Cloud Foundry User Survey

2020 Results

CLOUD FOUNDRY
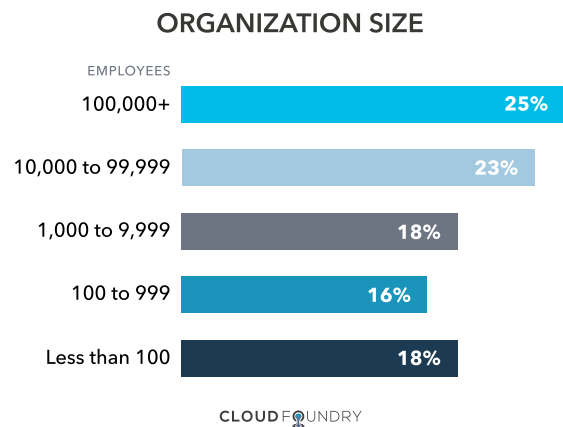
December 2020

Key Findings

- **Cloud Foundry Reduces Software Development Cycle Time** – Adoption of Cloud Foundry continues to support dramatic reductions in the length of software development cycles for its users, with 65% of survey respondents indicating that the time to develop and deploy applications was between 1 to 6 months before adopting Cloud Foundry. After adopting Cloud Foundry, 69% of responses reported that time having been reduced to between 1 day and 3 weeks.

- **Cloud Foundry Supports Mission Critical Software** – 47% of responses indicated deploying mission critical software to Cloud Foundry, and 65% of responses indicated production use of the technology.

- **Cloud Foundry Used With Kubernetes** – Cloud Foundry is used in conjunction with Kubernetes in 57% of organizations responding to the survey, and a total of 69% of respondents reported using Kubernetes within their organizations. A significant number of organizations also report already using several other open source projects, which have recently been integrated with Cloud Foundry: Istio (29% using), Prometheus (55%), and Fluentd (29%).

About the Survey and Responses

The Cloud Foundry Foundation, the home of the open source Cloud Foundry project, conducted it's annual user survey during September and October of 2020. A total of 278 responses were collected, however this report includes data from 176 valid responses after screening responses to key questions used to ensure respondents are actual users of the technology.

Largely consistent with past reports, Cloud Foundry is used by some of the world's largest companies. 66% of the respondents reported working for organizations with 1,000 or more employees and 25% of the total reported working for organizations with over 100,000 employees. Importantly, an emerging trend is evident in this year's survey results, which included 18% of respondents reporting that they work for organizations with less than 100 employees.

The individuals responding to the report were predominantly software developers, with 62% of respondents identified as either full time software developers or as being in mixed development and operations. Only 6% of respondents identified themselves as having primarily operational roles. The remaining respondents were a mix of managerial roles from within the IT departments and organizational lines of business. The participants were also quite experienced with Cloud Foundry, with an average of 47% of their time involving work with Cloud Foundry.

ORGANIZATION SIZE

EMPLOYEES

|	
100,000+	25%
10,000 to 99,999	23%
1,000 to 9,999	18%
100 to 999	16%
Less than 100	18%

CLOUD FOUNDRY

As an open source project, the Cloud Foundry community prides itself on being inclusive of not only those that actively create the Cloud Foundry software, but of those that use it. 64% of respondents indicated that they consider themselves to be members of the Cloud Foundry community. In fact, 9% of participants reported regular contributions to the project and 33% reported contributing on occasion. 66% of respondents indicated that they interacted with the Cloud Foundry community in some way. When asked if they found the Cloud Foundry community to be open, welcoming and readily responsive to questions about the technology, 87% of survey participants said yes.

Use of Cloud Foundry within organizations remains high, with 44% of respondents reporting broad deployment across either their entire company or that they are working towards broad deployment. This is consistent with our 2019 user survey, which was up from 30% in 2018 and 23% in 2017. 24% of respondents to the 2020 survey reported a limited rollout, which included either broad use within one or more specific business units or more generally that the technology was in the early stages of rollout within their organization.

Within their organizations, there is a wide distribution of the number of developers actively using Cloud Foundry. Respondents reported anywhere from 1 to 3,000+ developers using the technology.

Approximately how many developers at your company or organization are actively using Cloud Foundry technologies?
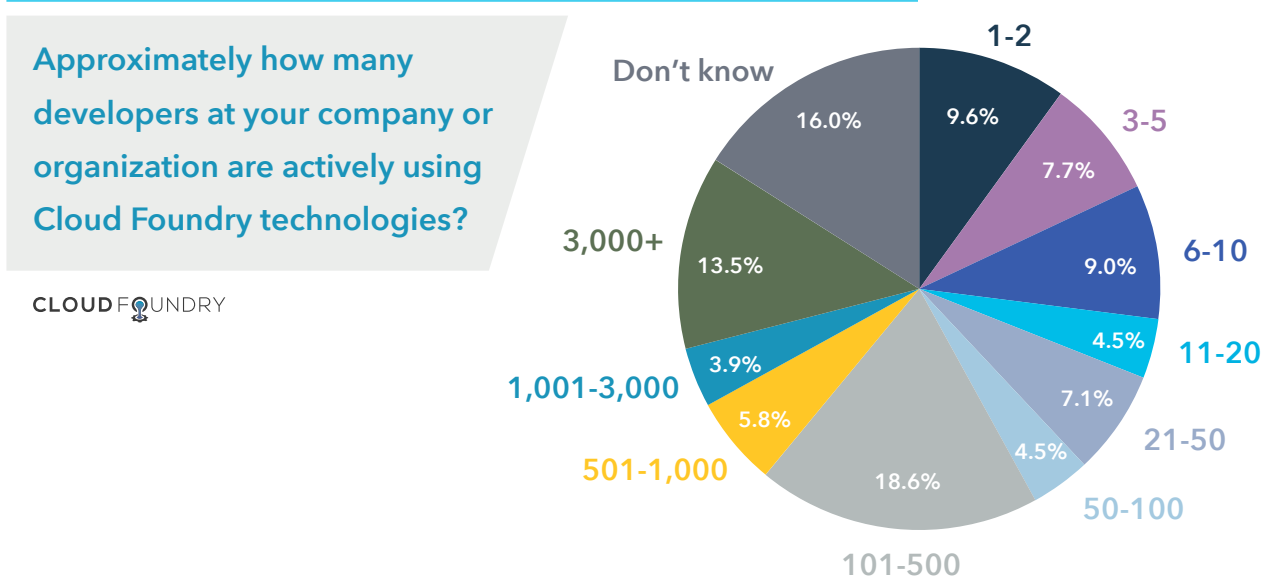
CLOUD FOUNDRY

In terms of the number of applications deployed to Cloud Foundry, the survey responses included 21% of respondents having deployed over 1,000 applications, 6% have between 500 and 1000 applications, 17% between 50 and 500, while 36% of respondents noted 50 or less applications deployed to Cloud Foundry. These deployments represent a significant number of the cloud applications within the respondent's organizations. Overall, the average percent of each respondent's organization's cloud applications deployed to Cloud Foundry was 38%.

Use of Cloud Foundry is expected to grow, as 46% of respondents reported their organization as currently migrating applications to Cloud Foundry. Another 17% or responses indicated that their organizations were either considering or planning migrations. Only 9% of responses indicated that they were not planning on migrating any additional applications to Cloud Foundry. The remaining respondents did not know about their organization's migration plans.

Asked about the criticality of the applications deployed to Cloud Foundry, 47% of responses indicated deploying mission critical software. 65% of responses indicated production websites or web services. 75% of participants used Cloud Foundry for development and testing of applications.

47%
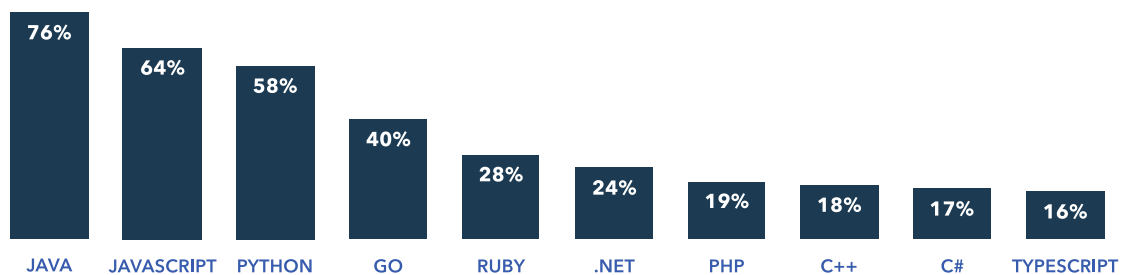**DEPLOYING MISSION CRITICAL SOFTWARE**

CLOUD F UNDRY

Cloud Foundry is often paired with Continuous Integration / Continuous Delivery (CI/CD) tools, with 70% of respondents indicating that they use a CI/CD tool in conjunction with Cloud Foundry. Asked which tools they use for CI/CD more broadly, only 9% of respondents answered "none" or that they did not know what tool was used. The top three tools used in organizations were Jenkins (63%), Concourse (43%) and JenkinsX (10%).

70%
USE A CI/CD TOOL
WITH CLOUD FOUNDRY

CLOUD F☁**UNDRY**

When asked about the programming languages used to build the cloud applications deployed to Cloud Foundry, respondents reported a wide range of languages. The top three languages were all used in more than 50% of organizations, with Java used in 76% of organizations, Javascript in 64% and Python in 58%. Overall, responses indicated 27 distinct programming languages being used to build software deployed to Cloud Foundry.

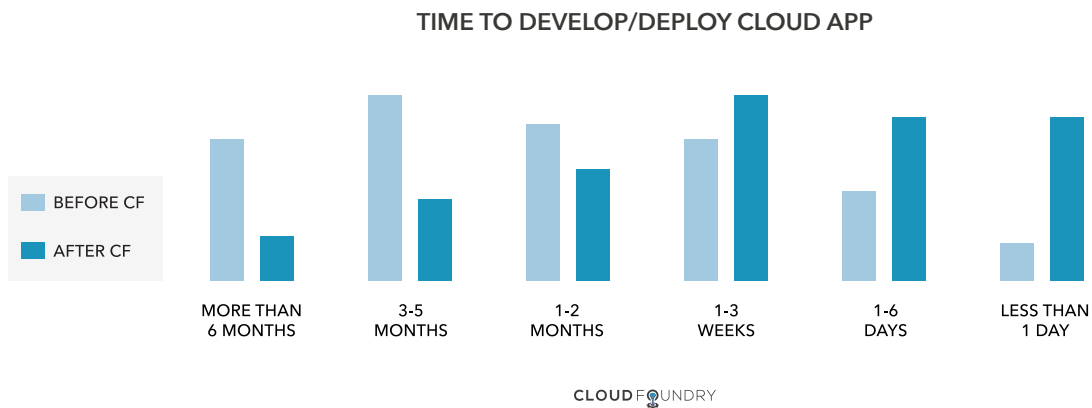**TOP 10 PROGRAMMING LANGUAGES USED WITH CLOUD FOUNDRY**

Language	Percentage
JAVA	76%
JAVASCRIPT	64%
PYTHON	58%
GO	40%
RUBY	28%
.NET	24%
PHP	19%
C++	18%
C#	17%
TYPESCRIPT	16%

CLOUD F☁**UNDRY**

Cloud Foundry's Impact

Cloud Foundry clearly makes an impact on organizations that adopt it by reducing software development cycle times from months to days in many organizations. When asked how long cloud applications took to develop and deploy before use of Cloud Foundry, 65% of respondents reported cycle times measured in months. That number dropped to 32% after the introduction of Cloud Foundry.

After the introduction of Cloud Foundry, 69% of respondents reported the development and deployment cycle being three weeks or less, with 44% of all responses indicating the cycle taking six or less days. 22% of respondents reported less than 1 day to develop and deploy applications after the introduction of Cloud Foundry into their workflow.

Overall, these improvements in software development times have led to a high degree of satisfaction with Cloud Foundry. When asked how likely they were to recommend Cloud Foundry to a coworker on a scale of 0 to 10, the median response was 7.6 (with a standard deviation of 2.5).

TIME TO DEVELOP/DEPLOY CLOUD APP

BEFORE CF
AFTER CF

MORE THAN 6 MONTHS | 3-5 MONTHS | 1-2 MONTHS | 1-3 WEEKS | 1-6 DAYS | LESS THAN 1 DAY
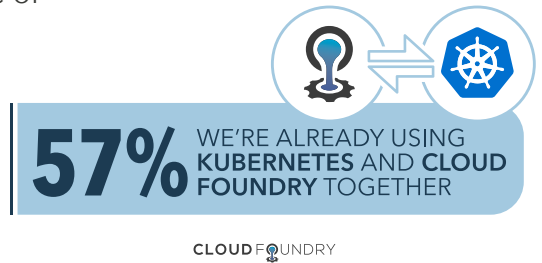
CLOUD FOUNDRY

User Readiness for Cloud Foundry's Evolution

The Cloud Foundry community has made a major transition to focus on being the best developer experience for Kubernetes-based infrastructure. While this work in our technical community continues, users are already reporting significant use of Kubernetes and other associated open source projects.

Importantly, 57% of participants reported that they were already using Kubernetes and Cloud Foundry together. Overall, 69% of respondents reported using Kubernetes somewhere in their infrastructure. Another 21% of respondents report being in the process of evaluating it. Of those that reported using Kubernetes, 21% reported using a managed Kubernetes service, 37% reported using a self-managed Kubernetes cluster and 42% reported using both a managed service and self managing Kubernetes.

57% WE'RE ALREADY USING **KUBERNETES** AND **CLOUD FOUNDRY** TOGETHER

CLOUD FOUNDRY

Survey participants were asked about the use of three other open source projects which are important to the new Cloud Foundry architecture: Istio, Prometheus and Fluentd. Responses indicated that Prometheus is used in 55% of organizations included in this report, while Istio and FluentD are both used in 29% of organizations.

Survey participants were also asked about their awareness of the Cloud Foundry community's new focus on Kubernetes, with 82% of responses indicating some degree of awareness. 33% reported being very aware and 49% were somewhat aware.

When asked about their awareness of five specific Cloud Foundry Foundation projects tied to this community's new focus, the majority of survey participants reported awareness for KubeCF, cf-for-k8s, Quarks and Eirini. Awareness of the Paketo project was nearly a majority, at 48%.

PROJECT AWARENESS

	VERY AWARE	SOMEWHAT AWARE	NOT AWARE
KubeCF	25%	49%	26%
cf-for-k8s	27%	42%	31%
Quarks	16%	34%	50%
Eirini	24%	31%	45%
Paketo Buildpacks	19%	29%	52%

CLOUD FOUNDRY