2021 State of the API Report
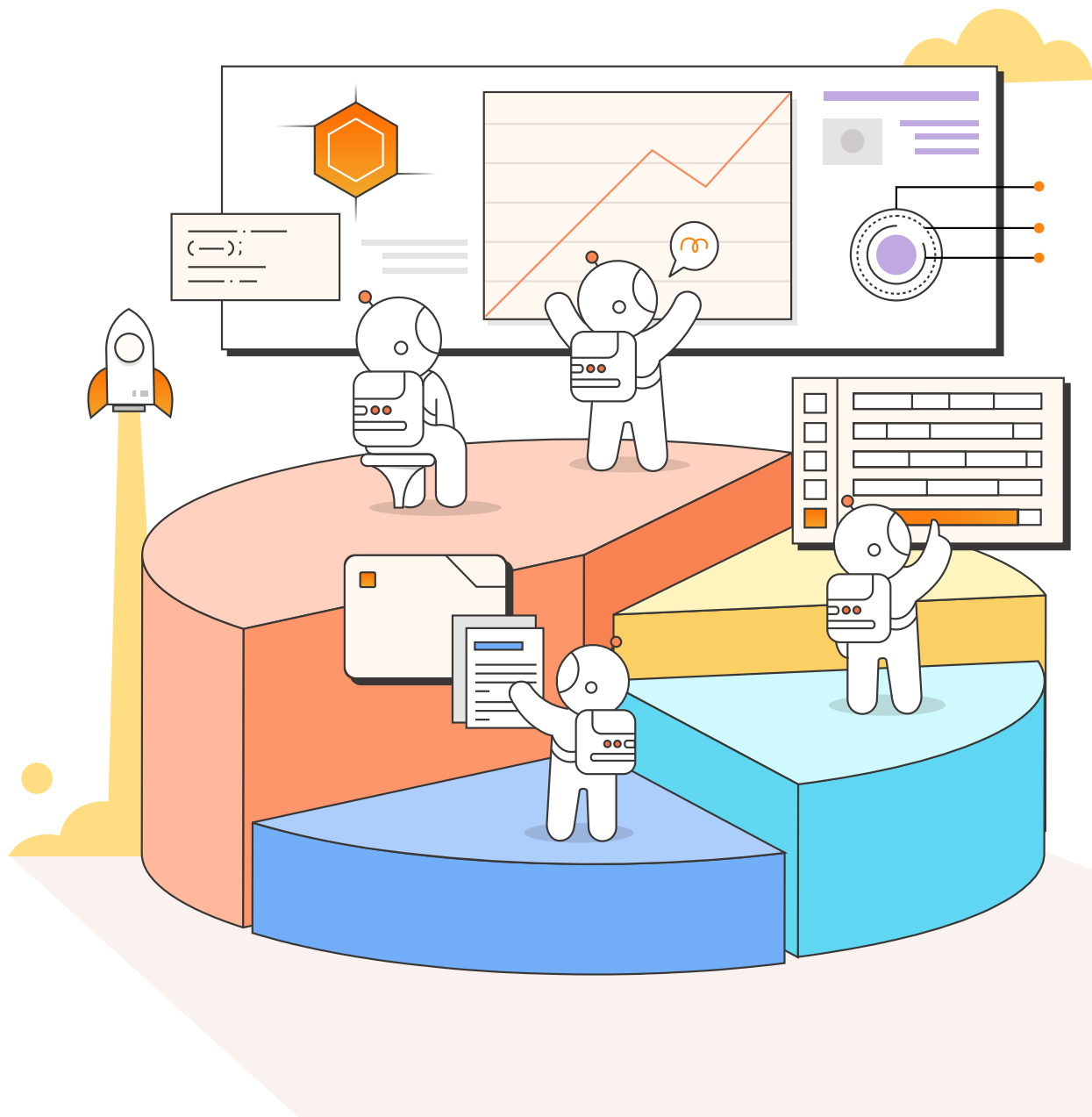
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Key Findings

Key Findings

Introduction

This year's State of the API report covers the largest and most comprehensive survey on APIs, ever. More than 28,000 developers and API professionals shared their thoughts on a range of topics, including their organizations' development priorities, how they get their work done, and where they see the industry going. We combined this data with data we've observed on the Postman API Platform to build a robust picture of the current state—and the future—of APIs.
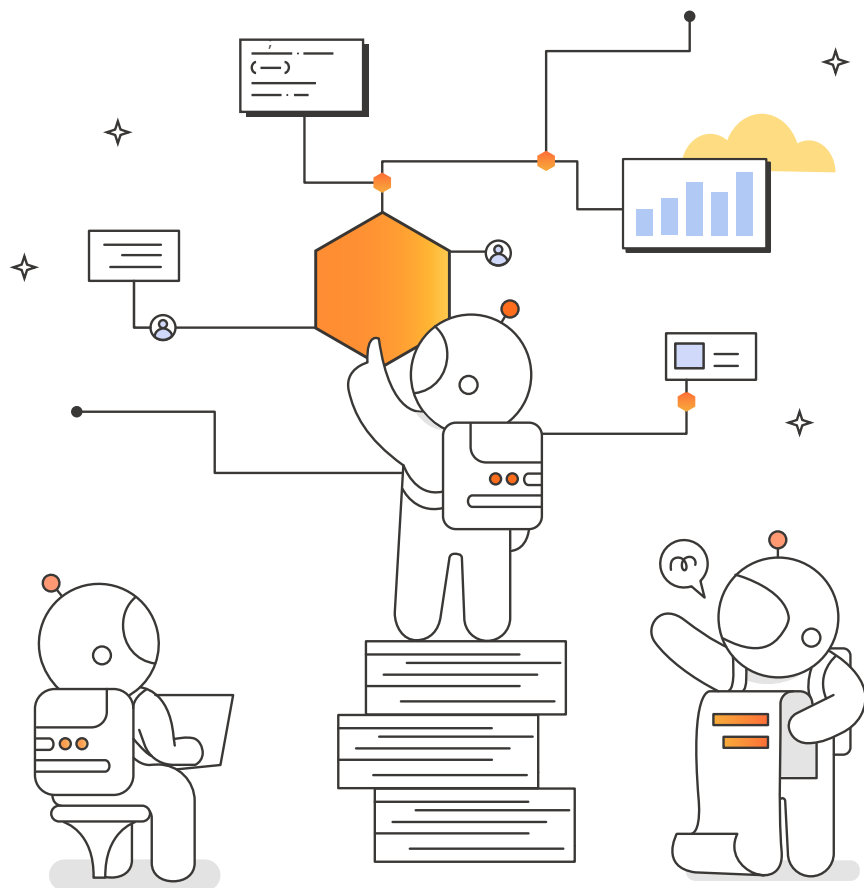
## The pandemic changed the world, and the world responded with APIs

We asked respondents to share whether the pandemic affected their work—either how their business operated or how they worked with others in their organization. Just short of two-thirds of respondents stated that the pandemic somewhat or significantly affected their work. Perhaps surprisingly, more than one-third stated that the pandemic did not affect their work. For many developers and API professionals, work continued just as it was—with many progressive organizations having already adopted a remote-friendlyor remote-first approach to work.

To individuals who stated that the pandemic affected their business operations or how they worked with others, we also posed the question, "Were your organization's changes supported by APIs?" More than half said yes.

◆ Organizations adopted new channels or enhanced existing channels to reach and serve customers in a pandemic world. Respondents told us that common areas of investment included e-commerce, customer support via chat and text, and contactless digital systems—all of which relied on APIs.

◆ Many respondents had to adjust to tectonic shifts in market demand, with some businesses completely pivoting their product offering. For many, product rollouts relied on APIs, and organizations pivoted in weeks and months what would normally take years. Some businesses were even born in the pandemic to meet new needs.

◆ Working from home presented new challenges for many organizations, too. APIs and integrations with internal systems helped solve these challenges by automating or enabling tasks that used to happen in person such as communication, attendance, reporting, and project management.

◆ Some of the most frequently cited innovations came from healthcare, with many healthcare organizations needing to digitize and automate workflows and relying on APIs to do so.

> " As the pandemic suddenly changed everything, CarMax was able to quickly create and support new experiences and solutions for our customers, employees, and partners—much of which was due to APIs."
>
> **Shamim Mohammad,** EVP and CIO/CTO, CarMax

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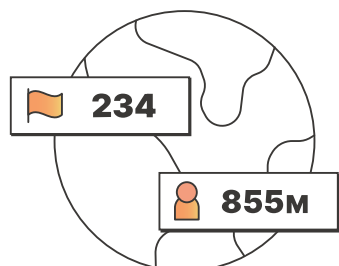
The API ecosystem is global and growing

Over the past 12 months, Postman users signed in from an impressive 234 different countries and geographies while making 855 million API requests (up 56% from the prior year).
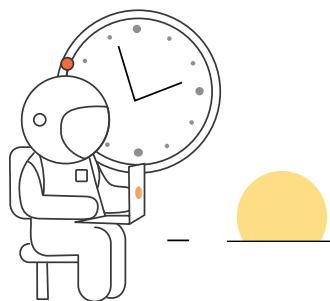
Developers are spending more time with APIs

How much time is spent working with APIs? 49% of respondents said that more than half of the organization's development effort is spent on APIs—compare that to just over 40% last year.
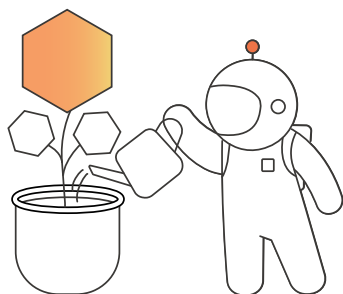
API investments stay strong

It appears organizations will continue investing in APIs: 94% of respondents stated that investment of time and resources into APIs will increase or stay the same for the next 12 months.

Quality is the top priority

We asked respondents to identify the top priorities for their organizations, and there was a clear winner: quality, coming in at 80%. Agility (66%) and reliability (65%) were next.
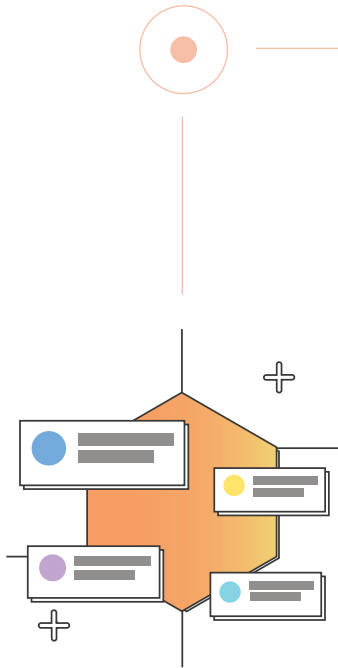
More companies are embracing the API-first philosophy

This year, 67% of survey respondents ranked themselves as a five or higher in terms of embracing an API-first philosophy, while only 62% ranked themselves in this way in 2020.
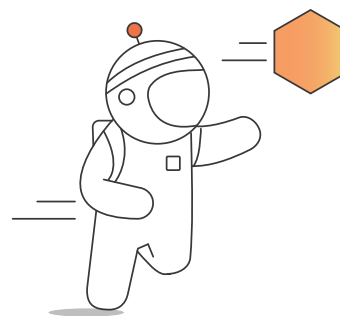
Being API-first pays off

We found that "API-first leaders" (as defined in the report) produce APIs more quickly, deploy more frequently, have fewer failures, and recover more swiftly when failures occur.

Global Growth of APIs

Global Growth of APIs

Over the last 12 months, the global growth of the entire API ecosystem—from the number of practitioners to the number of countries represented to the number of API requests being sent—has been impressive.

API activity is growing

Since the 2020 State of the API report was released, the Postman API Platform saw significant upsurges that indicate trends across the API ecosystem: the platform's user base grew to more than 17 million, with 30 million Postman Collections created (up 39%) and 855 million requests created (up 56%).
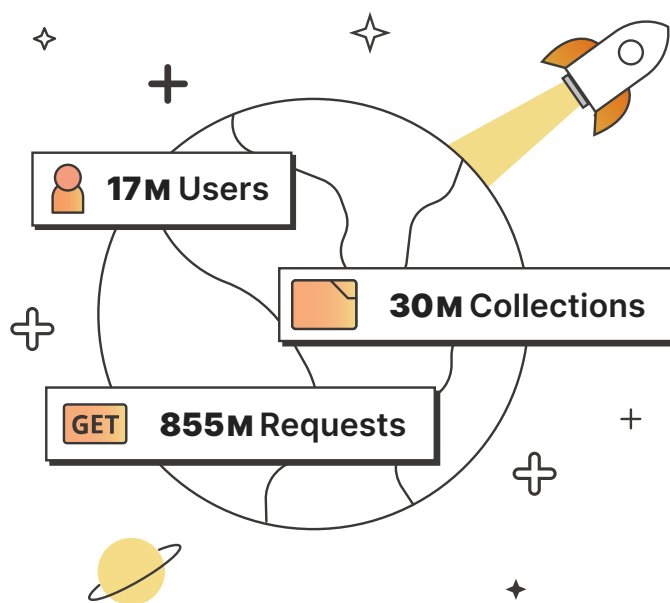
APIs are global

Who are the top geographic regions creating collections and sending requests? We wanted to know, and we wanted to compare those to the rest of the world. Here's how it breaks down:
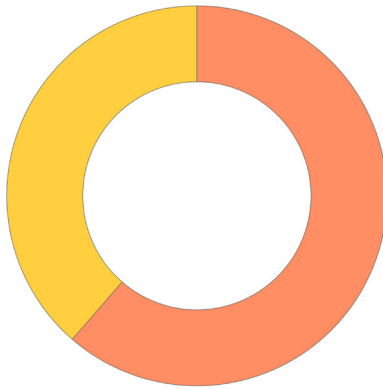
Number of Collections Created

■ Top Ten: 15,141,000
■ Rest of the World: 9,527,000

Due to rounding, percentages may not add up to 100%.

Number of Requests Created
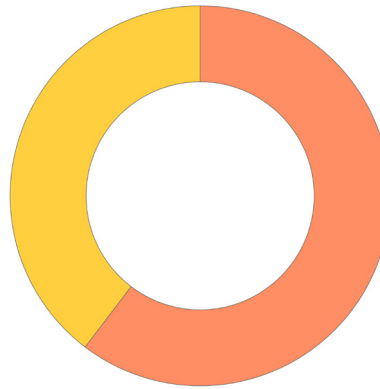
■ Top Ten: 480,391,000
■ Rest of the World: 315,644,000

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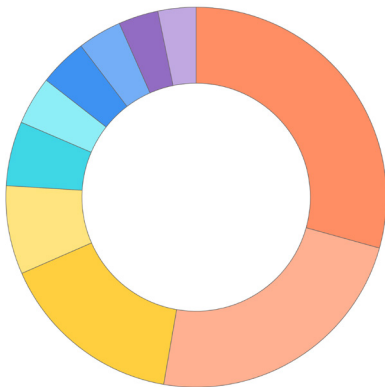
■ United States: 4,439,000   ■ France: 622,000
■ India: 3,545,000   ■ Germany: 621,000
■ China: 2,378,000   ■ Russia: 565,000
■ Brazil: 1,141,000   ■ Canada: 512,000
■ United Kindom: 830,000   ■ Indonesia: 489,000

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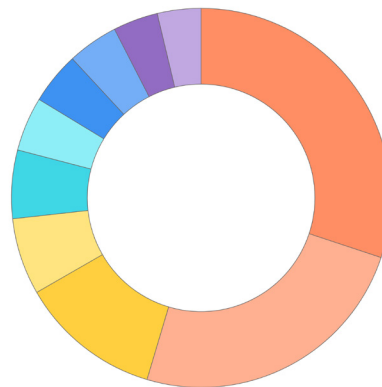
■ United States: 144,584,000   ■ Germany: 22,163,000
■ India: 117,734,000   ■ France: 21,301,000
■ China: 58,057,000   ■ Indonesia: 20,807,000
■ Brazil: 31,450,000   ■ Vietnam: 18,400,000
■ United Kindom: 28,030,000   ■ Russia: 17,865,000

Due to rounding, percentages may not add up to 100%.

Country-by-country API growth

We dug deeper into growth to understand which countries are growing the fastest, and here's what we found:

Year-over-Year Comparison in Collections Created

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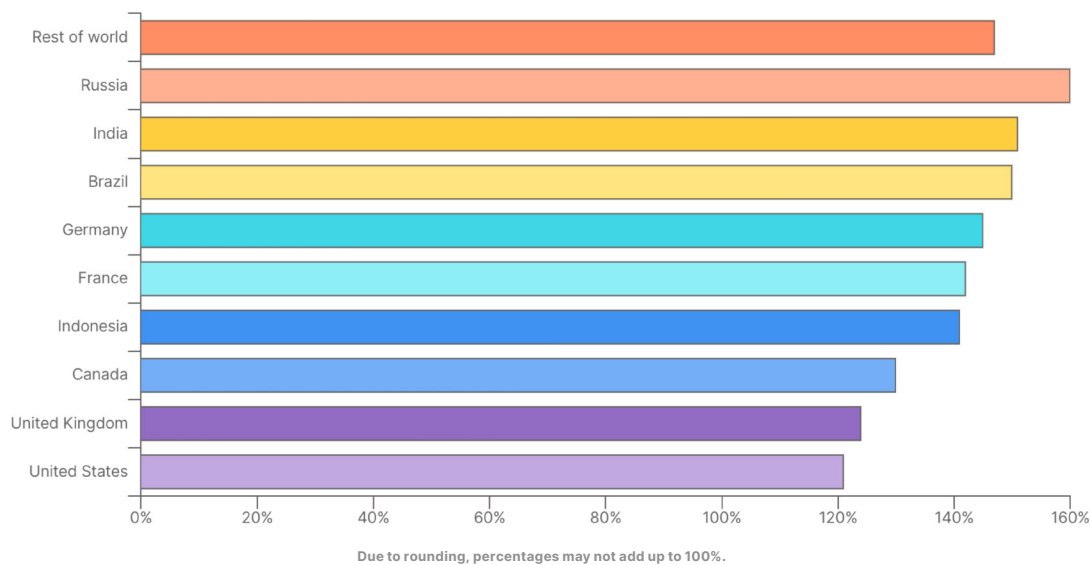
Year-over-Year Comparison in Requests Created

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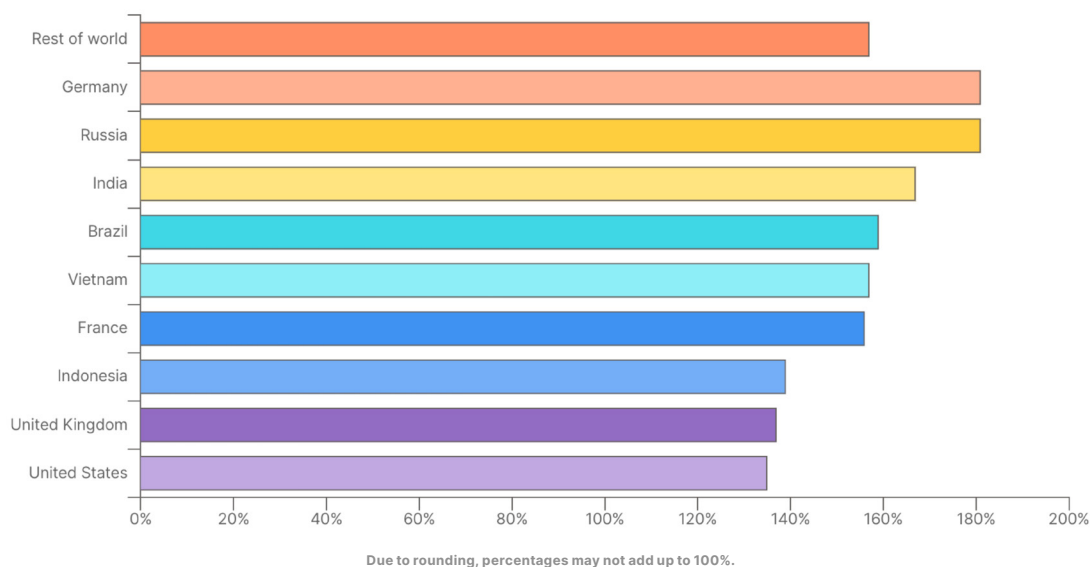
The API Platform Landscape

The global growth of APIs is also driving an ever-evolving landscape of tooling for APIs and development in the API Platforms category. We've observed that there are many vendors in this landscape serving a broad range of needs across the API lifecycle, from design to testing to security. Additionally, we see vendors offering repositories for source code, API gateways, application performance monitoring, and CI/CD—all of which should integrate with API platforms to achieve optimal results from API initiatives within an organization.
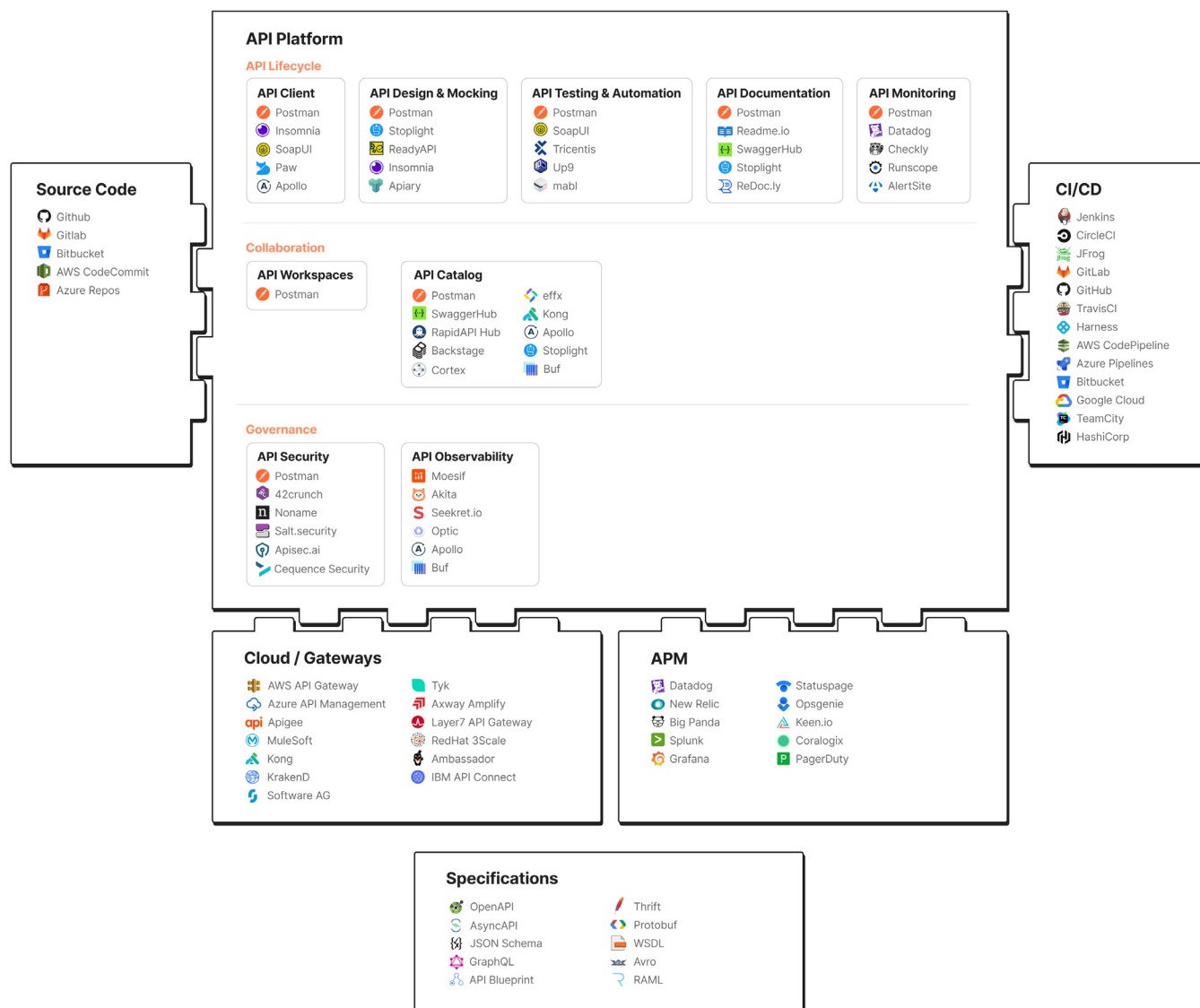
Here is our view of the landscape today:

API Platform Landscape

API Platform

API Lifecycle

API Client
- Postman
- Insomnia
- SoapUI
- Paw
- Apollo

API Design & Mocking
- Postman
- Stoplight
- ReadyAPI
- Insomnia
- Apiary

API Testing & Automation
- Postman
- SoapUI
- Tricentis
- Up9
- mabl

API Documentation
- Postman
- Readme.io
- SwaggerHub
- Stoplight
- ReDoc.ly

API Monitoring
- Postman
- Datadog
- Checkly
- Runscope
- AlertSite

Collaboration

API Workspaces
- Postman

API Catalog
- Postman
- SwaggerHub
- RapidAPI Hub
- Backstage
- Cortex
- effx
- Kong
- Apollo
- Stoplight
- Buf

Governance

API Security
- Postman
- 42crunch
- Noname
- Salt.security
- Apisec.ai
- Cequence Security

API Observability
- Moesif
- Akita
- Seekret.io
- Optic
- Apollo
- Buf

Source Code
- Github
- Gitlab
- Bitbucket
- AWS CodeCommit
- Azure Repos

CI/CD
- Jenkins
- CircleCI
- JFrog
- GitLab
- GitHub
- TravisCI
- Harness
- AWS CodePipeline
- Azure Pipelines
- Bitbucket
- Google Cloud
- TeamCity
- HashiCorp

Cloud / Gateways
- AWS API Gateway
- Azure API Management
- Apigee
- MuleSoft
- Kong
- KrakenD
- Software AG
- Tyk
- Axway Amplify
- Layer7 API Gateway
- RedHat 3Scale
- Ambassador
- IBM API Connect

APM
- Datadog
- New Relic
- Big Panda
- Splunk
- Grafana
- Statuspage
- Opsgenie
- Keen.io
- Coralogix
- PagerDuty

Specifications
- OpenAPI
- AsyncAPI
- JSON Schema
- GraphQL
- API Blueprint
- Thrift
- Protobuf
- WSDL
- Avro
- RAML

Who Works with APIS

Who Works with APIs

Primary job function

We asked survey-takers about their primary roles, and it's approximately an even split: about half of respondents considered themselves developers (full stack, backend, frontend, etc.), and about half have different roles within the organization. The most popular role to work with APIs? Full stack developers, accounting for 27% of survey responses.

The big story here is one that's ongoing across the industry and is expected to accelerate in the coming years: It's not just developers who work with APIs. A more and more diverse range of job titles and job families are steadily increasing their presence in the API field.
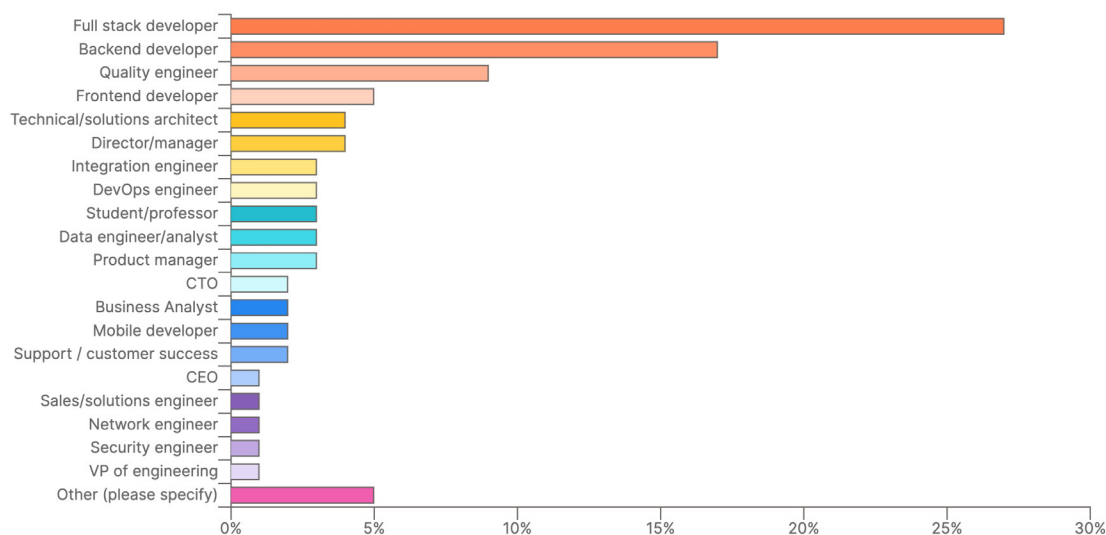
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Industry

We asked individuals about their industry, and the results are clear: Technology represents the largest industry, followed by business/IT services, banking/finance/insurance, and healthcare.

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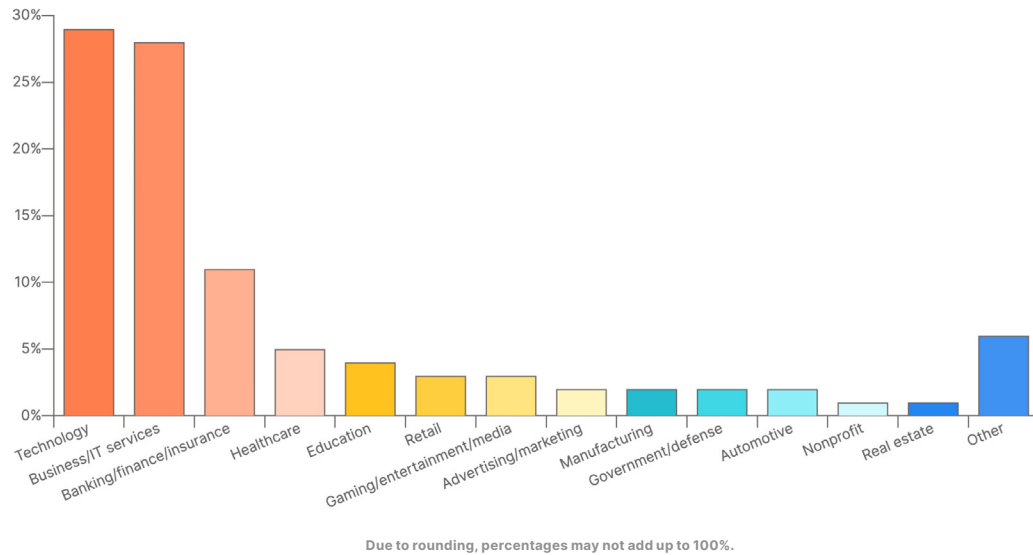
Years of experience

The API field continues to be an industry made up of individuals with relatively few years of experience: 76% of respondents reported between 0 and 5 years of experience with API development, compared to 74% last year.

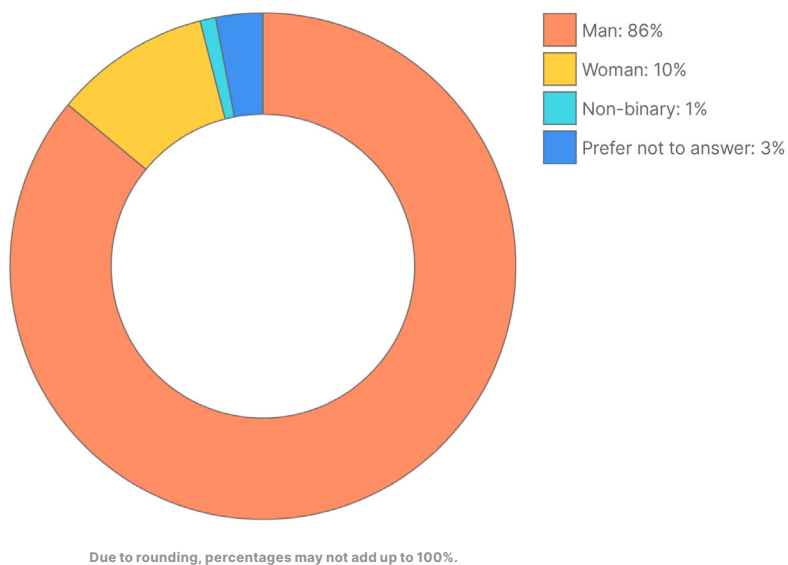Due to rounding, percentages may not add up to 100%.
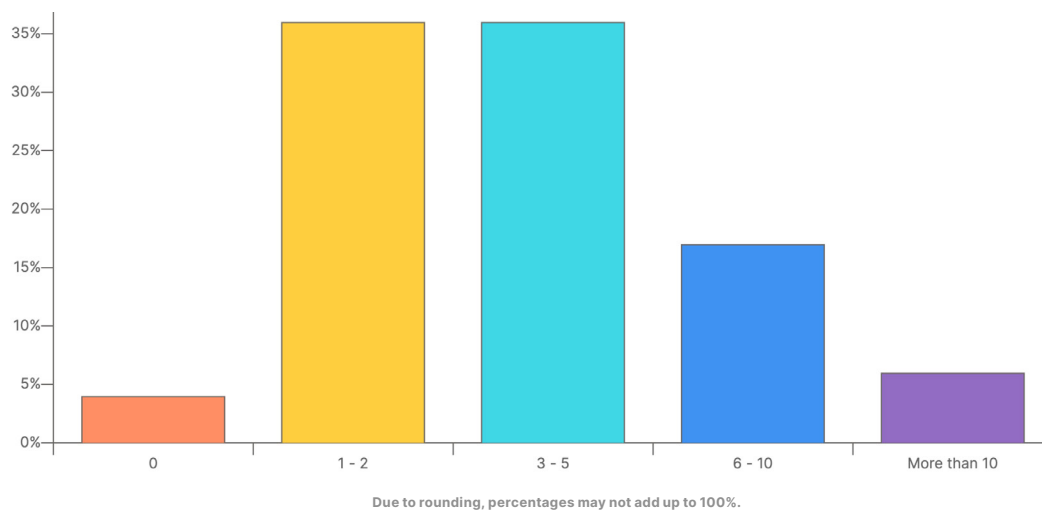
Generation

For the first time in 2021, we asked respondents about their age group by which generational label they identified with. The bulk of respondents identified themselves as Millennials, followed by Gen X, Gen Z, and finally Baby Boomers.

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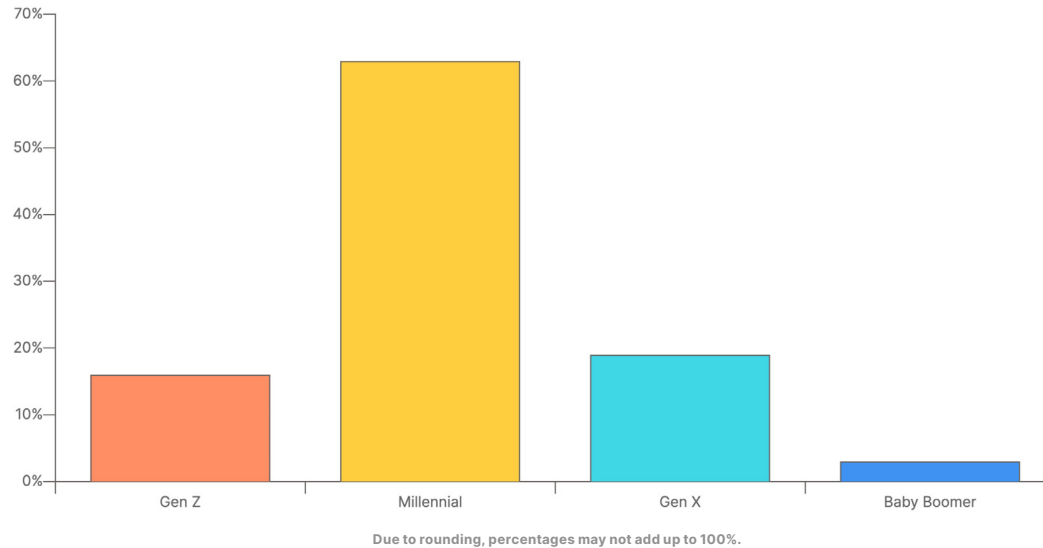
Gender

Also for the first time in 2021, we asked respondents to identify their gender. Our results indicated that the world of APIs skews heavily male, with 86% of survey-takers identifying as men. Only 10% of respondents identified as women, 1% as non-binary, and 3% preferred not to answer.


- Man: 86%
- Woman: 10%
- Non-binary: 1%
- Prefer not to answer: 3%

Due to rounding, percentages may not add up to 100%.

A Day, Week, or Year in the Life

A Day, Week,
or Year in the Life

Time spent with APIs

When it comes to the amount of time developers are spending with APIs, we saw some shifts this year. In 2021, 39% of respondents spent 10-20 hours per week working with APIs, compared to 36% in 2020; 28% of respondents in this year's survey spent 20 or more hours per week working with APIs, compared to just shy of 25% in 2020.

- < 10 hours a week: 33%
- 10 - 20 hours/week: 39%
- > 20 hours/week: 28%
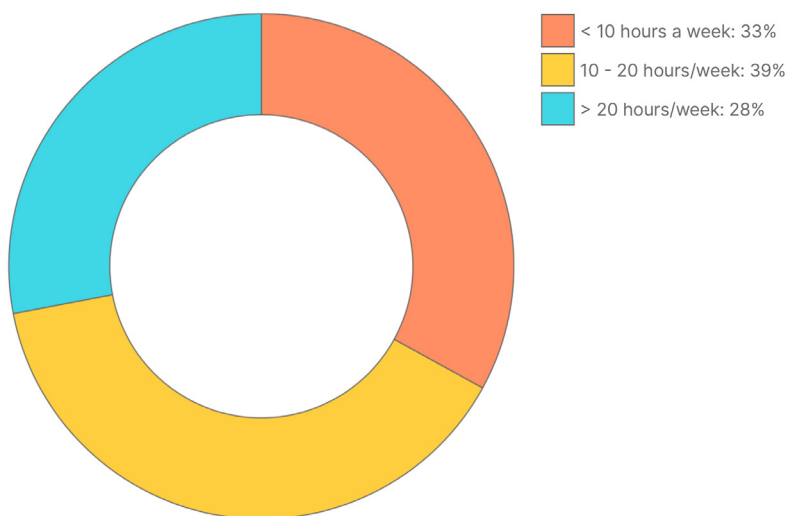
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API time allocation

When asked how individuals allocate the time they spend with APIs, more than two-thirds of their time was allocated to activities other than coding/programming APIs.

Within primary job functions, developers spend more time coding and programming APIs than those in other job functions—39% for full stack and backend developers, 31% for frontend developers. Quality engineers spend more time on automated testing (31%) and debugging (31%). Something that came as a bit of surprise is that even senior technical leaders spend substantial time coding and programming APIs: VPs of product, VPs of engineering, SVPs of engineering, and CTOs reported spending 29%, 31%, 32%, 37% respectively.

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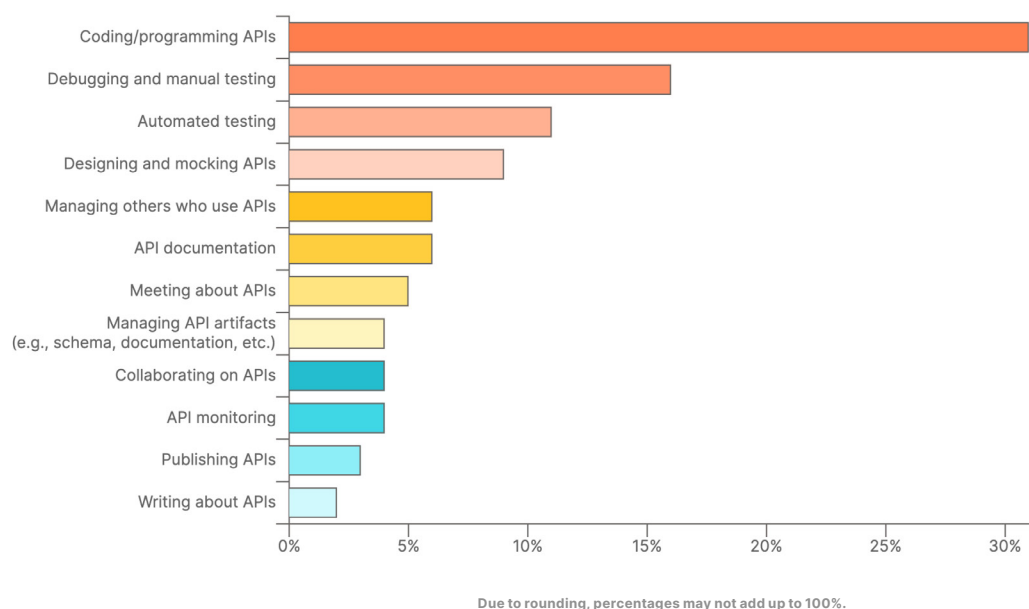
> " I spend most of my work time focusing on integrating API data changes into networked systems for further data processing. Also, a big part of my work is to verify that APIs have not changed/broken connected systems and to ensure APIs perform fast and reliably."
>
> **Dennis A.,** Engineering Team Lead

API time allocation: ideal state

We also asked participants where they thought they should spend their time with APIs. As we saw in 2020, the biggest difference between actual time spent and ideal time spent: debugging, 16% versus 10%, respectively.

Within primary job functions, developers—including backend, frontend, and full stack— and quality engineers alike felt that they should be spending more time on automated testing than they do today.

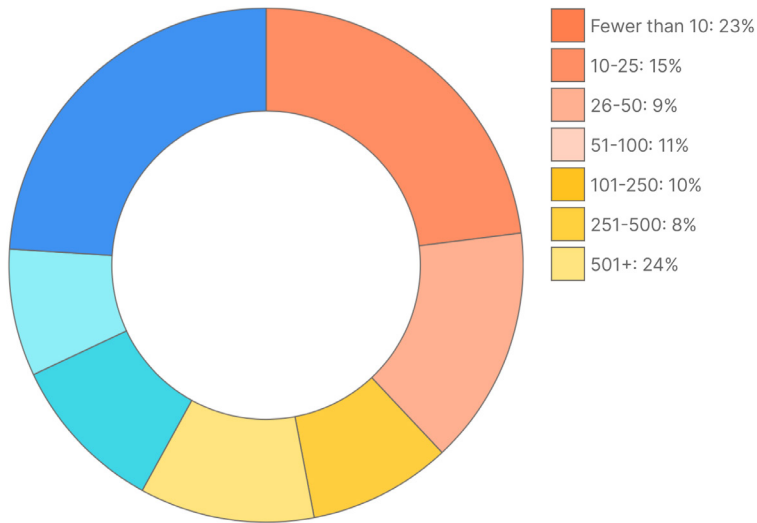Due to rounding, percentages may not add up to 100%.
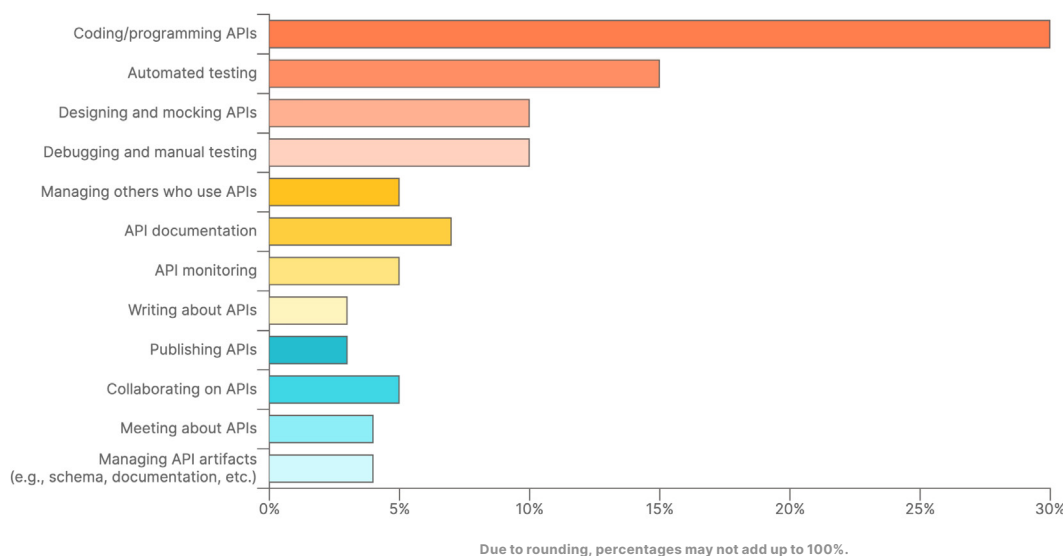
API development effort

When asked to rate the percentage of their organization's development effort spent working with APIs, 49% of respondents said that more than half of their organization's development effort is spent on APIs—compare that to just over 40% last year.

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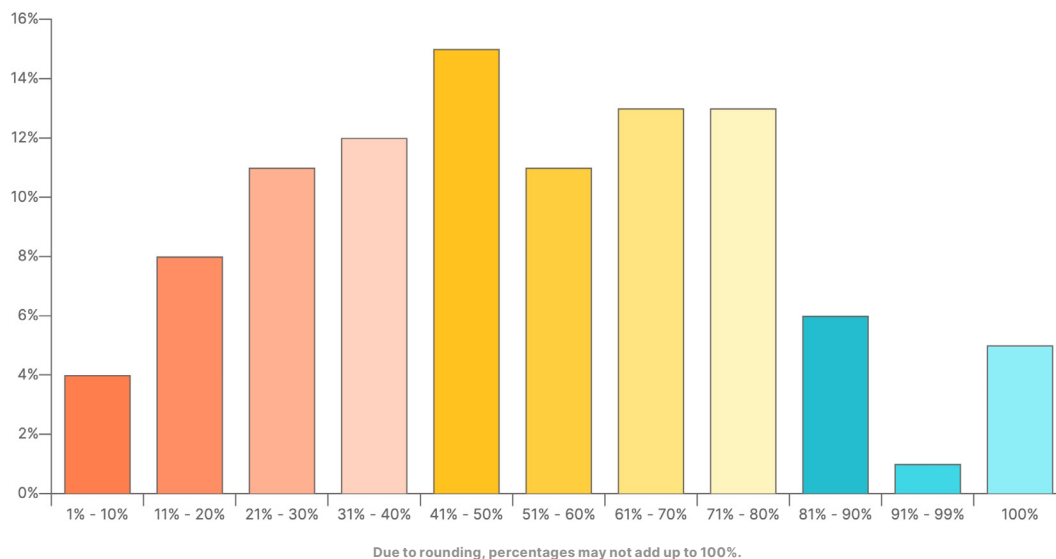
Number of developers in the organization

We continue to find an interesting dichotomy in the number of developers at organizations. Respondents from organizations with more than 500 developers were most common, at 24%; however, the next largest category—those with fewer than 10 developers—accounted for 23% of respondents. In general, when compared to last year's data, there was a notable shift toward larger organizations.

Fewer than 10: 23%

10-25: 15%

26-50: 9%

51-100: 11%

101-250: 10%

251-500: 8%

501+: 24%

Due to rounding, percentages may not add up to 100%.

API-First and Other Strategies

API-First and Other Strategies

Embracing API-first

Many teams and organizations are embracing an API-first philosophy. In fact, two-thirds of this year's survey respondents ranked themselves as a five or higher in terms of embracing API-first, while 62% ranked themselves in this way in 2020. It's clear that the industry as a whole is generally trending toward API-first, but it's only a select few who are leading the way—8% rank themselves as 9 or 10 on the scale of embracing API-first. We refer to these respondents as "API-first leaders."

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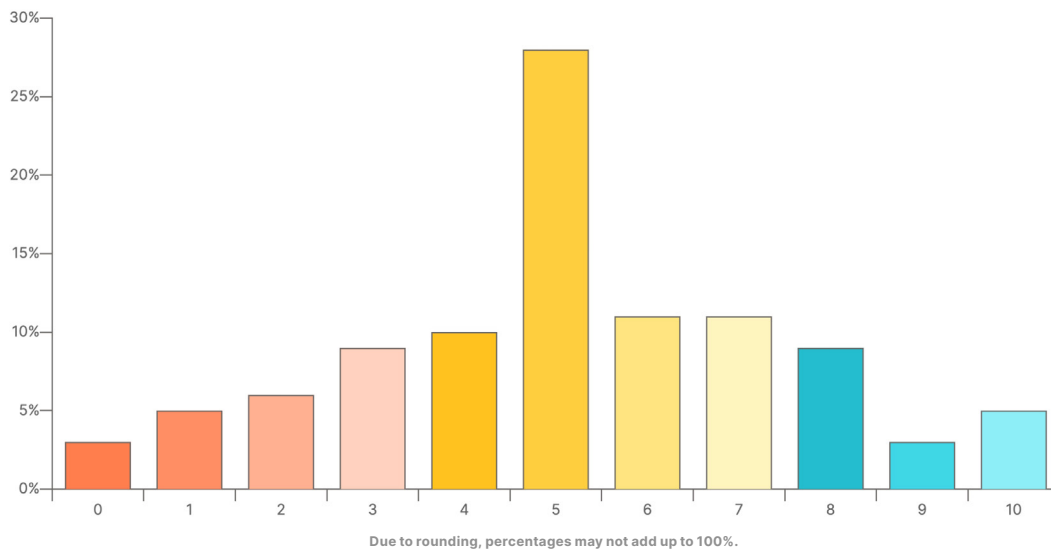
Defining API-first

But we wanted to dig even deeper: What does "API-first" mean to API developers and professionals? When it comes to defining API-first, we found a variety of responses, and the industry as a whole appears to be moving toward this definition: defining and designing APIs and underlying schema before developing dependent APIs, applications, or integrations. The next favorite? A little more than 3 out of every 10 developers and API professionals preferred developing APIs before developing applications or integrations dependent on APIs. Interestingly, only 10% of respondents said that they're not sure what API-first means, down from 13% in 2020.


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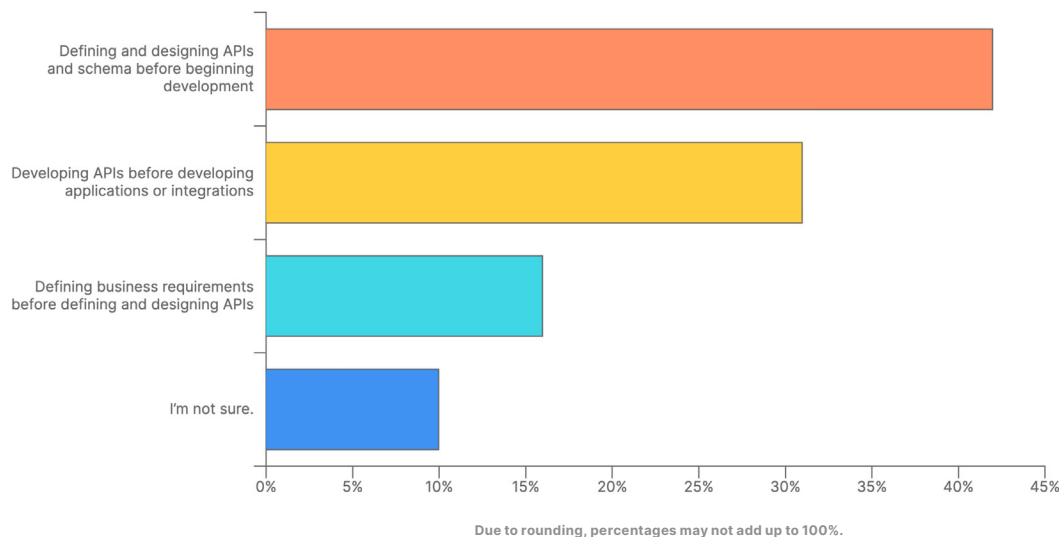
> " API-first in our organization means that we can think of what IS possible rather than what IS NOT possible when it comes to providing the best features and functionality for our products and services to our members. We no longer have the difficulties of customization or integrations with systems and applications."
>
> **Andrew C.,** Vice President, Development
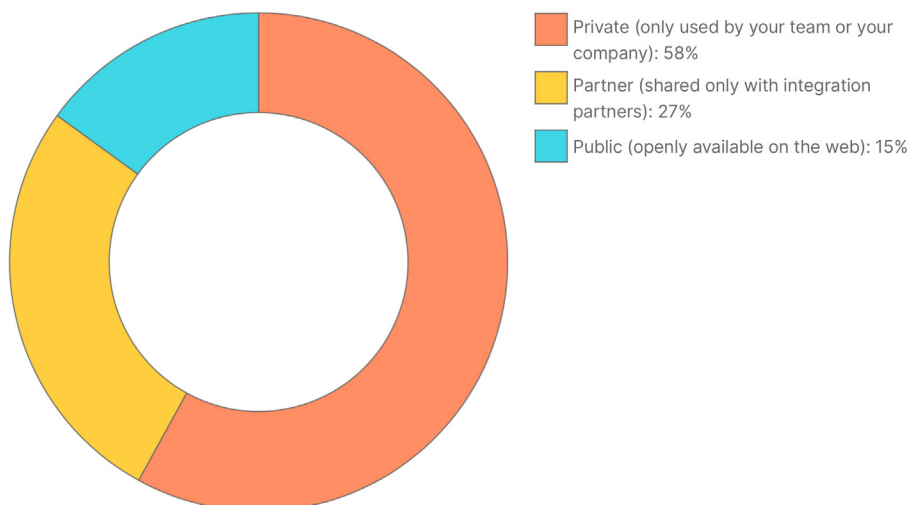
Development priorities

We asked respondents to identify the top priorities for their development teams and organizations, and there was a clear winner: quality, coming in at 80%. Agility, reliability, security, and speed of development were also important to more than half of respondents. What seemed to be less of a concern? Reducing costs, cited by less than one-third of API professionals. API-first leaders were even more likely to cite quality, reliability, agility, and security as priorities than other survey respondents.

Multiple responses allowed.
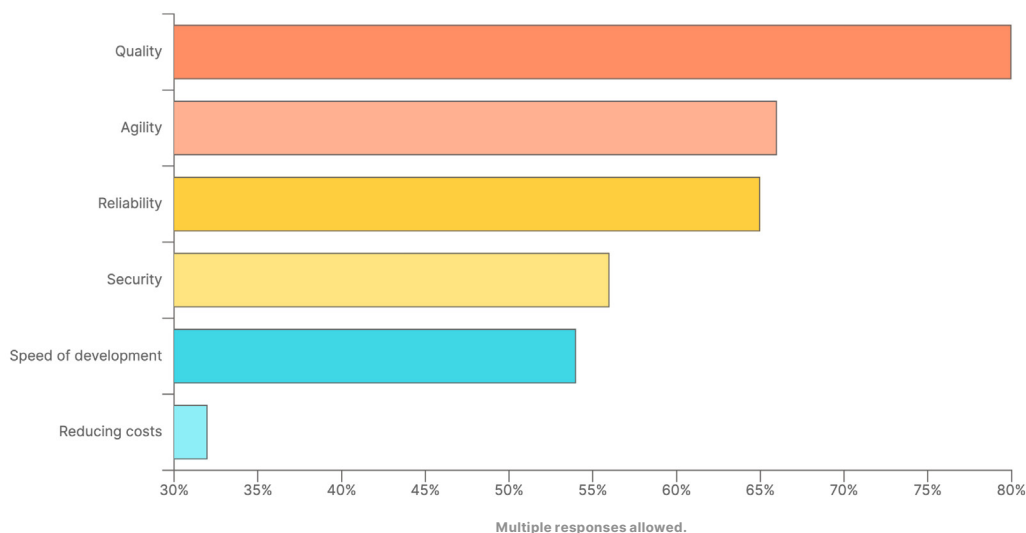
Public vs private vs partner

Respondents were asked to allocate 100 points among three API categories (public, private, and partner) to indicate the percentage of APIs in their organization for each. The leader again this year is private APIs.

Interestingly, API-first leaders reported a lower percentage of private APIs and higher percentage of public APIs, indicating that these leaders spend less time coding functionality in-house when they can rely on functionality already publicly available from others across the industry.

Private (only used by your team or your company): 58%

Partner (shared only with integration partners): 27%

Public (openly available on the web): 15%

API design

We asked respondents at what point in a project they typically consider API design. The majority of survey-takers said that they consider API design early in a project, before development kicks off. Almost 1 in 5 consider API design even before stakeholder expectations are set, and a similar ratio considers API design in the middle of projects. Less than 10% of respondents consider API design last or aren't concerned with API design at all.

Within job functions, quality engineers were more likely to state that API design is considered early, while full stack and frontend developers were less likely to state that API design is considered early.

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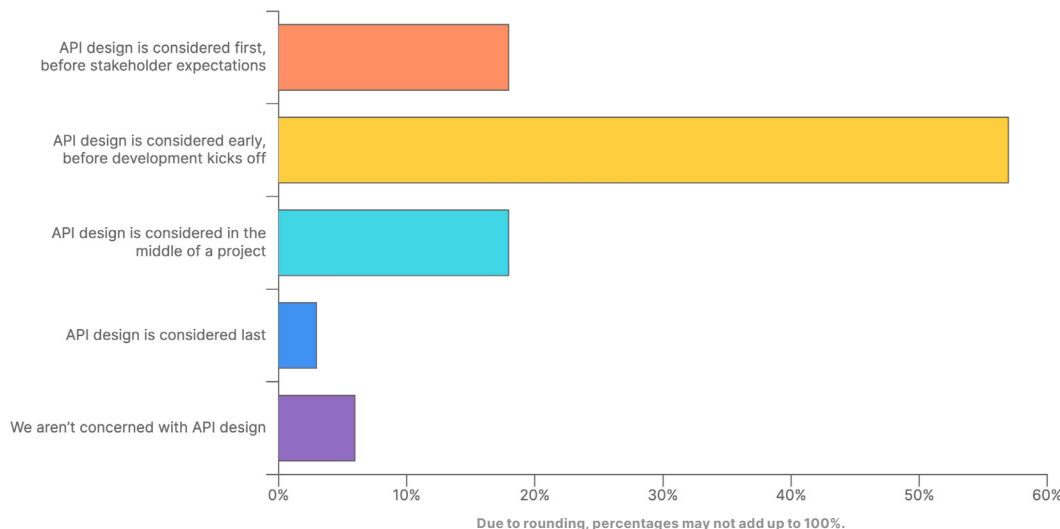
Factors considered: API integration

When asked what factors are considered before integrating with an API, four factors were cited by more than two-thirds of survey respondents: security, performance, reliability, and documentation. Also notable were scalability and usability, important to more than half of respondents. Interestingly, customer support, provider reputation, and popularity/adoption were considered less important.

API-first leaders were more likely than other respondents to cite the top four factors: security, performance, reliability, and documentation.

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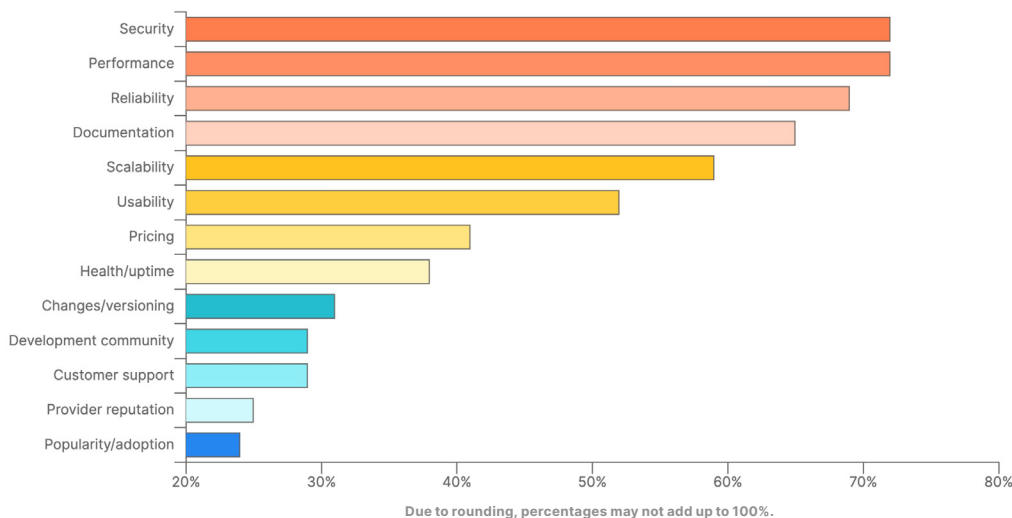
Factors considered: producing APIs

When asked what factors individuals consider when deciding to produce an API, the leading factor—mentioned by almost 67% of respondents—was integration between internal applications, programs, or systems. Integration with external systems, adding or enhancing functionality of internal systems, and adding or enhancing functionality for customers round out the top four—all mentioned by more than half of respondents.
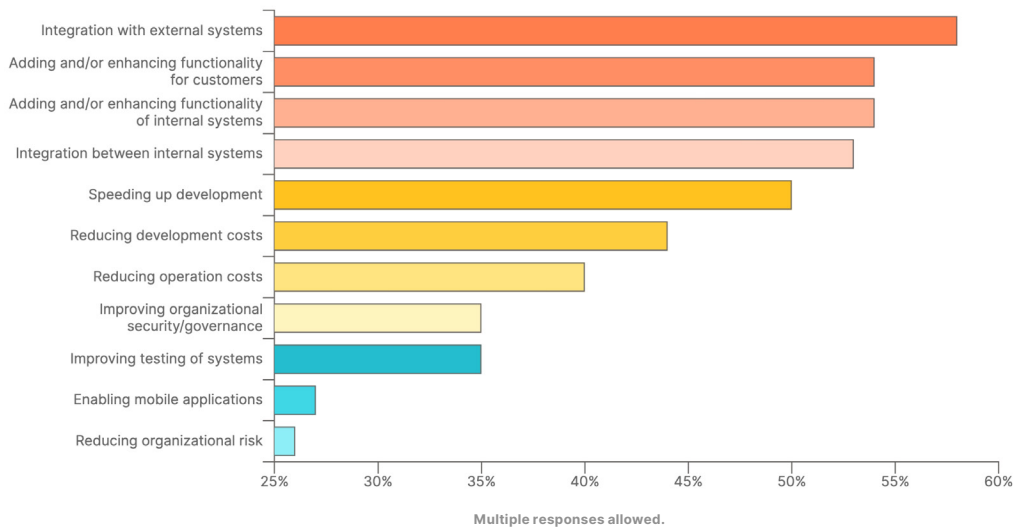
API-first leaders were more likely than other respondents to cite those same top four factors: internal integration, external integration, and adding or enhancing functionality for both internal users and customers.

Multiple responses allowed.
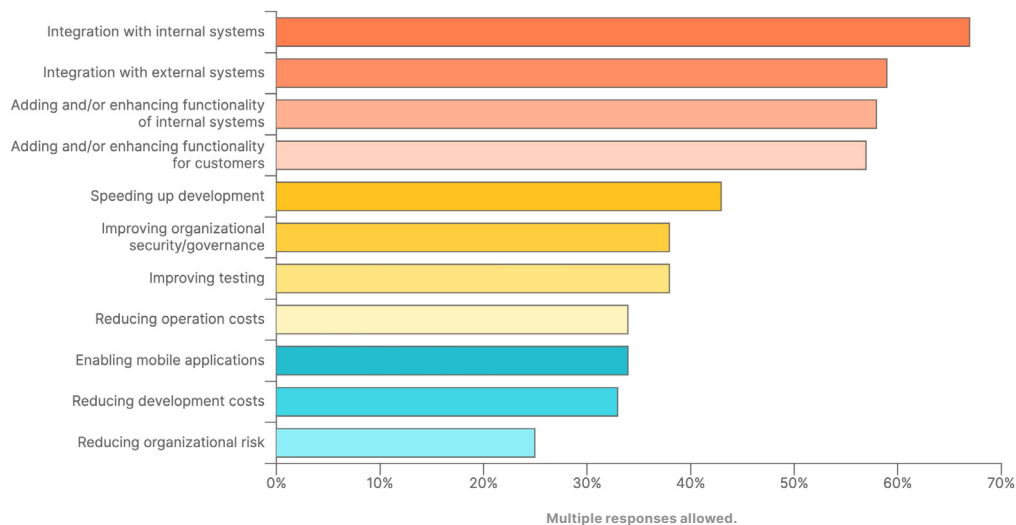
Factors considered: consuming APIs

When asked what factors individuals consider when deciding to consume an API, the factors included in the top four remain the same as cited by individuals deciding to produce an API (see above); however, the priorities are slightly shifted. The number one factor is integration with external systems, followed by adding or enhancing functionality for customers, adding or enhancing functionality of internal systems, and integration between internal systems. One factor that takes higher precedence when consuming APIs versus producing APIs: speeding up development.

Continuing the trend we observed among those deciding to produce an API, API-first leaders were even more likely to cite these same top factors for consuming an API than other survey respondents.

Factor	
Integration with external systems	58%
Adding and/or enhancing functionality for customers	54%
Adding and/or enhancing functionality of internal systems	54%
Integration between internal systems	53%
Speeding up development	50%
Reducing development costs	44%
Reducing operation costs	40%
Improving organizational security/governance	35%
Improving testing of systems	35%
Enabling mobile applications	27%
Reducing organizational risk	26%

Multiple responses allowed.

API Leadership and Governance

API Leadership and Governance

This year, we introduced a new series of questions to understand at a deeper level how organizations approach leadership and governance in their organization's API practices. We asked questions around five key areas: vision/strategy, communication, improvement, support, and recognizing achievement. Here's how industry members see API leadership and governance within their organization.

Vision/strategy

With regard to vision and strategy, more than six out of ten respondents felt that their API leadership and governance teams clearly understood how APIs contribute to business strategy and also clearly understood specific teams' API contributions. However, the picture looks a little different regarding the vision of where the API practice should be in five years: Only half of respondents indicated that they agree or strongly agree with the idea that their API leadership team has a "clear sense of where their API practice should be in five years."
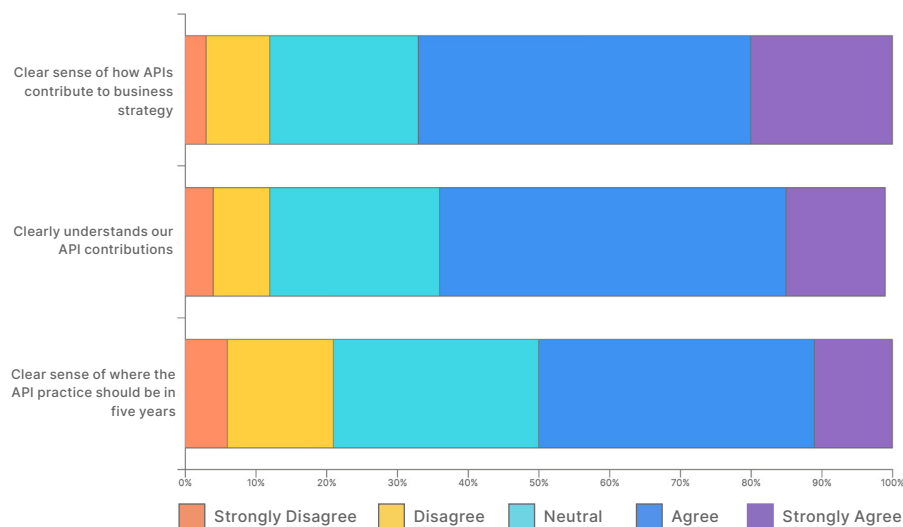
Due to rounding, percentages may not add up to 100%.

Communication

When it comes to communication, API leadership and governance teams often say positive things about employees' work, with two-thirds of respondents agreeing or strongly agreeing with the statement that leadership "finds positive things to say about my API work."

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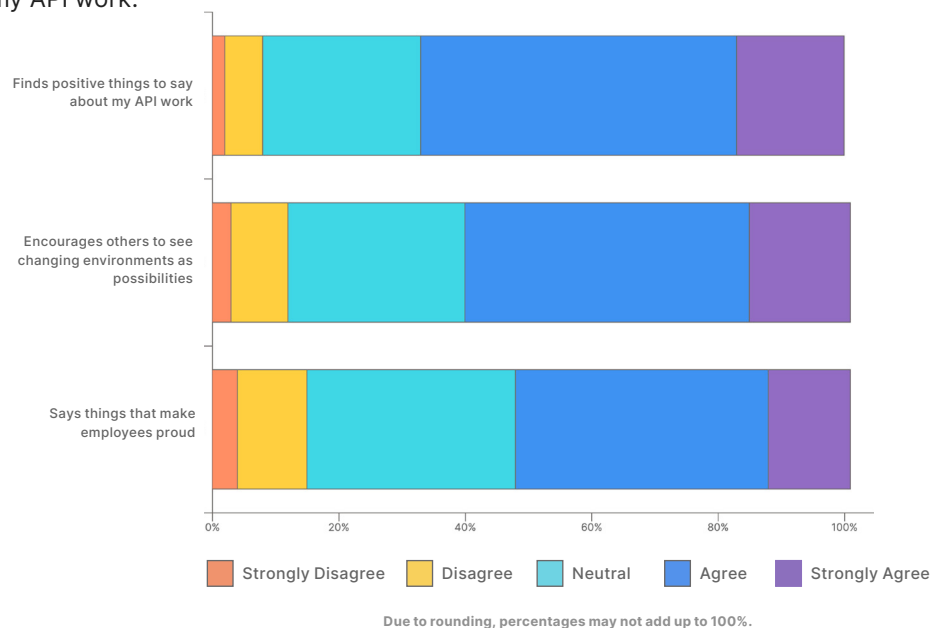
Improvement

To understand how organizations approach improvement, we first asked respondents to tell us whether they were challenged to think about problems in new ways, and more than three-quarters agreed. 60% of respondents also agreed or strongly agreed that their leadership and governance teams have ideas that have forced them to rethink some things they have never questioned before. Slightly less, 55%, stated that they were challenged on basic assumptions about work.

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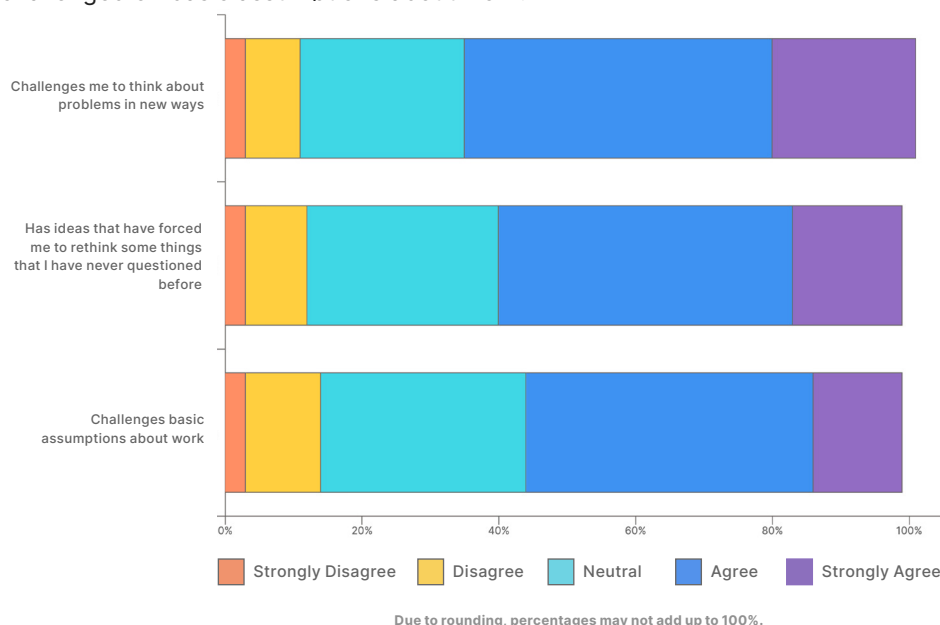
Support

We asked respondents several questions about how they were supported throughout the API lifecycle. More than 60% of respondents felt their API leadership and governance teams demonstrated a "willingness to change" as well as duly considering "the interests and opinions of employees." When it comes to regularly providing feedback and process correction, however, leadership and governance teams didn't score as well, with only 53% of respondents agreeing or strongly agreeing with that statement.

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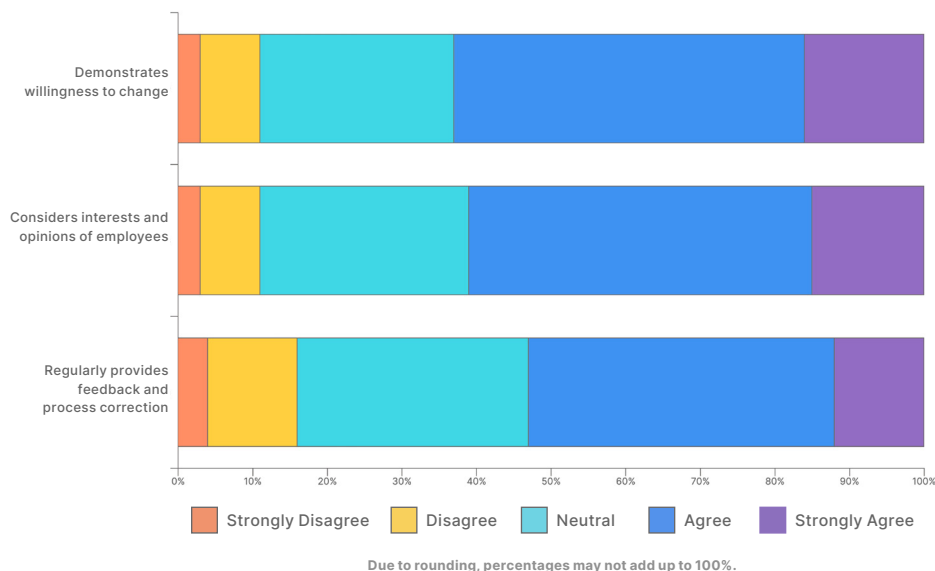
Recognizing achievement

When it comes to recognizing achievement, more than half of respondents agreed or strongly agreed with the statement that their API leadership and governance team "compliments me when I do outstanding API work" and "regularly celebrates improvements in quality."


Due to rounding, percentages may not add up to 100%.
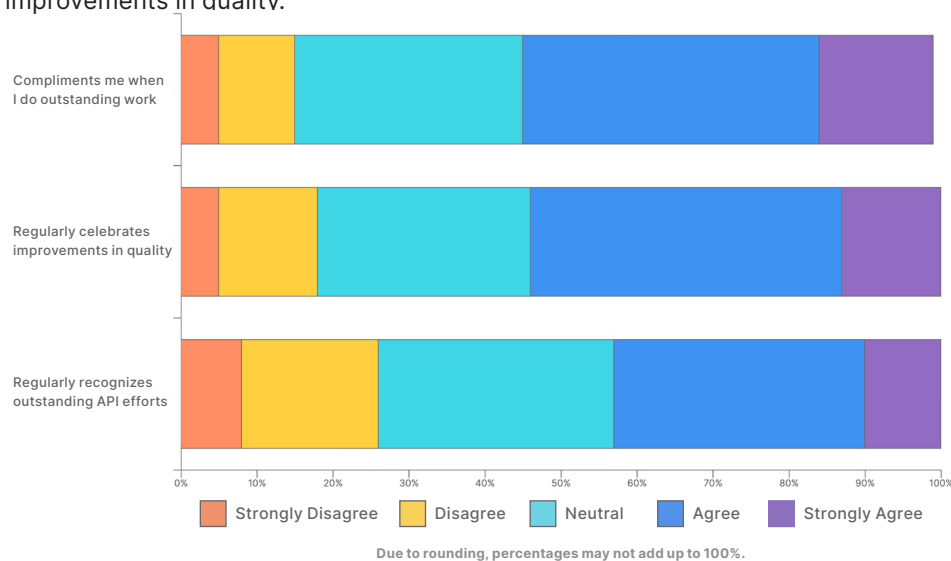
Executing on APIs

Executing on APIs

Time to production

We asked survey participants how long it typically takes to conceive, implement, test, and deliver an API to a production environment. One-third stated that it takes one day to one week, and more than one-third stated that it takes one week to one month. A handful of participants indicated that they can deploy in less than a day (or an hour), and another handful take more than a month to complete the process.

There's also some indication that API-first leaders are able to deploy faster—with 17% being able to deploy an API in a day or less (vs 14% of all respondents).

Due to rounding, percentages may not add up to 100%.
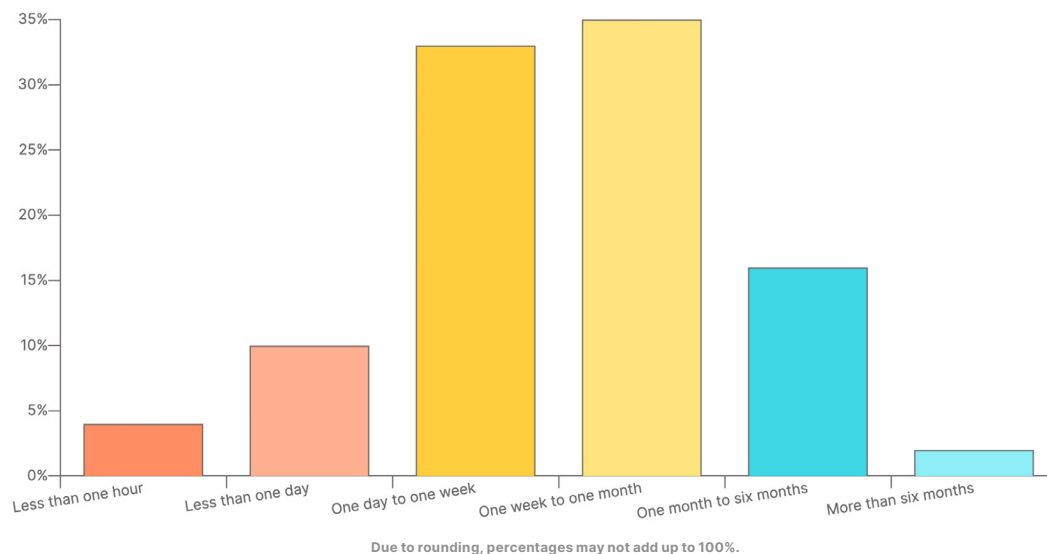
Deployment frequency

We also asked participants how frequently they deploy APIs to production. The most common response? About one-third stated that they deploy APIs to production between once per week and once per month. Slightly fewer respondents deploy between once per day and once per week, or between once per week and once per month—21% and 28% respectively.


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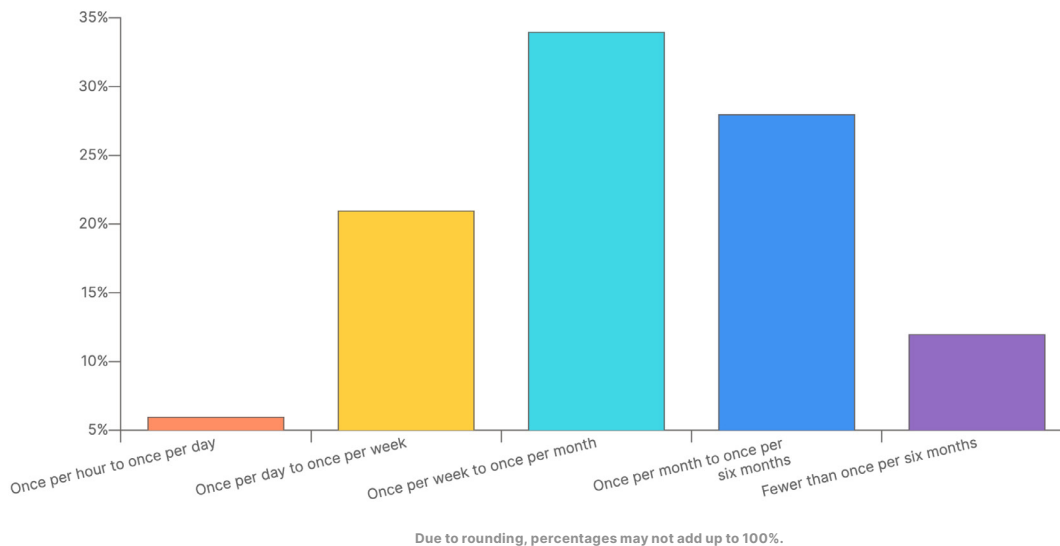
> " We deploy APIs to production multiple times a week. We deploy changes as soon as they're completed and tested, and we keep them feature-flagged off until the whole feature is ready to go live."
>
> **Sindhu N.,** Technical Architect

Deployment failures

Next, we asked participants what percentage of their API changes pushed to production experience failure. More than 4 out of 5 developers and API professionals indicated that less than 25% of their changes fail.

API-first leaders were even less likely to experience production failures, with only 13% stating that failures occurred more than a quarter of the time (vs 16% of all respondents).

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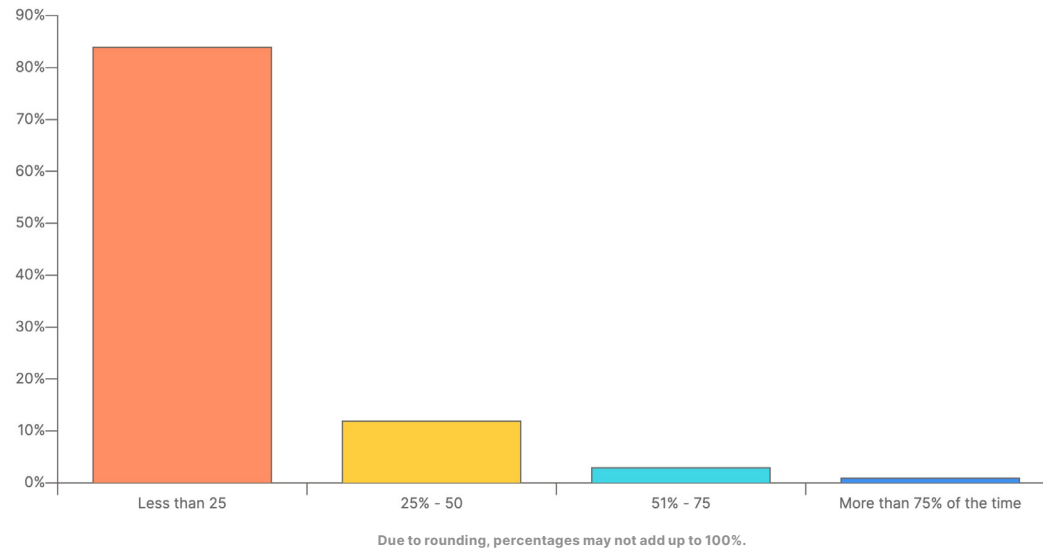
Time to recovery

We asked participants how long it typically takes them to recover when APIs fail, and more than 80% of participants indicated they can recover in less than a day, and fully one-third recover in less than an hour.

API-first leaders indicated that they could recover more quickly, with 46% indicating they could recover in less than an hour (vs 34% of all respondents).


Multiple responses allowed.
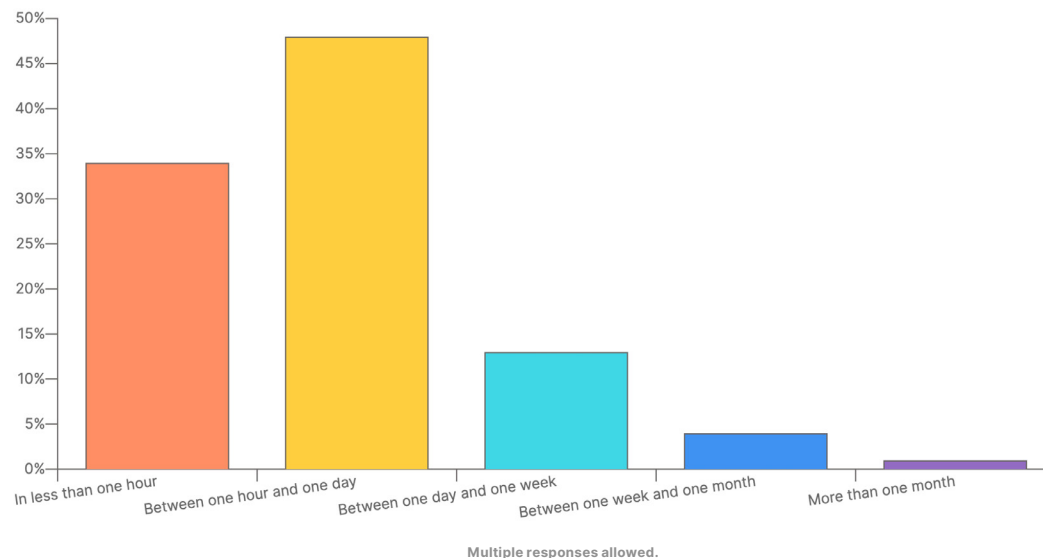
Obstacles to producing APIs

When asked about the obstacles to producing APIs, lack of time is by far the leading obstacle, with 45% of respondents listing it. Complexity was next most frequently cited at 38%, followed by lack of knowledge and lack of people both coming in at 34%.

Multiple responses allowed.
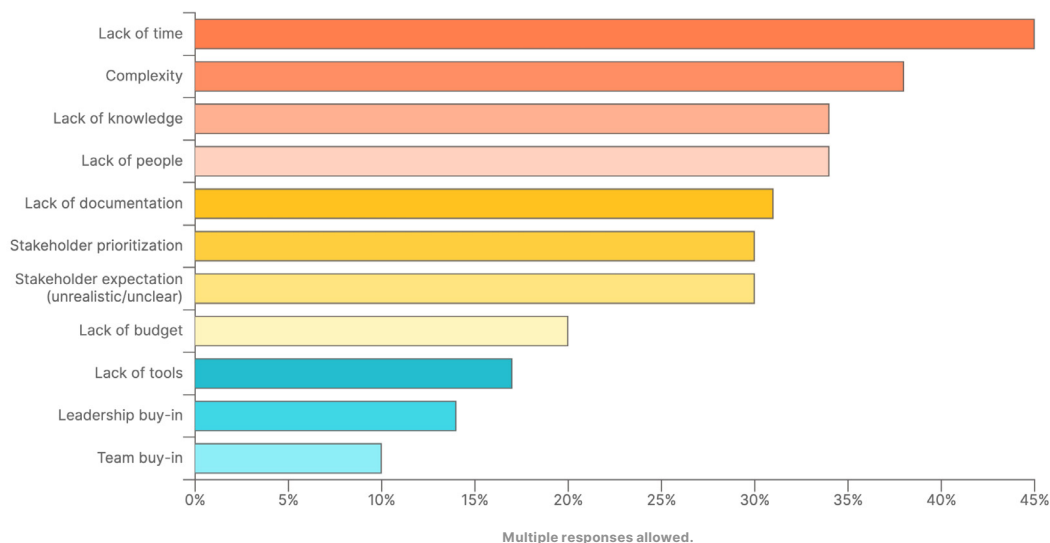
Obstacles to consuming APIs

When asked about the biggest obstacle to consuming APIs, the number one obstacle cited was lack of documentation, clocked at 55%. Other top obstacles to consuming APIs include complexity and lack of knowledge, both cited by one-third or more of participants.


Multiple responses allowed.
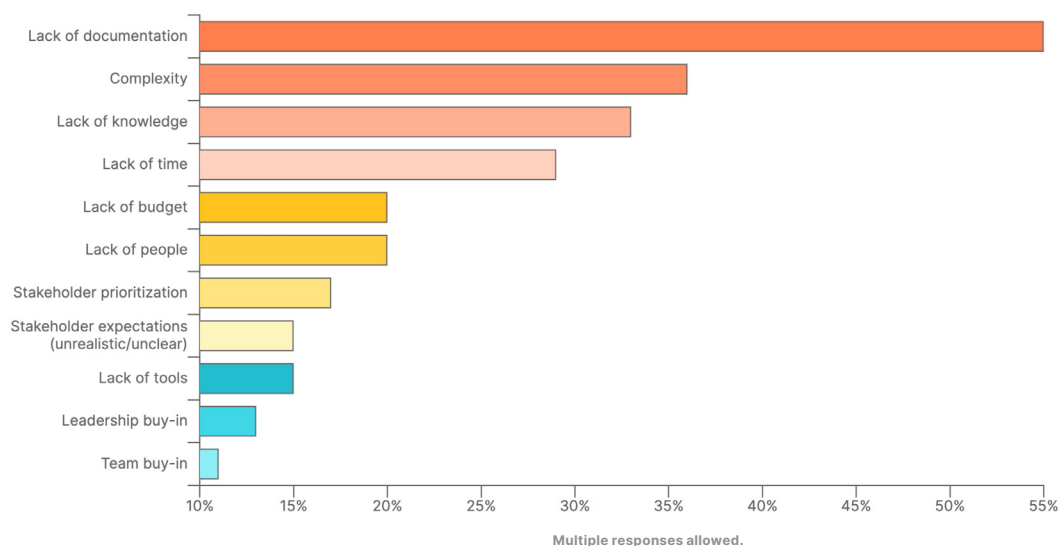
> " Great API documentation: That's a discipline that's really lacking, and we try to instill a sense of making sure that we have great documentation for the APIs that we deliver and making sure that we have the technical writers in place to help support them so the developers don't feel like they're left on their own."
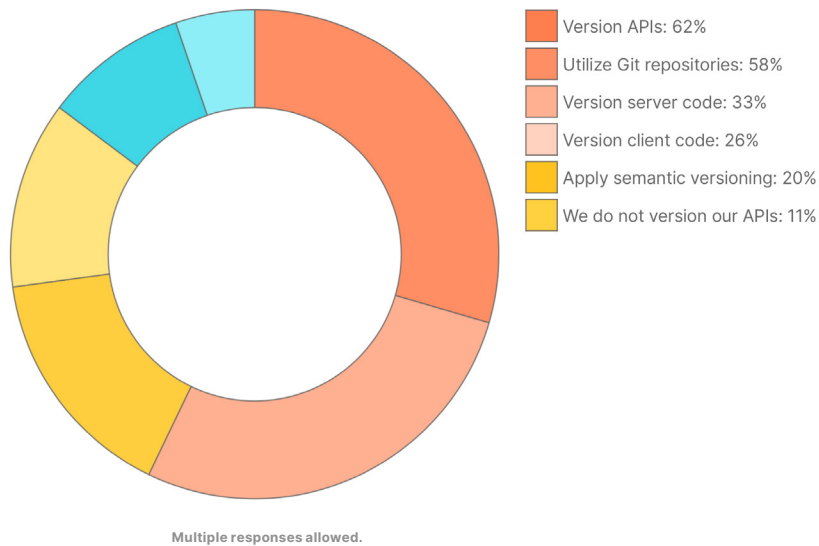>
> **James H.,** API Consultant

Collaborating on APIs

When asked how they collaborate, respondents' top answer (with 50%) was "working with API artifacts on a collaboration platform." Next up, with 40%, was publishing API artifacts to GitLab, GitHub, Bitbucket, etc. Also popular includes sharing URLs to API artifacts (38%), publishing API documentation (33%), and sharing API artifacts to Postman workspaces (32%).

Multiple responses allowed.
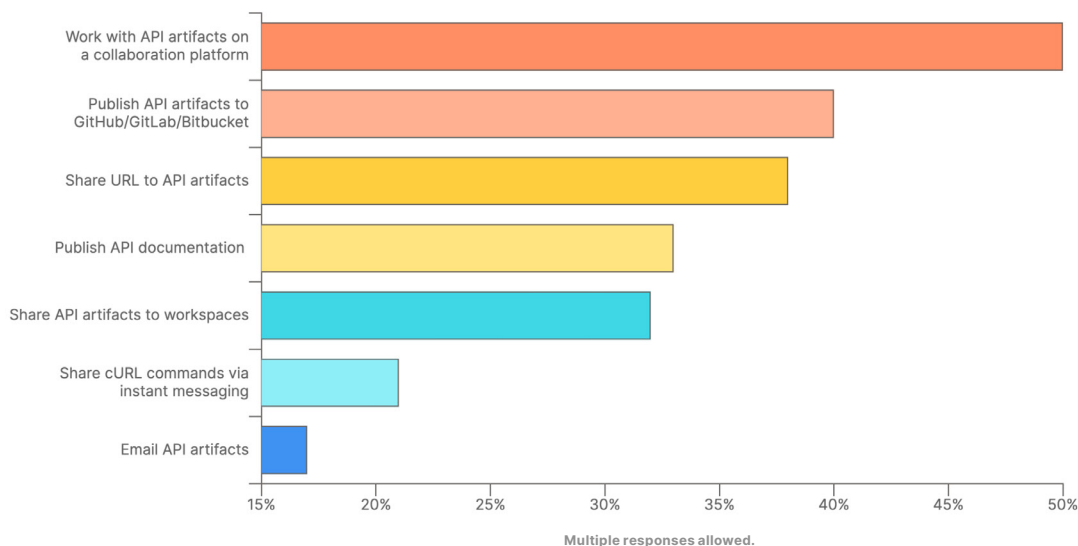
Change management

When it comes to preferred change-management practices, versioning APIs scored the most mentions, at 62%. In succession behind that top response, we find utilizing Git repositories (58%), versioning server code (33%), and versioning client code (26%).

- Version APIs: 62%
- Utilize Git repositories: 58%
- Version server code: 33%
- Version client code: 26%
- Apply semantic versioning: 20%
- We do not version our APIs: 11%

Multiple responses allowed.

API testing

When it comes to API testing, a wide variety of practices are applied, although functional testing (68%) and integration testing (66%) towered over the rest, with no other testing practice coming within ten percentage points of those top two choices.


Multiple responses allowed.
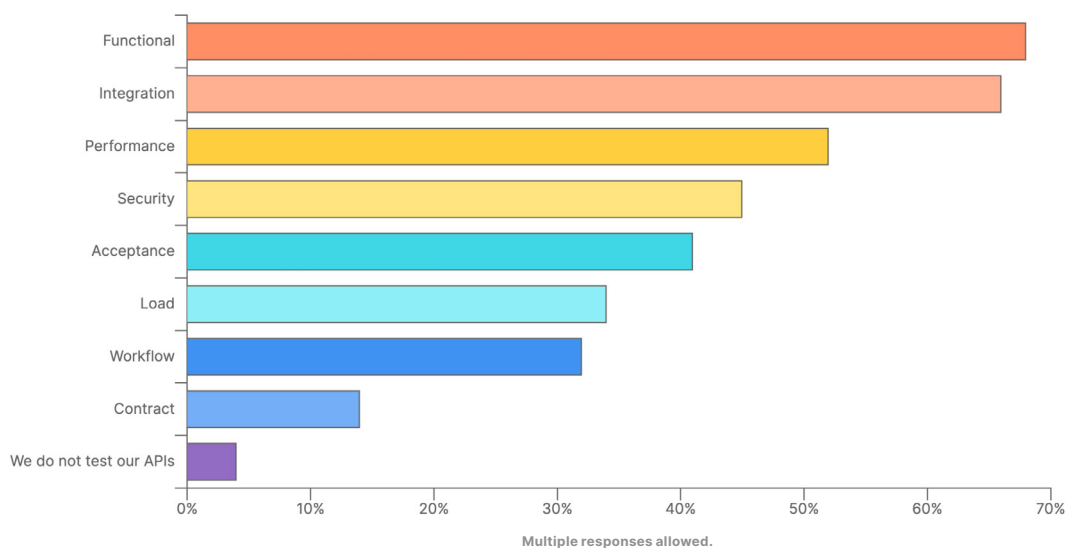
API documentation

We asked how well APIs are documented, and the results resembled a bell curve, with the highest percentage of respondents (26%) indicating that documentation scored a 5 out of 10 (or "okay"). Only 3% of respondents rated APIs they work with as "very well documented."

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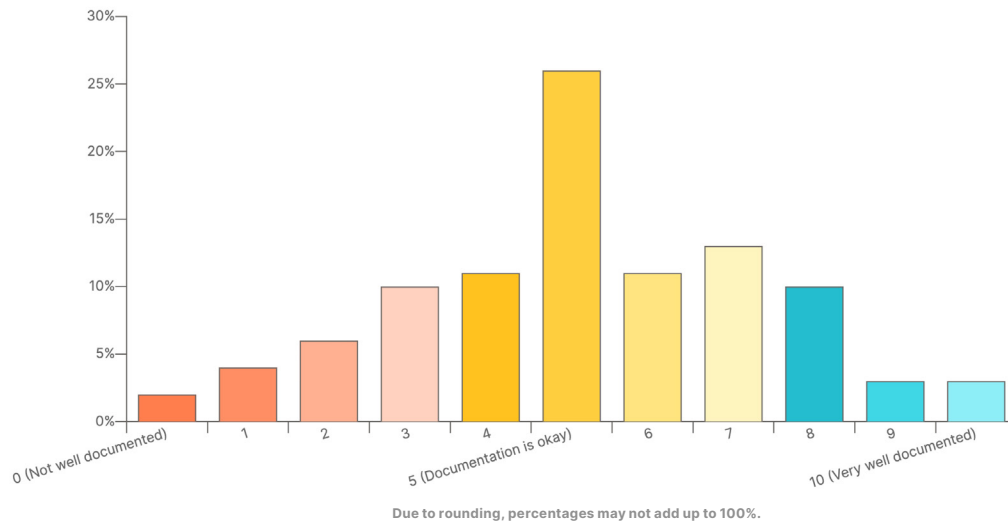
Improving API documentation

What does it take to improve documentation? Our respondents had insights: The most helpful enhancement API producers can make is to provide better examples in the documentation (61%), followed by sample code (56%), and standardization (54%). Respondents also indicated that real-world use cases, better workflows, additional tools, and SDKs were helpful, although to a lesser extent than the top responses.


Multiple responses allowed.
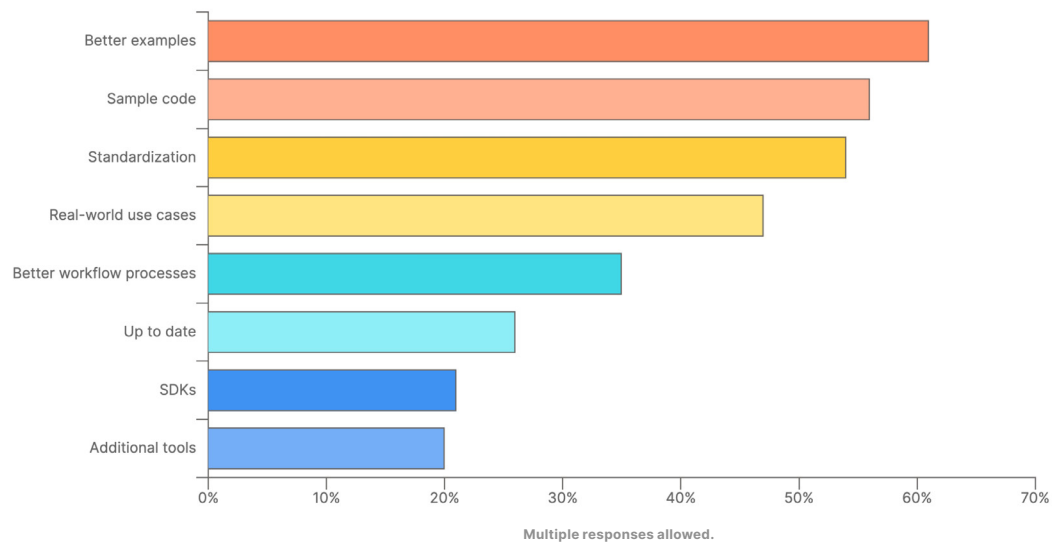
Tooling for APIs and Development

Tooling for APIs and Development

API platforms and tools

When respondents were asked which API tools they use, Postman led the way, garnering mentions from 83% of respondents. Amazon Web Services, SwaggerHub, and Azure API Management also earned double digits at 36%, 25%, and 14% respectively.

Multiple responses allowed.
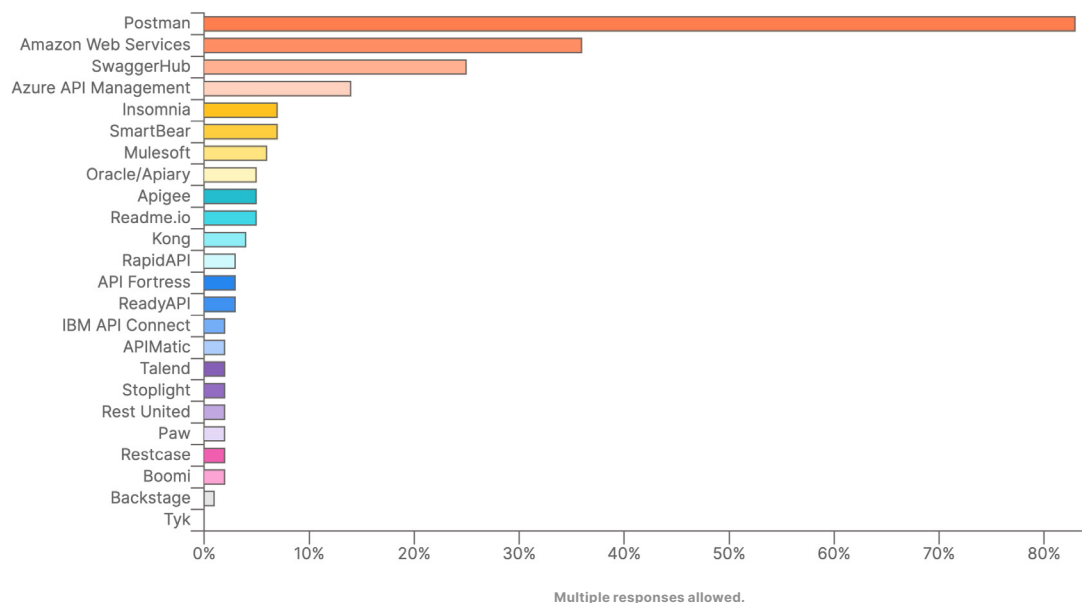
Platform vs separate tools

We asked respondents whether they prefer a single platform or a mix of tools to design, document, test, and deliver APIs. A combination of both was the most popular answer, garnering 43% of the responses, followed by one-third of respondents preferring a single platform.

- Combination of platform and tools: 43%
- Single platform: 33%
- Separate tools for each function: 19%
- No API tooling: 5%
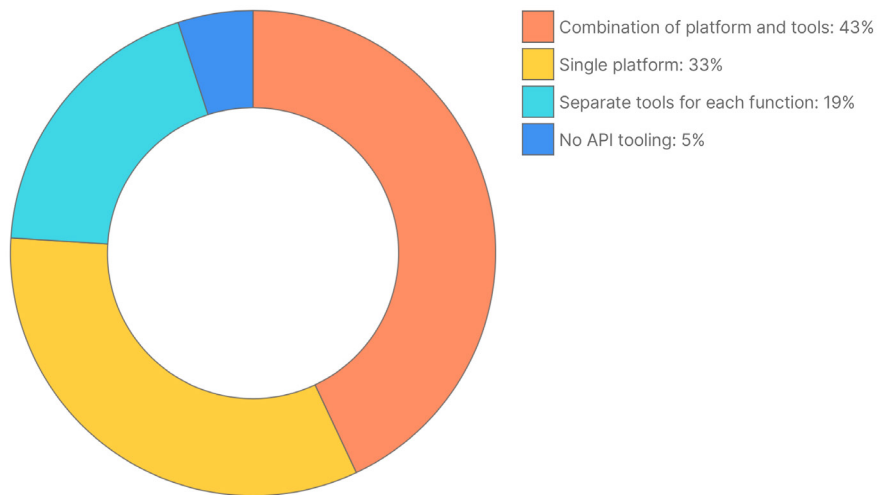
Due to rounding, percentages may not add up to 100%.

> " When thinking about total cost of ownership, we found that tooling which performs multiple functions is the most beneficial. Tools that create documentation, enable people from different teams to collaborate, perform tests, and drive development all in one location provide us with a shared understanding and single go-to place to find everything related to an API."
>
> **Allen H.,** Software Engineering Manager

DevOps tooling

DevOps practitioners rely on a number of tools, with Jenkins leading the way at 37%. Azure DevOps (26%), GitHub Actions (25%), AWS DevOps (23%), and GitLab Pipelines (22%) round out the top five.

Due to rounding, percentages may not add up to 100%.
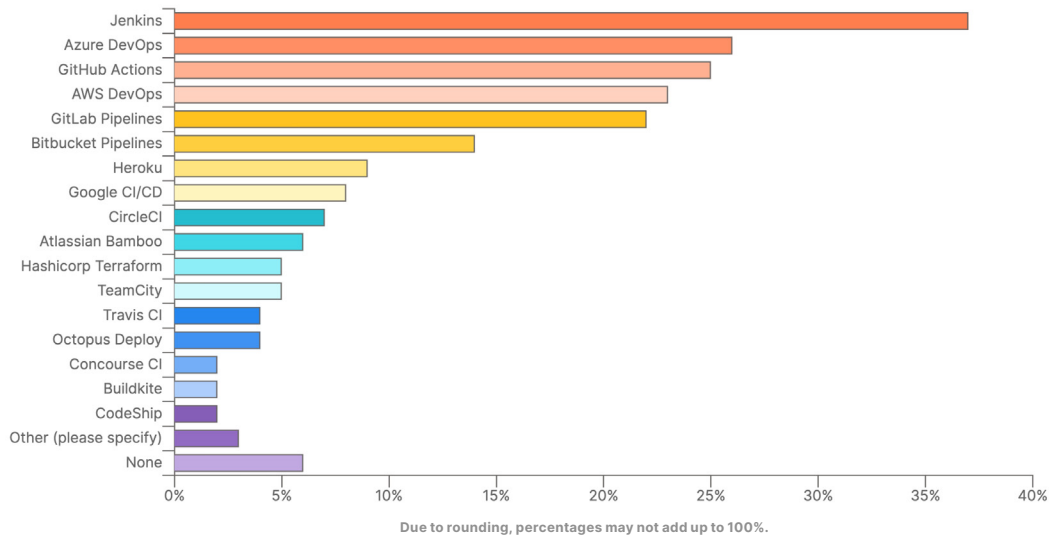
Deploying APIs

Respondents deploying APIs reported using a number of different approaches. CI/CD pipelines were the most popular, at 57%, followed by deploying APIs in the cloud (38%), frameworks (34%), and custom-built deployment methods (27%).
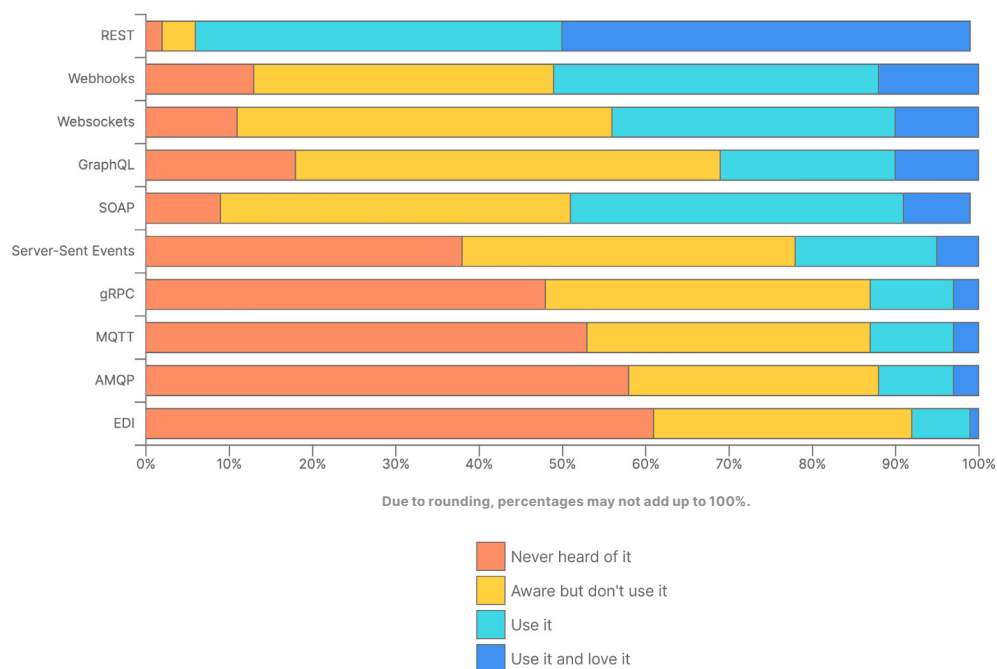

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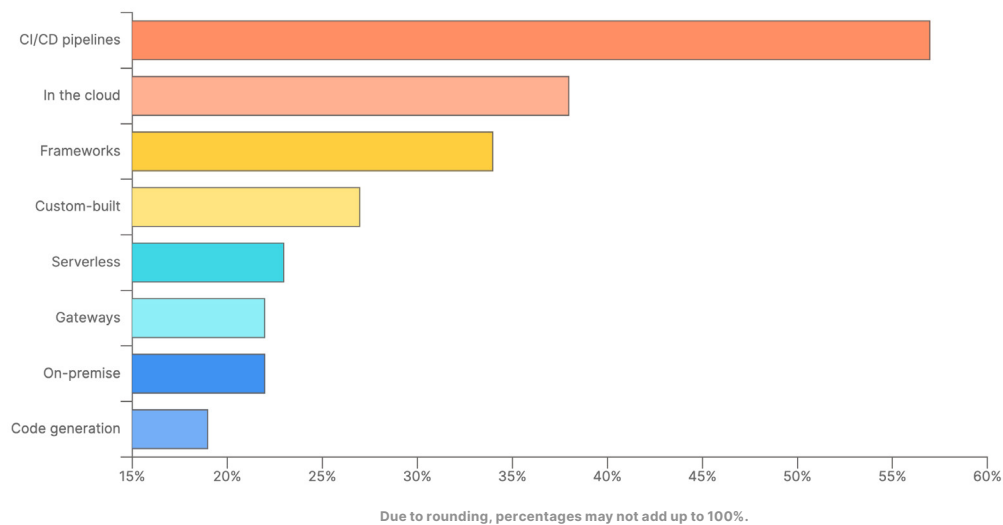
API
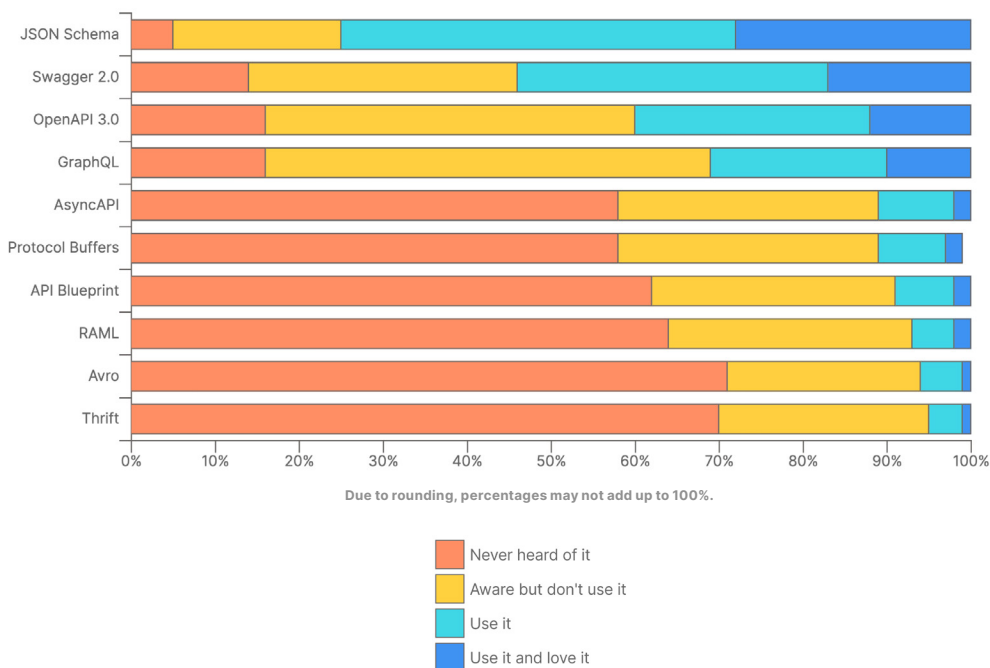# Technologies

API Technologies

Architectural style

As far as architectural styles for APIs are concerned, a sweeping majority of respondents (94%) use REST; of those, nearly half said that that they not only use REST, but that they "use it and love it." The majority of participants are aware of webhooks, WebSockets, GraphQL, and SOAP, but none of these have seen the same level of adoption as REST among our participants.

Due to rounding, percentages may not add up to 100%.

Legend:
- Never heard of it
- Aware but don't use it
- Use it
- Use it and love it

Specifications

We also asked folks which API specifications they know, use, and love, and JSON Schema was by far the top specification in use, cited by three-quarters of respondents. The next most popular specifications were Swagger 2.0 (54%) and OpenAPI 3.0 (40%).

Due to rounding, percentages may not add up to 100%.

- Never heard of it
- Aware but don't use it
- Use it
- Use it and love it

Future technologies

We posed the question, "What technologies are you most excited about using over the next year?" Microservices (58%) and Kubernetes (50%) led the way, just as they did in 2020. Rounding out the top five are containers (46%), serverless architecture (44%), and GraphQL (35%).

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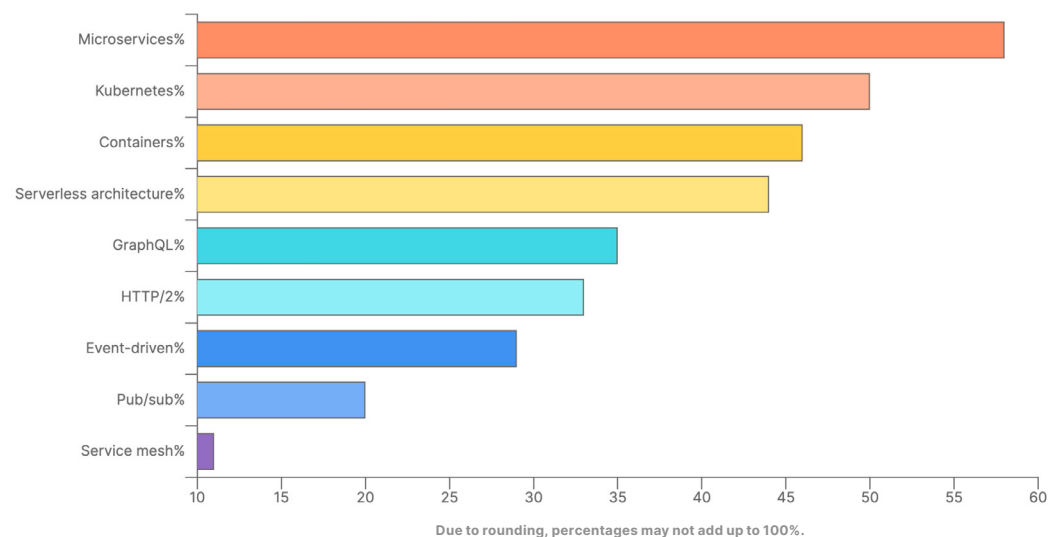
Learning about API technologies

We asked survey-takers where they gained most of their knowledge about APIs. Most respondents (62%) learned about APIs on the job or from coworkers. Documentation, online resources, communities, and blogs proved a bit more useful, according to our respondents, than in-person learning like coding schools or conferences.
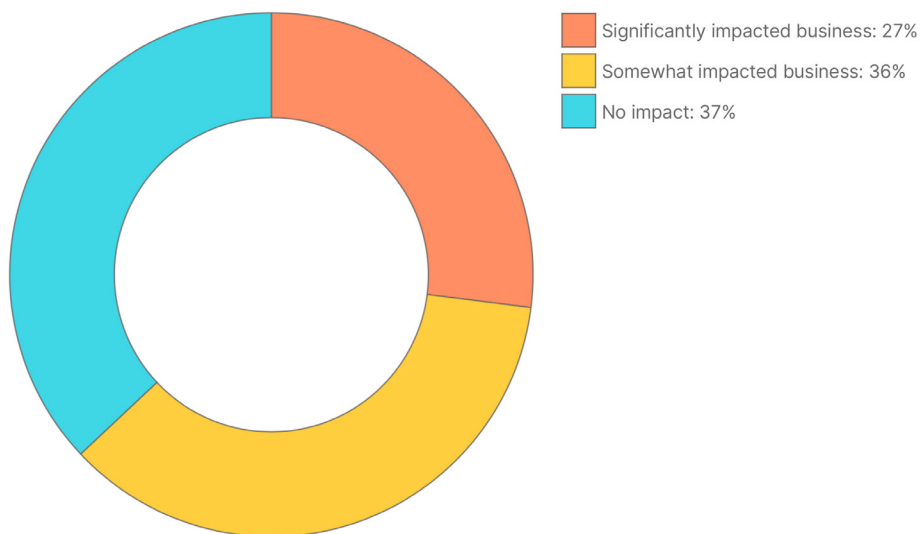

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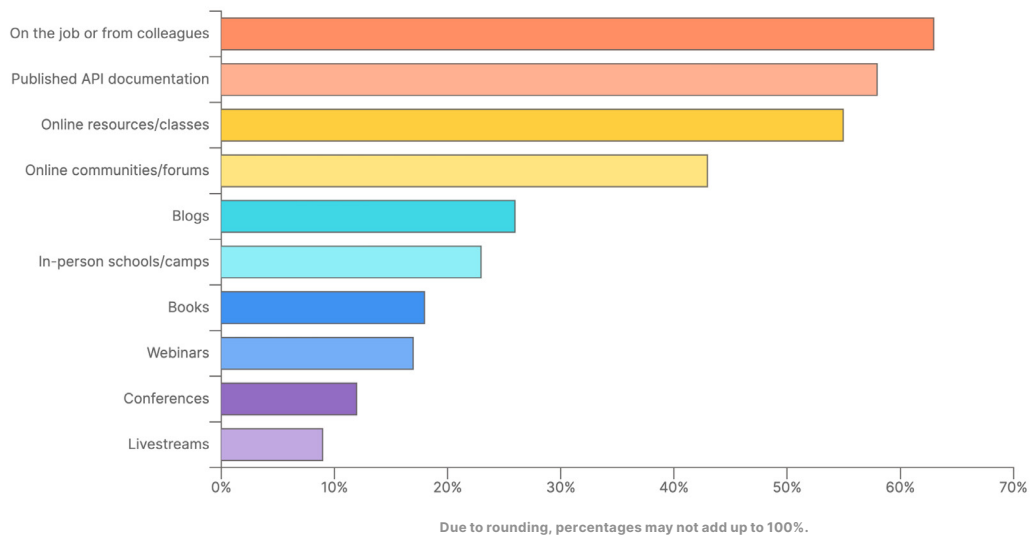
The Pandemic, APIs, and the Future

The Pandemic, APIs, and the Future

Pandemic effects

We asked respondents to share whether the pandemic affected their work—either how their business operated or how they worked with others in their organization. Just short of two-thirds of respondents stated that the pandemic somewhat or significantly affected their work. Perhaps surprisingly, more than one-third stated that the pandemic did not affect their work. For many developers and API professionals, work continued just as it was—with many progressive organizations having already adopted a remote-friendly or remote-first approach to work.

- Significantly impacted business: 27%
- Somewhat impacted business: 36%
- No impact: 37%

Due to rounding, percentages may not add up to 100%.

APIs support pandemic responses

To individuals who stated that the pandemic affected either their business operations or how they worked with others, we also posed the question, "Were your organization's changes supported by APIs?" More than half said, "Yes."

APIs supported pandemic response: 51%
APIs did not support response: 49%

**Due to rounding, percentages may not add up to 100%.**
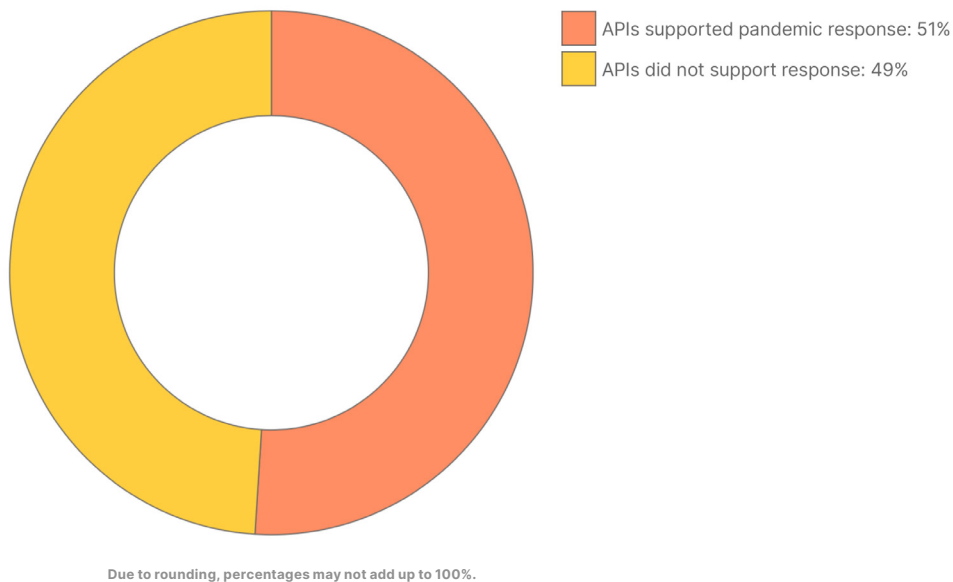
We went a step further and asked respondents how they continued to work through the pandemic. For many, APIs didn't just support organizations' pandemic responses, they played a key role in keeping the business operating:

◆ Organizations adopted new channels or enhanced existing channels to reach and serve customers in a pandemic world. Respondents told us that common areas of investment included e-commerce, customer support via chat and text, and contactless digital systems—all of which relied on APIs.

◆ Many respondents had to adjust to tectonic shifts in market demand, with some businesses completely pivoting their product offering. For many, product rollouts relied on APIs, and organizations pivoted in weeks and months what would normally take years. Some businesses were even born in the pandemic to meet new needs.

◆ Working from home presented new challenges for many organizations, too. APIs and integrations with internal systems helped solve these challenges by automating or enabling tasks that used to happen in person such as communication, attendance, reporting, and project management.

◆ Some of the most frequently cited innovations came from healthcare, with many healthcare organizations needing to digitize and automate workflows and relying on APIs to do so.

Pandemic changes to persist

Another question we posed to impacted individuals was, "Do you expect the changes to persist after the pandemic?" More than 8 out of 10 developers and API professionals stated that changes will persist in a post-pandemic world, with almost a quarter stating that all of the changes caused to their work by the pandemic will continue even when the world is back to normal.

Due to rounding, percentages may not add up to 100%.
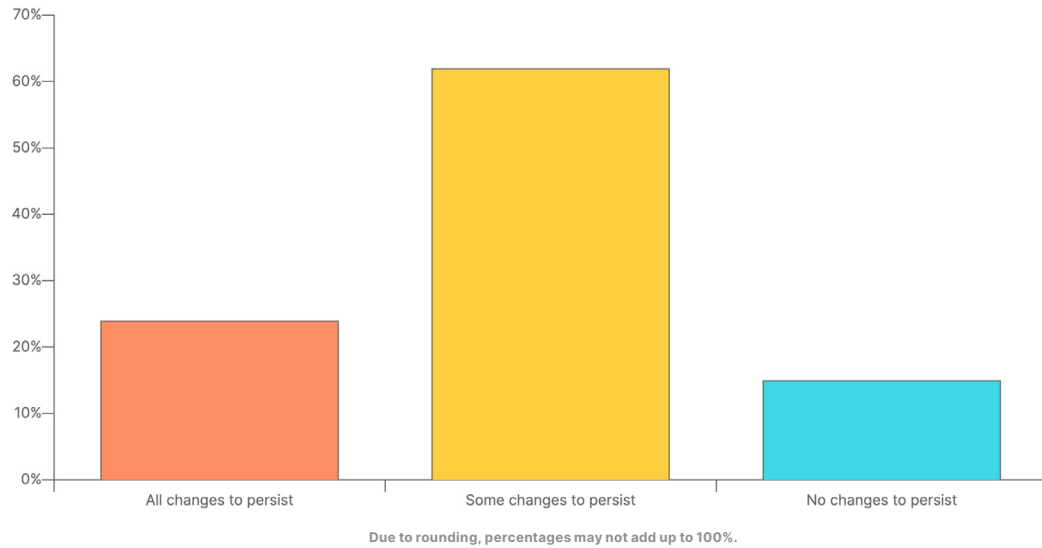
Working from home after the pandemic

Many organizations embraced a remote-friendly or remote-first approach to work, and we found the majority of API developers worked from home during the pandemic. To get insights into the future of work for API professionals, we asked the question, "Do you expect to work from home every day and/or at least one or more days per week," for the next 12 months. More than three-quarters of respondents said yes. We took the analysis a step further, and found generational differences—the older respondents were, the more likely they were to expect to work from home for the next year.

It's worth noting that, as virtual approaches to collaboration improve and gain ever-greater popularity (see the "Collaboration on APIs" section, above), people will have the ability to continue to work from home—or whatever remote location they prefer—with full productivity.

Due to rounding, percentages may not add up to 100%.

Not sure
No
Yes
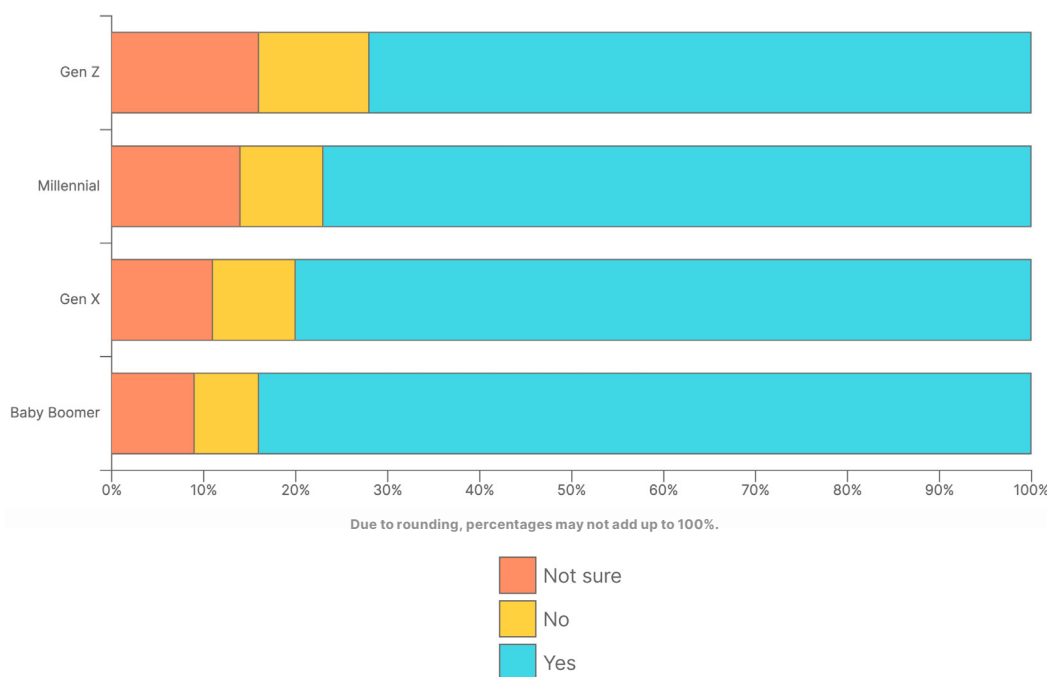
Investing in the future

Respondents strongly indicated that their organizations will continue investing in APIs as a key part of their business strategies. The vast majority of respondents, 94%, stated that investment of time and resources into APIs will increase or stay the same for the next 12 months. Only 7% felt that their organization would spend less time and resources on APIs.

- More time and resources on APIs: 56%
- Same time and resources on APIs: 38%
- Less time and resources on APIs: 7%
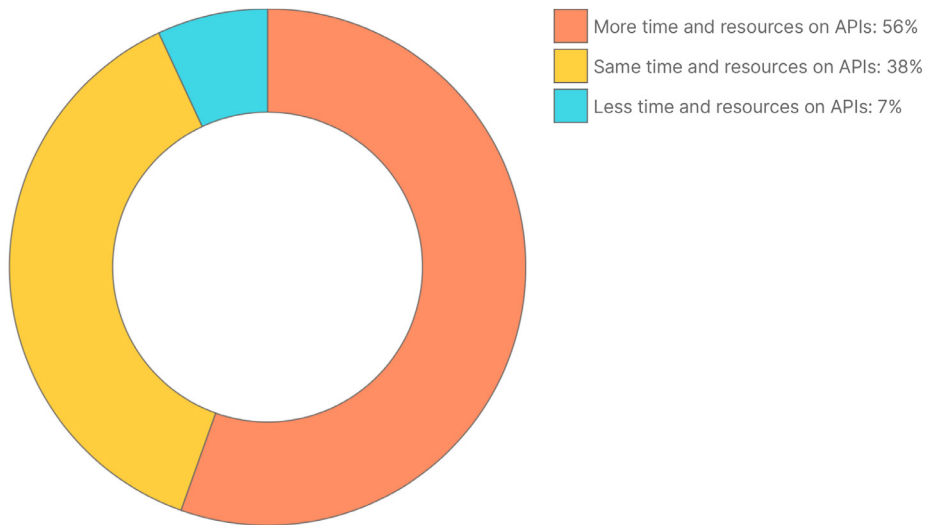
Due to rounding, percentages may not add up to 100%.

> " APIs will continue to be a key investment as we scale our developer platform."
>
> **Daniel M.,** Developer Relations

Methodology

Methodology

This report is based on a survey of 28,252 API industry members from around the world. The survey was fielded over a period of three weeks in July 2021. The median amount of time spent on the survey was 15 minutes and 29 seconds. The answers to most non-numerical questions were randomized in order to prevent order bias in answering.

Respondents were recruited primarily through channels owned by Postman, including social media, email, and the Postman community forum. Since respondents were recruited in this way, highly engaged users of Postman were more likely to notice the survey and complete it.

As an incentive, respondents who finished the survey could opt to receive a copy of this report. Also, individuals from eligible geographies were offered a chance to win prizes including one PlayStation®5, five $100 Amazon gift cards, or ten $50 gift certificates to the Postman swag store.