



Red Hat cloud-native development outlook



Executive summary

Cloud-native development is an application development, deployment, and operational discipline, spanning people, process, and technology to speed up high-quality application production. Cloud-native development is a common term today, but is it more than just a buzzword? Could it be the next phase of modern application development?

All signs point to yes.

As organizations seek to develop high-quality applications faster and more securely, developers naturally look for ways to build these applications anywhere and on any platform. Cloud-native development allows them to build applications that run as-a-service anywhere—on public, private, and hybrid clouds.

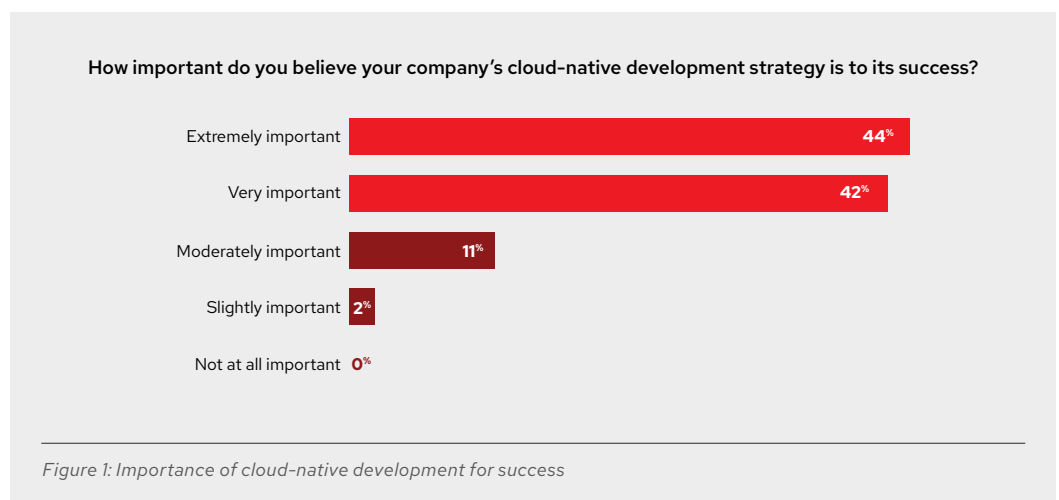
To gauge perception of cloud-native development, we surveyed a group of IT professionals to give us their perspectives. Results are based on 419 qualified responses from Red Hat® customers. The survey was conducted Feb. 14, 2020 - Feb. 21, 2020. Each interview lasted 15 minutes. Panelists needed to be:

- ▶ Employed full-time or part-time.
- ▶ Working at a company with more than US\$10 million in revenue.
- ▶ A decision maker or influencer for application development.
- ▶ Moderately familiar with application development, integration efforts, and spending at their company.

Here are five key takeaways from their responses.

1: Companies are adopting cloud-native development at a high rate.

86% of survey respondents believe that a cloud-native development strategy is extremely or very important to their company's success. This represents a dramatic shift in thinking and signifies that enterprises have adopted a new style of modern application development.



Our perspective:

The move toward cloud-native development reflects a new way of creating applications. It is no longer about building large applications from the ground up. Modern applications are composed of small, independent, and loosely coupled services. They are assembled by combining services from existing applications, much like the automotive industry uses parts from different automobiles to build cars.

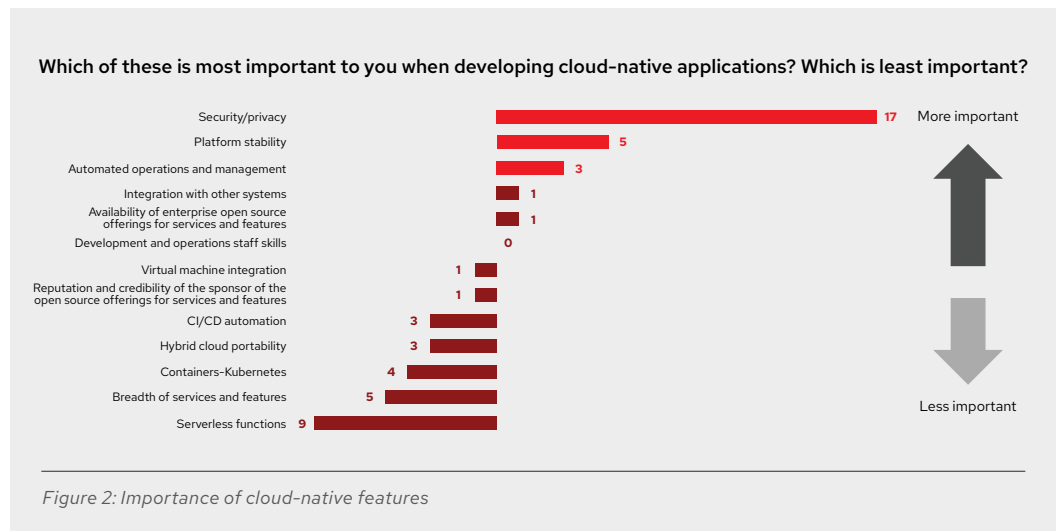
At Red Hat, we believe improving software delivery is the key to digital innovation. IT teams must modernize their application infrastructure, architecture, and processes to deliver higher quality applications with greater agility. Each of these is intertwined—improvements in one area demand improvements in another, so holistic improvement is critical.

Organizations that did not start out digital can overcome disruption from digital natives through strategic investments and commitments in agile software development and delivery capabilities using open, proven, and integrated Red Hat platforms. Red Hat OpenShift® and our application services work together to help customers develop, deliver, and run dynamic, connected, and intelligent applications based on industry standards like containers and Kubernetes across any cloud. Teams can focus on building applications that drive their businesses, leaving operations and infrastructure to the platform. While digital natives build their own tools and technologies from scratch, those that choose Red Hat will be operational immediately.

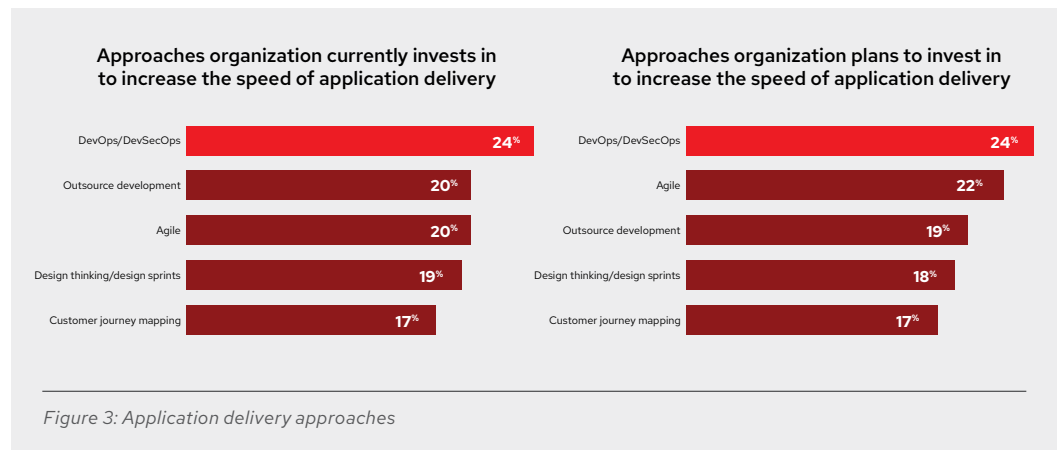
Red Hat Consulting and Red Hat Training teach and mentor your team on cloud-native development architecture and practices, helping you align your projects to business outcomes and business success.

2: Security and privacy are the most important factors in cloud-native development.

By a wide margin, survey respondents ranked security and privacy as the most important factors in cloud-native development—above platform stability and automated operations and management.



Not coincidentally, respondents also ranked DevSecOps and DevOps as the top areas in which they are currently investing and have plans to invest to expedite application delivery.



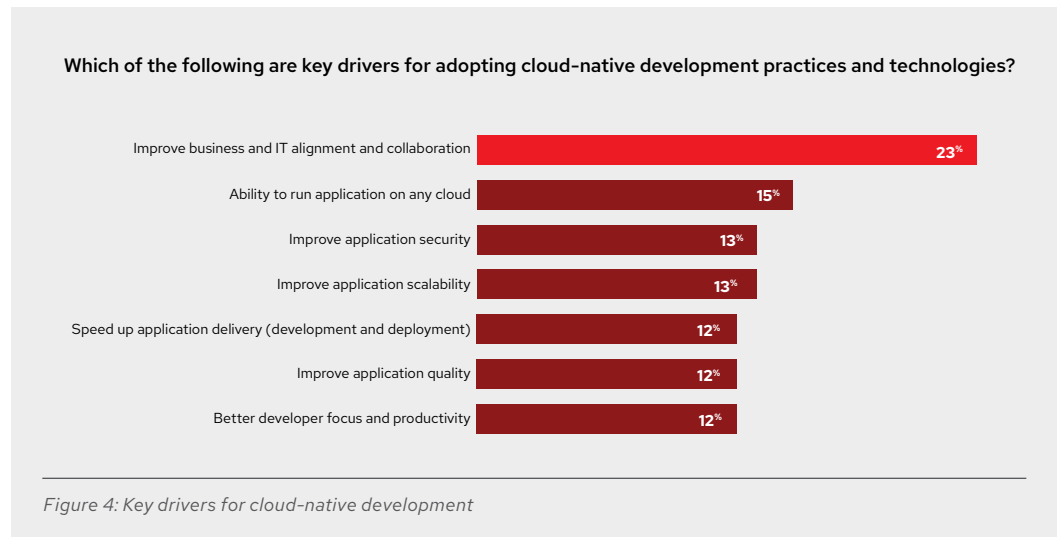
Our perspective:

Good security practices require time, effort, and care in the development cycle, but when done well, the effort invested in security during the development phase can be a productivity boom. Developers will not have to rush to fix bugs or vulnerabilities at the end of the development phase because those challenges will have already been accounted for during the development process.

We believe security must be inherent to modern application development processes. Practices like DevSecOps make security an organic part of those processes. When combined with security automation, these practices can produce applications that are highly secure the moment they are deployed.

3: Improving collaboration among stakeholders is the key to success.

In response to the question “Which of the following are key drivers for adopting cloud-native development practices and technologies,” a plurality of respondents (23%) cited the need to improve alignment and collaboration between business and IT. This result indicates that successful cloud-native development depends on more than just technology—it requires greater collaboration among stakeholders.



Our take:

It is important to consider how different teams interact with one another and create environments that help them thrive. Focusing on people and developing interactive and collaborative processes that are dedicated to continuous improvement is imperative.

This consideration starts with how teams are composed. Small, multifunctional teams are better for collaboration and, therefore, can deliver better outcomes. It continues with the teams' collaboration and development processes. Working styles must shift so that development moves smoothly from the ideation phase to coding, testing, and working software.

Red Hat was founded on the principles of open source technology, including the belief that open collaboration and teamwork can lead to the greatest innovations. We apply this mentality to the work we do internally, with our own solution development processes, and externally, with the collaborative approach we take with our customers. This has worked well for us, and we encourage the same approach in the businesses we work with.

4: Delivering innovative technologies is a top priority.

When asked about the projects they plan to undertake over the next 6 to 18 months, survey respondents cited "apps that replace, modernize, or integrate legacy systems" as their top answer. This indicates that respondents are partial to transforming and modernizing existing applications.

What types of application development projects are you planning to undertake in the next 6-18 months?

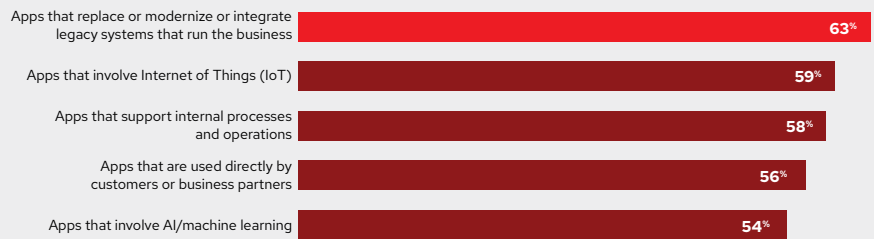


Figure 5: Application development projects

Taking things further, 4 out of 10 respondents also noted a majority of their applications will be new innovations.

Roughly what percentage of the applications you will develop in the next 6-18 months are new innovations?

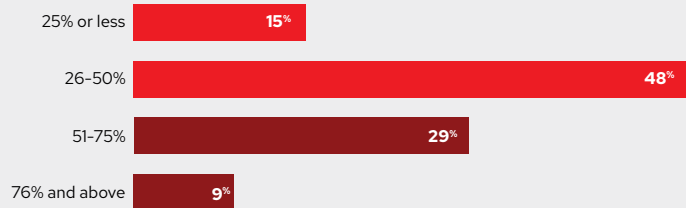


Figure 6: Percentage of applications that are new innovations

Our take:

Cloud-native development allows for flexibility, so enterprises can pursue multipronged development strategies that meet all of their modernization and innovation needs. With flexibility, tailoring application development to top organizational goals becomes easier. The trick is to choose the right development practices and map them to organizational goals.

We recommend our customers choose one or two application development strategies that will help them achieve those objectives, whether they involve extending the reach of their business through customer-facing applications, using the Internet of Things (IoT), or other priorities. We have identified three strategies that work for most customers:

Dynamic: Designed for change and scale, with dynamic application development you use modular applications with reusable components, which allows for continuous delivery of new applications and features.

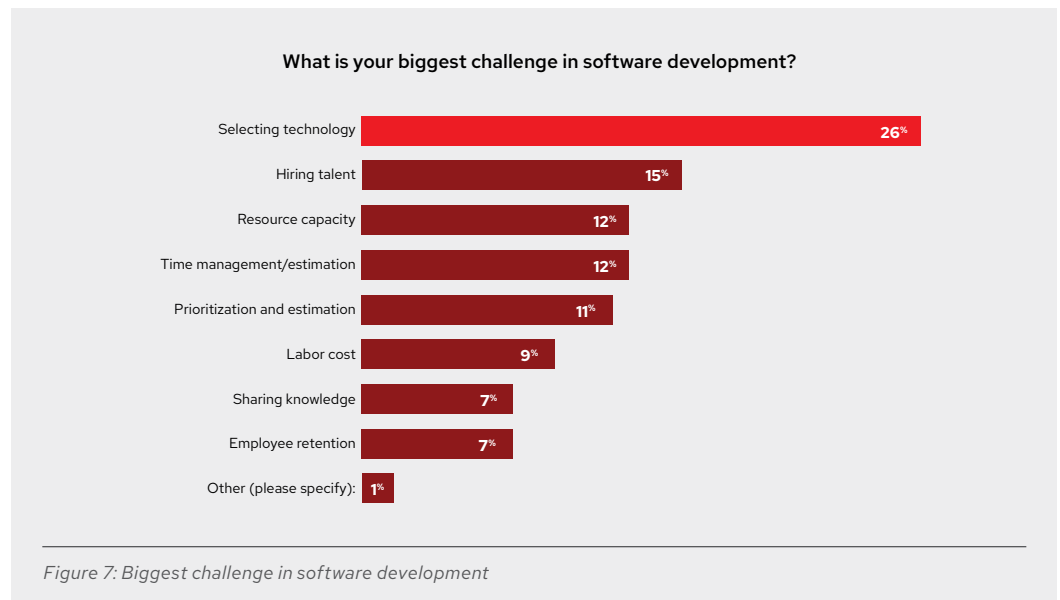
Connected: Connected applications run everywhere and allow organizations to interface with partners, customer ecosystems, and the IoT. Connected application development has event-driven architectures that adapt and make intelligent, data-based decisions in real time.

Intelligent: This method uses AI-driven automation, integrated analytics, and self-governance to produce applications that automate routine tasks, improve business processes, and better serve customers. Intelligent applications can improve productivity, reduce legal, business, and compliance risk, and improve customer interactions.

We work closely with developers to select which of these application development strategies is best suited for their unique needs and provide both in-person and online training courses to help them put these strategies into practice.

5: Developers want choice but need help selecting the right tools.

A plurality of respondents (26%) said that selecting the right technology to use for their cloud-native development needs was their biggest challenge.



Our perspective:

This result is likely because there are many software choices available for developers, which makes it hard for them to find the right tool(s) for the job(s). They need prescriptive recommendations to help them choose the appropriate technologies.

We believe in making this choice easier by providing customers with all of the solutions they need in one place. We know that different developers have different requirements. To satisfy those requirements, we provide a single platform that can be used on its own or bundled with other solutions. We actively consult with our customers to help them select the best technologies for their particular use cases.

Conclusion

Our survey confirmed that cloud-native development is not just a buzzword or passing fad, and our results revealed some noteworthy concerns and key drivers for adoption. In particular, organizations are focused on building better security into their application development processes. Organizations are also looking for ways to become more collaborative and determine the best technologies for their needs.

It is apparent that cloud-native development is quickly becoming the preferred method of developing and modernizing applications. Its continued success will depend on organizations' abilities to encourage collaboration and build team structures that support the use of hybrid cloud platform automation tools like Kubernetes and microservices to boost innovation velocity.

Learn more

To learn more about Red Hat and cloud-native development, visit <https://www.redhat.com/en/topics/cloud-native-apps>, or [contact us](#).



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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.



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