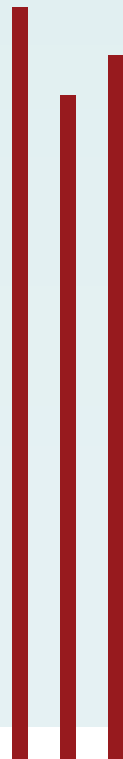




THE STATE OF

ENTERPRISE OPEN SOURCE

A RED HAT® REPORT





WHY ENTERPRISE OPEN SOURCE MATTERS

Without a doubt, the most exciting technological innovations occurring today are taking shape in open source communities. Major developments in big data, automation, machine learning, and artificial intelligence are the result of smart, globally distributed teams sharing resources, making unconventional connections, and challenging one another to advance the state of the art.

As a result, those innovations move at a truly stunning pace. Enterprises that want to integrate them into their business, explore their possibilities, and use them to create new value for customers can feel overwhelmed—especially when they need to balance their desire to innovate with their need for stability and consistency.

Red Hat understands this tension. As an open organization, we sit at the interface of two universes: the fast-moving, open source upstream and enterprises looking to transform their innovation models. For more than 25 years, we've been making powerful, game-changing open source technologies enterprise ready. We're not just experts in open source. We're experts in enterprise open source.

That's why I'm excited to share "The State of Enterprise Open Source" report, which Red Hat sponsored. The report details how and why open source solutions are making their way into enterprises with such remarkable momentum. And it explains some of the ways customers are turning to open source tools for modernizing their approaches to IT.

The question is no longer whether your enterprise should adopt open technologies. The question is when—and how. We hope this report catalyzes future conversations about the reasons organizations in all industries are choosing to innovate the open source way.



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*

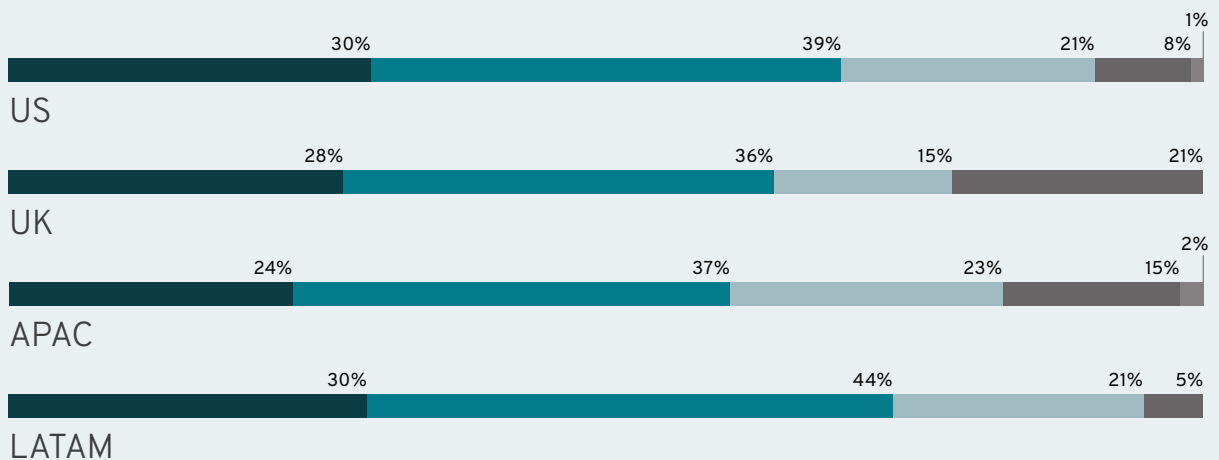
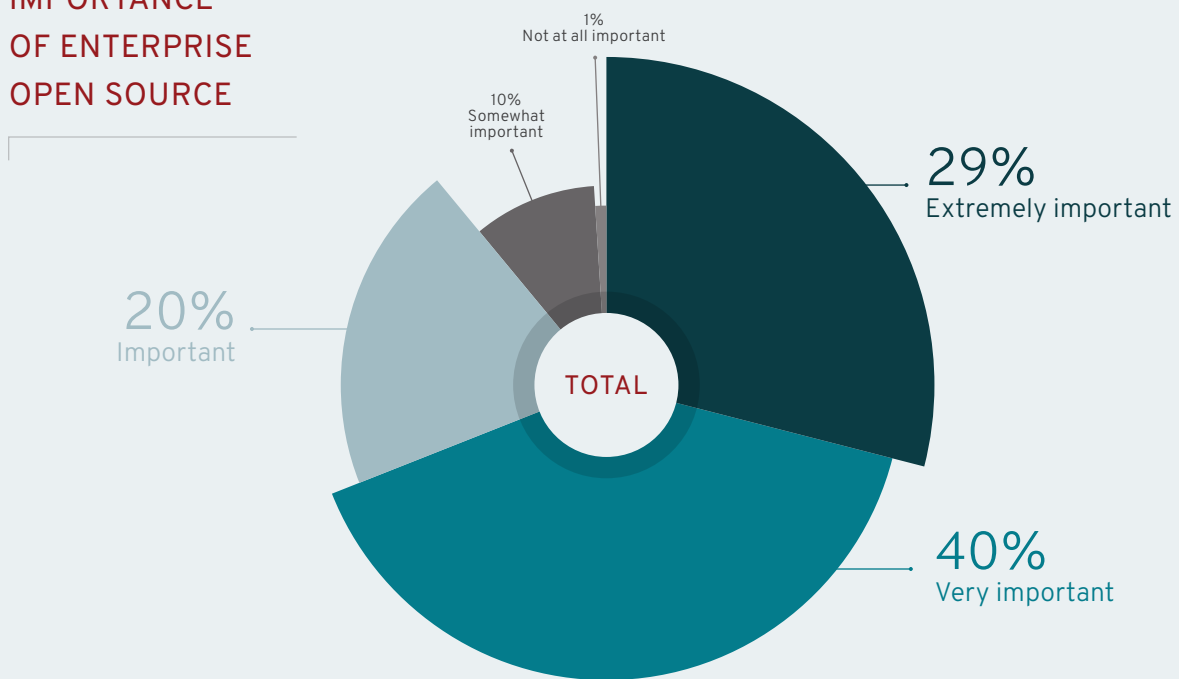
Respondents were unaware that Red Hat was the sponsor of this survey. Respondents had to influence purchase decisions for one of the following within their organization: app development, app infrastructure, cloud, storage, middleware, server OS, or virtualization. Respondents had to be familiar with enterprise open source, and have at least 1% Linux® installed at their organization.

*LATAM includes Argentina, Brazil, Chile, Colombia, and Mexico; English-speaking APAC includes Australia, New Zealand, Hong Kong, and Singapore. Research conducted in 2018.

Enterprise open source plays a strategic role

The question today isn't whether open source software is important to enterprises, especially in infrastructure roles. That's a given. Only a negligible 1% dismisses the importance of open source software entirely. 69% say it's at least very important—a high bar. The fact that these numbers will be unsurprising to many is just one indication of the key role open source software has come to play in the enterprise.

IMPORTANCE OF ENTERPRISE OPEN SOURCE

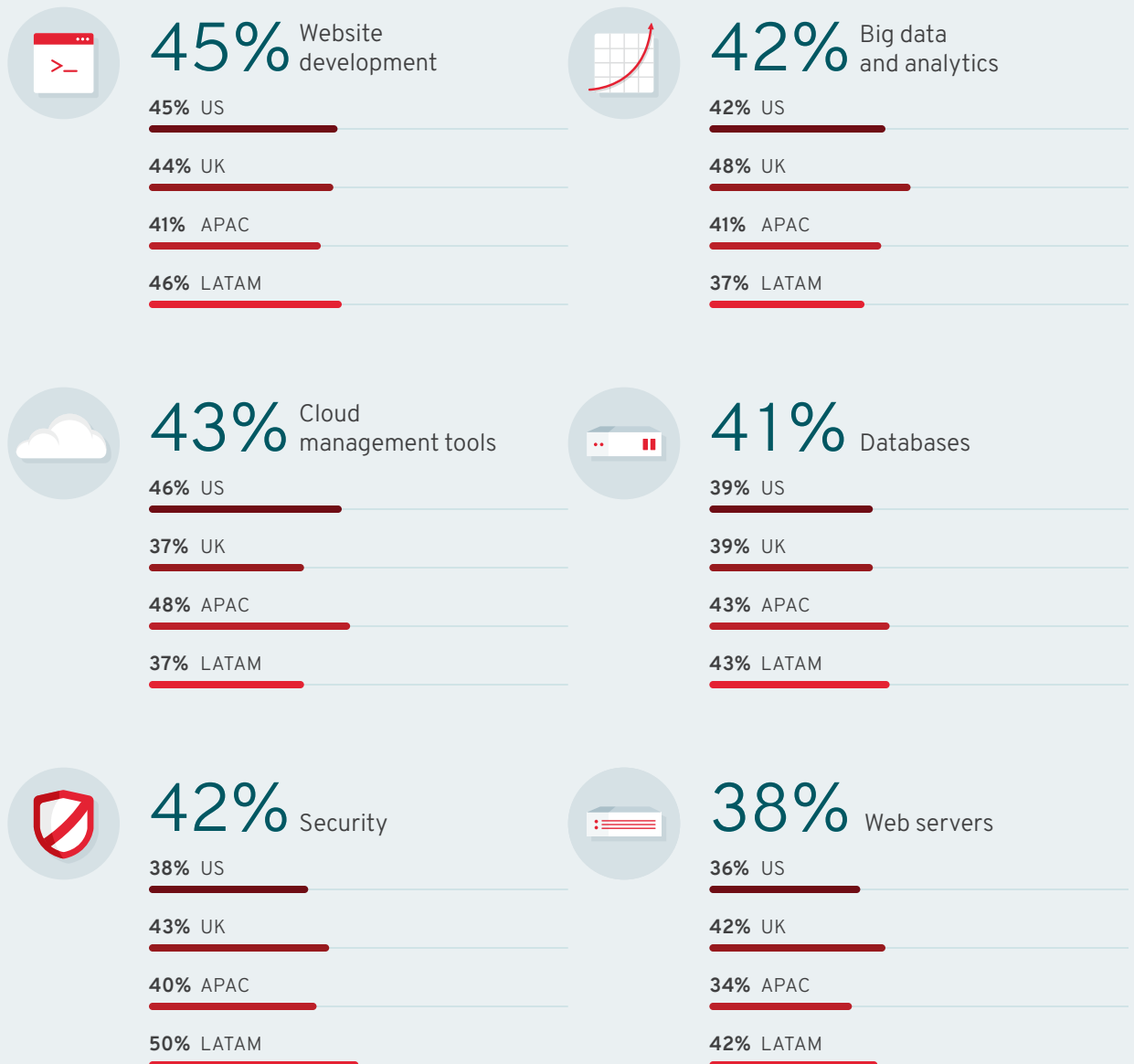


● Extremely important ● Very important ● Important ● Somewhat important ● Not at all important

Enterprise open source in use across the organization

We expect to see open source used in the areas that grew up with internet and web standards—or that are associated with emerging open source technologies, like containers. However, we are increasingly seeing open source used in categories that have historically been more associated with proprietary applications. These categories include, but are not limited to, cloud management, security, analytics, and storage.

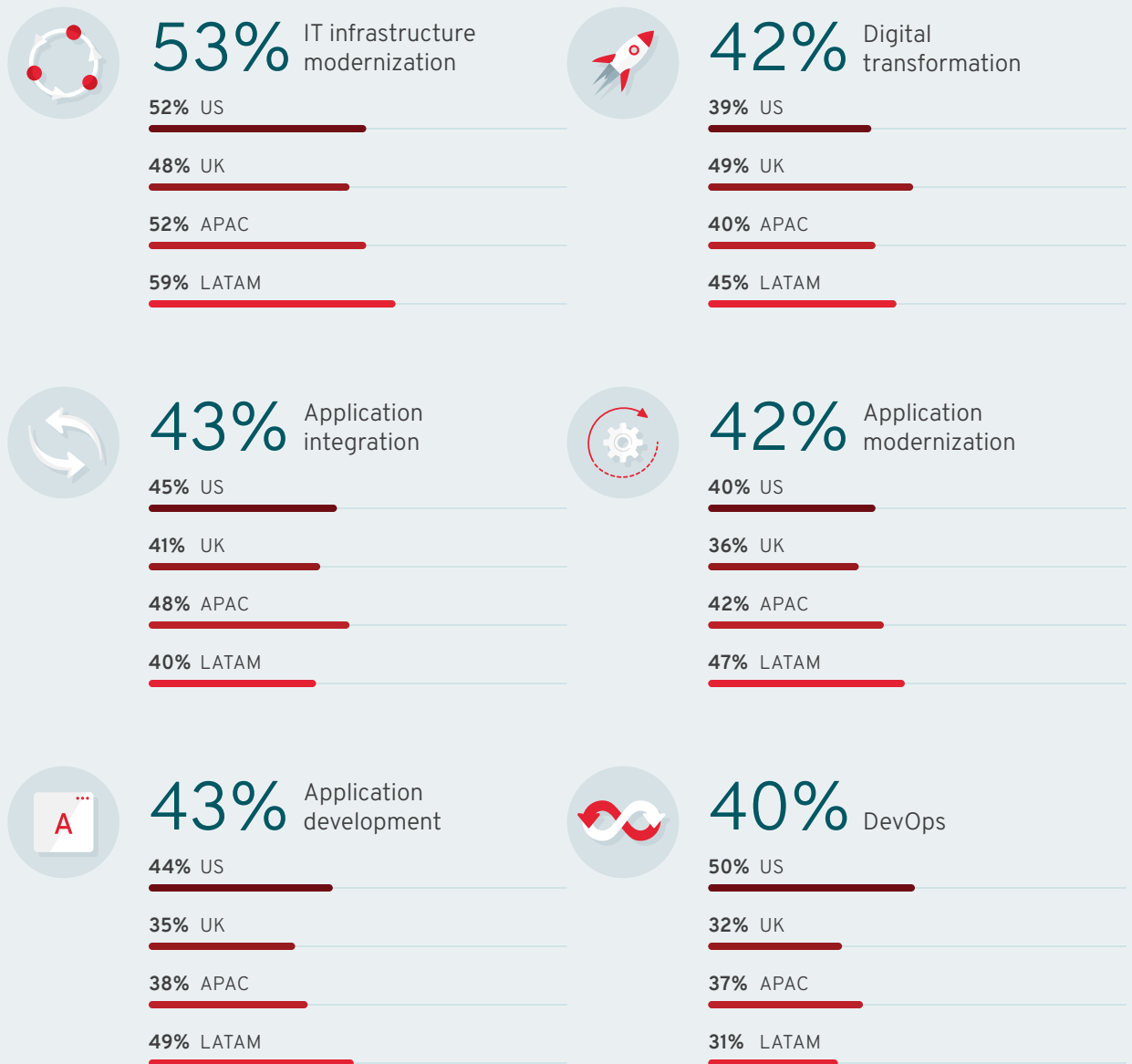
WHERE IS ENTERPRISE OPEN SOURCE BEING USED?



Enterprise open source modernizes the enterprise

Historically, open source software has been used in IT infrastructure modernization to update proprietary operating systems, application servers, and virtualization software. However, this survey also shows the widespread use of open source in many aspects of modern application development, as well as business-level organizational initiatives such as digital transformation.

WHAT IS ENTERPRISE OPEN SOURCE BEING USED FOR?



Innovation and security rank among the top benefits of using enterprise open source solutions

While they may wish they didn't have to, IT decision makers almost always have to closely examine the cost of solutions. Enterprise open source has long excelled in cost savings, so it's not surprising to see low total cost of ownership identified as an important open source benefit. But when you look just a bit further down the list of benefits, you also see innovation, better security, and higher quality.

Enterprise open source is increasingly used not because it's cheaper—though it often is—but because it's genuinely better software. Organizations report benefiting from its community-driven upstream innovation and enterprise-level support, which helps organizations more safely use open source technology.

TOP BENEFITS OF USING ENTERPRISE OPEN SOURCE SOLUTIONS AND TECHNOLOGIES

33%

Lower total cost of ownership

38% US

27% UK

29% APAC

30% LATAM

29%

Access to the latest innovations

29% US

27% UK

31% APAC

31% LATAM

29%

Better security

28% US

30% UK

30% APAC

30% LATAM

26%

Higher quality software

24% US

29% UK

27% APAC

29% LATAM

25%

Access to enterprise-level support

25% US

26% UK

29% APAC

24% LATAM

25%

Ability to customize applications

25% US

30% UK

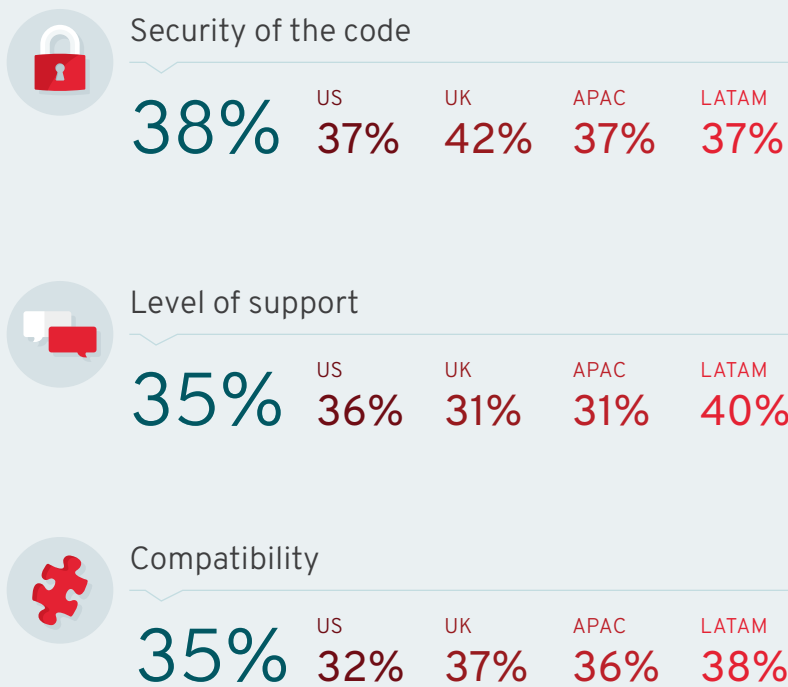
25% APAC

22% LATAM

Despite the prevalence of enterprise open source, residual concerns still exist

Security is still cited as an open source concern. Some of that fear likely stems from general security concerns since hacks and data breaches seem to be daily news. This concern may also reflect how unmanaged open source code—found across the web or brought in through dependencies—can introduce vulnerabilities in both open source and proprietary solutions. However, using trusted sources for enterprise open source software, with automated tools to quickly uncover and remediate security problems, can significantly reduce the potential for security issues.

BARRIERS TO USING ENTERPRISE OPEN SOURCE



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You're paying for more than support. You're paying for hardening—making certain that the distro is stable and security patches are released on time.

I.T. LEADER, SYDNEY

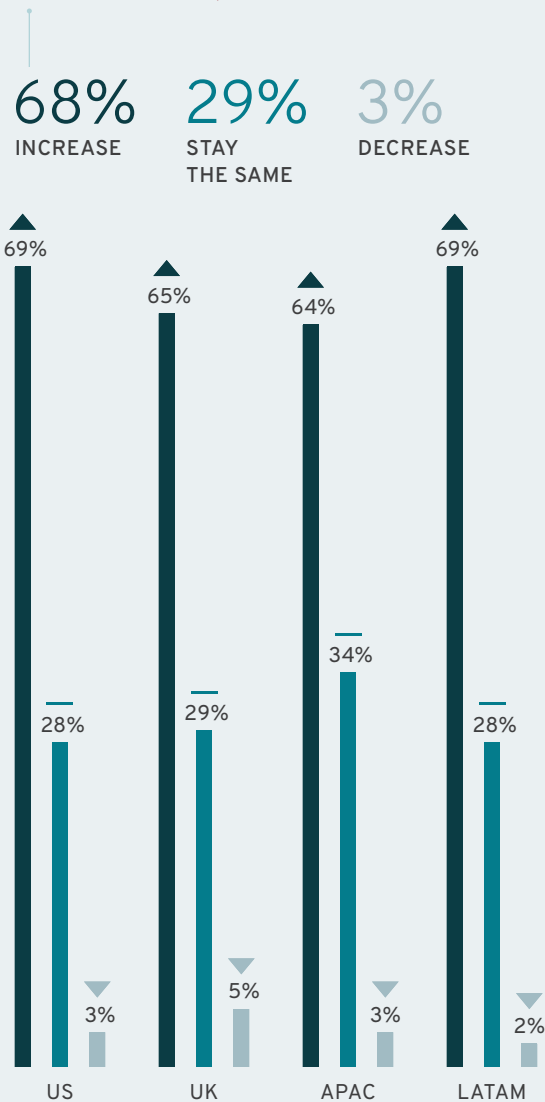
A lot of the enterprise-level software has an open source component, but it's provided for you by a company that charges for support. An enterprise needs that level of support.

I.T. LEADER, MELBOURNE

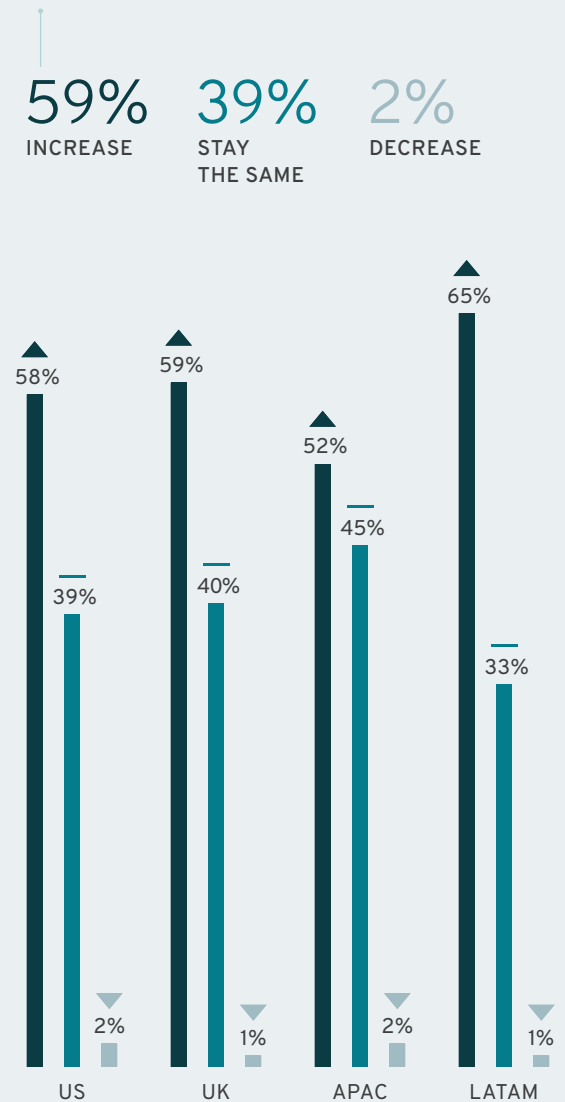
Use of enterprise open source is increasing—and growth is expected to continue

Open source is powering innovation at many organizations, and its importance is reflected in its increased use—both looking back over the past year and looking forward to the next. A majority of organizations have increased their use of enterprise open source and plan to continue that growth. Equally noteworthy is the tiny percentage of organizations that have decreased—or plan to decrease—their use. The trend is clear.

Change in use of enterprise open source over the **past 12 months**



Change in use of enterprise open source over the **next 12 months**



● Increase ● Stay the same ● Decrease

Organizations planning to use more enterprise open source invest in innovation

A common thread we see in open source research is that the more familiar organizations are with open source software, the more likely they are to understand the benefits they can receive from it. Familiarity breeds appreciation. The appreciation extends over many areas—from infrastructure, through management, to automation in its many forms. At a higher level, it's connected to where innovation is happening and the platforms and tools needed to remove innovation's constraints.

“““

For us, this is our way to become more agile. That's our biggest push. We don't want dependency upon these proprietary companies. We want those shackles to be broken. We still want support because we're not ready to take off the guardrails.

I.T. LEADER, NEW YORK

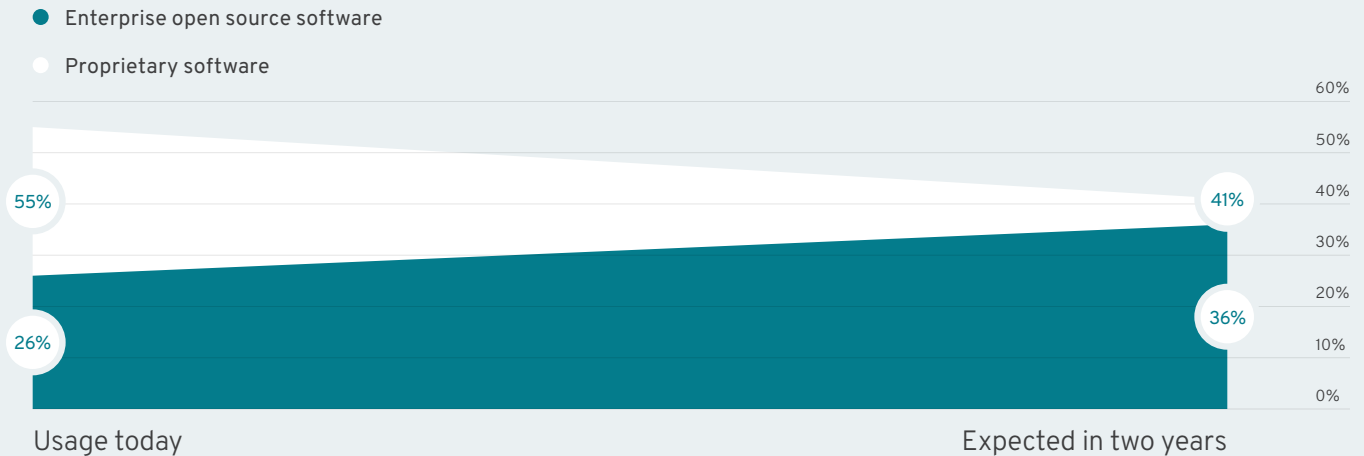
IT leaders who expect to use more enterprise open source in the next year are more likely to*:

- ▶ Move legacy applications to the cloud.
- ▶ Modernize IT infrastructure and applications.
- ▶ Manage hybrid or multiclouds.
- ▶ Use enterprise open source for automation and configuration, cloud management tools, app servers, and databases.
- ▶ Report higher quality as a top benefit of enterprise open source software.

*than IT leaders who do not expect to use more enterprise open source in the next year

Expect to see growth in enterprise open source and containers, while proprietary software use decreases

Enterprises still use a lot of proprietary software. Change is slow. But proprietary software is waning to the point where its use is expected to be at near parity with open source within two years. We've already seen some of the broad reasons for this shift: innovation, quality, and value. But we also see this transition powered by more specific technologies. Take containers, for example. Along with much of what is going on in the cloud-native space in general, containers are almost entirely a product of collaborative open source development. 67% of organizations plan to increase their use of containers over the next year. That's because of open source.



Approximately what percentage of your organization's software is proprietary vs. open source now / two years from now? ('Other' responses not reported.)

Expected change in use of containers (in the next 12 months)

67%

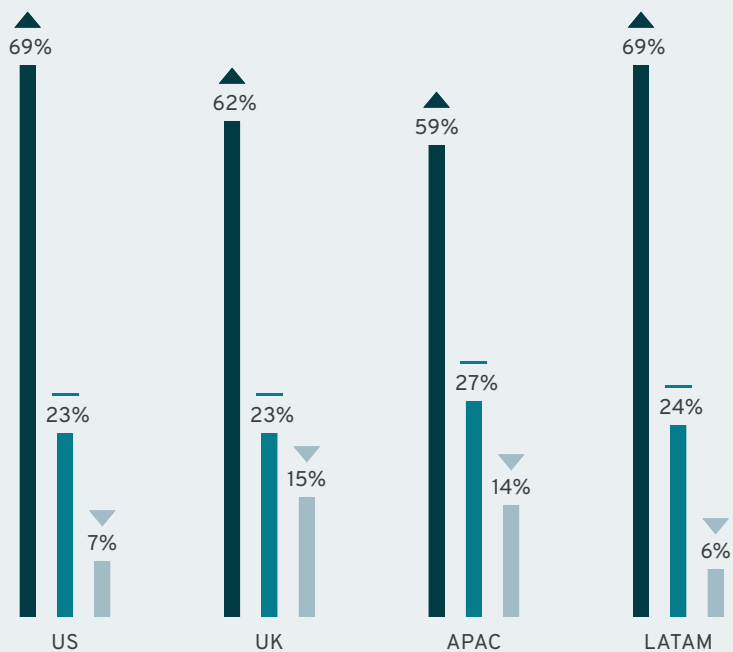
● INCREASE

24%

● STAY THE SAME

9%

● DECREASE





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 integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.