Cloud Foundry User Survey 2019

Third annual snapshot of Cloud Foundry users' deployments and productivity in Spring/Summer 2019

CLOUD FOUNDRY

September 2019

Introduction

Cloud Foundry is the prevailing open source cloud application platform used by more than half of the Fortune 500 and a third of the Global 2000 to increase developer productivity, saving significant time and resources while giving these enterprises a competitive edge as they build the future of business. Cloud Foundry Foundation's biggest supporters—including Google, IBM, Microsoft, Pivotal, SAP and SUSE—donate code and projects to open source Cloud Foundry, ensuring the technology continues to evolve at the expeditious rate of change in IT and cloud.

Cloud Foundry is a developer-first platform. It eliminates much of the complexity developers face in their workflow, giving them the freedom to focus on their priority: creating applications, not the platform. The majority (86 percent) of survey respondents agree that Cloud Foundry makes developers more efficient—and the facts support the feeling: A plurality of Cloud Foundry users (39 percent) have application development cycles of less than one day. More than three-quarters (77 percent) of users report application development cycles of fewer than three weeks.

When developers save time, the businesses that employ them save money. The global enterprises[1] using Cloud Foundry have ever-increasing confidence in the platform thanks to its maturity, security and interoperability that make it indispensable in highly regulated industries. These companies are doubling down on their investment in the platform. Case in point: In a two year period, broad deployment of Cloud Foundry within user organizations has nearly doubled, from 24 percent in 2017 to 45 percent in 2019.

Good business knows it needs happy developers to succeed, and organizations are increasingly interested in developer-centric technologies, like serverless and PaaS. According to the latest forecast from Gartner[2], the total PaaS market revenue is forecast to reach $19 billion in 2019, and to extend to $31.8 billion in 2022. Organizations using Cloud Foundry are already ahead of the game.

This report is the third Cloud Foundry User Survey, a series of annual surveys conducted and produced by ClearPath Strategies, a technology- and politics-focused research and strategy firm. For more details on Methodology, see page 12.

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1   Over three years of survey data, Cloud Foundry remains the most heavily used in IT—hardware, software, services, etc.—followed by financial services. The remainder of usage is distributed across telecommunications, transportation, and industries including healthcare, wholesale, education and government.

2   April 2019: https://www.gartner.com/en/newsroom/press-releases/2019-04-02-gartner-forecasts-worldwide-public-cloud-revenue-to-g

(1) **DEVELOPERS SAVE TIME, COMPANIES SAVE MONEY:** More apps in less time. A plurality of Cloud Foundry users (39 percent) have application development cycles of less than one day. More than three-quarters (77 percent) of users report application development cycles of fewer than three weeks.

(2) **CROSS-PLATFORM FLEXIBILITY REMAINS CRUCIAL:** Cloud Foundry users continue to value the flexibility the platform provides, with 9 out of 10 users citing this as important. Serverless computing usage among Cloud Foundry users is up 10 points (34 percent) from 2018. Notably, this is double the rate of increase in Kubernetes usage, indicating that developer-centric technologies are on the rise.

(3) **CONFIDENCE IN THE PLATFORM IS STEADY AND GROWING:** In a mere two year period, broad deployment of Cloud Foundry has nearly doubled. Nearly a majority (45 percent) of user respondents describes their Cloud Foundry use as "broad" compared to 30 percent in 2018 and 23 percent in 2017.

(4) **...AND SO IS INVESTMENT IN THE PLATFORM:** A full 41 percent of user companies have at least 100 developers using Cloud Foundry. The number of user companies with more than 50 applications deployed on Cloud Foundry rose to 43 percent compared to 24 percent in 2017. Furthermore, companies that are currently migrating applications to a Cloud Foundry platform is up 11 points (63 percent).
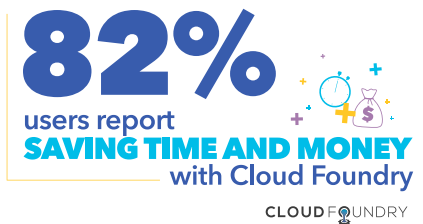
DEVELOPER-FIRST PLATFORM

Cloud Foundry is the best cloud native application platform for developers, full stop. An overwhelming majority (86 percent) of users agree that Cloud Foundry makes developers more efficient—and what does it mean when developers are at their peak productivity? Businesses are more effective (according to 78 percent of users) and they save time and money in the long term (82 percent of users agree).

CLOUD FOUNDRY USERS AGREE
CLOUD F♀UNDRY

86% more efficient developers

80% more efficient operators

78% more effective businesses

There's an unmistakable correlation between developer efficiency and developer happiness. Cloud Foundry provides a consistent one-stop experience for code, containers and access to cloud infrastructure according to 82 percent of users. This element of consistency is crucial to developers and operators as they work on application development, and operators too are more efficient (80 percent) thanks to Cloud Foundry.

When so much of the process is automated for them, developers get to focus on their priority: creating applications, not the platform.

82%
users report
SAVING TIME AND MONEY
with Cloud Foundry
CLOUD F♀UNDRY

MORE APPS, LESS TIME

Simply put, developers who use Cloud Foundry have much shorter application development cycles than prior to adopting Cloud Foundry. A plurality of Cloud Foundry users (39 percent) have application development cycles of less than one day. This is already 20 points higher than in 2018, when 19 percent of Cloud Foundry users were able to develop an application in less than one day.

USERS WITH APPLICATION
DEVELOPMENT CYCLES
UNDER ONE DAY
CLOUD F♀UNDRY

2018 19%

2019 39%

More than three-quarters (77 percent) of users report application development cycles of fewer than three weeks, up from 65 percent in 2018. This is a trend that has continued to hold year over year. In 2018, 28 percent of users were developing applications in less than one week. In 2019, that figure decreased to 19 percent, indicating that a portion of "less than one week" users has successfully entered the "less than one day" application development cycle.

There's no question that adopting Cloud Foundry sees immediate results: happier, more efficient developers, shorter application development cycles and resultantly lower costs.

*More than three-quarters of users report application development cycles of **fewer than three weeks***

OPEN SOURCE ENABLES INTEROPERABILITY

Cloud Foundry users are at the forefront of emerging technologies. Developers choose Cloud Foundry because they know the open source ecosystem is constantly evolving to incorporate new cloud native technologies that will continue to simplify their experience. Cloud Foundry's interoperability gives them confidence they won't miss out on the latest technology trends.

The open source community perpetuates this cross-platform ecosystem as relevant technologies are incorporated into the Cloud Foundry ecosystem—including Envoy, Istio, Kubernetes, MySQL and more—to create new Cloud Foundry projects, like Container Runtime, Eirini and Project Quarks.

Cloud Foundry users continue to value Cloud Foundry's cross-platform flexibility, with nine out of 10 users citing this as important, comparable to the previous two years.

9 OUT OF 10
CLOUD FOUNDRY USERS CITE IMPORTANCE OF **CROSS-PLATFORM FLEXIBILITY**
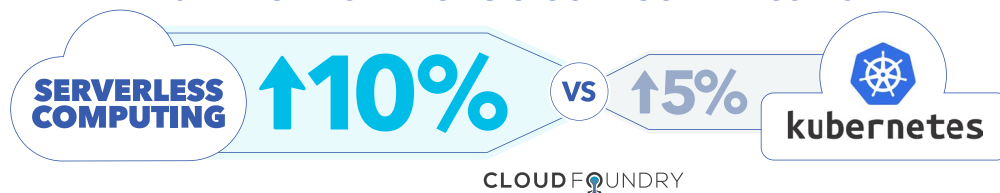
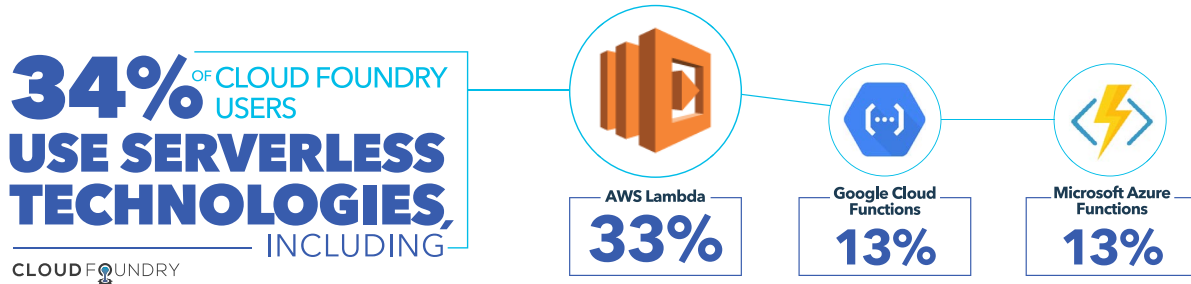## CROSS-PLATFORM FLEXIBILITY DRIVES DEVELOPER PRODUCTIVITY

Cloud Foundry abstracts away much of the complexity developers face in their workflow, enabling more productivity at lower cost. It is therefore unsurprising that Cloud Foundry users are increasingly excited about a similar technology that offers the benefits of abstraction: serverless.

Serverless computing usage among Cloud Foundry users is up 10 points (34 percent) from 2018. Notably, this is double the rate of increase in Kubernetes usage among Cloud Foundry users. The massive success of Kubernetes is driving the interest in further abstraction—which will naturally lead to greater interest and adoption of Cloud Foundry, PaaS, serverless and other technologies that deliver those abstractions.
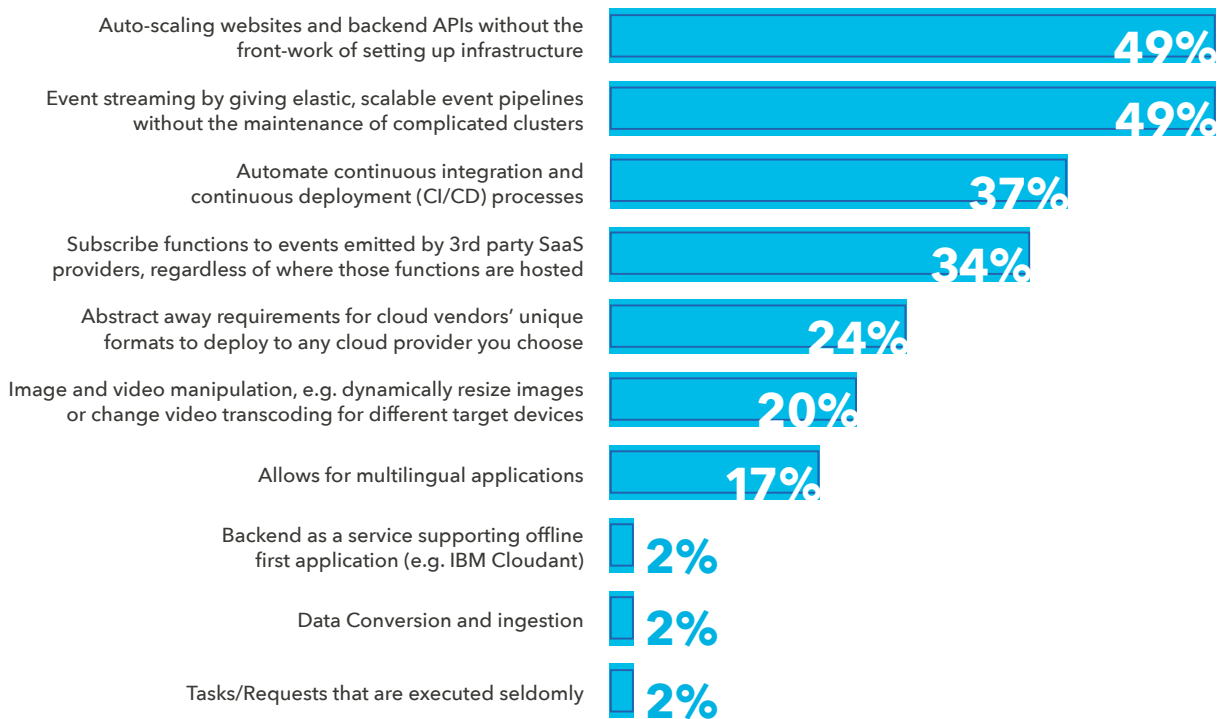
2019 INCREASE AMONG CLOUD FOUNDRY USERS

SERVERLESS COMPUTING ↑**10%** VS ↑**5%** kubernetes

A majority of Cloud Foundry users are choosing from three serverless products:

34% OF CLOUD FOUNDRY USERS **USE SERVERLESS TECHNOLOGIES,** INCLUDING

CLOUD FOUNDRY

AWS Lambda	Google Cloud Functions	Microsoft Azure Functions
33%	**13%**	**13%**

Some of the top reasons Cloud Foundry users choose serverless mirror the developer-centric benefits of Cloud Foundry itself, including auto-scaling websites and backend APIs without the front-work of setting up infrastructure (49 percent) and event streaming by giving elastic, scalable event pipelines without the maintenance of complicated clusters (49 percent). Fundamentally, developers do not want to deal with infrastructure. The Cloud Foundry community of users is focused on enabling software development. Serverless technology, in addition to PaaS, aligns with that goal.

Why Cloud Foundry Users Use Serverless

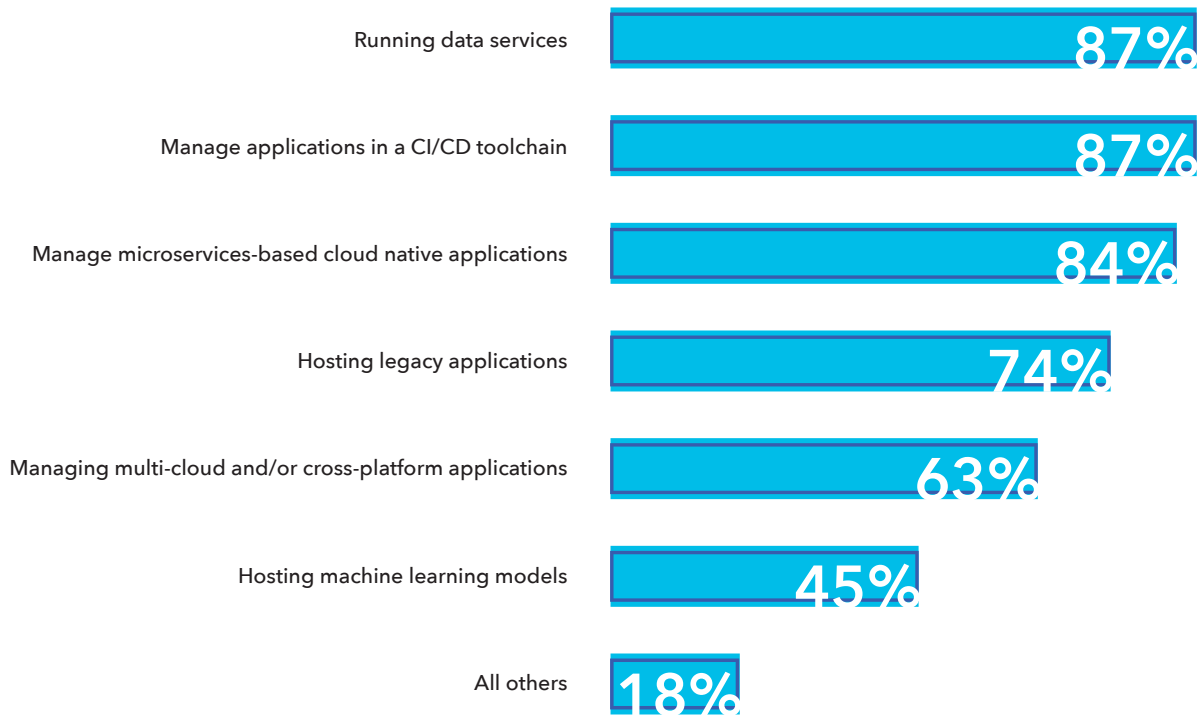|	
Auto-scaling websites and backend APIs without the front-work of setting up infrastructure	**49%**
Event streaming by giving elastic, scalable event pipelines without the maintenance of complicated clusters	**49%**
Automate continuous integration and continuous deployment (CI/CD) processes	**37%**
Subscribe functions to events emitted by 3rd party SaaS providers, regardless of where those functions are hosted	**34%**
Abstract away requirements for cloud vendors' unique formats to deploy to any cloud provider you choose	**24%**
Image and video manipulation, e.g. dynamically resize images or change video transcoding for different target devices	**20%**
Allows for multilingual applications	**17%**
Backend as a service supporting offline first application (e.g. IBM Cloudant)	**2%**
Data Conversion and ingestion	**2%**
Tasks/Requests that are executed seldomly	**2%**

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CLOUD FOUNDRY DRIVES THE ECOSYSTEM

Among the cloud native projects in the Cloud Foundry ecosystem, users rank Kubernetes in the top three most exciting technologies. Kubernetes usage among Cloud Foundry users is up five points (33 percent) since 2018.

More than half (54 percent) of Cloud Foundry users use a managed Kubernetes service from a cloud provider or a combination of a managed Kubernetes service and self-management.

Cloud Foundry users choose Kubernetes for a wide variety of reasons:
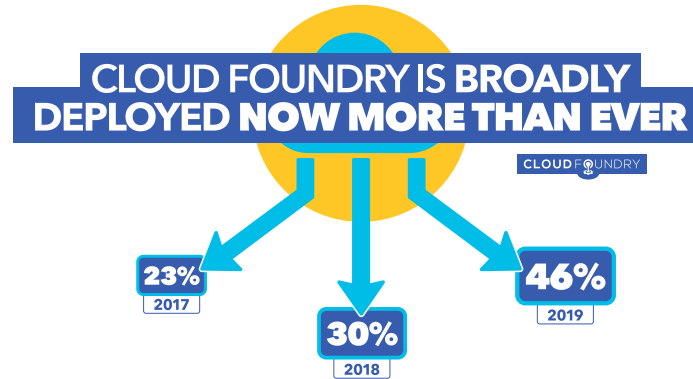
Why Cloud Foundry Users Use Kubernetes

Running data services	87%
Manage applications in a CI/CD toolchain	87%
Manage microservices-based cloud native applications	84%
Hosting legacy applications	74%
Managing multi-cloud and/or cross-platform applications	63%
Hosting machine learning models	45%
All others	18%

CLOUD FOUNDRY

Key Finding: Confidence in the Platform is Steady and Growing

BROAD DEPLOYMENT NEARLY DOUBLE
The global enterprises that use Cloud Foundry to develop, deploy and manage their cloud-native applications are deploying Cloud Foundry more broadly across their companies than ever before. In fact, broad deployment has nearly doubled in a mere two year period. Cloud Foundry has become an indispensable tool for enterprises dedicated to saving time, cutting costs, and improving the experience of their developer teams.

Nearly a majority (45 percent) of user respondents describes their Cloud Foundry use as "broad"—either rolling out or fully integrated across the whole company—compared to 30 percent in 2018 and 23 percent in 2017.

Companies have become more confident in their shift to cloud, and are heavily investing in their chosen cloud application platform services.

PIPELINE STRONG
Given the sharp increase in broad deployment, it's unsurprising to note that more than a third (38 percent) are long-term users who have been using Cloud Foundry for three years or more. As their confidence in the platform has grown, they have broadened their Cloud Foundry deployments across the business.

Nearly one in five respondents (17 percent) has started to use Cloud Foundry since the last user survey 12 months ago, indicating that Cloud Foundry adoption remains healthy.
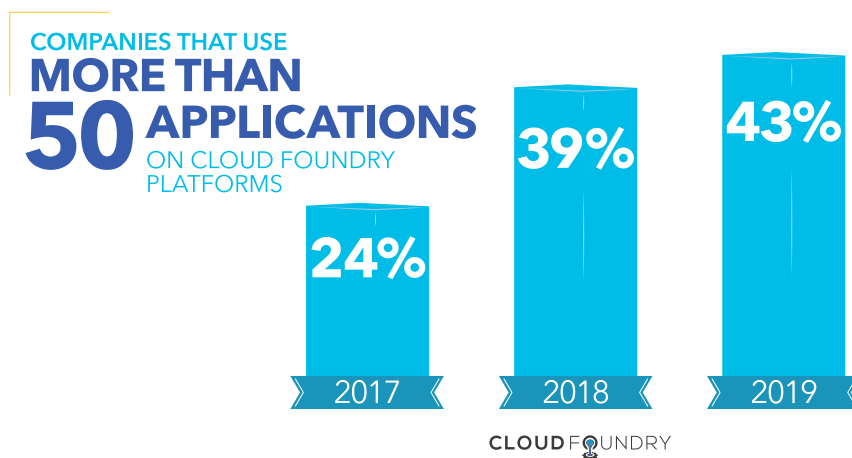
A PLATFORM FOR THE FUTURE

More than half of user respondents (63 percent) are migrating most applications to a Cloud Foundry platform, up from 52 percent in 2018, indicating trust in the platform continues to swell. A further 19 percent are considering or planning to migrate their applications to Cloud Foundry.

This breadth and depth of Cloud Foundry usage is reflected in the dramatic increase in the number of Cloud Foundry developers at each responding company. A full 41 percent of user companies have at least 100 developers using Cloud Foundry compared to one-third in 2018, demonstrating a continued investment in the technology.

Furthermore, companies are deploying more and more applications to Cloud Foundry. The share of companies with more than 50 applications on Cloud Foundry grew from 24 percent in 2017 to 43 percent in 2019.

COMPANIES THAT USE
MORE THAN
50 **APPLICATIONS**
ON CLOUD FOUNDRY
PLATFORMS

24% 2017
39% 2018
43% 2019

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Conclusion

Developers are driving forward the future of business. As every organization transforms into a technology company, the importance of a strong, efficient, happy development team cannot be overstated. Technologies like Cloud Foundry and serverless continue to streamline developers' workflows, enabling them to expedite the application development cycle and find time to innovate.

Developers choose Cloud Foundry because it serves as a gateway to the larger open source, cloud native ecosystem. They know the robust Cloud Foundry community guarantees that new, relevant technologies will be incorporated into the projects when mature, and that new Cloud Foundry projects will integrate easily with the other cloud native technologies they love to use, whether that's Kubernetes, Istio, Envoy or more.

The writing is on the wall: Cloud Foundry is an indelible technology for the hundreds of developers who rely on it daily to develop the applications that drive the future.

Methodology

The 2019 Cloud Foundry User Survey is the third in a series of semi-annual surveys conducted and produced by ClearPath Strategies, a strategic consulting and research firm for the world's leaders and progressive forces.

In total, 306 respondents completed the survey online from March 29 - June 1, 2019. Respondents were invited to participate via Cloud Foundry Foundation emails, newsletters, Twitter, website and Slack channels, as well as direct invitation from certified platform providers and other members. Of the total respondents, 144 can be identified as "users." Though companies who distribute commercial versions of Cloud Foundry could also be considered "users," we exclude them from the analysis of this survey. Numbers may not add to 100 percent due to rounding, or for multi-response questions. Respondents whose questionnaires were substantially incomplete have been excluded from these results. In instances where respondents completed most of the survey, their responses were included. Where they left a question blank, they have been excluded from those specific questions for the purpose of analysis. The Cloud Foundry User Survey outreach and survey were drafted and delivered in English across all geographies.