KONTENT.AI®

Report

The state of Jamstack 2023 report

by Kontent.ai Team

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About this report

For the fourth consecutive year, we have delved deep into the current state of Jamstack's adoption and usage. Our extensive survey reached out to **857 developers across Europe, North America, and Asia**, seeking their insights and comparing their responses to 2022 and 2021.

Are you eager to discover the most popular technologies used for Jamstack projects in 2023? Wondering if developers are sticking to the same tools or exploring new options? Keep reading to uncover these intriguing findings and more, including:

> The top 3 reasons why developers are gravitating towards the Jamstack

> Platforms where developers prefer to store their content and host their projects

> Preferred static site generators among developers today

So, grab your favorite beverage, cozy up in your favorite spot, and get ready to immerse yourself in this report. We're genuinely excited to hear your thoughts and insights. Join us on Twitter, LinkedIn, Facebook, or Instagram, and become a part of our vibrant community!

Introduction

Is the Jamstack still a thing?

In the last year's report, I delved into the definition of Jamstack, a term familiar to most developers. However, it seems that the Jamstack buzz has completely disappeared since then. Why?

It's the adoption.

We reached a point where nearly any project built with front-end technologies was labeled as Jamstack. The teams and contributors behind leading platforms like Next.js, Gatsby, and Nuxt did their best to cater to the needs of the most-demanding enterprise projects while enhancing the developer experience. This gave us the confidence that these tools could handle everything our projects required.

As a side effect, this also resolved the problem with the learning curve. Now, you don't really need to have extensive experience with all the Jamstack tools to make a good and informed decision. Just pick your favorite platform and the respective framework can handle it all.

We now default to the Jamstack without even consciously thinking about it. The name naturally faded into the background. So, does this mean that the website development field is finally problem-free and saved?

Not quite.

With enterprise companies now using the Jamstack approach with confidence, we are facing a new set of challenges. The findings from our survey this year indicate that marketers have become more acquainted with using headless CMSs and are increasingly demanding additional features. The most common examples include multiple sites or multiple channels management including previews, supporting multiple workflows within a single project, and precise handling of content translations.

On the development side, there is a growing concern over the size of client-side JS bundles. This has motivated developers to explore alternatives like Astro, which can generate lightweight solutions in cases where a fully-featured JS-based framework proves too heavy. Or handling rich text resolving that involves mapping content to components. A new standard called Portable Text aims to streamline this non-trivial process and unify implementations for specific platforms.

When I'm having conversations with fellow developers at conferences, we often find ourselves laughing at the fact that we are back at the starting line of the race. We have gone through the entire cycle, from classic server-side rendering to static pages, incremental regeneration, and now back again. So, while the journey may seem cyclical, it is crucial to recognize the progress made and the transformative impact of the Jamstack on the web development landscape. It has brought tremendous improvements in the developer experience, content creation and management, and website orchestration, and has almost eliminated entry barriers for beginners in website development.

So, without further ado, I invite you to read the report—gain a deeper understanding of the challenges we face, the advancements made, and the promising developments on the horizon.

Ondrej Polesny
Developer Evangelist, Kontent.ai

KONTENT.AI

The Jamstack
survey results

1. Are you familiar with the Jamstack, the architectural approach that decouples the web layer from data and business logic?

Respondents could select only one answer.

Each passing year, our research brings exciting news about the rising popularity of the Jamstack among developers. In fact, an impressive **83% of developers are currently well-versed in the Jamstack**, surpassing last year's figures.

However, please keep in mind that we used a new, updated definition this year, which makes the comparison provided only indicative.

● Definitely yes　　● Rather yes　　● Neither yes nor no　　○ Rather no　　○ Definitely no

N 2023 = 857 developers	38%	45%	9%	5% 3%
N 2022 = 746 respondents	31%	49%	10%	6% 4%
N 2021 = 769 respondents	25%	39%	20%	10% 6%
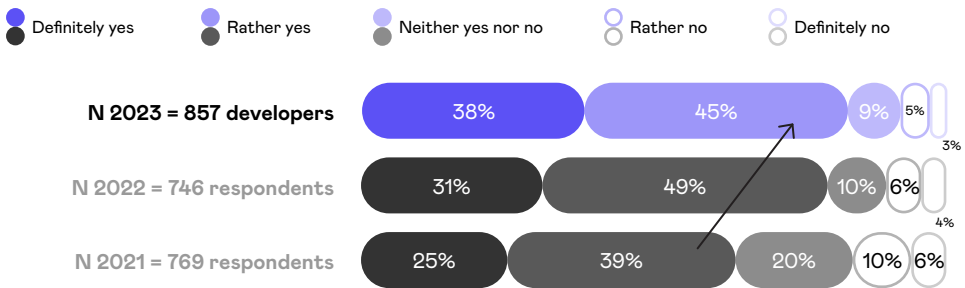
2. How long have you been working with the Jamstack?

Respondents could select only one answer.

The Jamstack community continues to grow in both knowledge and experience. **A remarkable 36% of developers now boast 3+ years of hands-on experience** with the architectural approach.

● 3 + years   ● 2 years   ● 1 year   ◯ Less than a yer   ◯ never

N 2023 = 857 developers	36%	27%	15%	11%	11%
N 2022 = 746 developers	21%	27%	23%	13%	16%
N 2021 = 769 respondents	18%	21%	20%	18%	23%
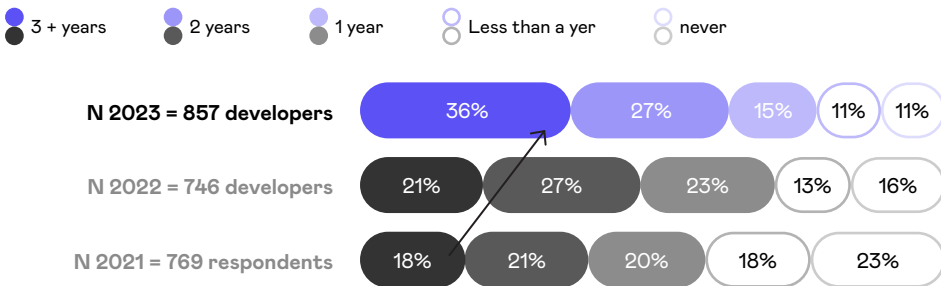
When examining the demographics of Jamstack practitioners, an intriguing pyramid structure emerges based on age. The youngest and oldest respondents tend to have the least experience with Jamstack while **developers aged 25 to 54 exhibit their extensive familiarity and expertise**:

Age

						N
18—24	24%	21%	24%	14%	17%	29
25—34	30%	29%	21%	11%	9%	260
35—44	42%	29%	13%	9%	7%	400
45—54	37%	20%	12%	16%	15%	125
55 and over	28%	19%	12%	9%	32%	43
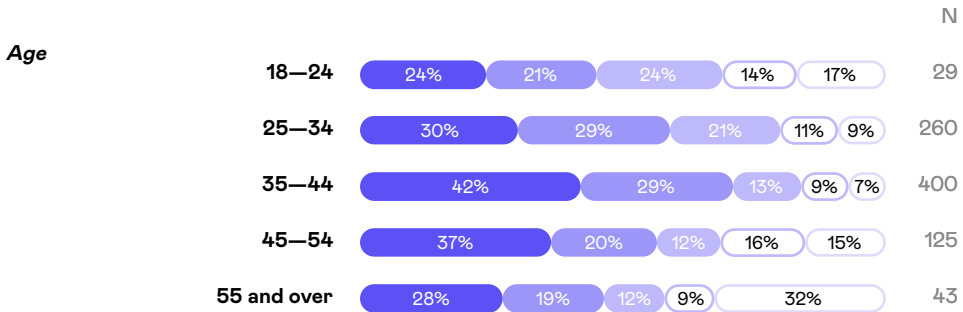
This pattern showcases the dynamic nature of Jamstack adoption, with different age groups contributing their unique perspectives and levels of proficiency.

3. What are most likely the reasons for choosing the Jamstack to build an app with?

Respondents were asked to put the items in order (the most likely reasons at the top, the least likely reasons at the bottom of the list).

The top reason for choosing the Jamstack is undeniably its **reliability and stability.** A whopping 49% of respondents listed this as one of their top three reasons. **Security** also takes the spotlight (43%)—the focus on protecting data and ensuring a secure environment remains a key consideration in this community. Not far behind, **performance** proves to be another compelling factor, with 40% of respondents recognizing the speed and efficiency offered by the Jamstack.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	TOP 3 2023
Reliability/stability	18%	15%	16%	12%	10%	10%	10%	9%		49%
Security	16%	13%	14%	14%	12%	10%	10%	11%		43%
Performance	13%	13%	14%	12%	11%	12%	12%	13%		40%
Productivity	11%	14%	14%	13%	14%	13%	10%	11%		39%
Developer experience	11%	12%	12%	11%	13%	15%	14%	12%		35%
Scalability	12%	13%	10%	12%	15%	13%	13%	12%		35%
Cost-effectiveness	11%	11%	11%	15%	13%	14%	13%	12%		33%
Editor experience combined with a headless CMS	7%	9%	11%	11%	12%	12%	18%	20%		27%
Other						11%	11%	11%	67%	-
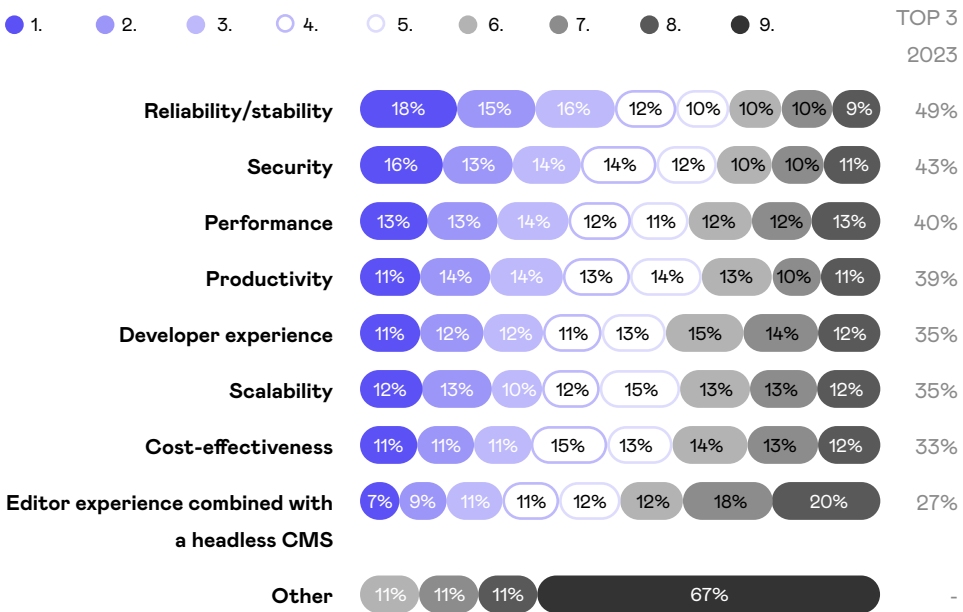
N (2023) = 766 developers working with the Jamstack

Interestingly, the least common reason for developers to embrace the Jamstack is its ability to combine the editor experience with a headless CMS.

What's intriguing is that these preferences and opinions remain fairly consistent from year to year. It shows that developers have found compelling reasons to opt for the Jamstack and those reasons have stood the test of time.

4. Think of the most complex project you've built with Jamstack. Try to describe its complexity (choose one item in each line):

Respondents could select only one item in each line.

Majority of developers who work with the Jamstack describe their most complex projects in 2023 as:

Serving 100s–1,000s of unique users	72%
Serving 3 and more channels	48%
Involving 2–5 services	45%
Involving 1–10 developers	73%
Having a 5–10% level of dynamicity	43%

● 10s ● 100s ● 1,000s ○ 100,000s ○ 1,000,000s

Unique users served 2023	7%	33%	39%	18%	3%
Unique users served 2022	8%	31%	42%	17%	2%
Unique users served 2021	16%	34%	34%	13%	3%

● 1 (e.g., web) ● 2–3 (e. g., web + mobile + social media) ● >3 (e. g., web, mobile, social, chatbot, IoT, AR/VR, dig. signage)

Channels served 2023	5%	47%	48%
Channels served 2022	5%	43%	52%
Channels served 2021	8%	53%	39%

Services involved

Legend: ● 0 ● 1 ● 2–5 ○ >5 ○ >10

	0	1	2–5	>5	>10
Services involved 2023	2%	24%	45%	24%	5%
Services involved 2022	3%	16%	53%	25%	3%
Services involved 2021	4%	29%	46%	18%	3%

Developers involved

Legend: ● 1 ● 1–4 ● 5–10 ○ >10 ○ >20

	1	1–4	5–10	>10	>20
Developers involved 2023	4%	27%	42%	22%	5%
Developers involved 2022	3%	30%	39%	24%	4%
Developers involved 2021	5%	33%	36%	22%	4%

Level of dynamicity

Legend:
● None (e.g., a blog or landing page)
● Up to 5% (e.g., a microsite)
● Up to 10% (e.g., a corporate website)
○ Up to 25% (e.g., an e-shop)
○ More than 25% (e.g., a personalized website/portal)

	None	Up to 5%	Up to 10%	Up to 25%	More than 25%
Level of dynamicity 2023	2%	20%	43%	27%	8%
Level of dynamicity 2022	1%	18%	53%	20%	8%
Level of dynamicity 2021	4%	25%	39%	23%	9%
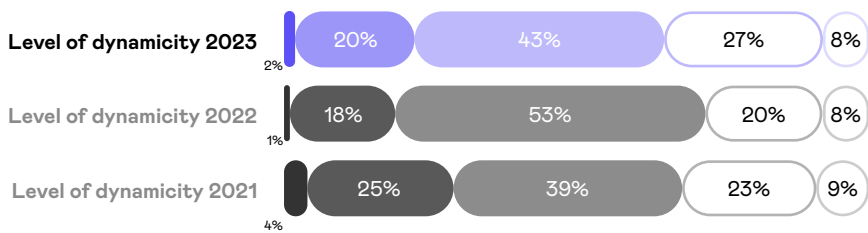
N (2023) = 766 developers working with the Jamstack

N (2022) = 628 developers working with the Jamstack

N (2021) = 592 developers working with the Jamstack

5. Please, select the technologies you've ever used in a Jamstack project.

Respondents could select more than one answer.

When it comes to the technologies employed in Jamstack projects, **e-commerce** takes the lead, with 45% of developers having utilized it in their Jamstack endeavors. This marks a 1% increase compared to the previous year, indicating its enduring popularity.

Coming in second is the usage of **edge functions**, which are leveraged by 42% of developers. While experiencing a slight 3% decrease compared to 2022, they still remain a widely adopted technology in the Jamstack community. With 41%, **serverless functions** claim the third spot as one of the most widely used technologies.

● N (2023) = 766   ● N (2022) = 628   ● N (2021) = 592

E-commerce
45%
44%
49%

Edge functions
42%
45%
This option was not offered in 2021

Serverless functions
41%
40%
33%

GraphQL
37%
39%
30%

Webhooks
35%
36%
29%

Personalization
32%
32%
26%

PWA
32%
28%
25%

AMP
29%
20%
28%

Containers
24%
22%
17%

Identity provider
19%
15%
14%

I've never used any of them
0,4%
1%
1%
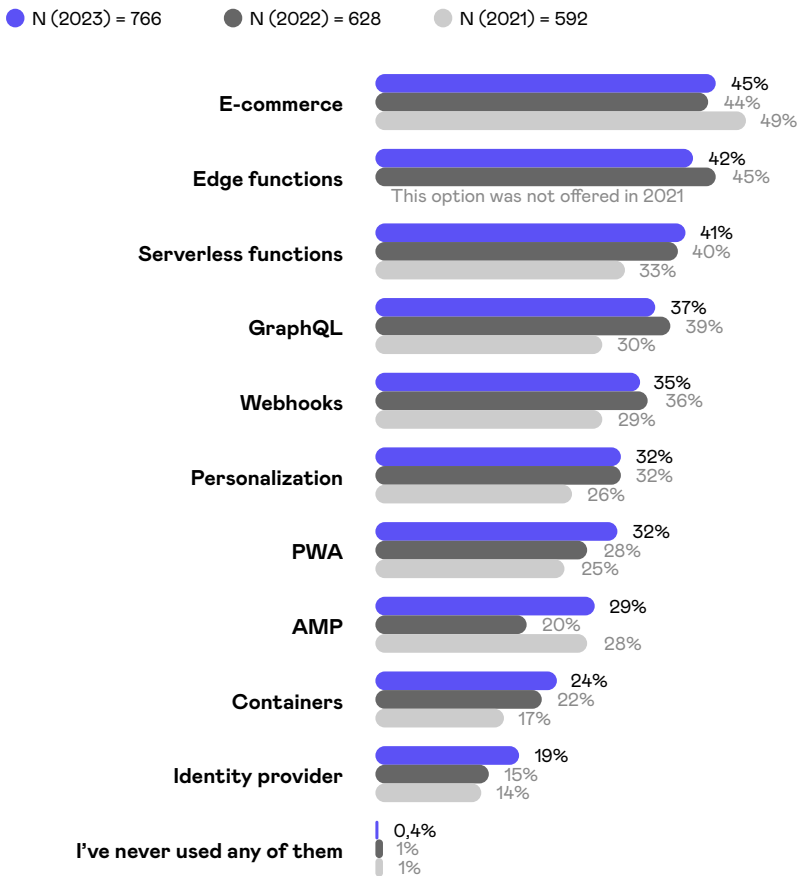
6. Which rendering modes of
Jamstack sites do you use?

Respondents could select more than one answer.

Approximately 64% of respondents prefer the "during build" mode, while an almost equal
62% opt for the "on-demand or when content expires" mode.

During build	64%
On-demand or when content expires	62%
Server-side on every request (SSR)	32%

N = 766 developers working with the Jamstack

7. **Considering your experience, where do the biggest challenges in adopting the Jamstack architecture lie?**

Respondents could provide more than one answer.

This year, the respondents indicated that the primary challenge in adopting the Jamstack architecture is **educating and training employees**, described also as **know-how**. 16% of surveyed developers spontaneously mentioned this challenge, which is a 4% increase compared to 2022.

● N (2023) = 766   ● N (2022) = 628   ● N (2021) = 592

Training of our employees, know-how	16%
	12%
	14%

Nothing, it is good, OK	7%
	10%
	23%

Programming skills, language	5%
	11%
	4%

| Problems with functions | 4% |
| | 5% |

Compatibility with other systems, platforms	4%
	7%
	5%

Upgrades; new, better system	4%
	8%
	6%

Secure data, security	3%
	6%
	5%

Complicated, difficult to use	3%
	5%
	2%

Integration in the company	3%
	3%
	4%

| Lack of flexibility | 3% |
| | 3% |

Price	3%
	5%
	4%

Technologies, software	3%
	4%
	5%

| Speed, slow performance | 2% |
| | 2% |

Other answer (<2%)	15%
	16%
	15%

Do not know, no answer	40%
	15%
	12%

8. Which static site generators do you like to develop with?

Respondents could select up to three answers.

Taking the lead with an unwavering position at number one is **Gatsby**, mentioned by a remarkable 22% of developers. **Hugo** has regained its popularity after a slight decline in 2022 with a solid 20% endorsing it.
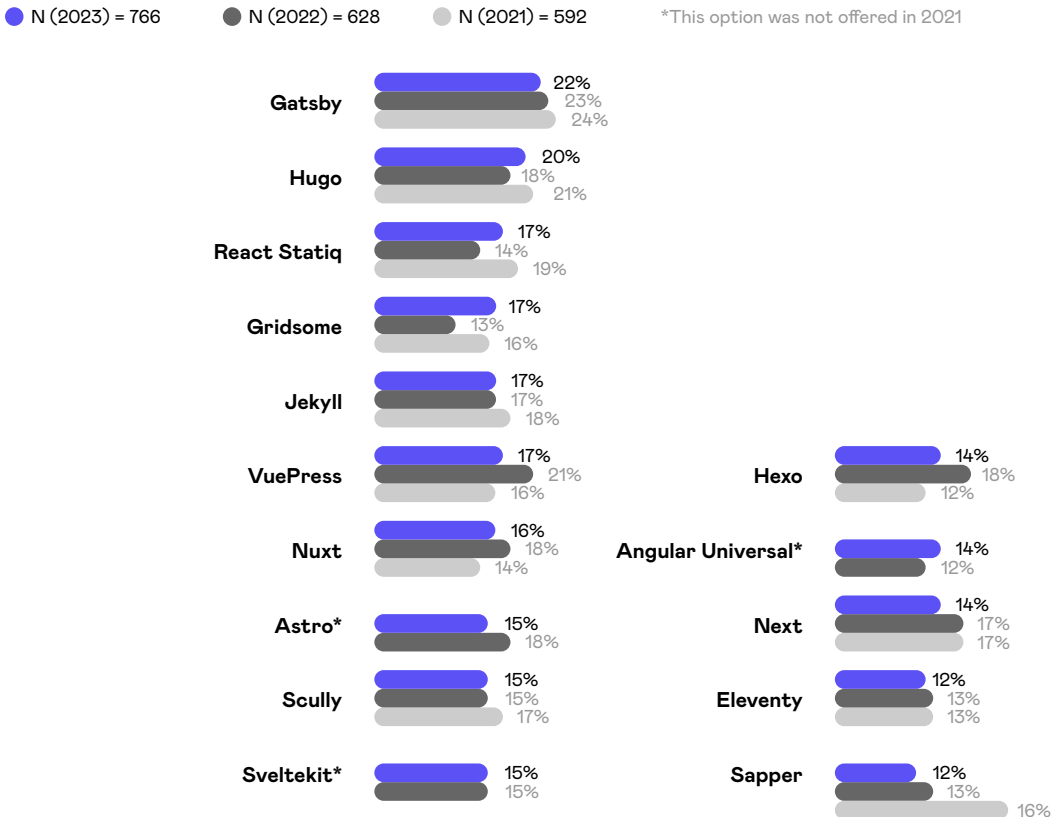
However, there are other notable contenders in the arena. **React Statiq** (17%), **Gridsome** (17%), and **Jekyll** (17%) have also remained popular choices.

On the other hand, some SSGs have experienced a slight decline in their fan base. VuePress, Hexo, Next, and others have seen a decrease in popularity, with VuePress and Hexo taking a hit of 4% compared to 2022, while Next experienced a decline of 3%.

● N (2023) = 766   ● N (2022) = 628   ● N (2021) = 592   *This option was not offered in 2021

	2023	2022	2021
Gatsby	22%	23%	24%
Hugo	20%	18%	21%
React Statiq	17%	14%	19%
Gridsome	17%	13%	16%
Jekyll	17%	17%	18%
VuePress	17%	21%	16%
Nuxt	16%	18%	14%
Astro*	15%	18%	
Scully	15%	15%	17%
Sveltekit*	15%	15%	
Hexo	14%	18%	12%
Angular Universal*	14%	12%	
Next	14%	17%	17%
Eleventy	12%	13%	13%
Sapper	12%	13%	16%

9. Where do you prefer to keep your content?

Respondents could select up to three answers.

Google Docs continues to dominate as the most popular content storage solution, maintaining its leading position (33%). **Netlify CMS** (21%) and **DatoCMS** (20%) hold strong in the second and third positions, showing a slight preference increase compared to the previous year.

● N (2023) = 766 ● N (2022) = 628 ● N (2021) = 592

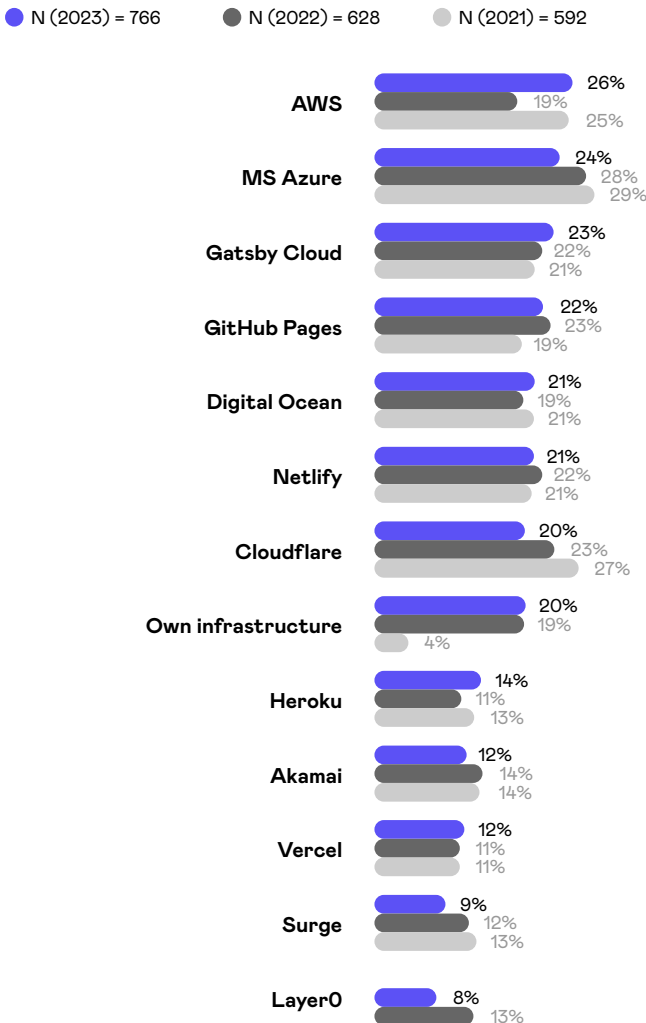|	2023	2022	2021
Google Docs	33%	31%	38%
Decap CMS (formerly Netlify CMS)	21%	19%	16%
DatoCMS	20%	18%	15%
Hygraph (formerly GraphCMS)	18%	17%	24%
Static files	16%	21%	17%
Contentstack	16%	14%	16%
Cosmic JS	15%	13%	12%
Headless Wordpress	14%	14%	
Storyblok	13%	14%	12%
ButterCMS	12%	14%	17%
Markdown files	11%	17%	14%
Contentful	11%	14%	13%
Prismic	11%	10%	12%
Kontent.ai	10%	10%	9%
Sanity	9%	11%	12%
Strapi	8%	8%	10%
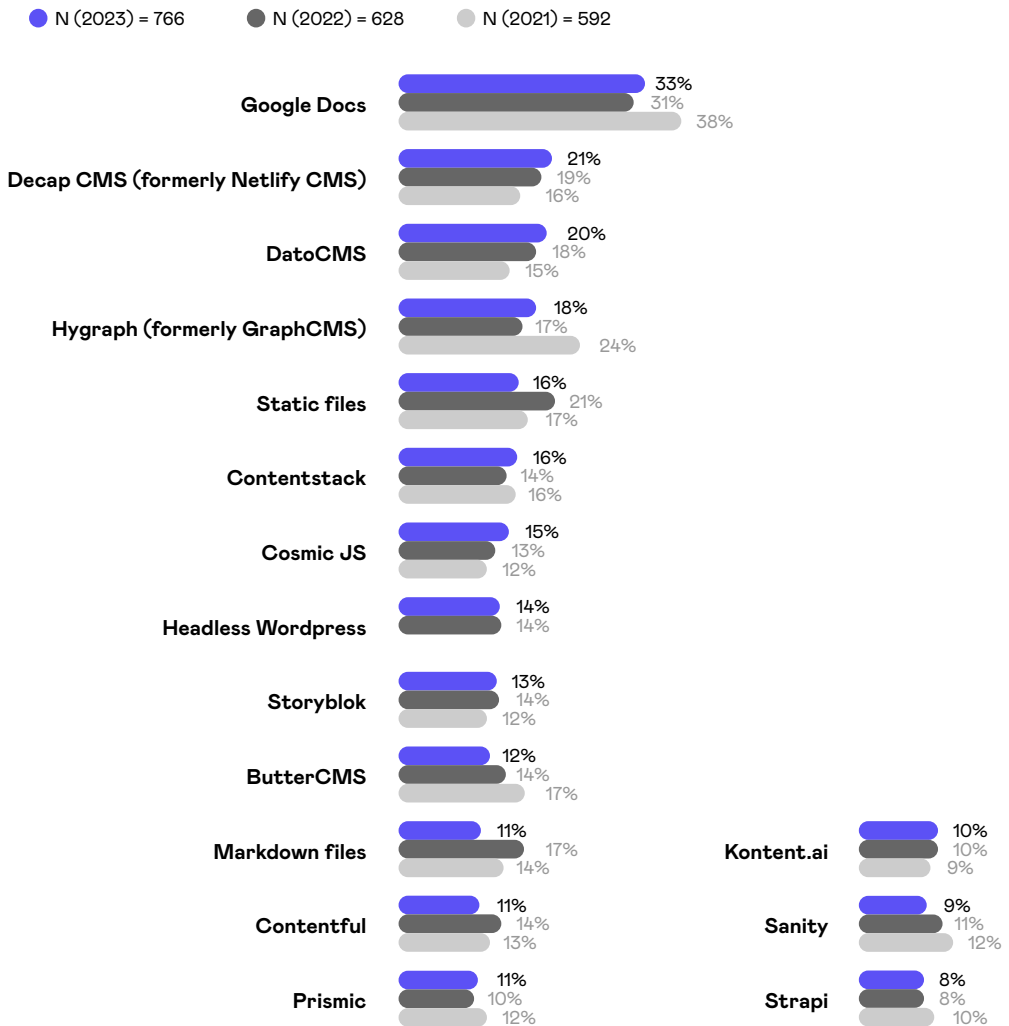
10. Where do you typically deploy and host your projects?

Respondents could select up to three answers.

AWS reclaims its leadership position as the preferred platform, with 26% of developers relying on it this year. Following closely behind is **MS Azure** with a current adoption rate of 24%. Not far behind, **Gatsby Cloud** holds its ground with a solid 23% of developers choosing it for their hosting needs.

Interestingly, approximately one-fifth of all developers surveyed choose to rely on their own infrastructure.

● N (2023) = 766   ● N (2022) = 628   ○ N (2021) = 592

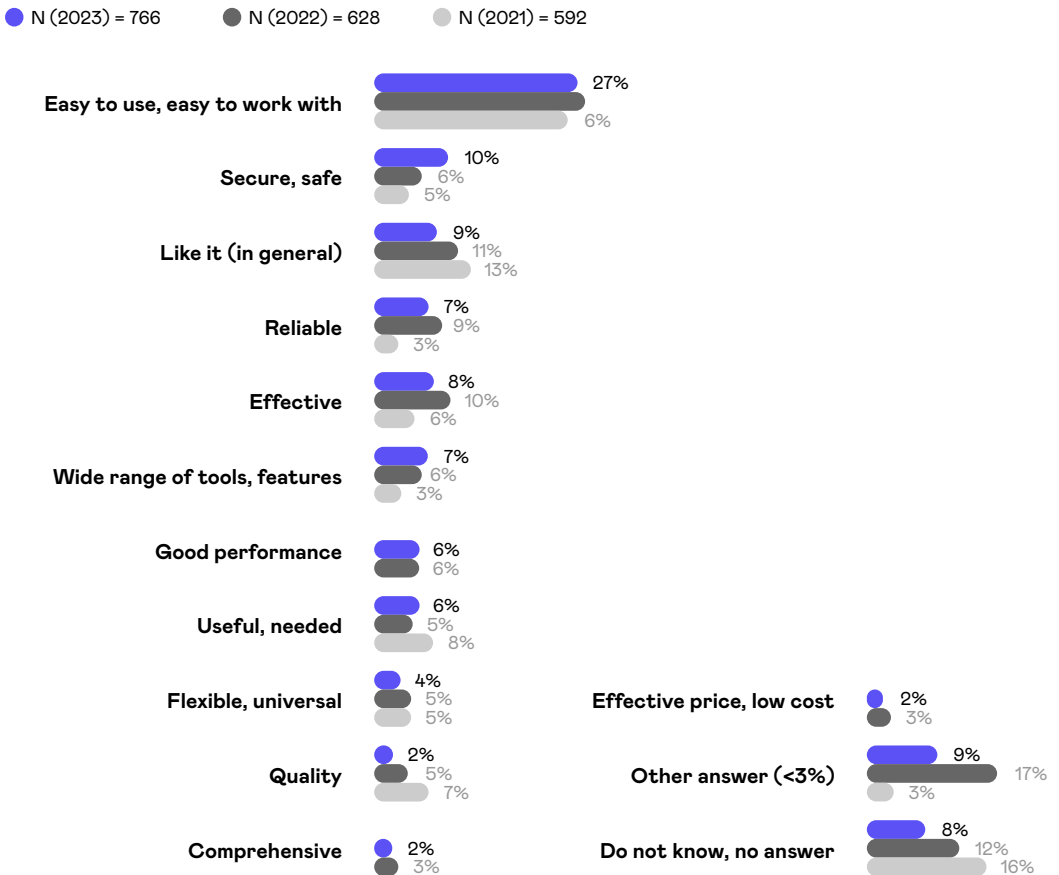|	2023	2022	2021
AWS	26%	19%	25%
MS Azure	24%	28%	29%
Gatsby Cloud	23%	22%	21%
GitHub Pages	22%	23%	19%
Digital Ocean	21%	19%	21%
Netlify	21%	22%	21%
Cloudflare	20%	23%	27%
Own infrastructure	20%	19%	4%
Heroku	14%	11%	13%
Akamai	12%	14%	14%
Vercel	12%	11%	11%
Surge	9%	12%	13%
Layer0	8%	13%	

11. What do you love about today's Jamstack tooling?

Respondents could provide more than one answer.

For 27% of respondents, the **ease of use** is a key highlight, emphasizing the intuitive nature of working with the Jamstack and the smooth development experience it offers. **Safety and security** take the second spot, with 10% of developers expressing their appreciation. Additionally, 9% of respondents simply **enjoy the architectural approach in general**, appreciating its overall benefits and the transformative impact it brings to their development workflow.
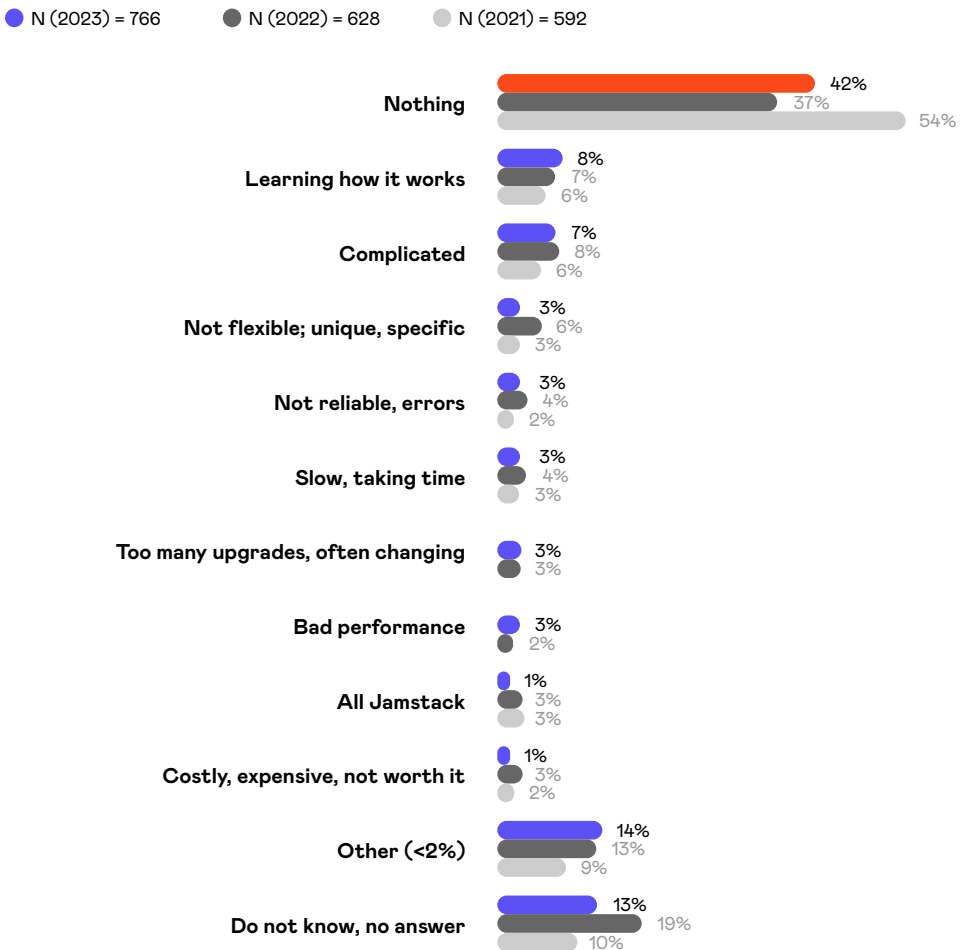
As the Jamstack continues to gain traction, it's clear that its strengths resonate with developers seeking a seamless and secure development experience.

● N (2023) = 766   ● N (2022) = 628   ○ N (2021) = 592

Easy to use, easy to work with
- 27%
- 6%

Secure, safe
- 10%
- 6%
- 5%

Like it (in general)
- 9%
- 11%
- 13%

Reliable
- 7%
- 9%
- 3%

Effective
- 8%
- 10%
- 6%

Wide range of tools, features
- 7%
- 6%
- 3%

Good performance
- 6%
- 6%

Useful, needed
- 6%
- 5%
- 8%

Flexible, universal
- 4%
- 5%
- 5%

Quality
- 2%
- 5%
- 7%

Comprehensive
- 2%
- 3%

Effective price, low cost
- 2%
- 3%

Other answer (<3%)
- 9%
- 17%
- 3%

Do not know, no answer
- 8%
- 12%
- 16%

12. What do you hate about today's Jamstack tooling?

Respondents could provide more than one answer.

42% of respondents **have no complaints**, reflecting a significant level of satisfaction and contentment. However, a fraction of respondents voiced their concerns about certain aspects of the approach. Some mentioned difficulties in **learning how it works** (8%), perceiving it as overly **complex** (7%) or lacking **flexibility** (3%) while others expressed concerns about its **speed** (3%).

N (2023) = 766   N (2022) = 628   N (2021) = 592

Category	2023	2022	2021
Nothing	42%	37%	54%
Learning how it works	8%	7%	6%
Complicated	7%	8%	6%
Not flexible; unique, specific	3%	6%	3%
Not reliable, errors	3%	4%	2%
Slow, taking time	3%	4%	3%
Too many upgrades, often changing	3%	3%	
Bad performance	3%	2%	
All Jamstack	1%	3%	3%
Costly, expensive, not worth it	1%	3%	2%
Other (<2%)	14%	13%	9%
Do not know, no answer	13%	19%	10%

13. Are you interested in the omnichannel approach, that is combining content from multiple sources or using a single source of content on multiple website and channels?

Respondents could select only one answer.

An overwhelming **89% of developers** working with the Jamstack **express a keen interest in the omnichannel approach**, which was defined as "the combination of content from various sources or utilizing a single content source across multiple websites and channels".

The high level of interest emphasizes the significance placed on achieving content consistency and omnichannel content management within the Jamstack ecosystem.
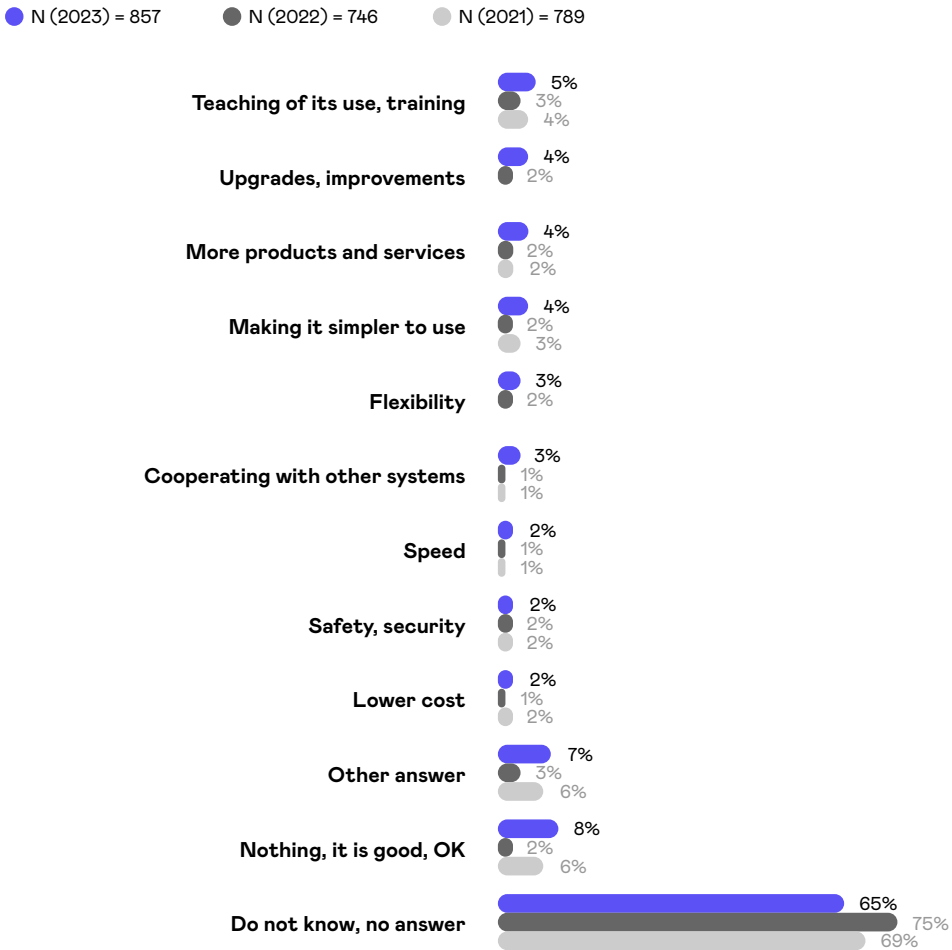
● Yes ● No

11%

YES
89%

89%
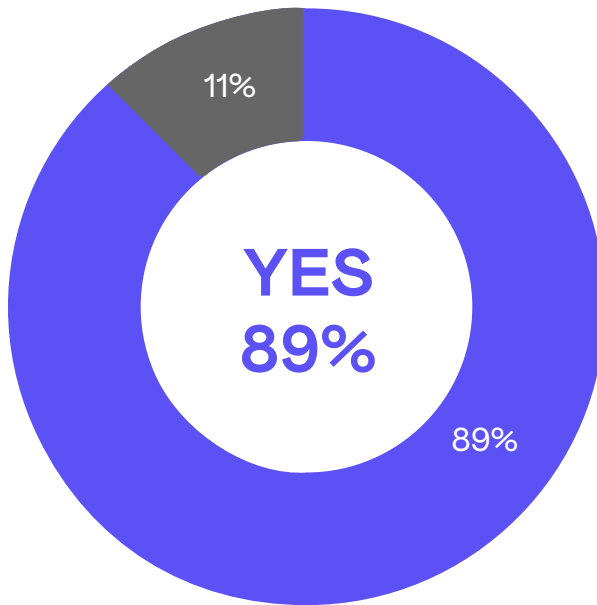
N = 766 developers working with the Jamstack

14. Name one thing that could help increase the Jamstack adoption.

Respondents could provide more than one answer.

The majority of respondents opted not to answer the question regarding what could potentially boost the Jamstack adoption. Nevertheless, those who did share their suggestions mentioned the provision of **comprehensive tutorials** (5%), **implementing various improvements and upgrades** (4%), or **simplifying overall usage** (4%).

● N (2023) = 857   ● N (2022) = 746   ● N (2021) = 789

Teaching of its use, training
- 5%
- 3%
- 4%

Upgrades, improvements
- 4%
- 2%

More products and services
- 4%
- 2%
- 2%

Making it simpler to use
- 4%
- 2%
- 3%

Flexibility
- 3%
- 2%

Cooperating with other systems
- 3%
- 1%
- 1%

Speed
- 2%
- 1%
- 1%

Safety, security
- 2%
- 2%
- 2%

Lower cost
- 2%
- 1%
- 2%

Other answer
- 7%
- 3%
- 6%

Nothing, it is good, OK
- 8%
- 2%
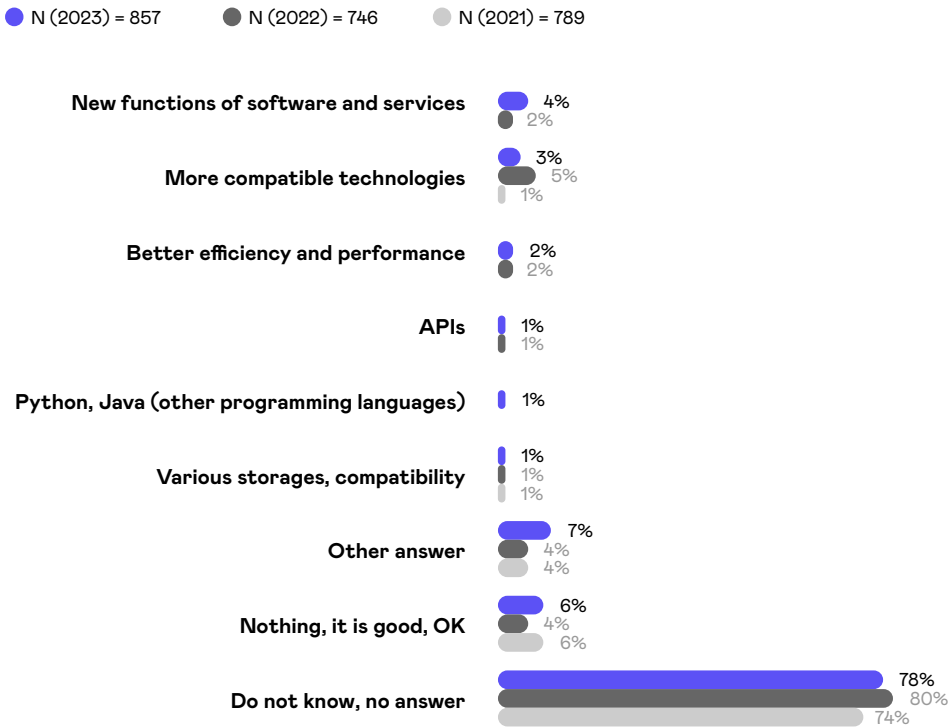- 6%

Do not know, no answer
- 65%
- 75%
- 69%

15. Name one integration you'd like to see in the Jamstack world.

Respondents could select only one answer.

The respondents who were willing to share their insights provided answers that were either very specific (Other answer) or general in nature. Some expressed their desire to explore **new features** (4%), a broader range of **compatible technologies** (3%), or enhancements in **efficiency and performance** (2%).

While some specific integrations were mentioned, such as **APIs** (1%) and **certain programming languages** (1%), it's important to note that these mentions were relatively scarce as 78% did not answer this optional question.
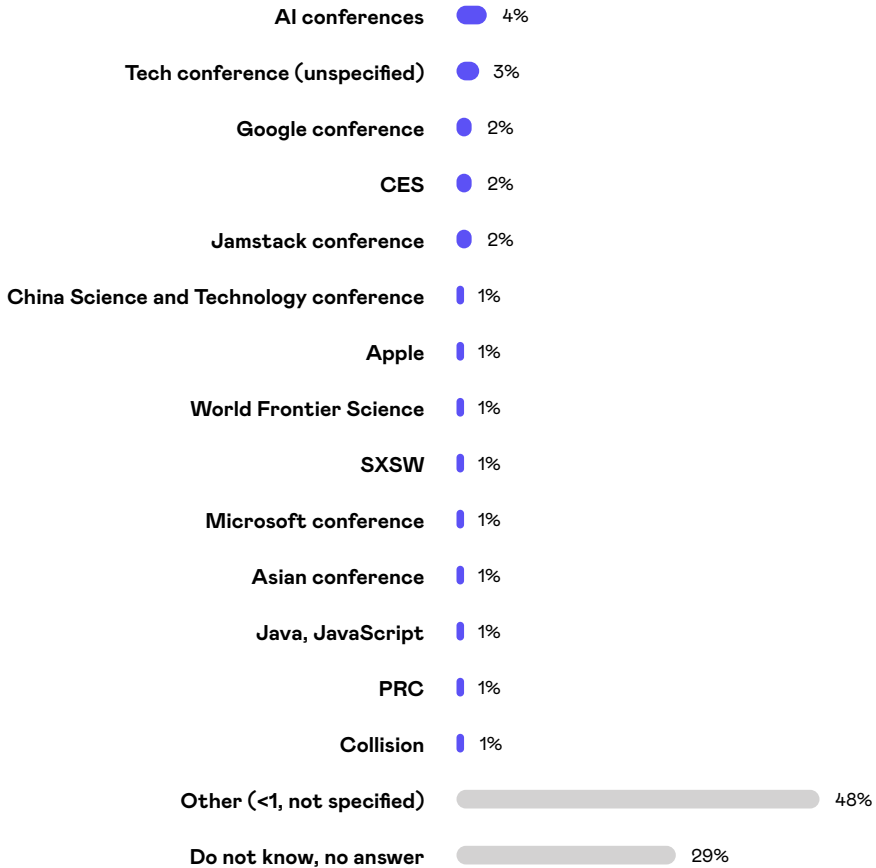
● N (2023) = 857   ● N (2022) = 746   ○ N (2021) = 789

New functions of software and services — 4% / 2%

More compatible technologies — 3% / 5% / 1%

Better efficiency and performance — 2% / 2%

APIs — 1% / 1%

Python, Java (other programming languages) — 1%

Various storages, compatibility — 1% / 1% / 1%

Other answer — 7% / 4% / 4%

Nothing, it is good, OK — 6% / 4% / 6%

Do not know, no answer — 78% / 80% / 74%

16. Which tech conference are you looking forward to this year?

Respondents could select only one answer.

The answers provided by the respondents make it evident that the tech conference landscape is incredibly diverse, offering developers a multitude of exciting options to explore.

With the recent surge in AI technology, it comes as no surprise that **4% of respondents** expressed their anticipation for upcoming AI conferences.

AI conferences	4%
Tech conference (unspecified)	3%
Google conference	2%
CES	2%
Jamstack conference	2%
China Science and Technology conference	1%
Apple	1%
World Frontier Science	1%
SXSW	1%
Microsoft conference	1%
Asian conference	1%
Java, JavaScript	1%
PRC	1%
Collision	1%
Other (<1, not specified)	48%
Do not know, no answer	29%

N = 857 developers

Conclusion

In conclusion, our comprehensive survey conducted with 857 developers has provided invaluable insights into the perception and adoption of the Jamstack approach. The findings reveal a high level of familiarity and experience among developers—an impressive **89% of respondents have hands-on experience** working with the Jamstack, highlighting its relevance in modern development practices.

When exploring the reasons behind choosing the Jamstack, the survey uncovered compelling factors that influence developers' decisions. Notably, **reliability** and emerged as the most prominent reason (49%). **Security** also ranked high, with 43% of respondents including it among their top three considerations. Additionally, **performance** garnered notable attention, with 40% of respondents recognizing it as one of their primary reasons for embracing the Jamstack.

In 2023, the most complex Jamstack projects demonstrate the following characteristics:

› Serving 100s–1,000s of unique users (72%)

› Developed by 1–10 team members (73%)

› Serving 3 or more channels (48%)

› Involving 2–5 services (45%)

› Exhibiting a 5–10% level of dynamicity (43%)

Additionally, developers widely incorporate **e-commerce technologies** (45%), **edge functions** (42%), and **serverless functions** (41%) in their Jamstack projects.
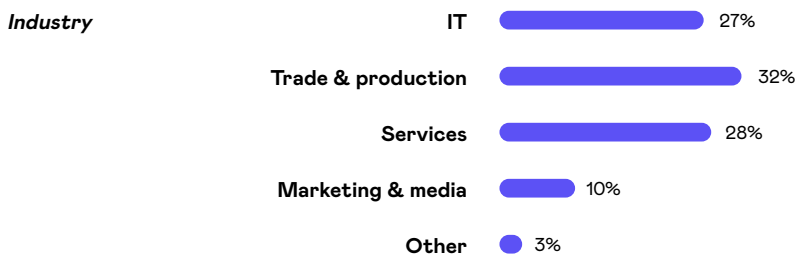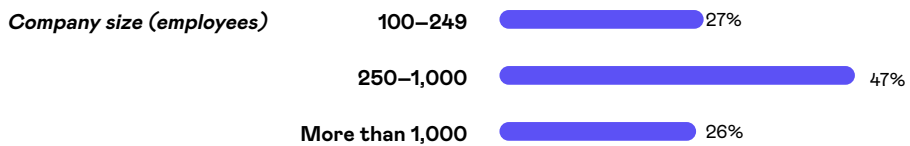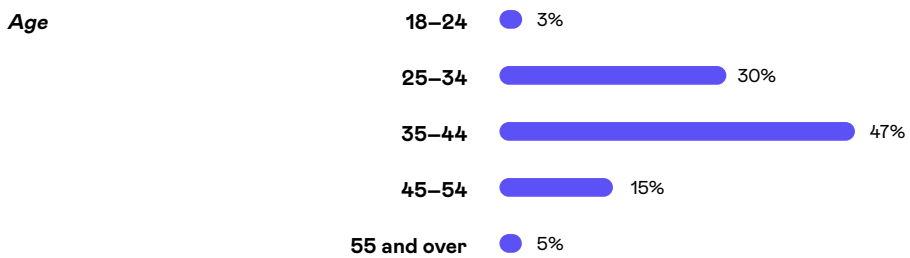
These findings underscore the Jamstack's appeal and effectiveness, aligning with its reputation for delivering dependable and performant digital experiences.

As the Jamstack ecosystem continues to evolve, we encourage you to explore the ever-expanding possibilities of this architectural approach. Together, we can push the boundaries of web and app development and create exceptional digital experiences that captivate and delight users.

Thank you for downloading this report—we hope you enjoyed reading it! We love to hear back from our readers, so feel free to reach out to us on social media and let us know what you think about the Jamstack ecosystem.

Overview of our respondents

Region

Europe   46%
Asia   29%
North America   25%

Age

18–24   3%
25–34   30%
35–44   47%
45–54   15%
55 and over   5%

Company size (employees)

100–249   27%
250–1,000   47%
More than 1,000   26%

Industry

IT   27%
Trade & production   32%
Services   28%
Marketing & media   10%
Other   3%

N = 857 developers

Job title

Job title	Percentage
CTO	26%
Lead Project Manager	18%
Director of Development	10%
Lead Software Developer	9%
Technical Architect	8%
Senior Web Developer	5%
Web Application Developer	5%
Front-end Developer	4%
Web Developer	4%
VP Development	4%
Web Manager	3%
Solution Architect	2%
Developer Evangelist	2%
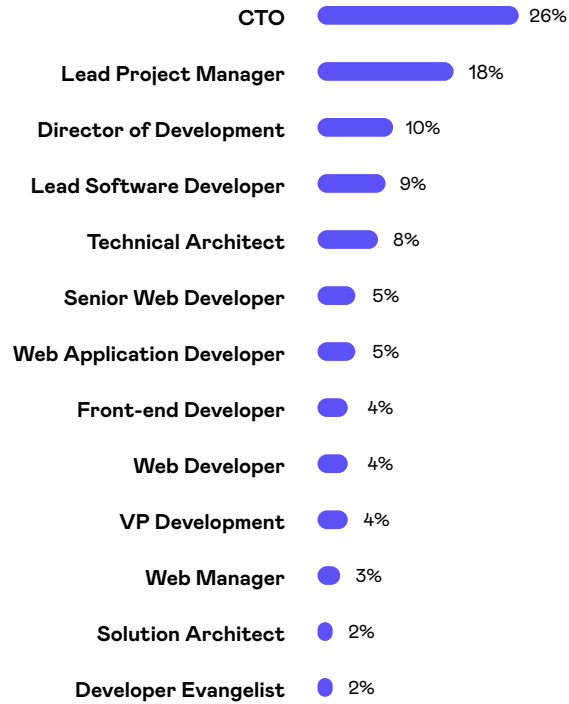
N = 857 developers

Primary programming language

Language	Percentage
JavaScript	26%
C#	22%
Java	21%
Python	15%
PHP	5%
Ruby	2%
Dark	2%
Go	2%
TypeScript	1%
Kotlin	1%
Swift	1%
Other	2%
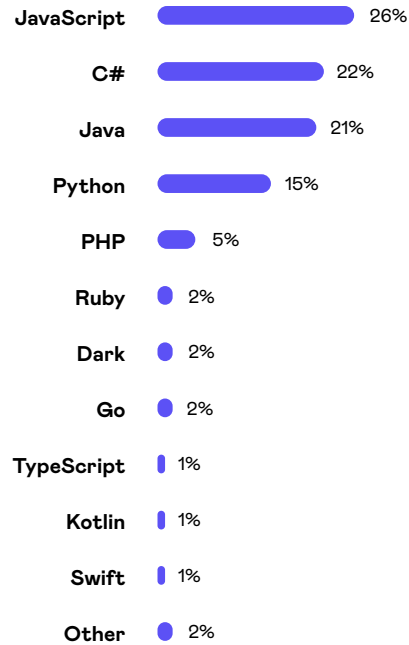
N = 857 developers

About
Kontent.ai

Kontent.ai's mission is to help the world's leading organizations achieve an unparalleled return on their content. In the industry's first AI-powered CMS, content teams plan, create, and optimize content and deliver it to any channel—quickly, securely, and flexibly. Kontent.ai is designed to support organizations with exacting governance requirements, often in highly regulated industries and with complex content value chains.

Tight permissions control all operations; enterprise-grade security and privacy keep content safe. With a demonstrated ROI of 320%, Kontent.ai customers, including PPG, Elanco, Zurich Insurance, Cadbury, and Oxford University, benefit from a measurable step change in how their teams operate, increasing content velocity, mitigating risk, and maximizing yield. Kontent.ai is a Microsoft partner, MACH Alliance member, and recognized vendor by Gartner and Forrester. Learn more at: kontent.ai.

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