

The State of Enterprise Open Source

A Red Hat Report



As the world's leading provider of enterprise open source solutions, we've been at the forefront of the open source revolution for more than 26 years. While open source is still a new concept to some, it has been and will continue to be, the driving force behind much of the innovation we are seeing today around cloud computing, automation, artificial intelligence, big data, and machine learning. All of the mega-trends happening in technology are user-driven and playing out in open source first.

Last year, we set out to determine if open source solutions were making their way into enterprises and found remarkable momentum. The result was the inaugural "The State of Enterprise Open Source: A Red Hat Report," which explored the thought processes driving more and more enterprise leaders to choose open source solutions.

For our second annual report, we wanted to know more. With 95% of IT leaders agreeing that enterprise open source is important to their enterprise infrastructure software strategy, it's safe to say we don't need to ask "if" anymore. We need to ask "why" and "how." Looking at the report, the results indicate a market environment driven by collaborative innovation.

I invite you to explore this report and learn some of the ways enterprises are turning to open source tools to modernize their IT approach. Clearly, more of the world now looks to enterprise open source not only as a powerful source of technological innovation but also as a standard for building the organizations of the future.

Jim Whitehurst
President and CEO, Red Hat

ABOUT THIS REPORT

Commentary throughout the report is written by Gordon Haff, a technology evangelist at Red Hat. He writes about technology, trends, and their business impact. He is a frequent speaker at customer and industry events. He has authored books including *How Open Source Ate Software* and *From Pots and Vats to Programs and Apps*.

950

Total interviews were conducted with IT leaders worldwide

400

Completes from the United States

150

Completes from the United Kingdom

250

Completes from Latin America*

150

Completes from English-speaking Asia Pacific*

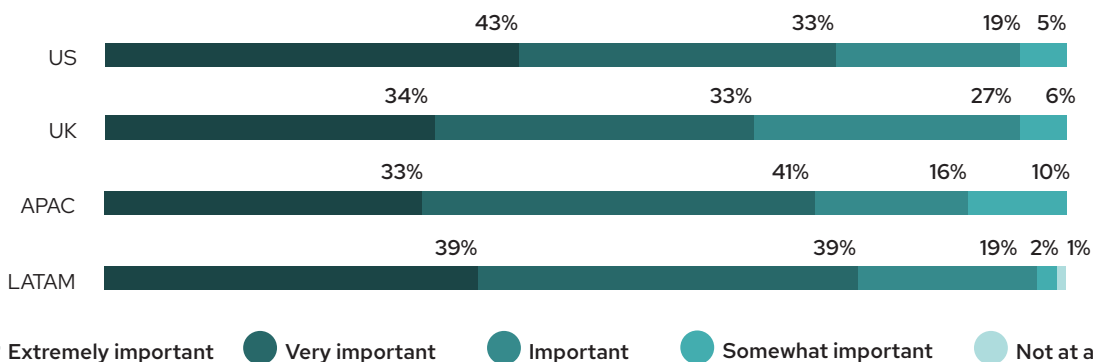
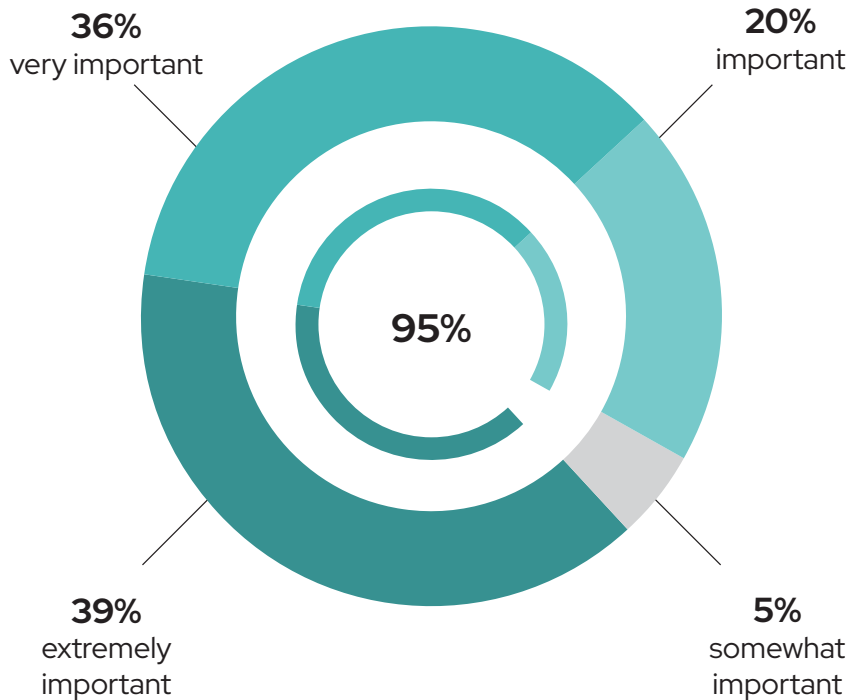
Respondents were unaware that Red Hat was the sponsor of this survey. Respondents had to influence purchase decisions within their organization: app development, app infrastructure, cloud, storage, middleware, server OS, or virtualization. Respondents had to be familiar with enterprise open source, and have at least 1% Linux® installed at their organizations. *LATAM includes Argentina, Brazil, Chile, Colombia, and Mexico; English-speaking APAC includes Australia, New Zealand, Hong Kong, and Singapore. Research conducted in 2019.

The importance of enterprise open source

We asked what people think about enterprise open source software. Essentially everyone (95%) agrees that enterprise open source is important. And this isn't just according to Red Hat customers or other enterprises leading the way in adopting new technologies. A cross section of IT decision makers from enterprise-sized companies in 11 countries across many industries voiced that opinion. And that opinion is spreading.

And when we raise the bar to consider only those who answered that enterprise open source is "very important" or "extremely important"? That's still 75% of respondents—an increase from a 69% figure in last year's inaugural enterprise open source survey.

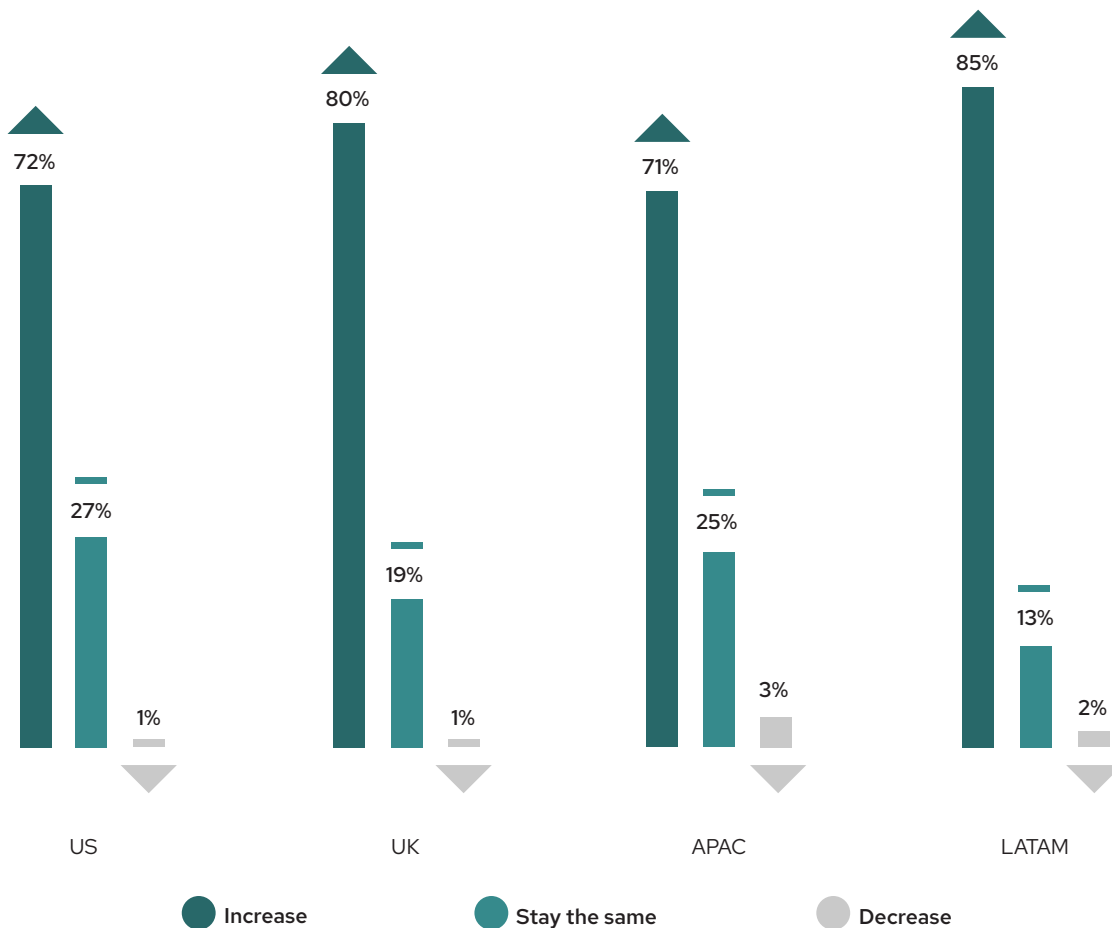
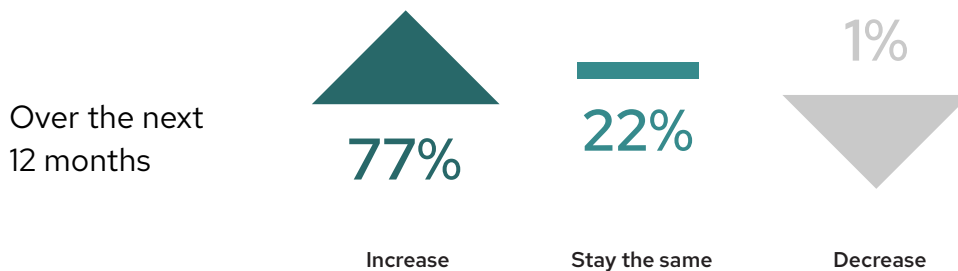
Importance of enterprise open source



Decision makers are also bullish on their future open source plans. Last year, 59% said that they expected to increase their use of enterprise open source software. That number has now shot up to 77%.

Other research has shown that as people become familiar with and use open source software, the more they view it as strategic and the more they use it. This survey series supports that conclusion.

Expected future change in use of enterprise open source



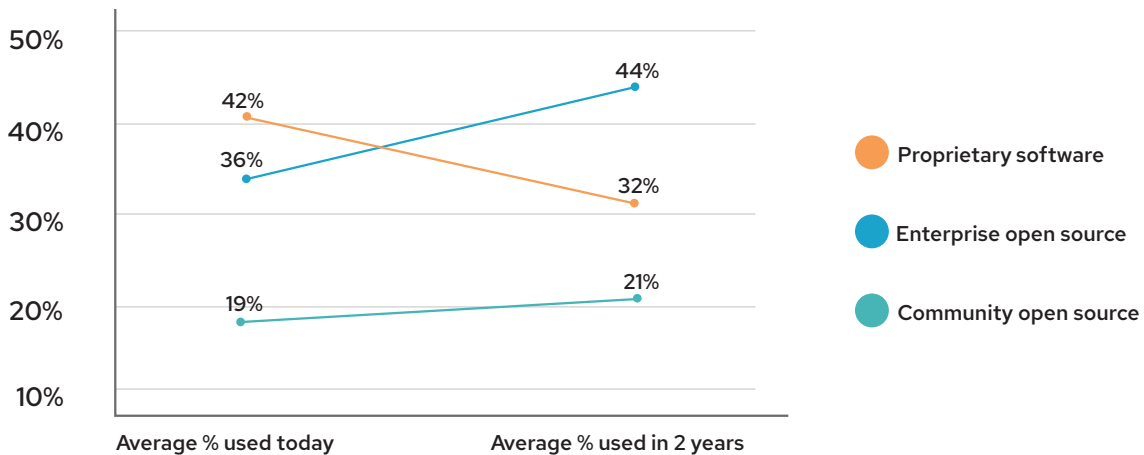
Proprietary software is quickly declining

Software is everywhere. Is the upward trajectory of enterprise open source just a matter of a rising tide lifting all software boats? The data says not.

Use of proprietary software is plummeting. Last year, our respondents indicated that about half (55%) of the software they used was proprietary. This year, it's 42%. Two years from now, they say proprietary software will be down to 32% of their software stacks. Maybe it doesn't surprise you that proprietary software is losing favor—expensive and inflexible proprietary software licenses result in high capital expenditures (CapEx) and vendor lock-in. However, the rate at which organizations are abandoning proprietary software is notable, especially given how slowly change usually comes to the enterprise software space. Remarkably, enterprise open source is expected to rise from 36% to 44% over the next two years.

The data also tells us that community-based open source is on the way up too. It's risen from last year's 16% of software usage to 19% today—and it's projected to hit 21% in two years. Community-based open source isn't increasing as rapidly as enterprise open source within the companies we surveyed, but it is on an upward trajectory—and proprietary software clearly isn't.

Expected changes in software usage

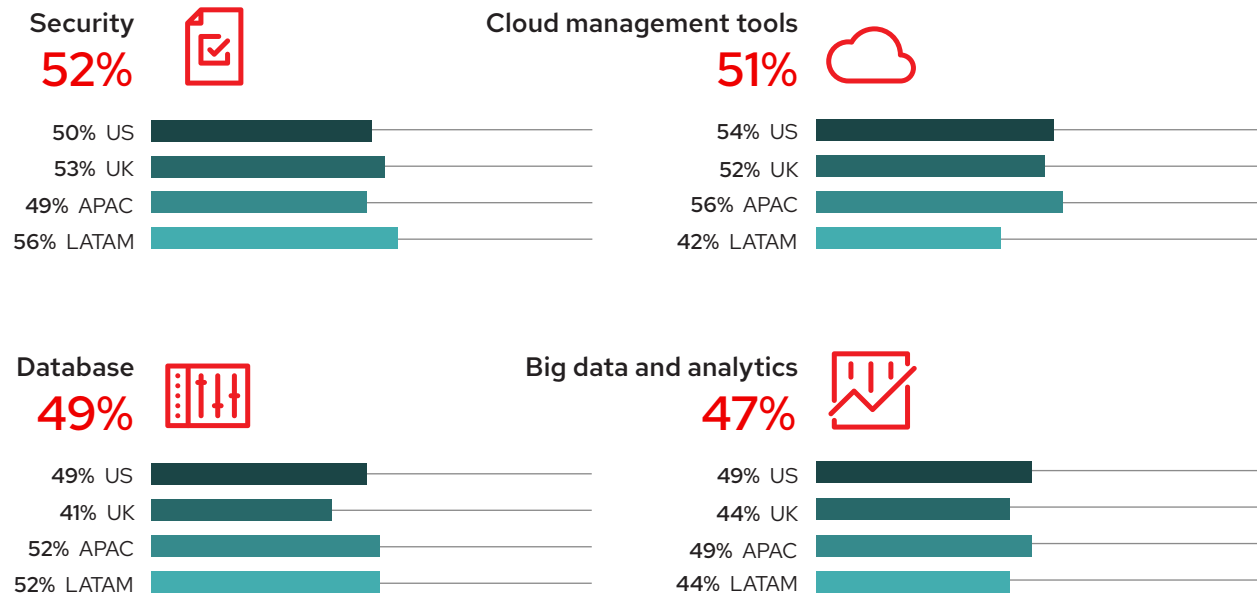


	Today		In 2 years	Today		In 2 years	Today		In 2 years
US	46%	▼	33%	35%	▲	45%	17%	▲	20%
UK	40%	▼	30%	37%	▲	46%	20%	▲	21%
APAC	40%	▼	31%	38%	▲	46%	19%	▲	20%
LATAM	39%	▼	32%	36%	▲	42%	21%	▲	22%

How are enterprises using open source technology?

What do organizations mean when they say that enterprise open source is becoming more important to them? We can reasonably infer that they mean they're increasingly using open source software for purposes considered vital to the business. This year's data illustrates this trend nicely.

Where enterprise open source is being used



What enterprise open source is being used for

IT infrastructure modernization

60%

57% US

59% UK

61% APAC

63% LATAM

Application development

53%

54% US

53% UK

52% APAC

51% LATAM

DevOps

52%

57% US

49% UK

59% APAC

41% LATAM



“Enterprise open source technologies bring a higher level of security and support to our deployments, allowing us to free up time for continual innovation towards student success and research administrations DevOps.”

Rachel Moorehead
Executive Director of Infrastructure and Operations
University of Alabama Birmingham

What are the barriers to enterprise adoption of open source?

Although there are plenty of positives to find in the broadening use of enterprise open source, respondents identified some perceived barriers to adoption. In fact, respondents listed the same top three barriers this year as they did last year, concerns around: security, support, and compatibility.

One reading of these data points is that they reflect lingering but outmoded concerns. For example, security might refer to a belief that the availability of source code makes software more susceptible to attacks—although that’s rarely the way in which vulnerabilities are exploited. Support concerns may conflate community-supported open source (and thus volunteer-based) with enterprise open source, which is by definition rigorously supported enterprise software.

However, the responses are also in line with the concerns of IT decision makers about software more broadly—if perhaps somewhat amplified. Who doesn’t worry about security these days? Who doesn’t have concerns about support? Who doesn’t think about the problems of maintaining compatibility across highly distributed software stacks? For example, the fourth most cited barrier, lack of internal skills, is a frequent lament that applies to many aspects of modern IT beyond enterprise open source.

Perceived barriers to using enterprise open source

Security of the code	Level of support	Compatibility	Lack of internal skills to manage and support
38%	37%	34%	33%
39% US	39% US	33% US	34% US
34% UK	32% UK	33% UK	33% UK
34% APAC	36% APAC	33% APAC	36% APAC
40% LATAM	38% LATAM	36% LATAM	30% LATAM

Benefits of using enterprise open source go beyond cost

“I don’t care about cost.” Said no one with a budget ever. As a result, it’s not surprising to see that “lower total cost of ownership” continues to rank highly in the top benefits of enterprise open source—though now ranked second compared to last year’s #1. Nonetheless, these results highlight the business value of enterprise open source subscriptions.

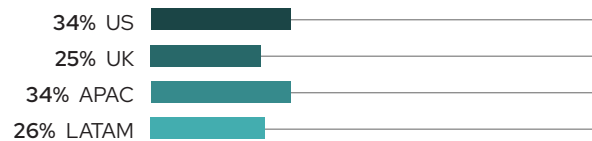
However, most of the top benefits cited go beyond cost. “Security” checks in at third, just as it did last year. The new leader is “higher quality software.” Perhaps most interesting is that “designed to work in cloud, cloud-native technologies” has climbed from last year’s eighth position to fourth. This shows how important the open source development model is to new and rising categories of software—including cloud-native software.

Benefits of using enterprise open source

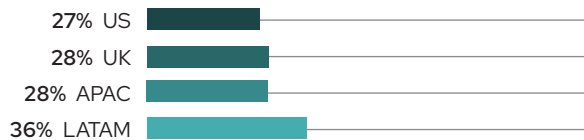
33% Higher quality software



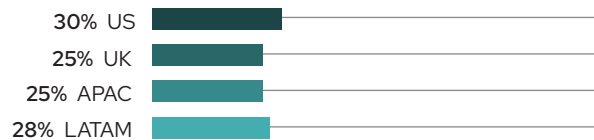
30% Lower total cost of ownership



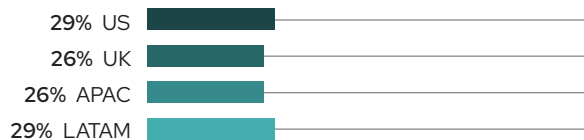
29% Better security



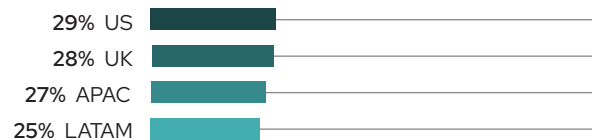
28% Designed to work in cloud, cloud native technologies



28% Ability to safely leverage open source technologies

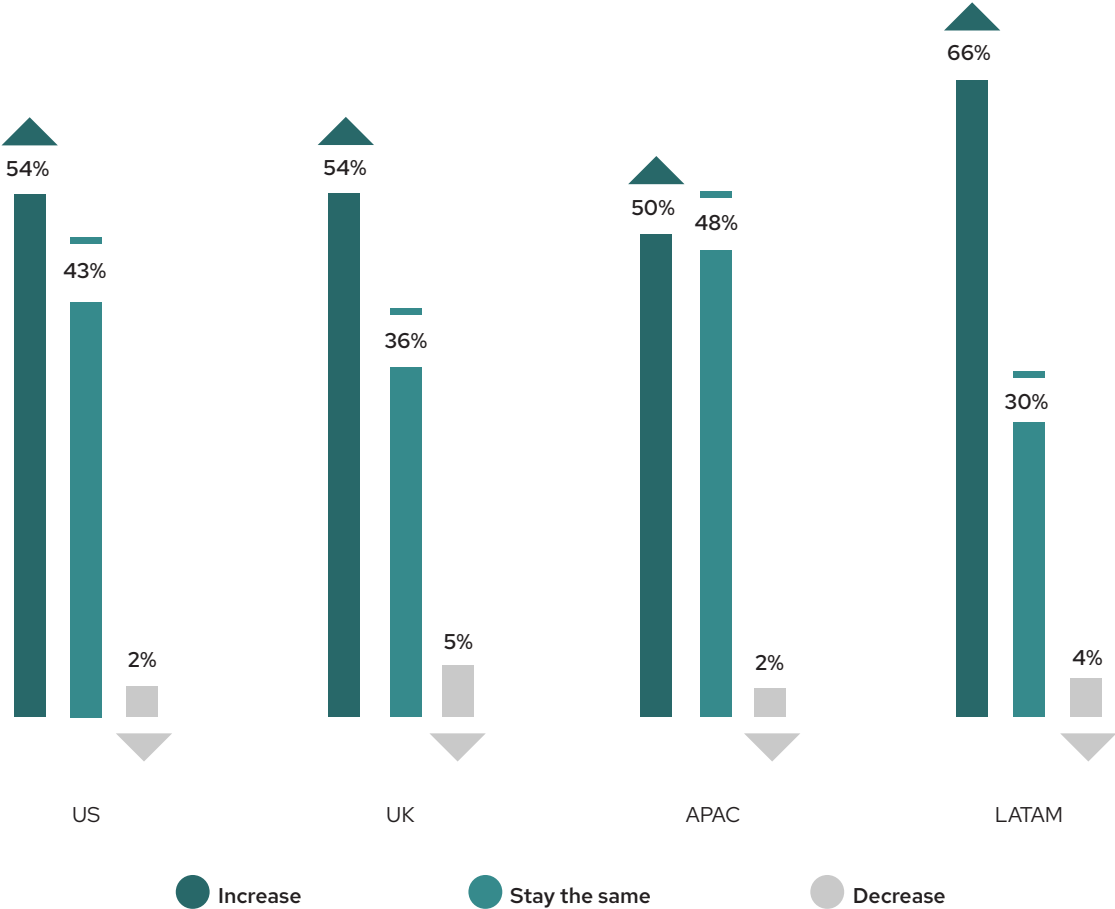
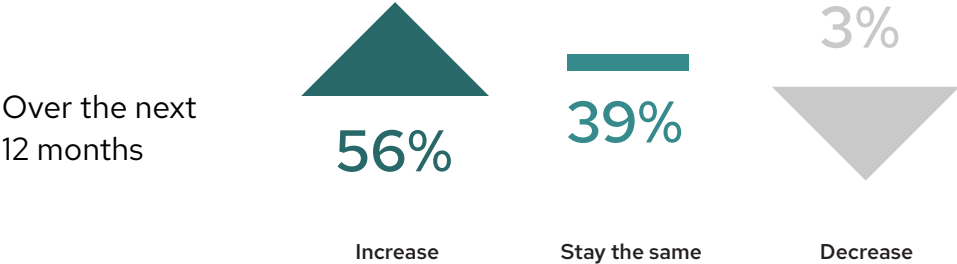


27% Access to latest innovations



These new categories of software are largely a product of open source development—and enterprises are adjusting their plans. Among those organizations that have an in-house application development team, 56% expect to increase their use of containers, a key cloud-native technology, in the next 12 months.

Expected change in use of containers

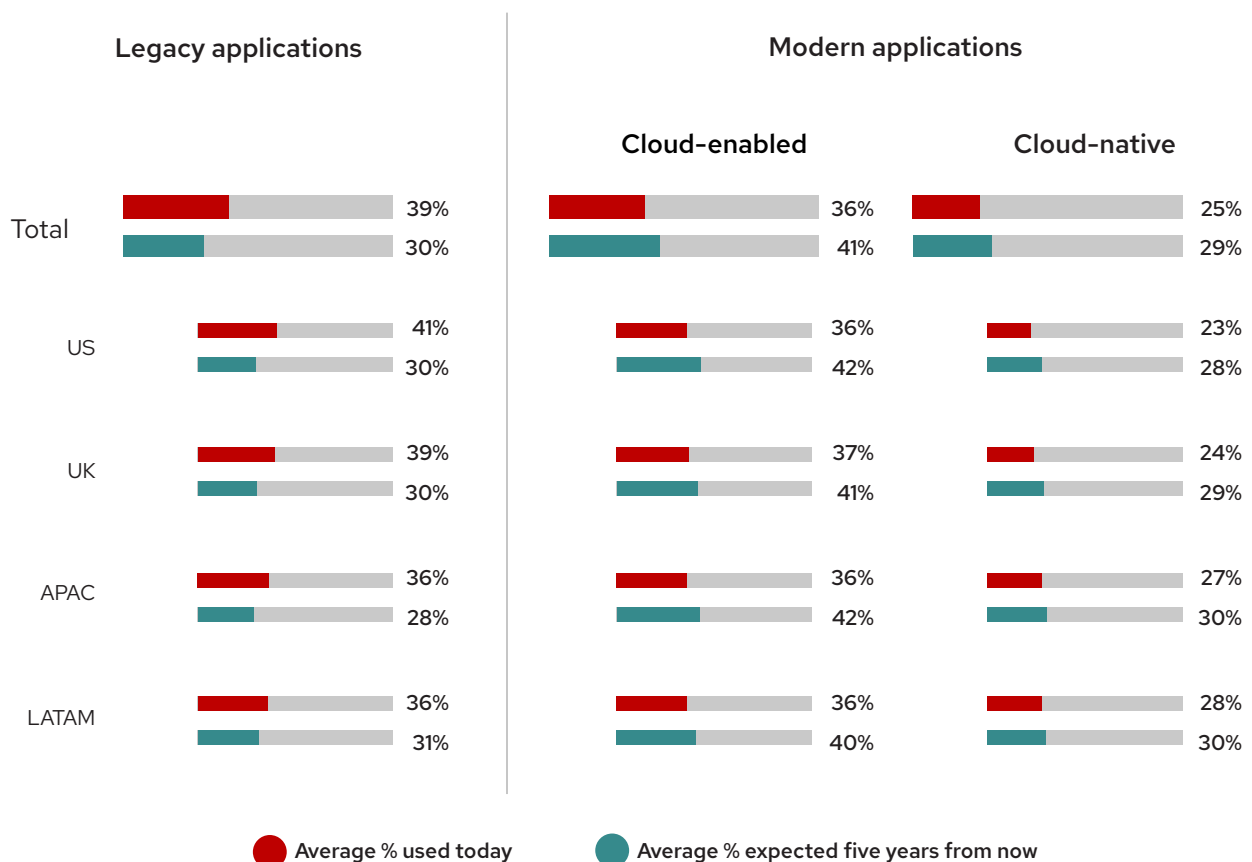


How enterprises are handling legacy applications

One of the new questions we added this year concerned the mix of legacy and modern applications, a category in which we included both cloud-native and cloud-enabled apps. However rapidly many enterprises have jumped on cloud-native containerized development, few organizations have the opportunity to throw away existing investments in legacy IT without suffering major disruptions.

That said, the combination of cloud-native apps and cloud-enabled ones already outnumber legacy applications by 61% to 39%. Cloud-enabled apps are those originally developed for deployment in a traditional datacenter but that have been adapted to cloud environments. This is yet another reminder of how the pace of IT change has accelerated in recent years.

Legacy vs. modern: usage trends



We also dug into the details of how legacy apps are being replaced (or not). A variety of different strategies emerged.

31% of apps are just being left as is. This can be an effective (and cost-effective) approach. If an app is doing what it needs to do, change for the sake of change doesn't make a lot of sense. On the other hand, sometimes the best approach is to just start over with a clean sheet of paper; the strategy for 16% of apps is to sunset or decommission them.

An equal percentage of legacy apps, 47%, are going to be re-architected or modernized, but that number splits about evenly into three different approaches. 17% will be updated or modernized. Another 16% will be re-architected as cloud-enabled apps. And 14% will be completely re-architected as cloud-native.

Overall, the data tells a story of IT decision makers making thoughtful decisions about their application portfolios. There's no single "right" approach that applies across the board.

Legacy application strategy next 24 months

Sunset or decommission	Leave as-is	Update or modernize	Re-architect as cloud-enabled	Re-architect as cloud-native
16%	31%	17%	16%	14%
17% US	33% US	15% US	15% US	13% US
18% UK	33% UK	16% UK	15% UK	13% UK
16% APAC	26% APAC	14% APAC	16% APAC	13% APAC
14% LATAM	29% LATAM	20% LATAM	16% LATAM	16% LATAM



"A key ingredient to improving Adobe's operations has been our focus on eliminating 'manual toil'. We've developed innovative open source powered frameworks, such as our "Healing as a Service (HaaS)" capability – which automatically identifies and fixes issues and outages across our systems without human intervention. Open source enables the rapid evolution of an ecosystem by providing solutions to common problems and has helped us achieve our goal of having 'cloud-like characteristics in our DNA'."

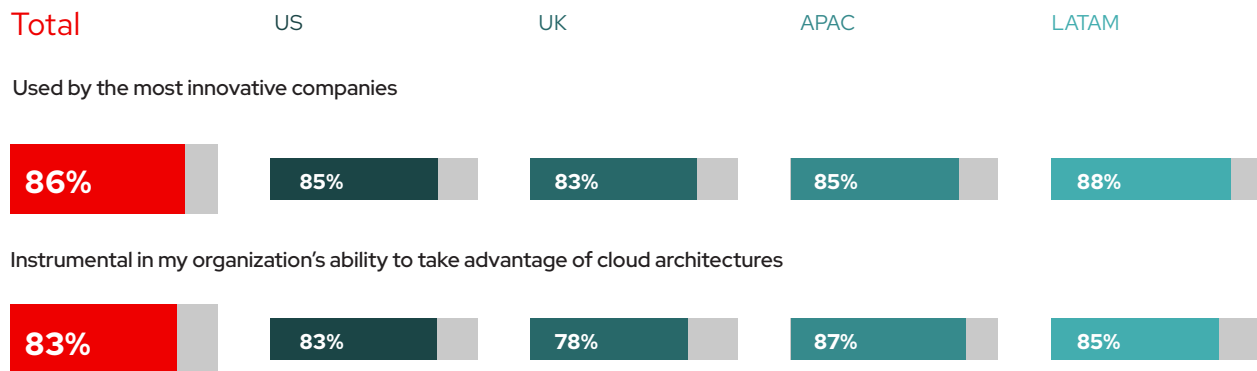
Cynthia Stoddard
Senior Vice President and Chief Information Officer
Adobe

Open source is for innovators

Finally, we asked our respondents to take a step back, beyond specific benefits, use cases, and plans to modernize their application portfolios. What's their overall perception of enterprise open source?

The top two responses say a lot about the state of enterprise open source.

Attributes associated with enterprise open source



Ranked second was “Enterprise open source has been instrumental in my organization’s ability to take advantage of cloud architectures.” Hybrid cloud architectures are the foundation for digital transformation. “Only” 63% of respondents have a hybrid cloud infrastructure today. But among those that don’t, more than half (54%) plan to have one within the next 24 months.

But the top spot went to “Enterprise open source is used by the most innovative companies” with 86%. This speaks to the overarching story of enterprise open source and open source software more broadly. It’s not about being cheaper than proprietary software, or “good enough” from a technology perspective. It’s about organizations and individuals coming together to collectively invent the future.



About Red Hat

Red Hat is the world’s leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. A trusted adviser to the Fortune 500, Red Hat provides award-winning support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

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