

## REPORT REPRINT

# Cloud Foundry shows mainstream appeal as Pivotal goes public

**CARL BROOKS**

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Pivotal Software and the Cloud Foundry Foundation have reached a major inflection point, with Cloud Foundry hitting its stride in mainstream take-up and scale of use, and Pivotal banking on that to underpin its IPO in April.

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Pivotal Software and the Cloud Foundry Foundation have reached a major inflection point, with Cloud Foundry hitting its stride in mainstream take-up and scale of use, and Pivotal banking on that to underpin its IPO in April and stretch out as a relatively new, important software vendor to large enterprise. Priced at \$15, the IPO was a modest success, but the strength of the Cloud Foundry platform and its momentum mean that Pivotal will almost certainly see continued growth. Cloud Foundry is an open source PaaS system that allows users to create and manage applications without any need to access underlying hardware, mostly via containers.

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## THE 451 TAKE

After seven years of development, and with the support of some of the largest enterprise vendors extant (and access to their customers), Cloud Foundry has succeeded. It is now embedded in the DNA of digital transformation in a large portion of the largest enterprises in the world, and shows signs of accelerating momentum. Some of this success is due to responsive development and support for customers, as well as fostering an active open source community; some of it is due to being available as a growing number of large enterprises reach a tipping point and adopt cloud-style operational models. Developers are the new engines of industry, and Cloud Foundry sits at the nexus of enabling developers and enabling cloud infrastructure, and it will continue to be popular until the next major shift in IT usage. This is counterbalanced by the diverse and equally popular array of new container technologies that have also established beachheads in enterprise software.

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## CONTEXT

Cloud Foundry has come a long way from its roots as a spinoff of VMware's early experiments with cloud-enabling software. At this point, it works across every major public cloud platform, and almost every hardware and IaaS system or platform, with a strong affinity for OpenStack among users. It has more than 15,000 developers currently training for certifications, and more than 3,000 active contributors to the project. Major sponsors include the likes of Cisco, IBM, Dell EMC and VMware, among others.

Cloud Foundry's purpose is to make application development easier and faster by using containers and very small, single-purpose Linux operating systems to create and bundle microservices into larger applications with common components. Cloud Foundry forms a platform and management toolset for these container microservices, and automates some common tasks in operating them together in an application. The appeal to software developers is very similar to that of IaaS – it removes menial, repetitive tasks from the development process at crucial junctures and frees up more time for experimentation and writing code that serves the application's end purpose directly. It's not a panacea for bad code, nor is it a completely hands-off PaaS like Heroku, but the kind of standardized, easy, modular approach to application development it enables is very appealing.

## STRATEGY

Pivotal is the commercial standard-bearer of Cloud Foundry, and its version of the software, Pivotal Cloud Foundry (PCF), is by far the most widely used. Like other open source software firms, Pivotal makes money offering premium support and services to users, and it targets the largest organizations. Spun off of VMware, Pivotal is part of the larger Dell EMC group and co-sells along with it and sister companies VMware and Virtustream. In short, it has a rich ecosystem to tap into, and it has done so effectively, culminating in the April IPO. While the stock opening didn't set off fireworks, it was a success and has effectively capitalized Pivotal to the tune of \$555m. In this case, the IPO designates commercial viability and validation of Pivotal's strategy. It will continue to be the locus of most of Cloud Foundry's growth and development.

## COMPETITION

Cloud Foundry has certified a number of vendors, including Fujitsu, IBM, SUSE, SAP, Huawei Swisscom and Atos, to operate and support the software. Some of these operate hosted PaaS offerings based on Cloud Foundry, and some only support and sell services into enterprises, but all are nominally competitors. IBM Bluemix has a distinctive approach to how it integrates Cloud Foundry. PaaS providers like Elastic Beanstalk (AWS), Heroku, AppFog, Cloudify, Google App Engine, Microsoft Azure, Bitnami and others are competition to host enterprise code. Container management tools and container technologies like Docker and, in particular, Kubernetes are viable alternatives to Cloud Foundry, if not precise equivalents in terms of use and philosophy of design. In short, Cloud Foundry has plenty of company.

## SWOT ANALYSIS

### STRENGTHS

Cloud Foundry has broad support from large enterprise vendors and a thriving development community. Pivotal has thoroughly cemented itself into enterprise organizations at this point.

### WEAKNESSES

Cloud Foundry represents some aspects of compromise and loss of control in favor of expediency in architecting applications.

### OPPORTUNITIES

The opportunity for Pivotal and Cloud Foundry is to be a major part of application development in the largest IT organizations extant for the foreseeable future.

### THREATS

Competition for code and the fast pace of container development, as well as the possibility of another shift in developer habits, risk Cloud Foundry being relegated to a limited corner of those large organizations.