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CURRENTS

A Seasonal Report on Developer Trends in the Cloud:

Open Source Edition

Introduction

Trends in the developer community move quickly. As a developer-focused company, we like to keep up with the technologies and tools that developers and their teams are interested in.

To share these insights with the broader community, we created Currents, a seasonal report on developer cloud trends. For our fifth edition, we focused entirely on open source — to coincide with the movement's 20-year anniversary this year, and DigitalOcean's fifth Hacktoberfest this month. We surveyed more than 4,300 respondents from around the world about the state of open source, including how they and their companies use it and what inspires them to support the community.

Key findings:

- **Twenty years in, just over half of developers surveyed are contributing to open source projects** (55 percent). However, that is less than what companies expect from their employees: three out of four respondents said their companies expect them to use open source software as part of their day-to-day development work.

- **Two of the most prominent barriers preventing developers from getting involved in open source are not knowing where to begin, and doubting they have the right skills.** Companies not giving their employees time to contribute is also a large factor.

- **Of the five major tech companies — Microsoft, Google, Amazon, Facebook and Apple — developers overwhelmingly said Google is most supportive of the open source community,** followed by Microsoft. Apple ranked last.

- **There's a disconnect between companies' encouragement of open source within their organizations, and their actual investment.** Only 18 percent of respondents said their company is a member of an open source-related organization, and 75 percent said their company invests $1k or less every year in donations to open source.

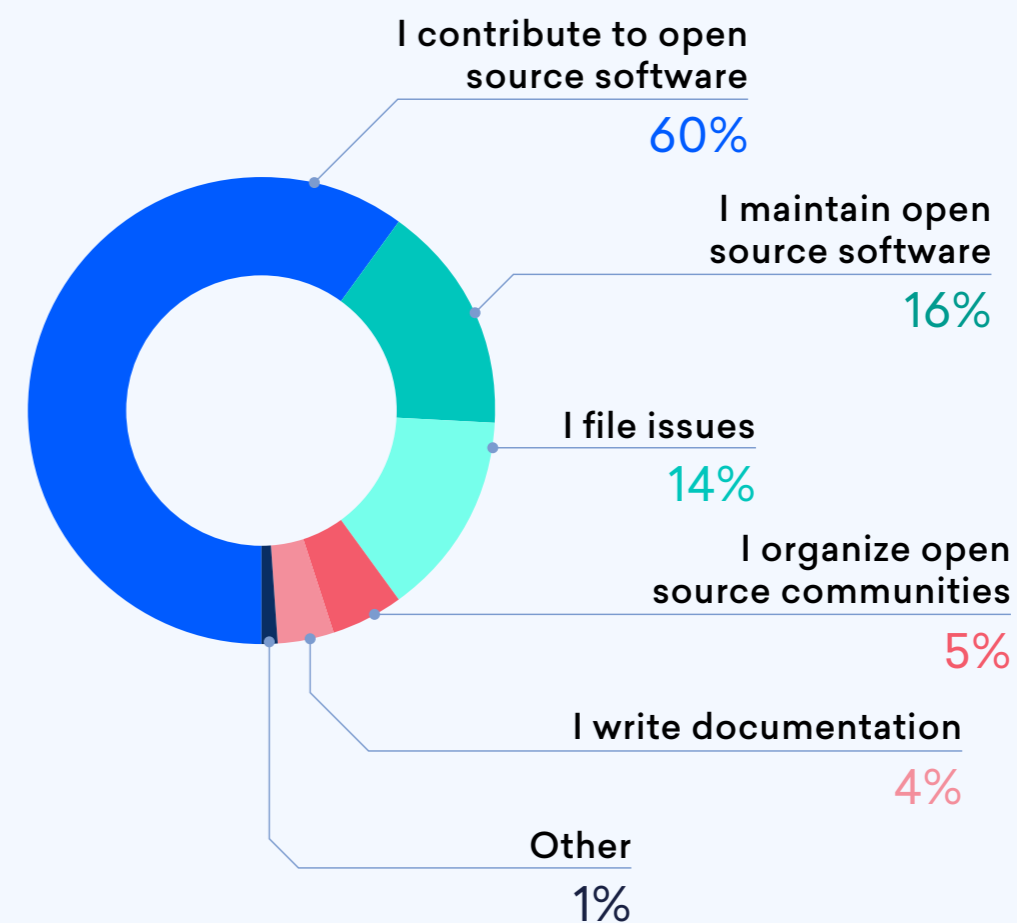DigitalOcean

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Open Source and Individuals

With 2018 marking the twenty-year anniversary of open source, we were interested in understanding how individual developers were contributing to the open source community, and why.

More than half (55 percent) of respondents said they contribute in some way. Those who contribute do so in a few ways, with the most popular way being through contributions to open source software, followed by helping maintain open source software. Developers in India are more likely to contribute than developers from other countries, with more than two-thirds (68 percent) actively participating.

What's inspiring people to participate? The top motivation is improving coding skills — developers in the UK especially cited this (78 percent vs. 69 percent overall). A close second was being part of a community — even though developers tend to work independently, they still look for ways to connect with other coders and learn new technology. Thirty seven percent of developers said they would contribute more if their companies gave them additional time to do so.

While open source advocates would undoubtedly like to see more developers contributing to the community, the good news is developers as a whole are very bullish: 89 percent said the open source community is healthy and growing.

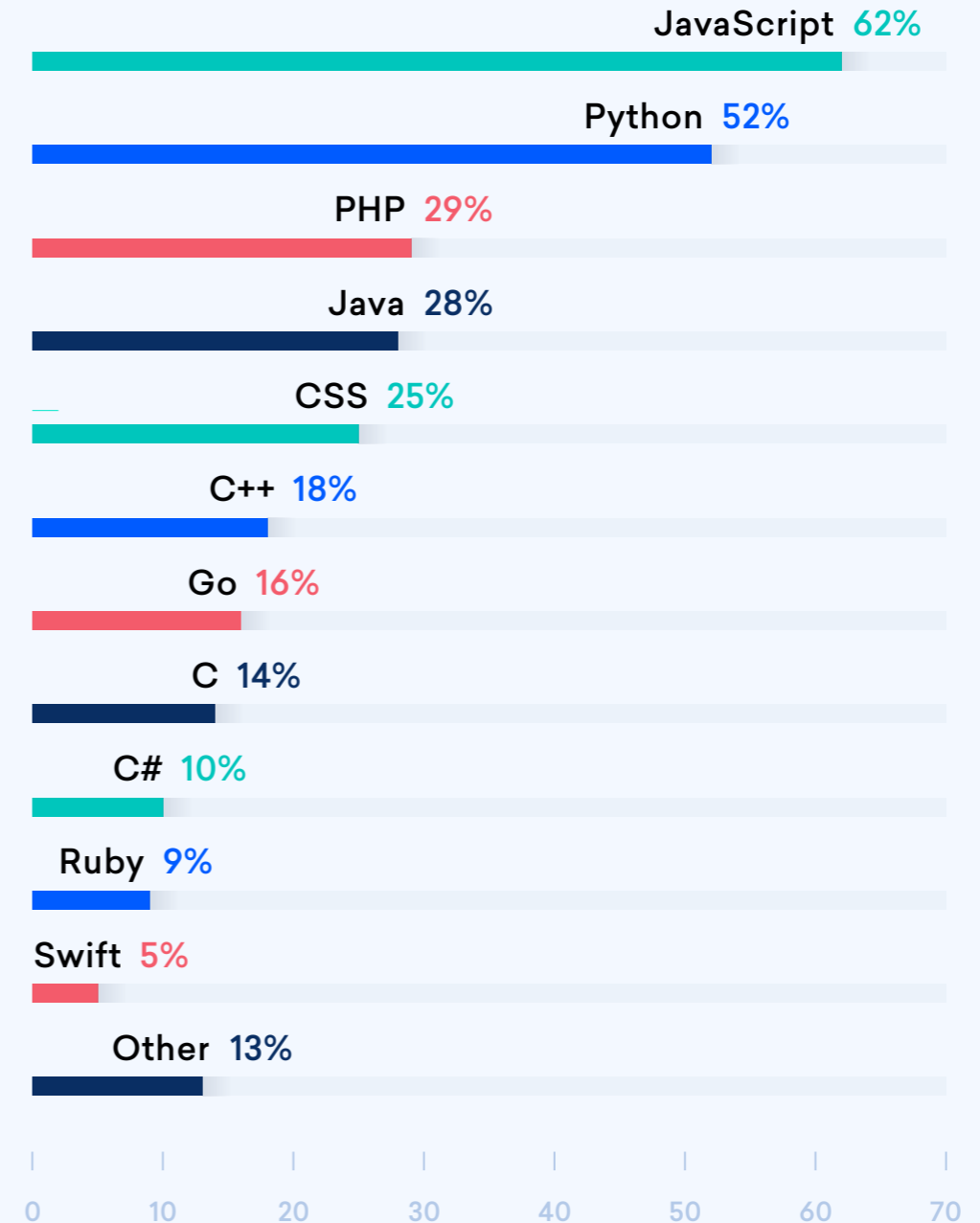## What is your primary involvement in open source?

I contribute to open source software
60%

I maintain open source software
16%

I file issues
14%

I organize open source communities
5%

I write documentation
4%

Other
1%

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What are your top motivations for participating in open source?

1		Improving coding skills
2		Being part of a community
3		Learning new technologies
4		Advancing my career
5		Advancing software freedom
6		Developing new products
7		Improving technologies required for my job

What languages do you primarily engage with in open source?

JavaScript **62%**

Python **52%**

PHP **29%**

Java **28%**

CSS **25%**

C++ **18%**

Go **16%**

C **14%**

C# **10%**

Ruby **9%**

Swift **5%**

Other **13%**

0   10   20   30   40   50   60   70

How long have you been involved with open source projects?

11–15 years
4%

More than 15 years
3%

6–10 years
13%

Less than a year
20%

1–5 years
60%
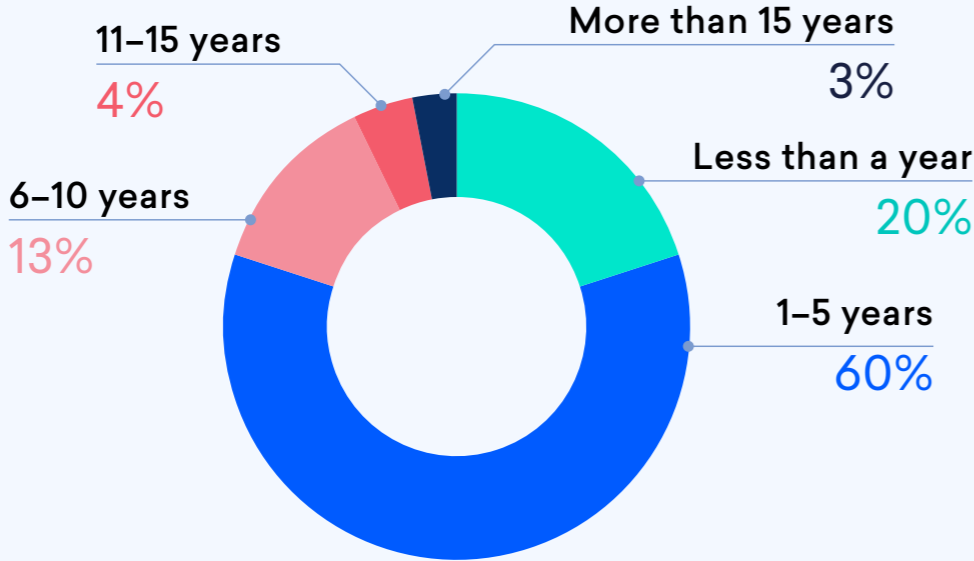
How often are you involved with open source projects?

Quarterly
8%

Daily
19%

Monthly
27%

Once a week
23%

Multiple times per week
24%

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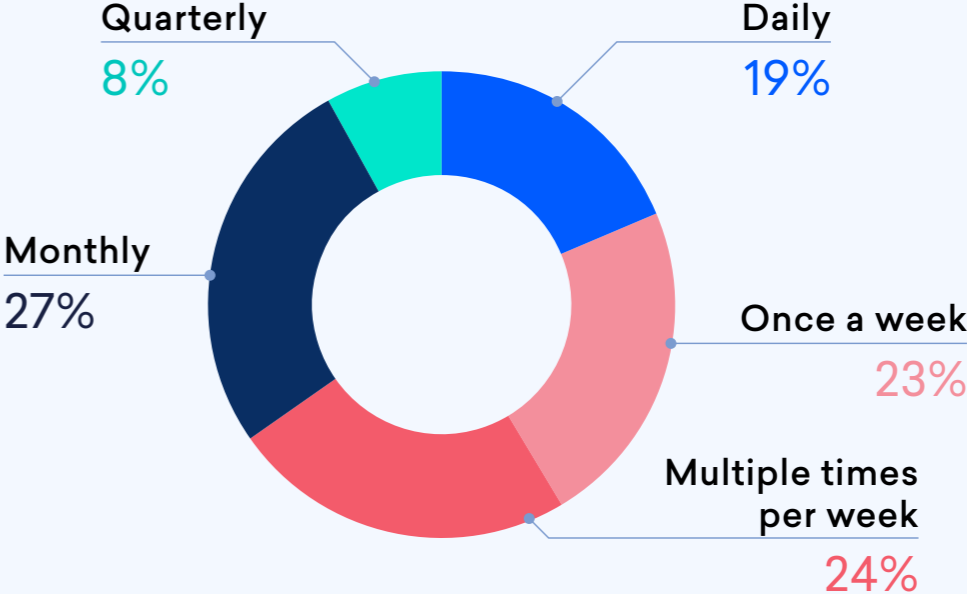
In the last three years, which open source projects have excited you most?

1. **React.js**
   468 mentions

2. **Kubernetes**
   335

3. **Docker**
   252

4. **Linux**
   240

5. **Tensorflow**
   226

6. **Vue.js**
   192

7. **Laravel**
   170

8. **Angular.js**
   123

9. **Python**
   95

10. **Ruby on Rails / Android**
    84 (tied)

What platforms do you use to discover open source projects that you could contribute to? Choose all that apply.

GitHub **97%**

GitLab **31%**

BitBucket **21%**

SourceForge **9%**

Launchpad **3%**

Beanstalk **1%**

Other **2%**

0   20   40   60   80   100

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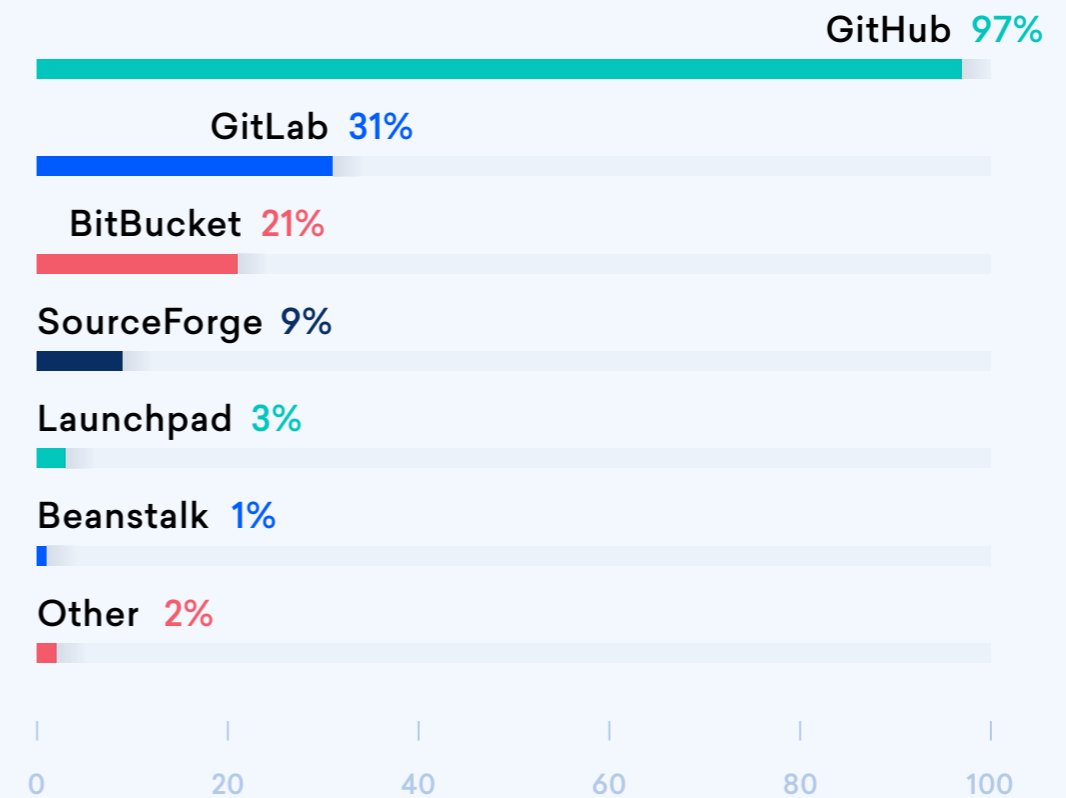
What has prevented you from getting more involved in open source? Choose all that apply.

It seems difficult to get started/I don't know where to start 45%

I feel like I don't have the right skills to contribute 44%

My company doesn't give me time to contribute 30%

I am too intimidated to contribute 28%

Lack of resources 24%

I already contribute a significant amount to open source 11%

Lack of interest 7%

| 0 | 10 | 20 | 30 | 40 | 50 |

The biggest barriers preventing developers from contributing more to open source are them not knowing where to begin and doubting they have the right skills. This was particularly noticeable when we looked at how long respondents had been working in the community: 52 percent of those who only started over the last year said it's not clear how to get involved, and 49 percent questioned their skill sets.

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As the number of developers and hobbyists worldwide continues to grow, there is an opportunity to create better resources and starting points to get those newer to code — and open source — excited about contributing. As part of this, we need to underscore that developers of all skill levels can make a difference.

What would it take to get you to contribute more to the open source community? Choose all that apply.

Improvement in my skills **57%**

An easier entry point **48%**

More time from my company **37%**

More resources **32%**

Improvement in the community **18%**

I already contribute a significant amount **6%**

I don't want to contribute **2%**
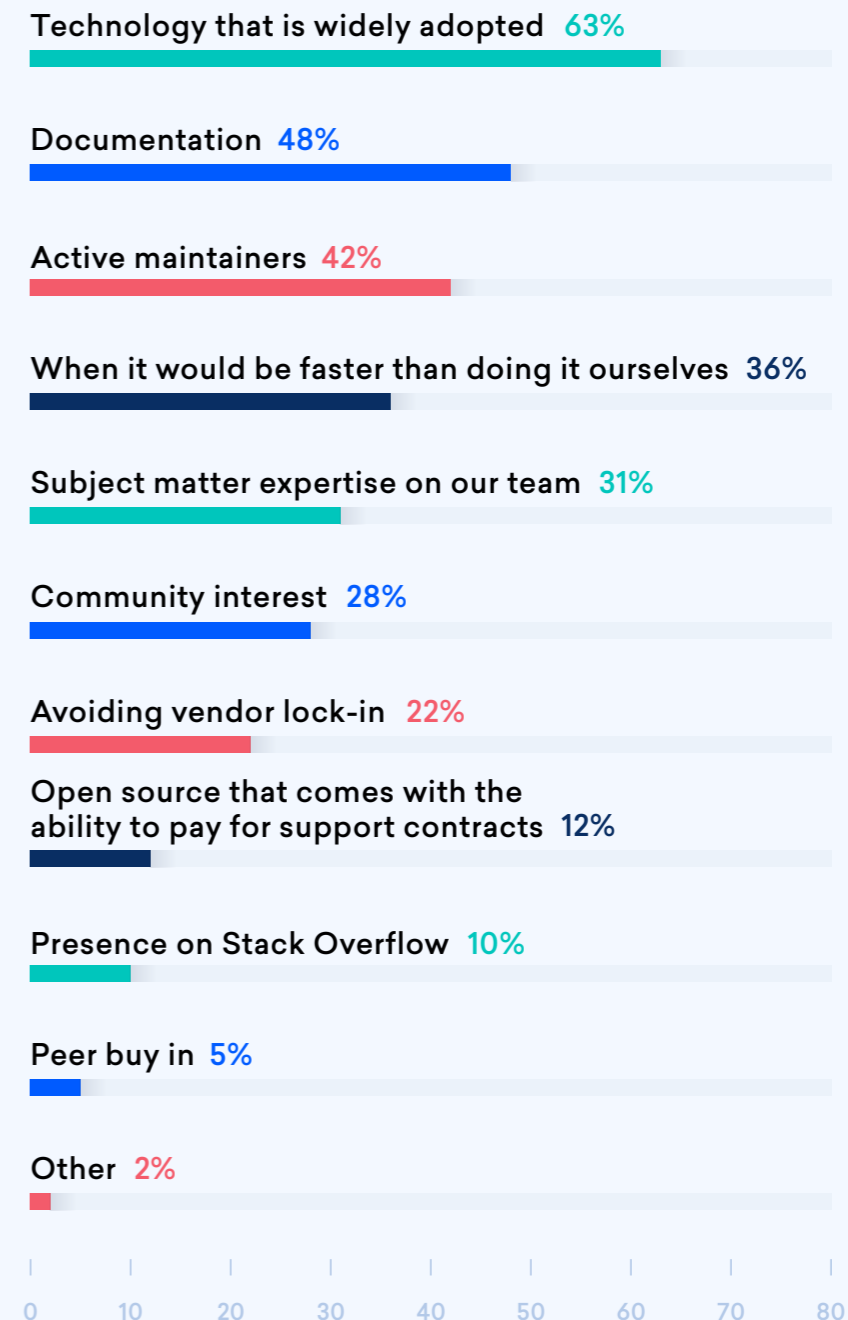
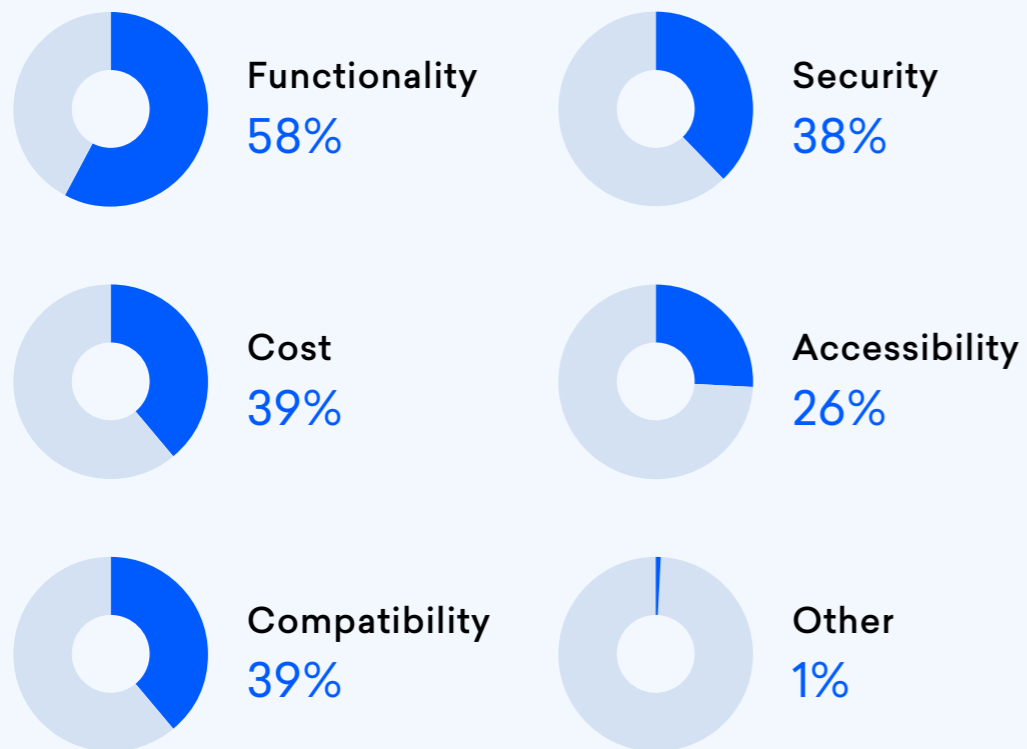| 0 | 10 | 20 | 30 | 40 | 50 | 60 |

2 —

Open Source in Business

While more than half of developers are contributing to open source, their companies are not as supportive of the community's organizations — only 18 percent of employees said their companies actively participated in open source organizations (e.g. Apache Foundation, Node.js Foundation, Cloud Native Computing Foundation), with the cost of those organizations being the number one detractor. Seventy five percent of respondents also said their companies have donated just $1k or less in the last year.

Even though most companies don't invest in open source organizations, they encourage the use of open source within their businesses: nearly three out of every four respondents said their companies expect them to use open source software as part of their day-to-day development work. Furthermore, more than one-third (34 percent) said their companies give them time to work on open source projects not related to work.

What factors does your company consider while making business decisions around when to use open source for a particular project?

Technology that is widely adopted **63%**

Documentation **48%**

Active maintainers **42%**

When it would be faster than doing it ourselves **36%**

Subject matter expertise on our team **31%**

Community interest **28%**

Avoiding vendor lock-in **22%**

Open source that comes with the ability to pay for support contracts **12%**

Presence on Stack Overflow **10%**

Peer buy in **5%**

Other **2%**

0   10   20   30   40   50   60   70   80

What are the top two factors that your company assesses when vetting open source technologies?

Functionality
58%

Security
38%

Cost
39%

Accessibility
26%

Compatibility
39%

Other
1%

When is it not appropriate to use open source at your company?

Lack of documentation **37%**

Negative security track record **35%**

Cost to integrate **34%**

Small number of maintainers **33%**

It would take longer to integrate open source than doing it ourselves **30%**

Written on a language we don't know **27%**

Confusing or difficult set up **27%**

Proprietary solution is better **25%**

We could build it better **25%**

Operational track records **10%**

Open source solutions are not a fit for our needs **9%**

Project has enterprise features we don't need **8%**

Other **1%**

0   5   10   15   20   25   30   35   40

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On a scale of 1 to 5, how secure do you perceive open source technologies to be?

1% — 1
3% — 2
28% — 3
49% — 4
19% — 5

least secure ← → most secure
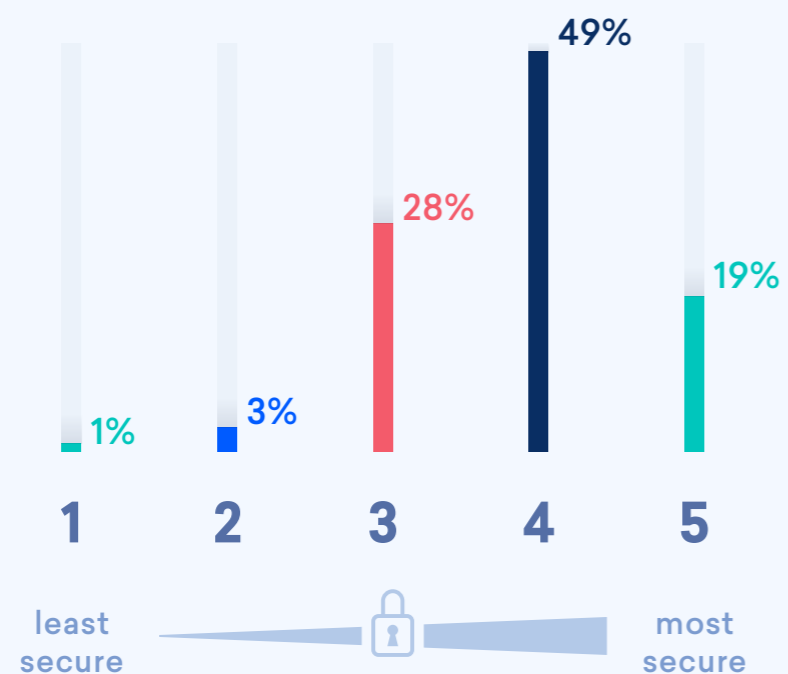
Companies evaluating open source technologies look primarily for ones that are widely used, and have great documentation and active maintainers. At the same time, poor documentation and security concerns are a few reasons why companies opt against open source. Individuals showed concerns over security too — on a scale of one to five (with five being most secure), more than 30 percent of respondents rated open source technologies as average or below.

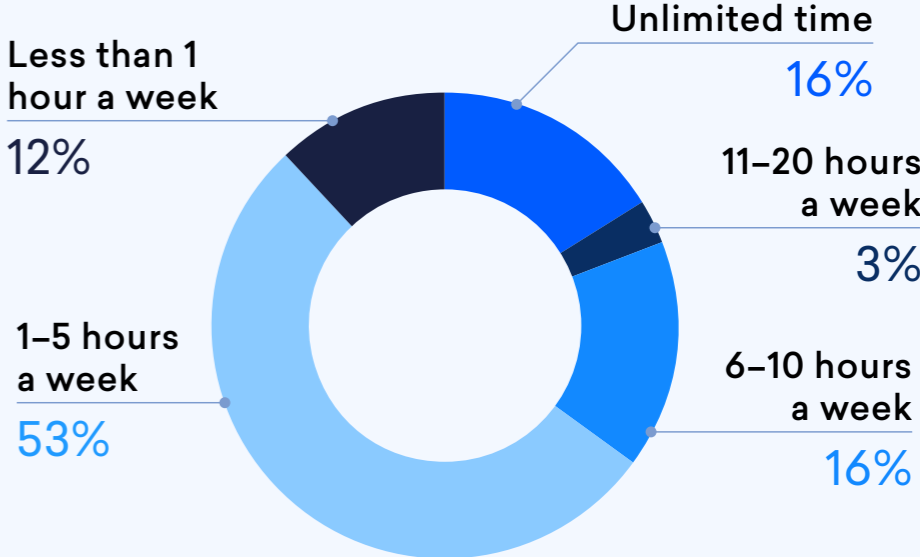# How companies are encouraging employees' use of open source

Does your company expect you to routinely use open source software as part of your day-to-day dev work?

Yes
71%

No
29%

Does your company give you time to work on open source projects not related to work?

Yes
34%

No
66%

If yes, how much time?

Less than 1 hour a week
12%

Unlimited time
16%

11–20 hours a week
3%

6–10 hours a week
16%

1–5 hours a week
53%
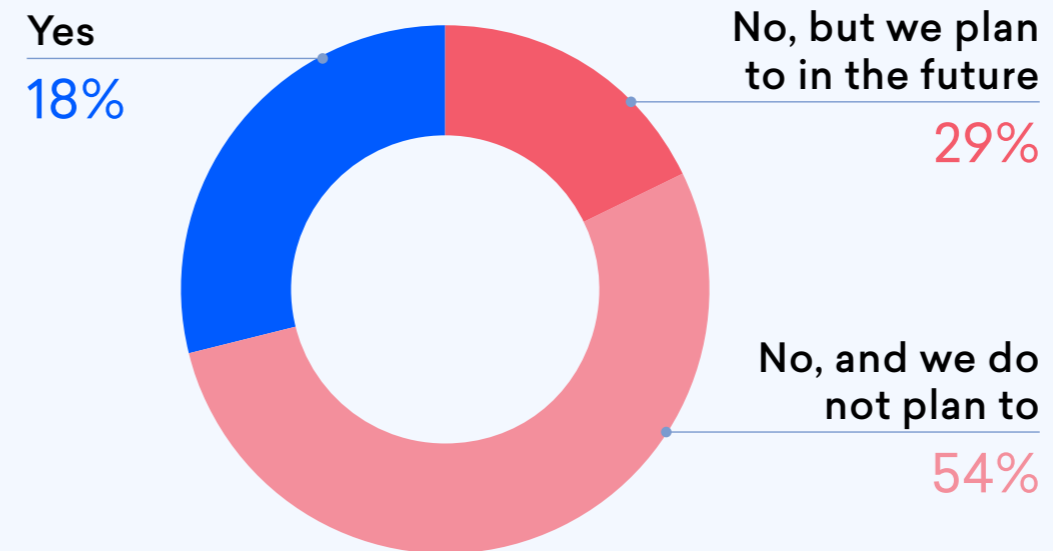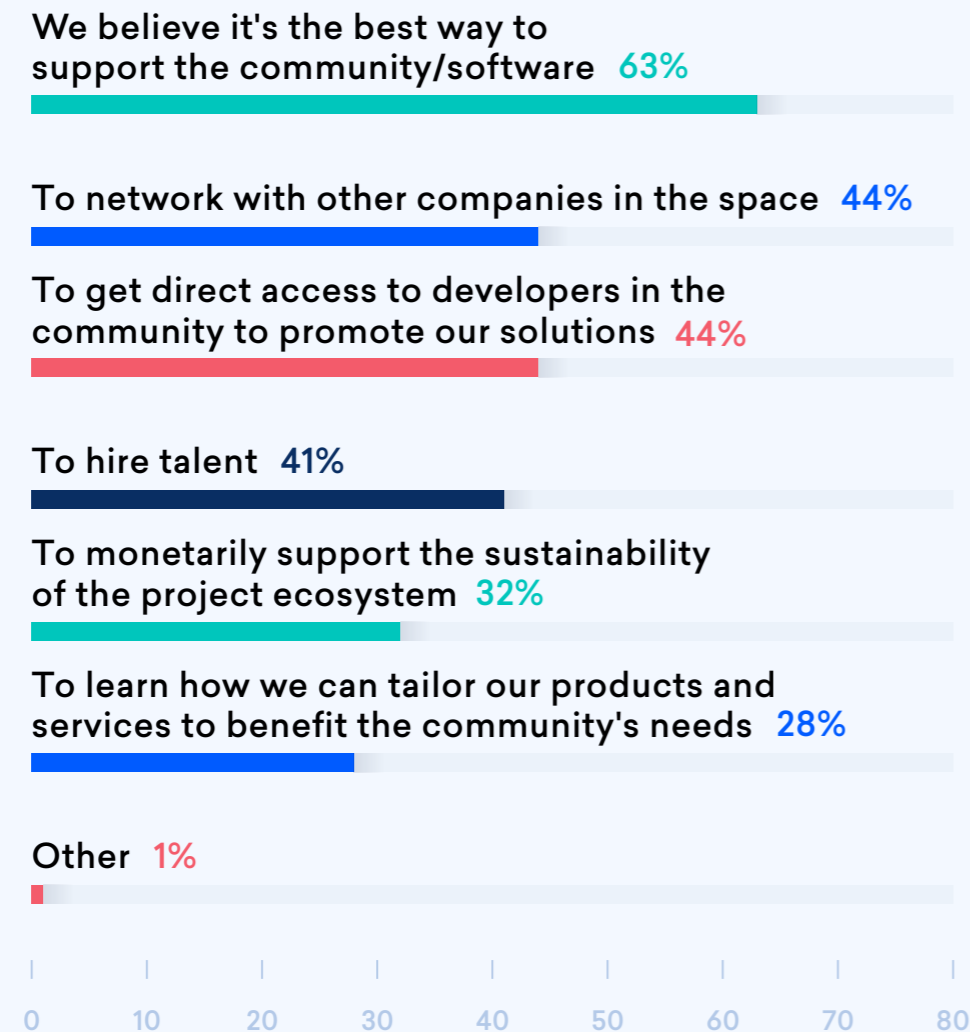
How companies are investing in open source

Does your organization participate in any open source software foundations?
(e.g. Apache Foundation, Node.js Foundation, Cloud Native Computing Foundation)
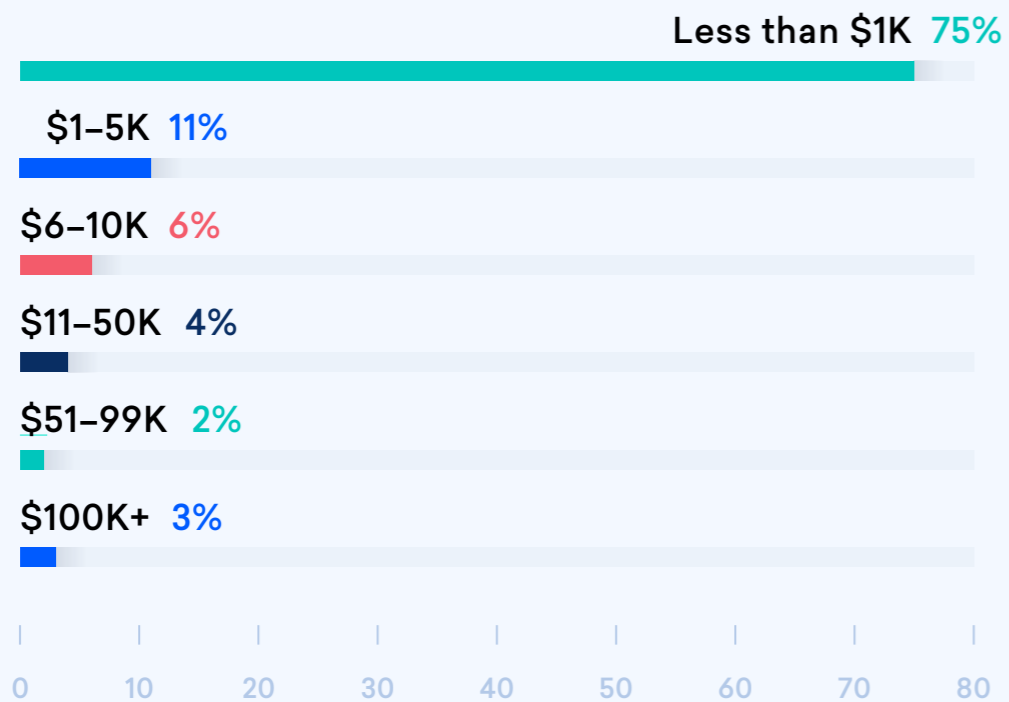
Yes
18%

No, but we plan to in the future
29%

No, and we do not plan to
54%

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If yes, why does your organization choose to participate in open source software foundations?
Select all that apply.

We believe it's the best way to support the community/software **63%**

To network with other companies in the space **44%**

To get direct access to developers in the community to promote our solutions **44%**

To hire talent **41%**

To monetarily support the sustainability of the project ecosystem **32%**

To learn how we can tailor our products and services to benefit the community's needs **28%**

Other **1%**

0   10   20   30   40   50   60   70   80

## If no, why does your organization choose to not participate in open source software foundations?
Select all that apply.

The cost to participate is too high for our organization **38%**

We prefer to contribute development resources to the projects themselves **33%**

We did not know these foundations existed **27%**

We believe there are better ways to support the community/software **16%**

Other **11%**

We've participated before and did not receive any value **8%**

0   5   10   15   20   25   30   35   40

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How much money has your company donated to open source in the past year?

Less than $1K **75%**

$1–5K **11%**

$6–10K **6%**

$11–50K **4%**

$51–99K **2%**

$100K+ **3%**

0 10 20 30 40 50 60 70 80

Does your company employ anyone who works full-time primarily on public open source projects?
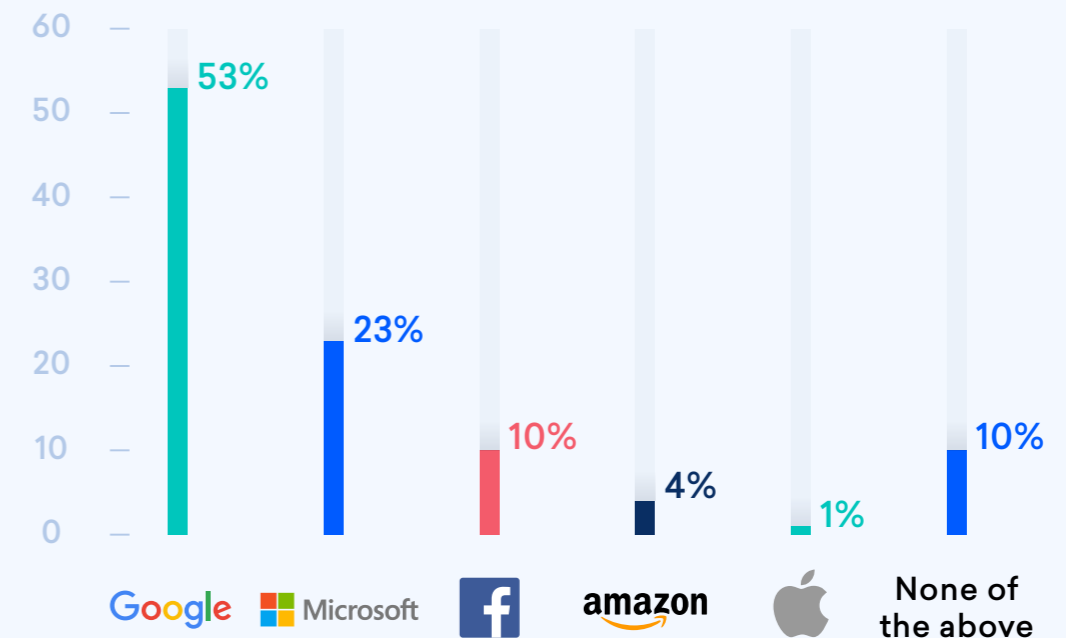
Yes **21%**

No **79%**
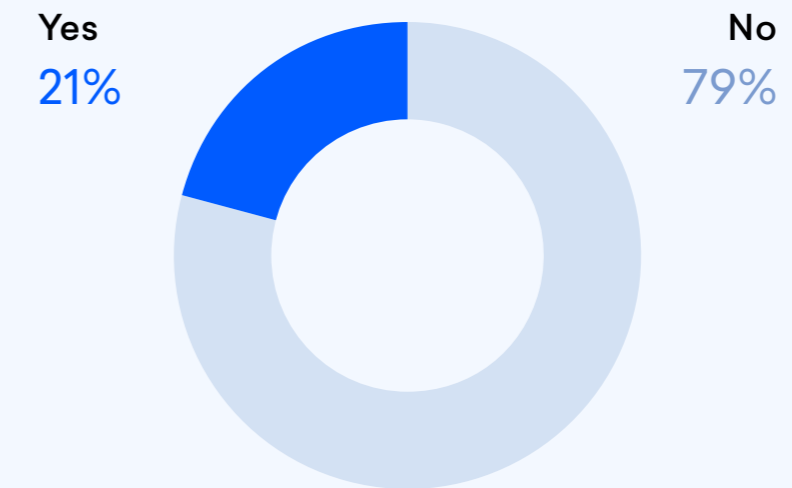
How other companies are doing

In your opinion, do large tech companies contribute as much to the open source community as they gain?

Yes
50%

No
50%

Which of the following technology organizations do you believe embraces open source the most?

Google	53%
Microsoft	23%
Facebook	10%
amazon	4%
Apple	1%
None of the above	10%

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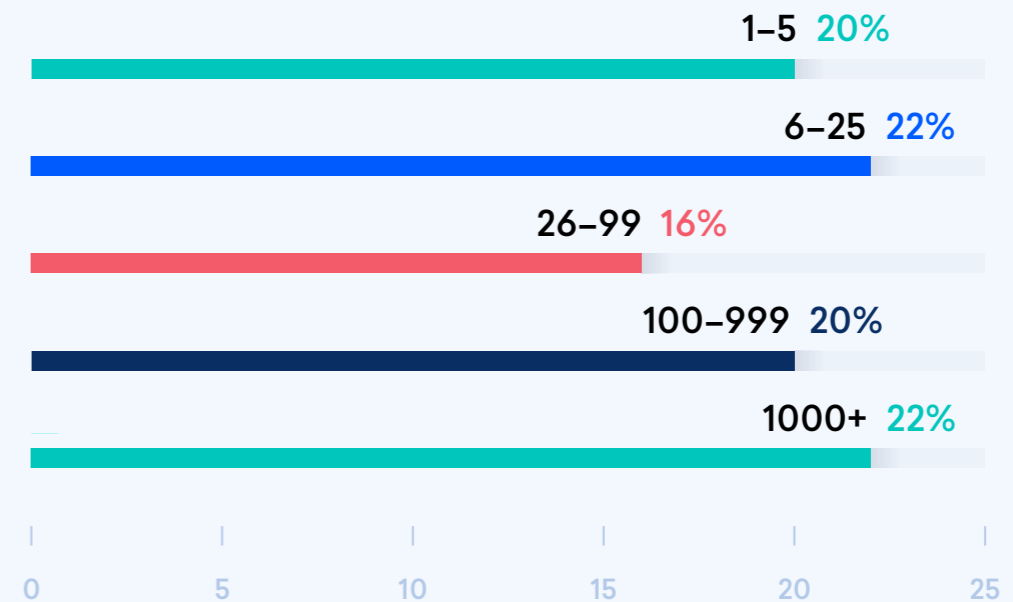## Which companies are the best at embracing open source?

At least among the tech giants, respondents look to Google — which created Android, Go and Kubernetes — as the leader (53 percent). They are followed by Microsoft (23 percent) — with those newer to the community slightly more likely to believe Microsoft has embraced open source better than veteran developers. Apple, whose developers are known to not be active in contributing code back into the community, ranked last.
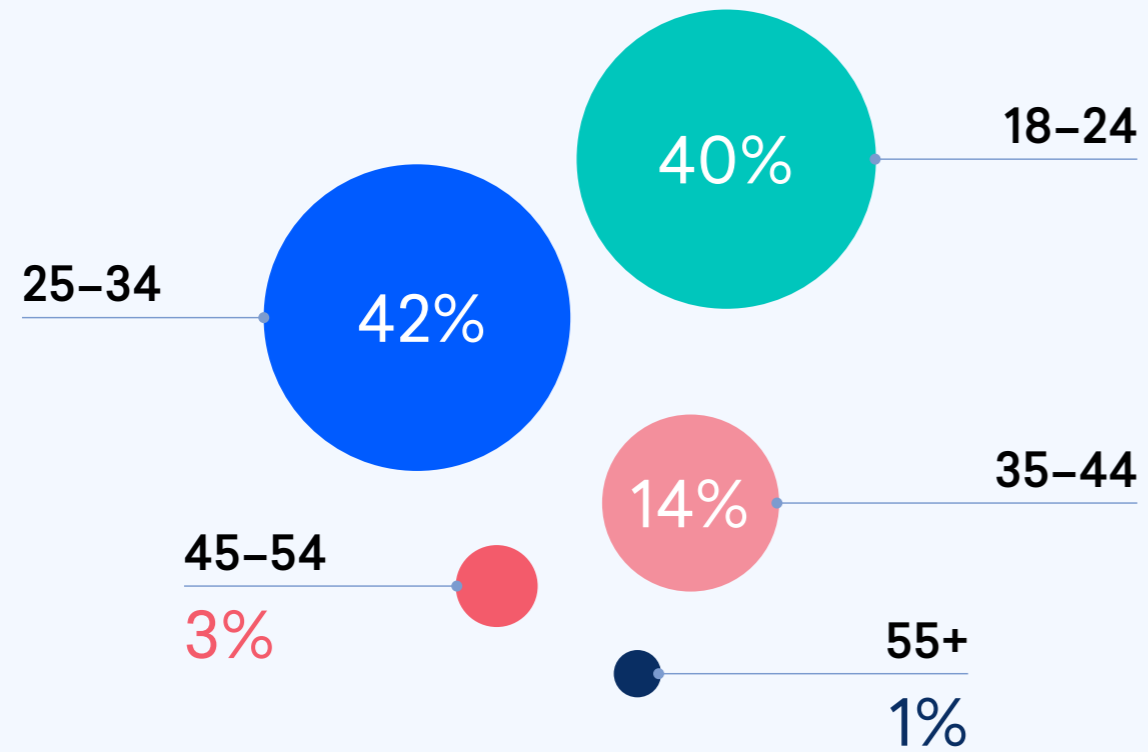
Demographics

Of the 4,349 survey respondents, 58 percent self-identified as developers, 22 percent as students and 10 percent as systems administrators. The rest identified as managers, technical support or "Other."

Forty two percent said they worked in IT & Services, 29 percent in Software and five percent each chose Financial Services and Education. The remainder represented a variety of other industries including Retail/wholesale, Government and Healthcare.

What size is your company (number of employees)?

1–5 **20%**

6–25 **22%**

26–99 **16%**

100–999 **20%**

1000+ **22%**

0   5   10   15   20   25

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What is your age?

18–24 — **40%**

25–34 — **42%**

35–44 — **14%**

45–54 — **3%**

55+ — **1%**

I identify as a...

Woman — **11%**

Non-Binary/Other — **2%**

Man — **88%**