State of
APIs

Developer Survey 2021 Report

Rapid API

Research and Methodology

Welcome to RapidAPI's State of APIs developer survey report. This year, we had diverse respondents from a variety of roles, organizations, industries, and backgrounds.

The survey was conducted through Typeform, and was distributed through RapidAPI's newsletter, social media channels, website, and developer community.

2021 was the third annual RapidAPI Developer Survey. Results from previous years are linked at the bottom of this report.
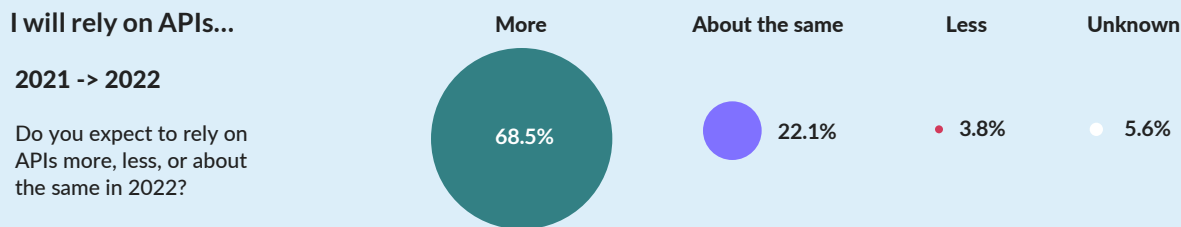
Respondent Demographics

In total, the survey had over 2200 responses from 130 countries. Over 92% of respondents reported they program as part of their job or education. The most popular industries represented in the survey were **Technology**, **Financial Services**, and **Telecommunications**. The most popular job titles represented in the survey were **Full Stack Developer**, **Back End Developer**, **Front End Developer**, and **Mobile Developer**.
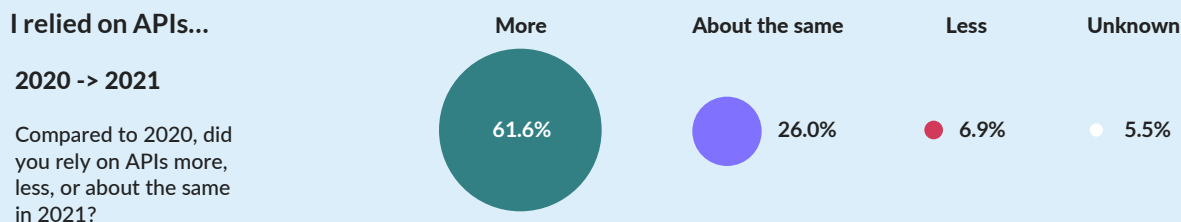
5 Top Takeaways

1: 68% of developers expect their API usage to rise in 2022.
2: 75% of developers prioritize or plan to prioritize participating in the API economy.
3: 28% more developers report working on partner-facing APIs compared to 2020.
4: JavaScript, TypeScript, and Python dominate as Java, PHP, C#, and .NET decline.
5: More than half of developers consider switching jobs amid the Great Resignation.

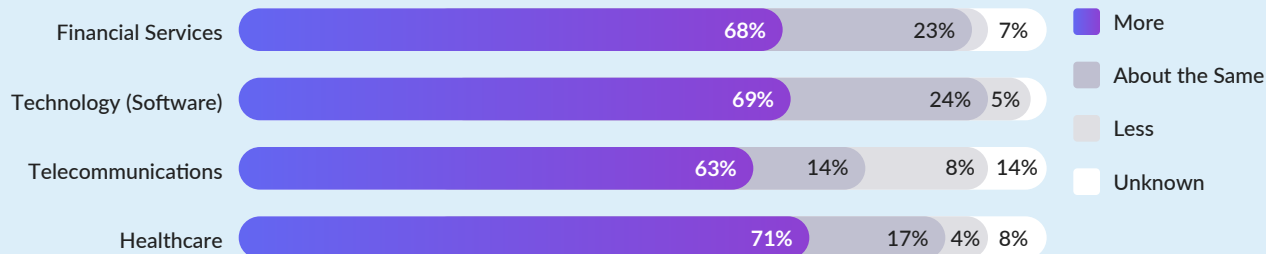## Key Finding 1: API Reliance Continues to Rise

When asked to predict their API usage in 2022, 90.5% of developers expect to use APIs more or the same. An additional 5.6% are unsure, and only 3.8% of developers think they will use APIs less in 2022.

I will rely on APIs...

2021 -> 2022

Do you expect to rely on APIs more, less, or about the same in 2022?

More	About the same	Less	Unknown
68.5%	22.1%	3.8%	5.6%

Over 61.6% of developers reported relying on APIs more in 2021 than they did in 2020. An additional 26.0% reported relying on APIs about the same in 2021 and 2020.

I relied on APIs...

2020 -> 2021

Compared to 2020, did you rely on APIs more, less, or about the same in 2021?

More	About the same	Less	Unknown
61.6%	26.0%	6.9%	5.5%

Do you expect to rely on APIs more, less, or about the same in 2022?

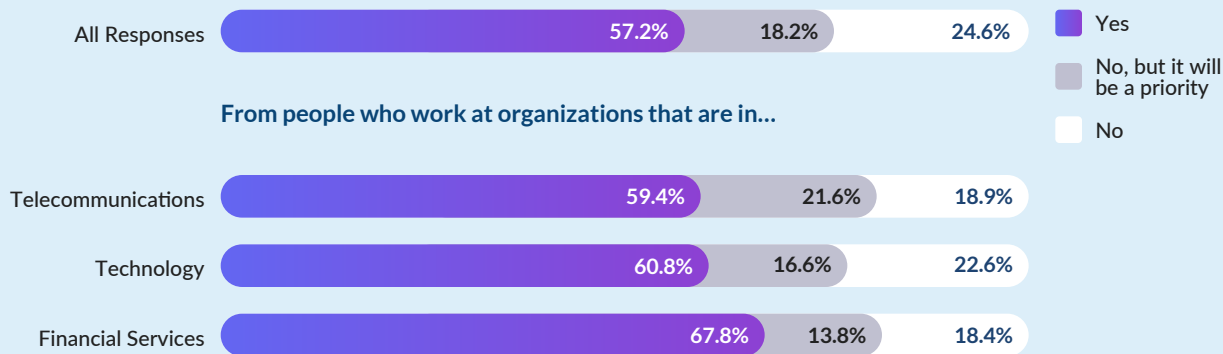|		
Financial Services	68% 23% 7%	**More**
Technology (Software)	69% 24% 5%	**About the Same**
Telecommunications	63% 14% 8% 14%	**Less**
Healthcare	71% 17% 4% 8%	**Unknown**

These predictions by developers signal that the API economy will continue to boom in 2022.

Key Finding 2: Participation in the API Economy is a Priority or Plan for 75.5% of Developers

Overall, 75.5% of developers indicated that participating in the API economy is a priority for their organization, or they plan to prioritize it in the near future. This number was even higher in certain industries, including telecommunications, technology, and financial services.

Do you expect to rely on APIs more, less, or about the same in 2022?

All Responses	57.2% 18.2% 24.6%	**Yes**
		No, but it will be a priority
From people who work at organizations that are in...		**No**
Telecommunications	59.4% 21.6% 18.9%	
Technology	60.8% 16.6% 22.6%	
Financial Services	67.8% 13.8% 18.4%	

Key Finding 3: More Developers are Working on Third-Party and Partner-Facing APIs

Internal APIs were still the most common API type that developers reported working on for their organization. However, compared to our 2020 Developer Surveys, more developers in 2021 reported working on partner-facing or 3rd party APIs.
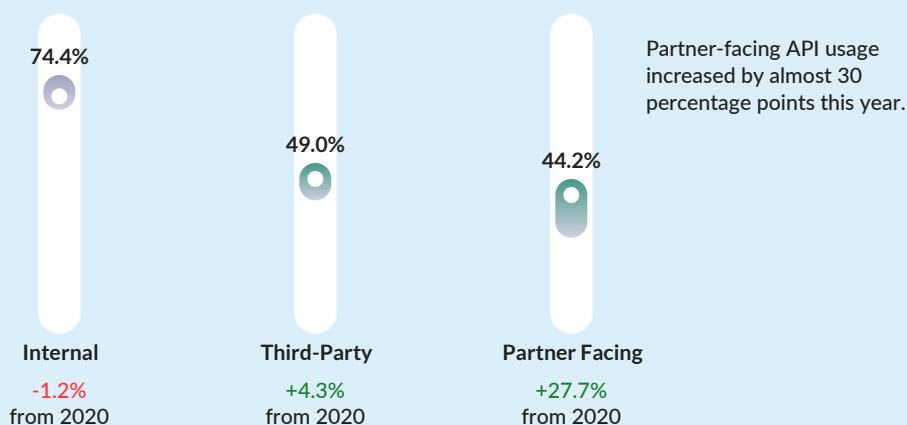
The types of APIs were defined in the survey as follows:
    Internal: APIs for organization use.
    External/3rd Party: APIs you subscribe to (free or paid).
    Partner-Facing: APIs your organization exposes for others to use.

What type of APIs do you work on?

74.4%

49.0%

44.2%

Partner-facing API usage increased by almost 30 percentage points this year.

Internal	Third-Party	Partner Facing
-1.2%	+4.3%	+27.7%
from 2020	from 2020	from 2020

The percentage of developers who reported working on partner-facing was the most noticeable increase across all categories, increasing almost 30% (from 34.6% to 44.3%).

Percent of Developers Working on Partner-Facing APIs.

2020

2021

34.6%

44.2%

Key Finding 4: More Organizations are Monetizing APIs

More organizations are monetizing APIs in 2021 than in previous years. This growth mirrors the increase in developers who reported working on partner-facing APIs.

Has your organization ever monetized an API?

2020   2021

35.4%   40.5%

The percentage of developers who reported working on partner-facing was the most noticeable increase across all categories, increasing almost 30% (from 34.6% to 44.3%).
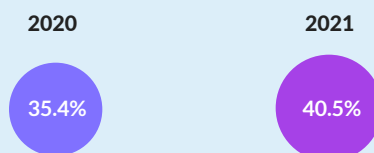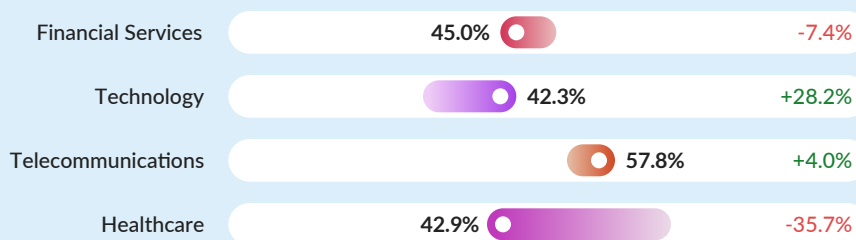
Has your organization ever monetized an API?

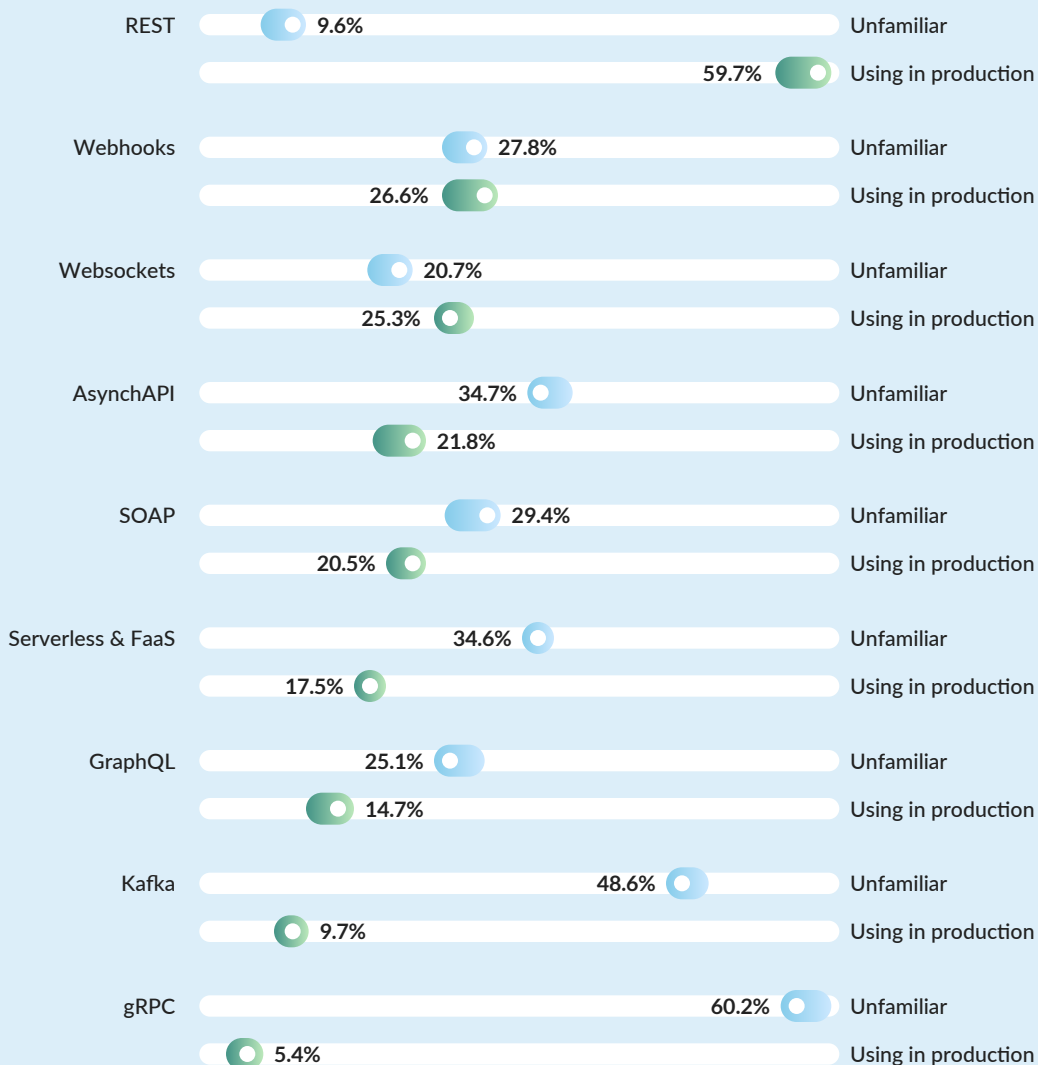|		
Financial Services	45.0%	-7.4%
Technology	42.3%	+28.2%
Telecommunications	57.8%	+4.0%
Healthcare	42.9%	-35.7%

The number of organizations monetizing APIs in 2021 is up around 15% compared to previous years.

As we move into 2022, we expect even more organizations will take advantage of the API economy.

Key Finding 5: Adoption and Exploration of New API Technologies Accelerates

Compared to 2019 and 2020, API technology is becoming more varied. Of the trends we surveyed, REST continues to be the most popular. However, the number of developers using REST in production fell slightly between 2020 and 2021. In contrast, GraphQL and Async API adoption has dramatically increased in the last several years.

What tools are we using?

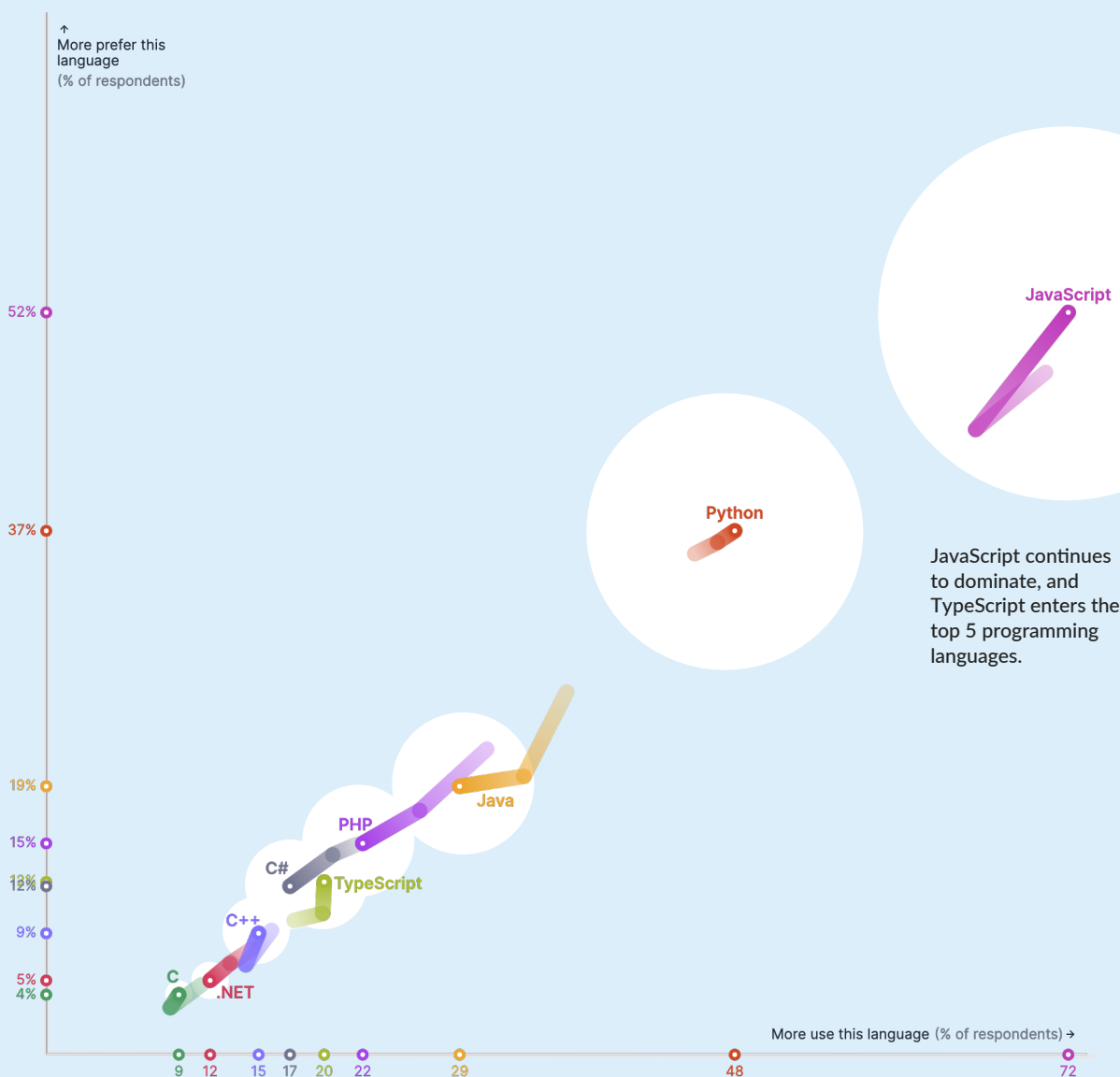| Technology		
REST	9.6%	Unfamiliar
	59.7%	Using in production
Webhooks	27.8%	Unfamiliar
	26.6%	Using in production
Websockets	20.7%	Unfamiliar
	25.3%	Using in production
AsynchAPI	34.7%	Unfamiliar
	21.8%	Using in production
SOAP	29.4%	Unfamiliar
	20.5%	Using in production
Serverless & FaaS	34.6%	Unfamiliar
	17.5%	Using in production
GraphQL	25.1%	Unfamiliar
	14.7%	Using in production
Kafka	48.6%	Unfamiliar
	9.7%	Using in production
gRPC	60.2%	Unfamiliar
	5.4%	Using in production

There continues to be a strong interest in other types of emerging technology, including Serverless & FaaS, Websockets, and gRPC.

Key Finding 6: JavaScript Continues to Dominate, and TypeScript Enters the Top 5 Programming Languages

Javascript continues to dominate as the most used programming language and the most preferred programming language. Compared to our 2020 and 2019 surveys, JavaScript usage and preference modestly increased in 2021.

What are our favorite languages?

↑
More prefer this language
(% of respondents)

JavaScript

Python

JavaScript continues to dominate, and TypeScript enters the top 5 programming languages.

52%

37%

19%
15%
13%
12%
9%
5%
4%

Java

PHP

C#
TypeScript

C++

C
.NET

More use this language (% of respondents) →

9 12   15 17 20 22   29   48   72

More notably, TypeScript entered both the top 5 most used programming languages and the top 5 most preferred languages for the first time in any of our surveys. Older languages, such as Java, PHP, C#, and .NET fell in both popularity and preference.

Key Finding 7: Over 50% of Large Companies Have Over 100 APIs

We found the number of APIs an organization maintains grows with the size of the organization. Over 50% of the largest companies we surveyed reported having over 100 APIs, and nearly 40% reported having over 250 internal APIs. This mirrors our findings from 2019 and 2020.
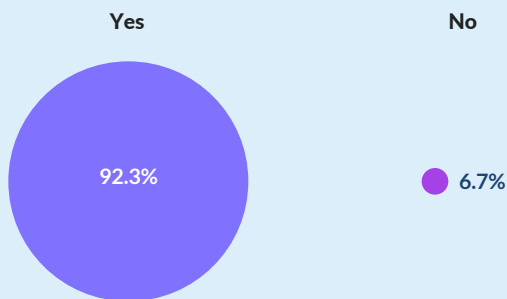
How do APIs scale with organization size?

Number of Internal APIs that the organization uses

Number of employees in the organization	0 to 10	11 to 50	51 to 100	101 to 250	250+
1 to 100	61.7%	24.7%	8.0%	1.7%	3.0%
51 to 200	40.0%	33.8%	15.0%	6.3%	3.3%
201 to 1,000	29.6%	36.0%	21.2%	7.9%	3.7%
1,000 to 5,000	25.0%	29.5%	17.4%	9.1%	12.9%
5,001 to 10,000	15.5%	32.8%	15.5%	15.5%	17.2%
10,000+	11.9%	16.4%	18.2%	11.3%	36.5%

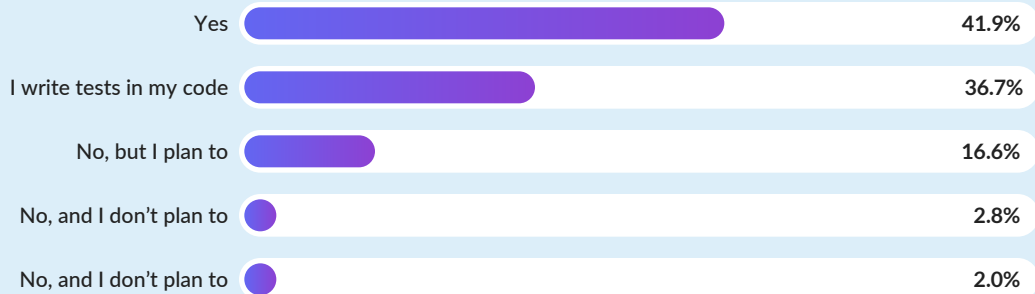## Key Finding 8: API Testing Remains a Top Priority

API testing continues to be a top priority for almost all developers, with over 90% indicating they test or plan to test their APIs.

Is security and data privacy a top priority when you create and manage APIs?
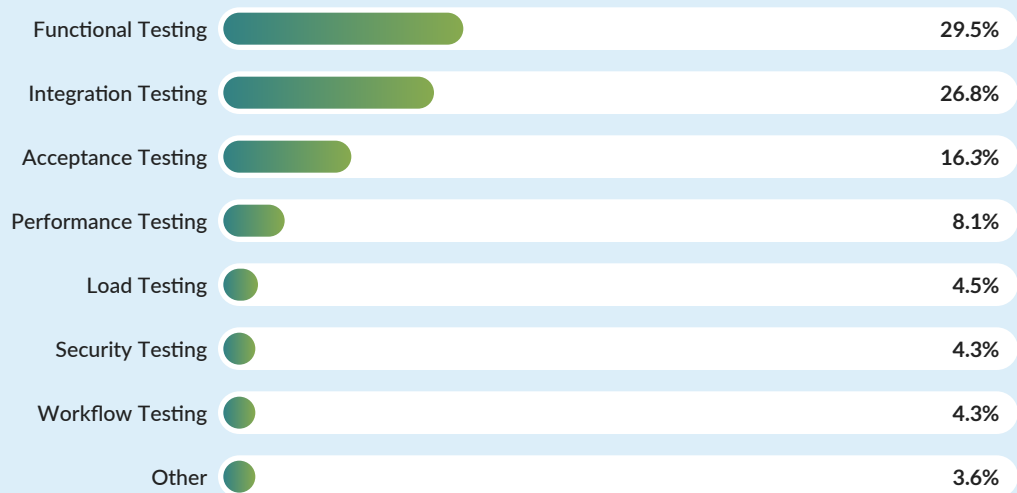
Yes   No

92.3%   ● 6.7%

Taking a deeper dive into API testing, 58.5% of developers use a specific API testing tool or plan to soon.

Do you use any tools for API testing?

Yes	41.9%
I write tests in my code	36.7%
No, but I plan to	16.6%
No, and I don't plan to	2.8%
No, and I don't plan to	2.0%

Functional testing, integration testing, and acceptance testing were the three most popular types of API testing developers reported doing in 2021.

What types of API testing are we doing?

Type	Percentage
Functional Testing	29.5%
Integration Testing	26.8%
Acceptance Testing	16.3%
Performance Testing	8.1%
Load Testing	4.5%
Security Testing	4.3%
Workflow Testing	4.3%
Other	3.6%

API testing continues to be a top priority for almost all developers, with over 90% of developers reporting testing or planning to test their APIs.
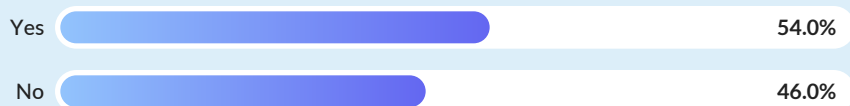
Key Finding 9: Challenges Anticipated for 2022

Developers were not immune from the impacts of the COVID-19 pandemic, and staffing challenges continue to disrupt businesses around the globe. Lacking engineers or team members was the top challenge developers predicted for 2022 with over 56.8% of developers anticipating this problem.

Respondents also felt that a shortage of development resources could negatively impact the business, and 35% felt that they lacked internal prioritization around digital transformation efforts.
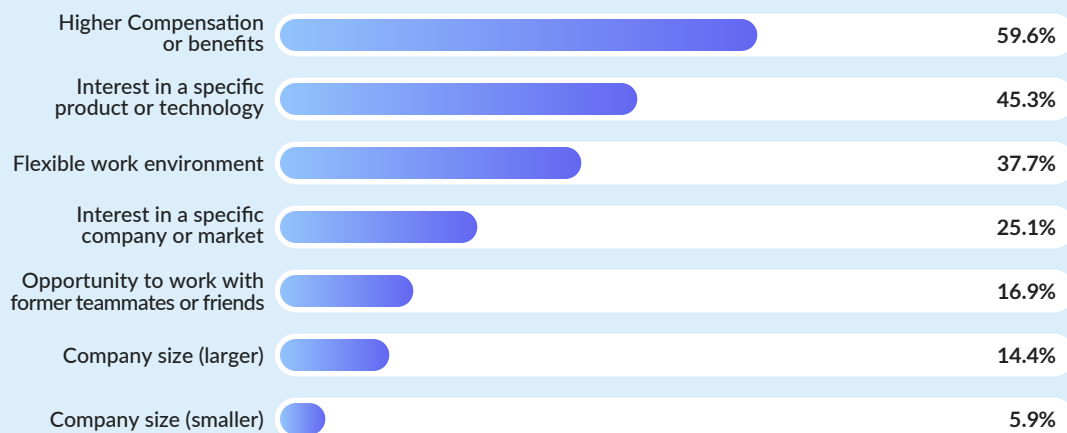
Key Finding 10: More than Half of Developers Surveyed Considered Leaving their Job as the Great Resignation Movement Grows

Based on the last key finding and the overall turbulence seen in the job market through 2021, it is not surprising that 54% of developers considered leaving their current position.

Have you considered leaving your current position?

Yes	54.0%
No	46.0%

What are the top reasons you considered a new role?

Higher Compensation or benefits	59.6%
Interest in a specific product or technology	45.3%
Flexible work environment	37.7%
Interest in a specific company or market	25.1%
Opportunity to work with former teammates or friends	16.9%
Company size (larger)	14.4%
Company size (smaller)	5.9%

Of all the job titles we surveyed, Front End Developers were the most likely to report considering leaving their current role (at 63.1% and 65.1% respectively), and Web Developers were the least likely (44%).

Final Thoughts

Thank you to everyone who participated in this year's RapidAPI Developer Survey!
We hope this report gives you insight into the API landscape and emerging technology trends.

To see the interactive results, please visit https://StateofAPIs.com

Previous results are available at https://rapidapi.com/developer-survey

What is RapidAPI?

RapidAPI, the world's largest API Hub, is used by millions of developers to find, test, and connect to thousands of APIs — all with a single account, API key, and SDK.

For enterprise organizations, RapidAPI offers RapidAPI Enterprise Hub, a next-generation API platform that enables enterprises to accelerate innovation and bring software to market faster with one place to find, govern, and collaborate on APIs for internal development teams and external partner communities.

12/21

Rapid API

Global HQ
2 Shaw Alley, Fourth Floor
San Francisco, CA 94105

Contact
info@rapidapi.com
www.rapidapi.com

RapidAPI empowers millions of developers to build modern software with a next-generation API platform including the world's largest API hub and fully-integrated solutions for API collaboration, discovery, testing, publishing, consumption, and more.

11