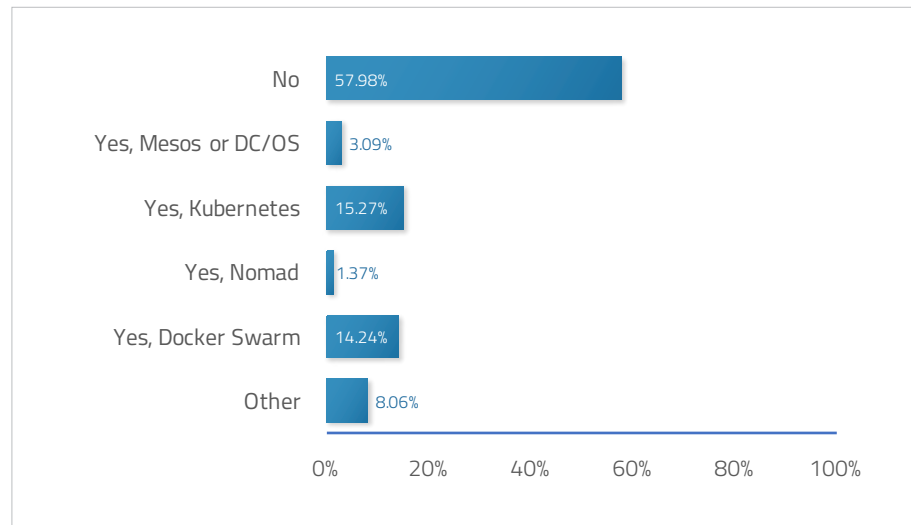
90% reported that they are now using microservices to some degree. More than half are not using container services, but Kubernetes and Docker Swarm are leading the pack among those who do.

The Cloud

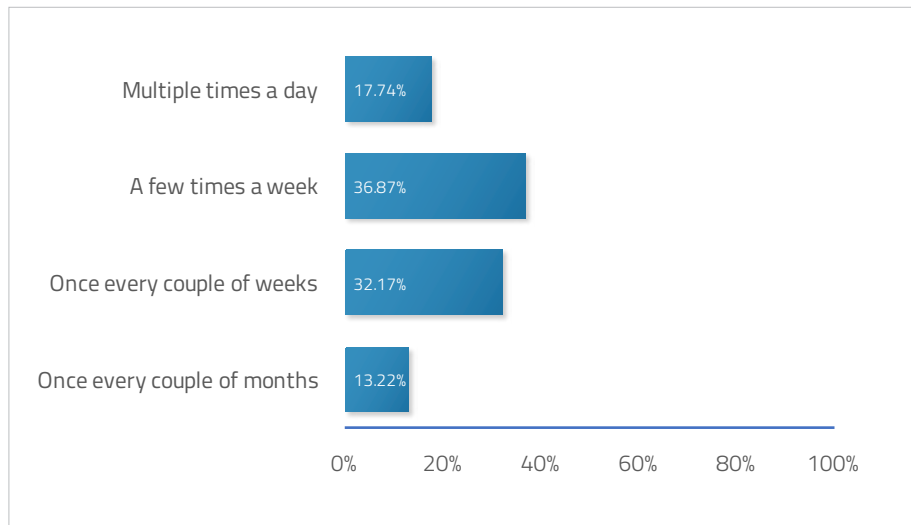## What percentage of your infrastructure is based in the public cloud?

0-25%	54.55%
25-50%	11.78%
50-75%	11.95%
All of it	21.72%
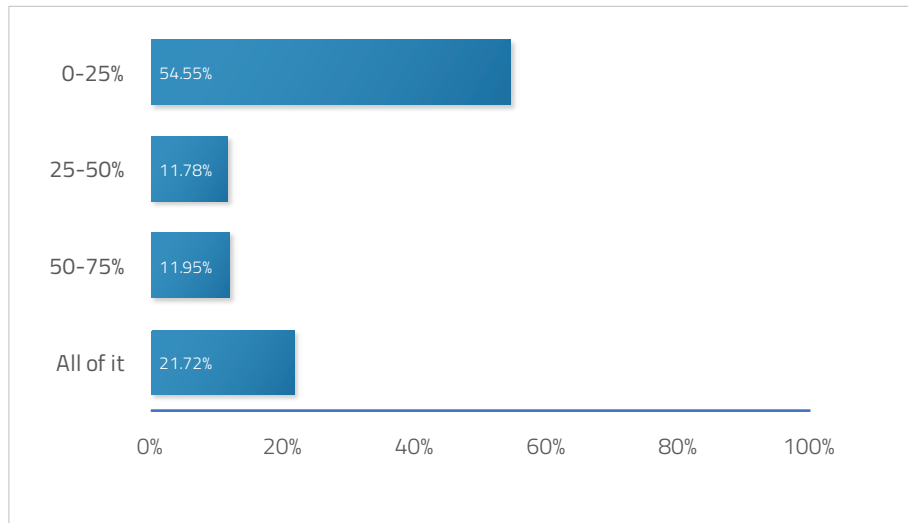
Which cloud are you using?
(you can choose more than one)

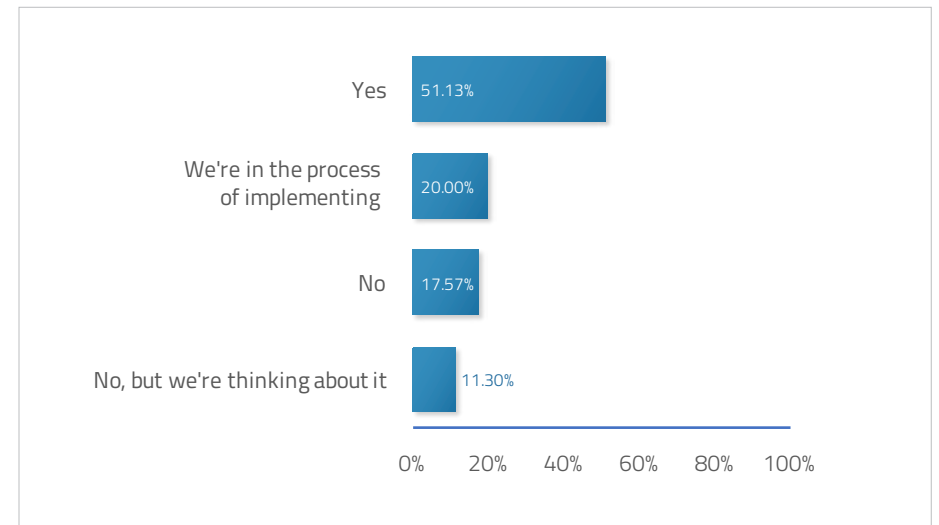|	
AWS	70.66%
Google Cloud Platform	18.73%
Azure	27.61%
IBM Softlayer	3.67%
Docker Datacenter	2.51%
Oracle	4.05%
Digital Ocean	6.37%
Other	13.32%

One interesting story is the ever-increasing dominance of the Big Three public cloud companies -- AWS, Azure, and Google Cloud Platform. In The DevOps Pulse 2016, 28% stated that they used an "other" platform. This year, the number fell to 13% while the percentages of people using the Big Three each increased. More people in general are using AWS, Azure, or Google Cloud Platform. As might not be surprising, AWS still leads the pack.
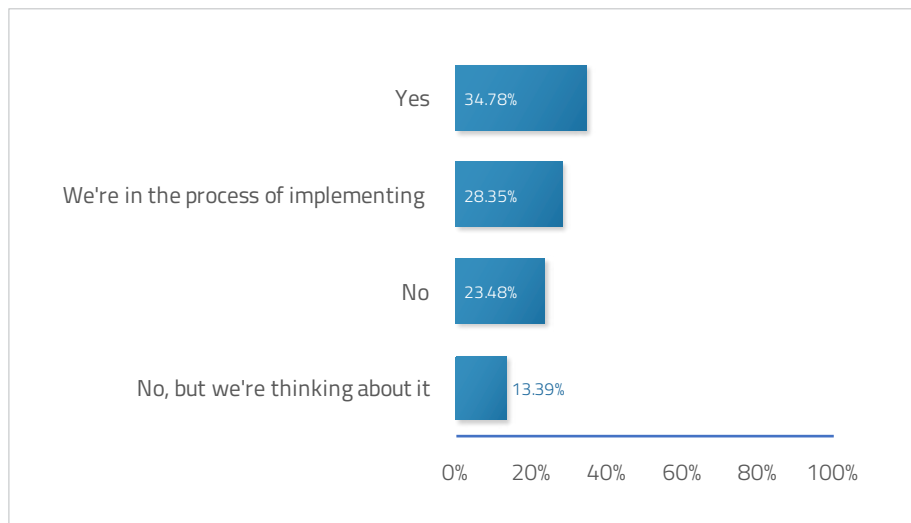
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How frequently does your team deploy code to production?

Multiple times a day — 17.74%
A few times a week — 36.87%
Once every couple of weeks — 32.17%
Once every couple of months — 13.22%

0%   20%   40%   60%   80%   100%

Do you have a Continuous Integration (CI) strategy in place?

Yes — 51.13%
We're in the process of implementing — 20.00%
No — 17.57%
No, but we're thinking about it — 11.30%

0%   20%   40%   60%   80%   100%

Do you have a Continuous Deployment (CD) strategy in place?

Yes — 34.78%
We're in the process of implementing — 28.35%
No — 23.48%
No, but we're thinking about it — 13.39%

0%   20%   40%   60%   80%   100%

How do you do QA in your organization?

Manual — 22.26%
100% automated — 4.70%
Both manual and automated — 68.70%
We don't do QA — 4.35%

0%   20%   40%   60%   80%   100%
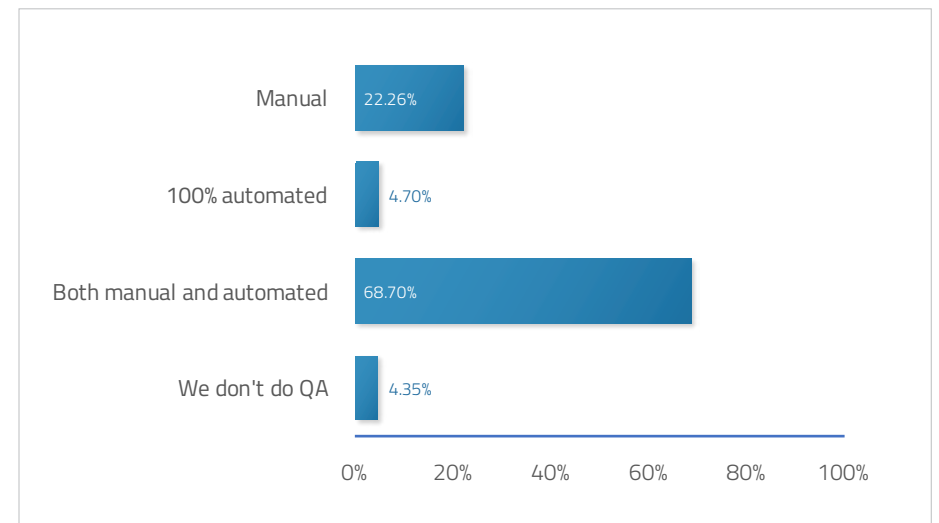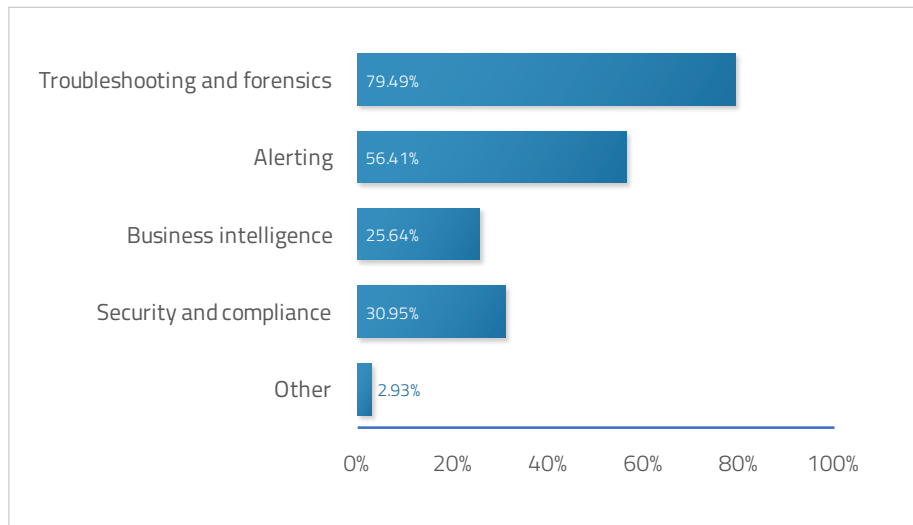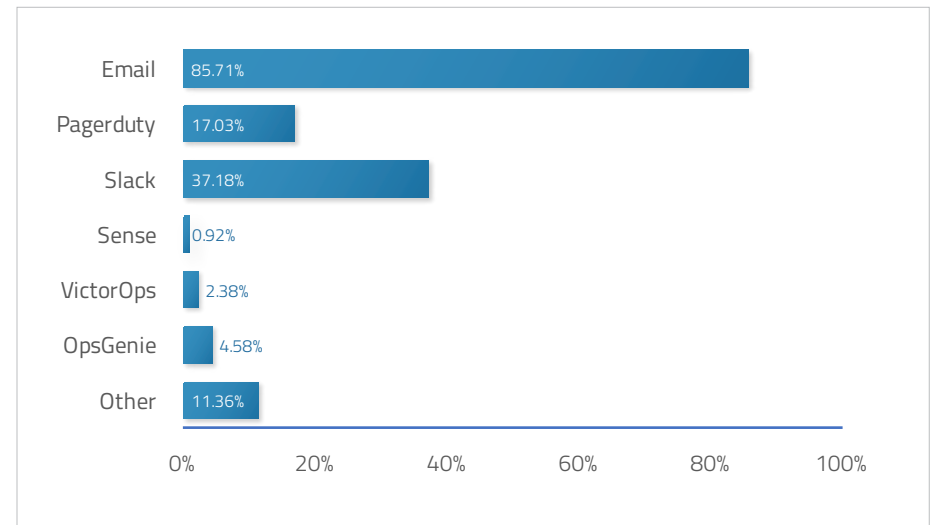
54% of of survey takers are deploying code to production between a few times a week and multiple times per day. 71% of people now have a continuous integration (CI) strategy. 63% have a continuous deployment (CD) strategy. Almost 70% use a mix of manual and automated QA.

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What's your most common use case for log analytics?

Troubleshooting and forensics	79.49%
Alerting	56.41%
Business intelligence	25.64%
Security and compliance	30.95%
Other	2.93%

How do you distribute alerts in your organization?

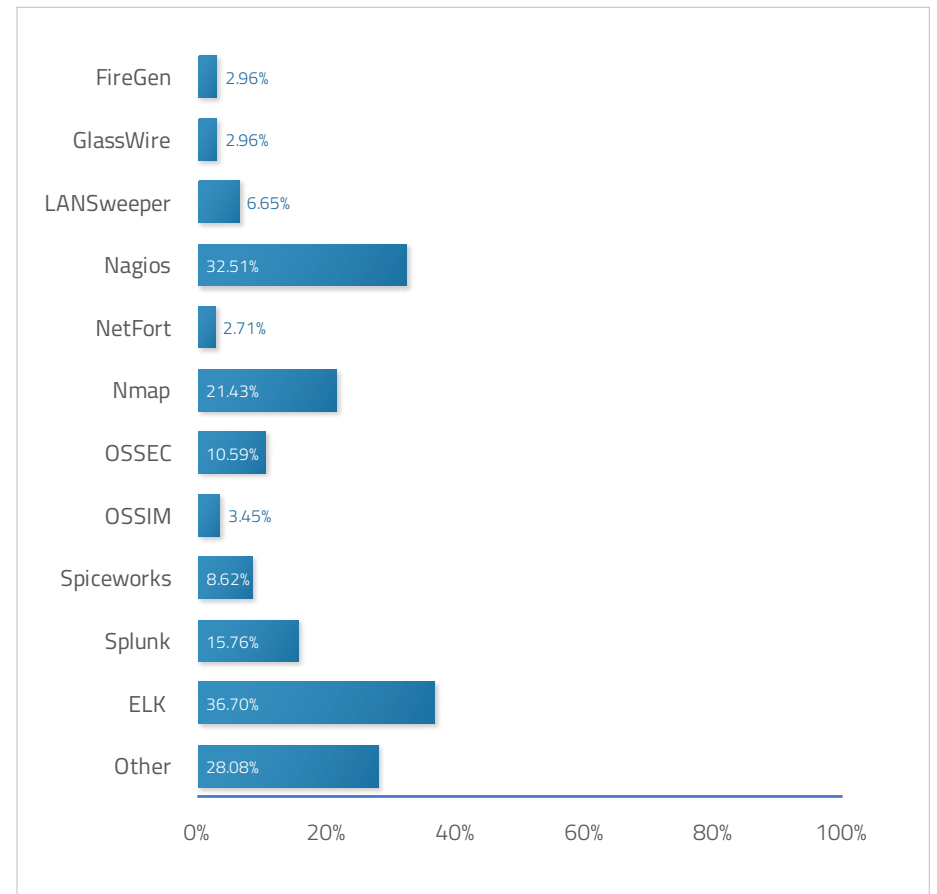|	
Email	85.71%
Pagerduty	17.03%
Slack	37.18%
Sense	0.92%
VictorOps	2.38%
OpsGenie	4.58%
Other	11.36%

As we found last year, the top three use cases for log analytics (in descending order) are troubleshooting, alerting, and security. Slack devotees might be shocked to hear that 86% of people still prefer to receive alerts over old-fashioned e-mail.

Security Operations
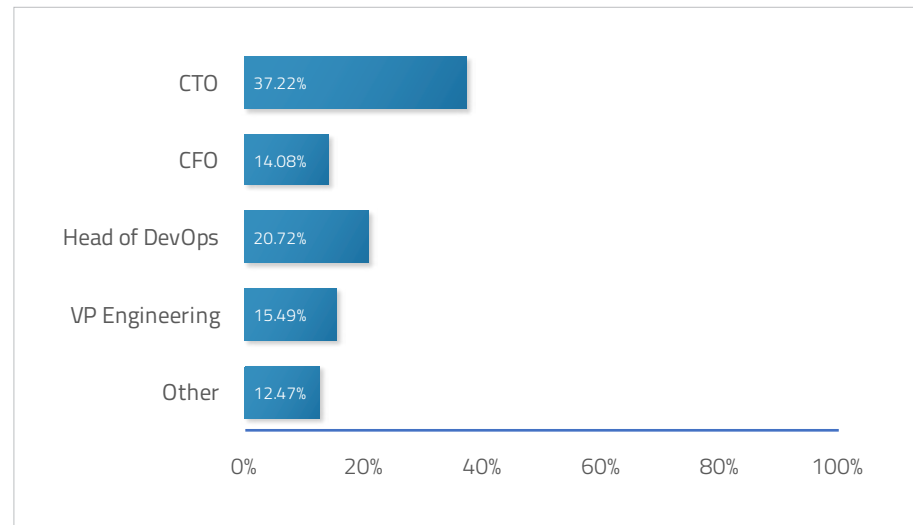
Who is responsible for security in your organization?

DevOps — 23.00%
Security operations — 36.84%
Development — 10.14%
System administration — 27.10%
Site reliability engineering — 2.92%

0%   20%   40%   60%   80%   100%
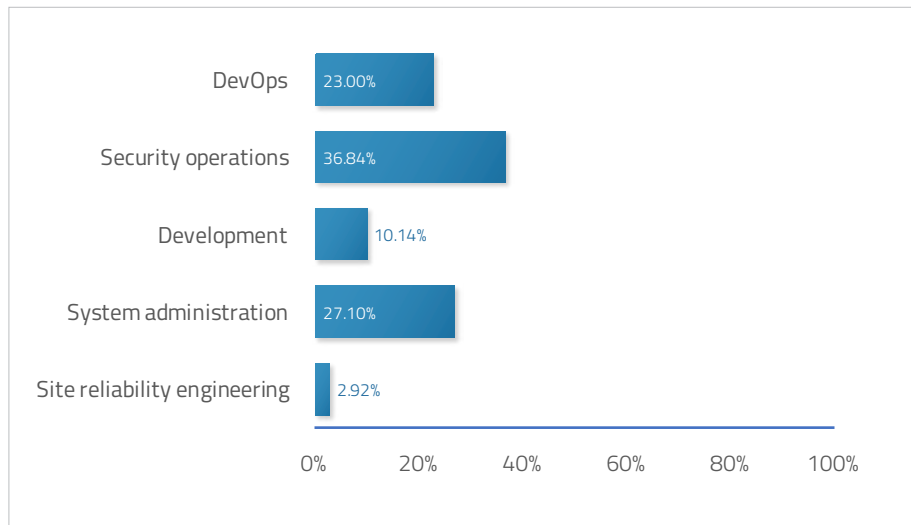
Which tools do you use for security monitoring?

FireGen — 2.96%
GlassWire — 2.96%
LANSweeper — 6.65%
Nagios — 32.51%
NetFort — 2.71%
Nmap — 21.43%
OSSEC — 10.59%
OSSIM — 3.45%
Spiceworks — 8.62%
Splunk — 15.76%
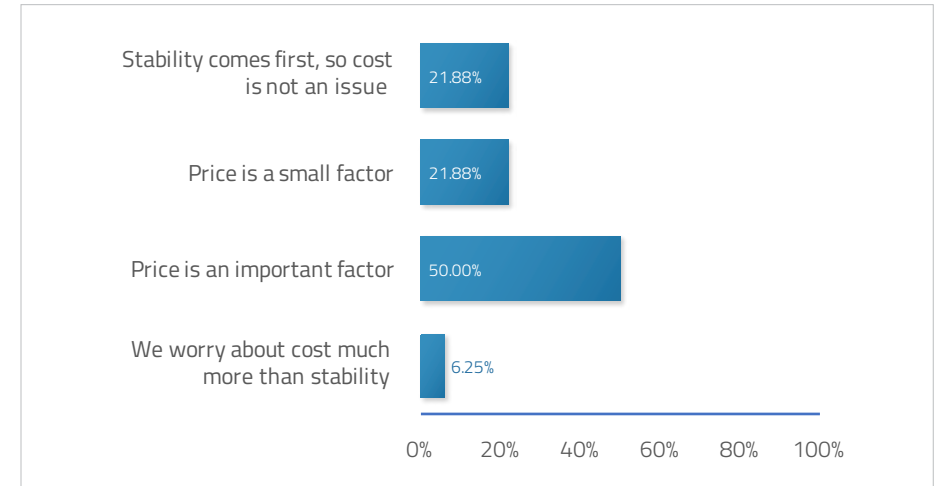ELK — 36.70%
Other — 28.08%

0%   20%   40%   60%   80%   100%

After the open source ELK Stack, the most popular security monitoring tools
are Nagios, Nmap, Splunk, and a collection of other lesser-known or
custom-built platforms.

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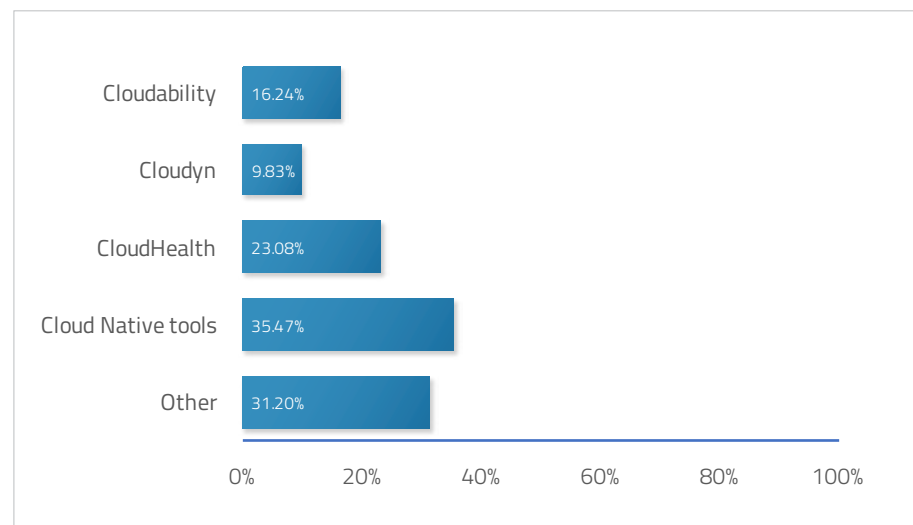https://logz.io   info@logz.io   @logzio

Cost Management

In your organization, who monitors the cost of production?

- CTO — 37.22%
- CFO — 14.08%
- Head of DevOps — 20.72%
- VP Engineering — 15.49%
- Other — 12.47%

If you use a public cloud, what priority does cost management have?

- Stability comes first, so cost is not an issue — 21.88%
- Price is a small factor — 21.88%
- Price is an important factor — 50.00%
- We worry about cost much more than stability — 6.25%

If you do practice cloud cost management, what tools do you use?

- Cloudability — 16.24%
- Cloudyn — 9.83%
- CloudHealth — 23.08%
- Cloud Native tools — 35.47%
- Other — 31.20%

If you have specific initiatives around cost management, what are your goals?

- Optimizing our environment — 69.92%
- Buying reserved instances from public cloud providers — 24.80%
- Understanding our usage — 57.26%
- Other — 5.54%
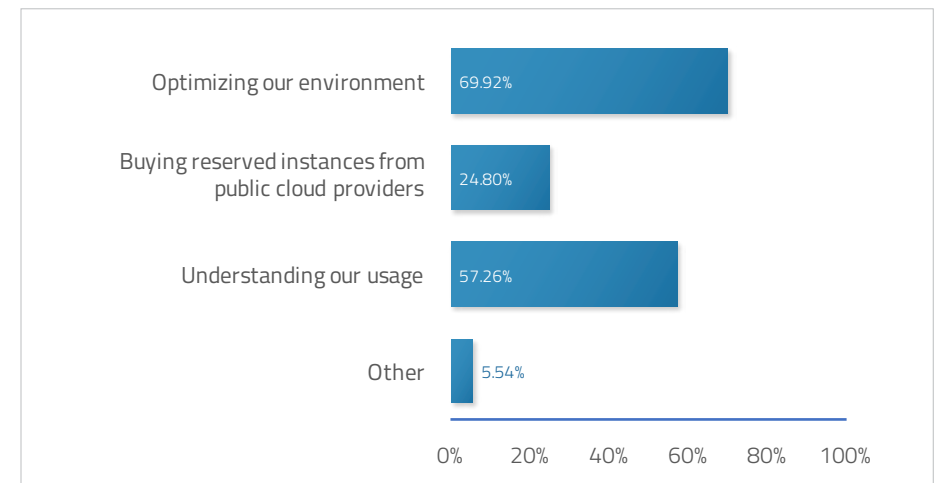
While the initial rush to the cloud was in part to cut costs, the cloud still becomes expensive as companies' underlying infrastructures grow with the business. As a result, businesses are using popular cost management platforms such as Cloud Native, CloudHealth, and a batch of others including AWS itself and custom-built tools. The most common reasons for cost management are to understand cloud usage and optimize environments.

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AI-Powered ELK As a Service

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 2018.

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 incorporatethem into next year's report.

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