

Annual Report 2018

CLOUDFOUNDRY

January 2019



In 2018, the Foundation expanded its definition of Cloud Foundry, shifting away from prioritizing the Application Runtime in order to spread awareness of the many projects that comprise Cloud Foundry technologies. This new messaging aligned with the 2018 vision for interoperability, a theme that underpinned all Foundation content. The interoperability of Cloud Foundry was evident across the ecosystem -- in the technologies integrated into the platform itself to the technologies with which Cloud Foundry integrates to form a multi-platform strategy. This year, the Foundation launched a Certified Systems Integrators program, announced new Certified Providers Cloud.gov and SUSE, accepted interoperable projects Eirini and CF Containerization into the Project Management Council and published four research reports -- while planning and hosting two major Summits and six Cloud Foundry Days. Like the platform itself, the Cloud Foundry Foundation has reached a new level of maturity and continues to evolve.



2018 Highlights

TECHNICAL & COMMUNITY

- **Interoperability:** Two new projects were accepted by the Project Management Committees in order to further integrate Kubernetes with Cloud Foundry technologies. CF Containerization, initially developed and donated to the Foundation by SUSE, is designed to package Cloud Foundry BOSH releases into containers and deploy those containers into Kubernetes. Eirini, proposed by IBM and seeing contributions from IBM, SUSE and SAP, is working towards allowing operators and product vendors to use Kubernetes as the underlying container scheduler for the Cloud Foundry Application Runtime.
- **2018 Certified Providers:** In 2018, Cloud.gov and SUSE joined the list of certified providers of Cloud Foundry, bringing the total to eight -- the other six being Atos, Huawei, IBM, Pivotal, SAP and Swisscom.
- **Certified Systems Integrators:** The Foundation launched the Cloud Foundry Certified Systems Integrator program, designed to help SIs, consultancies and professional services organizations highlight their expertise working with the Cloud Foundry family of technologies.
- **Developer Training and Certification:** By the end of 2018, the CFF had supported the education of over 19,000 developers. New versions of our course material and exam have been launched. Our course catalog will expand in 2019 to include Cloud Foundry BOSH material.
- **Infrastructure Providers:** Cloud Foundry became available on both Alibaba Cloud and Huawei Cloud in 2018.
- **Meetups:** Cloud Foundry Meetups across the world are now at 160 groups with nearly 88,000 members, compared to 70,000 members at the end of 2017.



BUSINESS DEVELOPMENT & OPERATIONS

- **Membership:** We ended the year with 66 members.
- **Foundation Growth:** In 2018, fourteen new members joined: 12 Silver and two Gold.
- **Organization:** In 2018, Kim McMahon joined the Foundation as Senior Director of Digital Strategy. Naomi Washington came on as Meeting and Event Coordinator, while Deborah Giles was promoted to Meeting and Event Planner. Brie Rogers joined the team as Digital Marketing Specialist and Roger Strukhoff was hired on as User Stories Program Manager. We also began working with the Allison + Partners public relations team.



2018 Highlights

MARKETING & COMMUNICATIONS

- **Cloud Foundry Summits:** With the support of our members, the Foundation executed two highly successful summits in Boston and Basel, with great attendance at both events - with a 12 percent increase in Europe.
- **Content:** The diversification of content in 2018 is the beginning of a more varied approach to content strategy. From the development of an executive leadership content program to shorter, punchier reports with graphics to an animated cartoon of the Cloud Foundry “galaxy,” the Foundation created original content that both establishes itself as an agnostic leader in the space and remains accessible to an extended community.
- **Media & Analyst Awareness:** The Foundation pivoted towards analysts in the second half of 2018 with more than 53 meetings that yielded Cloud Foundry mentions in 222 industry analyst reports. Media presence at Cloud Foundry Summits continued to increase, with a combined total of nearly 50 press in Boston and Basel, and nearly 200 articles arising from event attendance. Cloud Foundry and Cloud Foundry Foundation garnered a combined 19,587 global press mentions in 2018.
- **Research:** ClearPath Strategies continued to provide deep dive analysis on industry awareness and adoption of Cloud Foundry, and insights into current industry trends, like multi-platform strategy and preferred developer languages. The Foundation published four reports in 2018 based on quantitative and qualitative research provided by ClearPath.
- **The Foundry:** In 2018, The Foundry grew to be the world’s largest open source marketplace. This online directory serves as the gateway for the Cloud Foundry ecosystem. In 2018, The Foundry grew to over 5600 entries with 12k page views. It continues to be a place where our members can place their offerings and to drive traffic to their website.
- **Social Media & Online Growth:** Followers on Twitter grew modestly at 0.9% to nearly 85k at the end of 2018. The Twitter purge of accounts dropped our follower count, but we have regained to our original numbers through our social media actions. Follower gain on LinkedIn was more robust at 16.5% to nearly 6k followers. Twitter engagements were down 50% and impressions on both Twitter and LinkedIn were up 50% to nearly 106M impressions together, driving visibility among the community.





TECHNICAL COMMUNITY

This was a year of innovation for our technical community, including deepening integrations with the broader open source community, charting a vision for the next phase of BOSH's evolution, hackathon ideas blooming into full projects, and the continued incremental evolution of the developer experience offered by our projects. The community also continued its long tradition of focusing on the operational quality, scale and security of our projects.

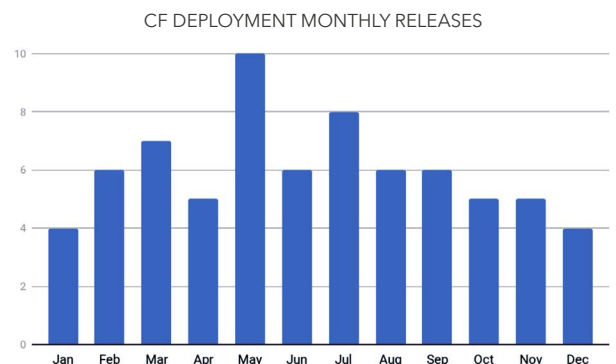
The technical community consists of four Project Management Committees (PMCs), with individual project teams further breaking down the technical efforts within the PMCs. The PMCs are Cloud Foundry Application Runtime, Cloud Foundry BOSH, Open Service Broker API and Cloud Foundry Extensions. The lifecycle of PMCs is governed by the PMC Council. In April of this year, Dieu Cao was elected to the position of PMC Council Chair.

As with past years, the number of new features, improvements and bug fixes released by the project teams are too numerous to describe fully. What follows are some significant highlights of the work of our technical community across all of our projects.

CLOUD FOUNDRY APPLICATION RUNTIME PMC

Release Velocity

The Cloud Foundry Application Runtime PMC has a track record of consistently impressive release velocity over the last several years. In past years, releases were tracked as released versions of the cf-release project. In February of 2018, with the hard work of the Release Integration project team as well as other project teams feeding into the coordinated release process, cf-release was deprecated in favor of the cf-deployment project. One of the goals of this transition was to enable the Release Integration team to compose and release new versions of the combined CFAR platform more easily and frequently. Over the course of 2018, the community produced 72 releases, averaging six releases a month.



Evolving Developer Experience

- Work on the CFAR v3 API is accelerating, with the formation in October of a joint CAPI and CLI team focused on completing development of the v3 CC API, deprecating the v2 API, and introducing a new, major CLI release, v7.



Technology & Community

- The CF Services API team has added the ability to share service instances across orgs and spaces. In addition, they have begun work on adding the ability to register the same Service Broker multiple times in CF.
- The CAPI team has begun work on supporting per-resource metadata to API resources exposed by the Cloud Controller.
- The CLI team announced the CF CLI minimum supported version policy for 2019.
- The CLI now includes the ability to assign a stack to a buildpack.

Diego & Garden Continue to Improve

- The Diego team released Diego v2.0.
- The Garden Windows team has merged the Windows Acceptance Tests (WATS) suite into CF Acceptance Tests (CATS), simplifying the acceptance test process for both Linux and Windows based environments. This represents a key milestone in maturity for the platforms to manage Windows.
- Support for Windows 2016 was also announced, as of cf-deployment v1.22.
- Garden-runc-release is now shipping with GrootFS built in.
- The Garden team announced the end of life on the Garden-shed filesystem driver.
- Diego Persistence reached release v1.0.0.
- Diego added support for sidecar containers within the platform, a key to enabling several new use cases and architectural options.
- The Diego and Garden project teams remain key to the successful release of numerous developer and operator facing capabilities throughout the platform's architecture.

Networking in CFAR Evolving

- The Routing and Diego teams announced some significant new features which, among other things, enable the Gorouter to encrypt traffic to application containers via TLS. This workstream provides the platform with increased security and resilience, and guarantees against misrouting.
- Envoy Proxy has been integrated into the CFAR architecture as of the first quarter of 2018. This was the first step in a broader effort to integrate Istio Pilot.



Technology & Community

- Istio Pilot is actively being integrated, with many features complete and significant focus being put on the scalability of Istio to achieve the performance needed in larger CFAR environments. Testing of the new architecture has reached a 20K application scale target.
- Several new routing tier features were added to support compliance frameworks like GDPR.
- The CF Networking team continued to make progress, and has proposed moving the Istio Router onto the overlay network used by app containers.
- A BOSH release for Istio has been created to support its integration into CFAR.
- Weighted routing is now experimentally available, showing the potential of the new Istio integration.

Logging and Metrics Scaling Up

- Significant effort was spent this year on continuing to scale the logging and metrics pipeline for larger and higher volume environments.
- The Loggregator team launched both Noisy Neighbor Nozzle and Log-Cache.
- The team used the CLI plugin architecture to experiment with new developer and application operator capabilities, including the ability to use the CLI to tap into the space-level drain.
- Loggregator released both versions 1.0 and 2.0 of log-cache-release.
- CF Drain CLI reached v1.0.0

Kubernetes Integration Proceeding

- The proposal to support Kubernetes as a deployment architecture option for some CFAR operators -- a project named Eirini - was proposed and accepted as an incubating effort within the Application Runtime PMC.
- Over the course of the year, the Eirini project team has steadily progressed from the initial proof of concept to being able to pass 100% of the CATS suite at the time of this writing. This is a huge milestone for that effort.
- Work continues on integrating with Kubernetes in other ways, including shared logging, networking, and service catalogs.



Technology & Community

CLOUD FOUNDRY BOSH PMC

This year, Marco Voelz took over the role of BOSH PMC Lead from the longtime BOSH project lead Dmitry Kalinin. The BOSH community owes Dmitry a huge debt of gratitude for his many years of leadership on the BOSH platform.



The entire BOSH PMC has spent significant time planning the future of the BOSH project. In December, they shared a [vision and strategy](#) document with the broader community. The vision of the BOSH PMC is:

Ubiquity and flexibility are at the core of the philosophy of the Cloud Foundry Foundation. This means supporting public, private, and hybrid application environments is a core concern for all the projects making up the platform. To address this concern effectively, we need to deliver a superior developer and operator experience. Consequently, our vision for BOSH is: to be the best way to version, package and deploy software in a reproducible manner.

The value proposition of BOSH is that it unifies release engineering, deployment, and lifecycle management. No other platform combines all three aspects and we intend to expand its feature set in all three areas. In addition, BOSH's support for a wide variety of on-premises and Cloud Infrastructure as a Service (IaaS) providers is a core feature of BOSH that sets it apart from competitive solutions. We plan to broaden our list of supported IaaSes according to market trends to enable our community to capitalize on emerging opportunities.

The strategy to achieve that vision has been articulated by the PMC as requiring seven key initiatives:

1. User Experience
2. Optimizations
3. Better Support for Internet-less Environments
4. Hardening
5. Increased Leverage of Native IaaS Features
6. Improved Networking
7. Distributed Director

The PMC also announced the BOSH Linux Stemcell Support Policy, formalizing stemcell support into an N & N-1 model.



Technology & Community

In addition to the handoff from Dmitry to Marco, a few other important changes to the BOSH PMC occurred:

- The BOSH Core project was split into BOSH Core San Francisco, BOSH Core Toronto and BOSH Core Europe. Morgan Fine (Pivotal) is the new project lead for the San Francisco team and Frederic Desbiens (Pivotal) is the new project lead for the Toronto team. Felix Riegger (SAP) is the new project lead for Europe.
- The BOSH CPI project has been archived, and three BOSH CPIs were promoted from incubating to active, individual projects: BOSH Azure CPI, BOSH Google CPI, and BOSH VSphere CPI.
- BOSH AWS CPI and BOSH Openstack CPI were also moved out of incubation, but will be managed by the BOSH Core San Francisco and BOSH Europe teams, respectively.
- CPIs for both HuaweiCloud and Alibaba Cloud were proposed and accepted into the BOSH PMC as an incubating projects.
- CF Containerization was proposed and accepted into the BOSH PMC as an incubating project, with initial contributors from SUSE, including project lead Vlad Iovanov. The project is focused on taking BOSH release manifests as input, and generating Docker images and Helm charts for deployment. The primary use case is to deploy CFAR into a Kubernetes cluster.

OPEN SERVICE BROKER API PMC

Florian Mueller (SAP) has joined Matthew McNeeney (Pivotal) as co-chair of the Open Service Broker API group, after Doug Davis (IBM) resigned the role.



Over the course of 2018, the Open Service Broker API PMC has released two new versions of the specification: v2.13 in January and v2.14 in July. Work continues on v2.15.

EXTENSIONS PMC

The Extensions PMC continued to add new and interesting projects that extend and enhance the Cloud Foundry Application Runtime and Cloud Foundry BOSH platforms:



- MultiApps was proposed and accepted into the Extensions PMC, with initial committers from SAP.
- SQL Server was proposed and accepted into the Extensions PMC, with initial committers from Pivotal.



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- Project Blockhead was proposed to the Extensions PMC, with initial committers from IBM. The project started as a CF Summit hackathon idea. It enables the use of blockchain as a service within OSBAPI compatible platforms. The project was subsequently rewritten in Golang, and can now be deployed as a BOSH release or a Kubernetes Helm chart.
- CF-Dev was accepted into the Extensions PMC, with initial committers from Pivotal. For supported systems, CF-dev provides a local CFAR environment for development, experimenting and testing.

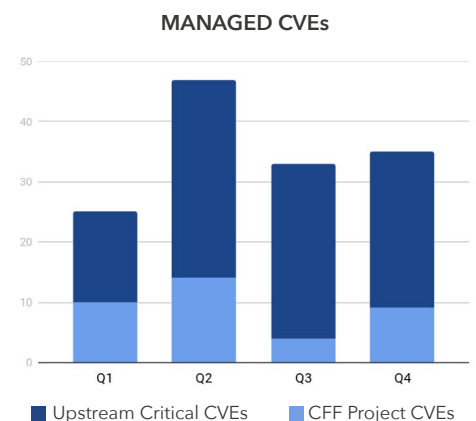
Additionally, many of the extension projects made significant progress:

- The Service Fabrik team proposed Service Fabrik 2.0 and announced BOSH 2.0 support for Service Fabrik and backing services.
- CFCR shipped 18 releases of kubo-release, with the last of the year being v0.26. Work this year included the continued process of staying up to date on Kubernetes releases and adding Microsoft Azure support as a target IaaS environment.
- Stratos UI released v2.0.
- App Autoscaler published their first GA release, v1.0.0. They have begun discussing a UI integration with the Stratos team.

The buildpacks project continued to evolve, demonstrating the community's commitment to keeping our buildpacks up to date with the latest language and framework releases. Perhaps most importantly, the buildpacks project team worked closely with engineers from Heroku to establish a path to unfork the Cloud Foundry and Heroku buildpack communities. This work culminated in the establishment of a Cloud Native Computing Foundation project called Cloud Native Buildpacks (buildpacks.io). Work has begun to evolve CFAR to use the buildpack API created through these efforts.

VULNERABILITY MANAGEMENT

Our technical community's efforts around vulnerability management remain impressive, with rapid response to newly identified issues being the norm. Over the course of the year, the technical community remediated 37 CVEs in our own projects. Perhaps more importantly was the focus on ensuring that vulnerability fixes for our upstream dependencies are integrated into and released within the Cloud Foundry community, including 105 upstream fixes for High or Critical severity issues.





COMMUNITY MANAGEMENT

The efforts led by Foundation staff in 2018 to deepen the community showed significant results towards the end of the year.

- **End Users:** The Cloud Foundry user community includes more than half of Fortune 500 organizations. Many of our users were represented at our semi-annual Summits and demonstrated the scale at which they have adopted the platform. Increasing end user engagement in the community will continue to be a major focus for the Foundation team in 2019.
- **Meetups:** The meetup community witnessed a large uptick in membership along with an increase in number of regional events. Interoperability projects such as Eirini, CF Containerization, Container Runtime, BOSH CPI for Kubernetes, and more were topics of interest to the community at meetups.
- **Cloud Foundry Ambassadors:** The Foundation staff's commitment to the Ambassador program resulted in increased engagement from Ambassadors, along with expanded interest from the community members in the program. Ambassadors led activities such as User Day, the Unconference at Cloud Foundry Summits, regional events and meetups, and participated in webinars and keynotes at Foundation events.

We will continue to nurture these programs and grow the community's engagement across the board in 2019.

HACKATHONS FOR INNOVATIVE IDEAS

We hosted hackathons at both the Cloud Foundry Summits in 2018. Both events were vastly improved from our inaugural efforts in 2017, with growth in participation and noted technical value for the community.

Our North American Summit hackathon was sponsored by VMware for the second year in a row. The winning project, Blockhead, is a service broker which allows application developers to utilize the Ethereum blockchain without having to know how to provision an Ethereum node or connect to the Ethereum network. It has since been accepted into the Extensions PMC as an incubating Cloud Foundry project, the first hackathon project to have done so.

Our European Summit hackathon was sponsored by IBM, which was especially remarkable as we had not had a sponsor for our first EU hackathon. Turnout also increased nicely, and the top



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two teams both submitted noteworthy projects: a central BOSH package manager, and a project which integrates silk into CFCR to allow L4 communication for containers across Cloud Foundry and Kubernetes. Both teams have continued work on their projects.

We are currently planning our fifth Cloud Foundry hackathon at the upcoming summit in Philadelphia in April 2019.

DEVELOPER CERTIFICATION AND TRAINING

- Over 19,000 students have registered for our “Introduction to Cloud Foundry and Cloud Native Application Architecture” course offered on edX and the “Cloud Foundry for Developers” eLearning course delivered through the Linux Foundation.
- The [Cloud Foundry Certified Developer \(CFCD\)](#) program has seen steady adoption, with over 200 certified developers at the end of 2018.
- CFCD exams were offered in-person at both the Cloud Foundry Summit North America and Cloud Foundry Summit Europe events in 2018.
- Pivotal has donated a Cloud Foundry BOSH course to the Foundation. We are working on plans to release that course and potentially offer a professional certification exam for BOSH release authors to be launched in 2019.
- The “Cloud Foundry for Developers” course received numerous updates throughout the year, including new content around buildpacks, routing and service brokers.
- The “Introduction to Cloud Foundry and Cloud Native Application Architecture” class underwent a major revision as well, launching on October 25th.
- “Hands on Labs” was created as a new feature of Cloud Foundry Summit, providing event attendees with the opportunity to experience different capabilities of the open source projects at the Foundation via short guided lab exercises.



KEY LESSONS FROM 2018

- Our technical community embracing the broader open source ecosystem in a more deliberate and active way has paid significant dividends for the evolution of the Cloud Foundry family of technologies.



Technology & Community

- Balancing innovation with careful evolution of the platform must remain a key focus for our technical community, especially as both the demand for new features / integrations and the need for enterprise-grade maturity continue to grow.
- Architectural experimentation has provided several members with new opportunities for technical collaboration, bringing additional energy and ideas into the community.
- Hackathons have been very successful at inspiring new ideas and experimentation.
- End users continue to be interested in sharing their stories with each other, if not with the larger market. The opportunities we offer for their collaboration is something we must continue to iterate on, so that it remains fresh and relevant.
- Our community of meetup organizers and ambassadors is a powerful voice in the ecosystem.

AREAS FOR IMPROVEMENT IN 2019

- Our events can serve as a platform for contributor collaboration, and we must work to find ways to increase the quality of interactions and the value of the event structure to support that audience.
- Experimentation exists throughout our community, both within and outside the official Foundation projects. We must do better at discovering and promoting all of the innovative ideas.
- Our release cadence for Cloud Foundry projects is rapid and incremental, making it difficult to promote the excellent work of the technical community through campaigns. We will work to aggregate technical updates on a quarterly basis, establishing a cadence for promotional work both within the community and to the broader market.
- Our training offerings have evolved quickly, but need focused efforts to align the needs of various personas with the right approach to training. Similarly, we must improve our Authorized Training Partner program to better support the launch of instructor-led educational efforts.



Marketing & Communications

In 2018, the Foundation matured its content strategy and reassessed PR results mid-way through the year, eventually replacing the firm with which it had been working since 2016. The team created a successful executive leadership program with a steady cadence of articles from our executive director, CTO and VP of marketing across a variety of publications. We reimagined our user stories program in the latter half of the year and hired a dedicated writer to own those relationships. The Foundry continued to grow and serve as a central hub for our ecosystem while the member dashboard continues to generate positive engagement with our members' marketing teams. We continued to work with our research firm, generating unique data and building out content campaigns to promote and legitimize our findings. By the end of 2018, the marketing team had created more unique content than ever before, expanded its media and analyst program and delivered on digital strategy in order to surpass its yearly goals.

GLOBAL CLOUD FOUNDRY EVENTS

With the support of our members, the Foundation executed two highly successful summits in Boston and Basel. In a year with event overload in the tech industry, registrations for the Boston Summit decreased from 1,609 to 1,500 while registrations for the Basel Summit increased from 858 to over 900 - 12 percent.

We found that the east coast is a welcoming home for Cloud Foundry Summit, and have built upon this strategy to host our 2019 NA Summit in Philadelphia. The 2019 European Summit will take place in the Hague in the Netherlands this September.

We hosted a User Day at the Boston Summit, with over 165 attendees participating in the event. At the same event in Basel, there were 65 users in attendance. We also hosted Hackathons in both Boston and Basel, with 45 and 25 participants, respectively.

Cloud Foundry led the charge on Cloud Foundry Days, hosting three in Copenhagen, Shanghai and Seattle. IBM hosted two Cloud Foundry Days in London and New York, while SAP Labs held a successful event in Bangalore. In 2019, it is our hope that members will continue to team up to hold these events in strategic regions and reach a wider audience worldwide, as the Foundation steps back from hosting regular Cloud Foundry Days.

INDUSTRY OPINION RESEARCH

The Foundation continued to track the rapid evolution of the cloud industry through a regular cadence of Global Perception Studies (GPS). This research provided high quality data on



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emerging technologies, cloud trends and IT strategy to guide Cloud Foundry marketing strategy and brand identity. Using the data from this research, Cloud Foundry continues to successfully navigate the rapidly changing cloud space in order to maintain relevance for users today and tomorrow. GPS results were also consistently leveraged in conversations with analysts and journalists to add data points to the industry conversation around platform, containers and serverless, as well as the industry's trajectory. The Foundation published four reports in 2018 based on quantitative and qualitative research provided by ClearPath, including [What's Driving Companies to the Cloud](#); [These Are the Top Languages for Enterprise Application Development And What That Means for Business](#); [Where PaaS, Containers and Serverless Stand in a Multi-Platform World](#); and the [2018 User Report](#).



INDUSTRY ANALYST RELATIONS

In 2018, Cloud Foundry Foundation took a targeted approach to industry analyst relations, focusing its efforts on analysts from tier one and influential boutique firms. Over the course of the year, more than 53 analysts from 17 firms including Gartner, Forrester, IDC, 451, Ovum and RedMonk participated in briefings and events designed to increase their awareness and understanding of Cloud Foundry technologies, contributors and users. These and other interactions resulted in mentions of Cloud Foundry in more than 222 industry analyst reports and blogs, including a detailed IDC research note about the Kubernetes projects announced in Q4.

As has become tradition, an invitation-only analyst event took place at both Cloud Foundry Summit North America in Boston and Cloud Foundry Summit Europe in Basel. Nineteen analysts from 12 firms attended the event in Boston, which include an end user panel featuring Allianz, American Airlines, Boeing, Comcast, AllState and Zipcar.

In Basel, nine analysts from as many firms attended an interactive end-user customer panel featuring AirFrance, Adfinis, Boeing, Gov.UK, Kaiserswetter, Thales and X-Integrate. The commentary and commitment to the Cloud Foundry platform exhibited by these customers helped generate upbeat analyst Twitter chatter and a very positive write up published by 451 Research.

DIGITAL

The Foundation used multiple tools to operationalize ecosystem and community growth, promote the interoperability message, and reach Cloud Foundry current and potential users, developers and contributors in 2018.



Marketing & Communications

Key initiatives included growing The Foundry directory and usage by adding new entries, improving the first 30-days user experience with new web pages and targeted communications, expanding member benefits via the member dashboard, and supporting the Foundation's China initiatives via social and PR.

The "first 30 days" experience work began in Q1 by coming to a shared agreement on the Foundation's key audiences/personas as vetted with members, the community, and Board Staff. This has also helped narrow targets for advertising and demand generation activities.

Website

The website is one of the Foundation's key marketing assets. The content, usability and look and feel of the website reflects the Foundation's reputation, brand and core values.

Total pageviews for 2018 were 280k. The top pages were The Foundry, Why Cloud Foundry and Get Started, fitting with our goal of a visitor journey that helps users quickly get started and use Cloud Foundry.

The website was redesigned over the past two years. In 2019, the website will go through a refresh to continue to provide the most relevant information for our audiences (primarily developers, operators and CIOs) with heightened engagement with the community, and improved usability and SEO for organic search.

The Foundry

In 2018, The Foundry grew to be the world's largest open source marketplace. This online directory serves as the gateway for the Cloud Foundry ecosystem. In 2018, The Foundry grew to over 5,600 entries with 12,000 page views. It continues to be a place where our members can post their offerings to drive traffic to their website.

In 2019, we will continue our focus on growth and use of The Foundry with targeted digital campaigns.

Member Dashboard

The Foundation continued our shared marketing program to raise awareness of Cloud Foundry through collective member participation. The member dashboard included ways to promote Cloud Foundry to gain access to additional member benefits -- for example, multiple mentions of



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Cloud Foundry in a member company's email newsletter to gain a banner ad in the Foundation's e-newsletter.

In 2019, we will update the benefits semi-annually to keep the program interesting and valuable to our members.

Email

Our email database continued to grow with 137 percent growth in 2018 to a total of 27,000 names in the database. The growth of the database came from gated content such as our research reports, lead scans at events, and sponsored media with DZone and InfoQ. We reached the email database with event announcements, event recaps, monthly newsletters, and research reports.

In 2019, we anticipate that our email database growth will taper off slightly as a result of reduced spending on paid media coupled with less Foundation participation at industry events, meaning fewer lead scans. Our focus will be on nurturing the contacts with high value content.

Webinars

We kicked off our webinar program in 2018. Six webinars were held with nearly 400 views. The program had strong participation and consistent viewership from its very first webinar. The most successful content was technical with a special emphasis on demo.

In 2019, we will continue to highlight technical content in our webinar program, as it has the highest engagement with our audience.

Social Media & Online Growth

In 2018, a notorious purge by Twitter of fake accounts reduced our follower count drastically, but we have regained our original numbers through our active social media presence -- with a very slight gain of 0.9 percent to nearly 85,000 followers by the end of 2018. Follower gain on LinkedIn was more robust at 16.5 percent to nearly 6,000 followers. Twitter engagements were down 50 percent over the course of the year but impressions on both Twitter and LinkedIn were up 50 percent to nearly 106M impressions together, demonstrating increased visibility among varied communities.

In 2019, the Foundation will focus on social media strategy to engage with the community and grow our followings on Twitter and LinkedIn.



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China

In 2018, the Foundation focused on the China market. We launched a Chinese language website (cloudfoundry.cn). We hired a regional PR firm to reach Chinese media, manage translations of our press releases, host media events, post content on social media, update content for SEO and more. As of the end of 2018, 78 pages were indexed on Baidu with 70 percent of the content revised on Baidu Baike, and our Weibo channel had received over 21,000 views. There are over 400 active community members from various industries following Cloud Foundry on Wechat OA since the account was created in early 2018. During the past year, we posted four articles and videos per week on the technology, use cases, community and ecosystem in order to generate excitement and engagement around Cloud Foundry in the China market.

In 2019, we will continue our focus on the China market, following the strategy developed in 2018.

PRESS COVERAGE 2018

In 2018, Cloud Foundry Foundation reassessed its PR/AR strategy mid-year and hired a new firm to own its media and analyst relations. As a result, the metrics for measuring media coverage changed slightly, with 16,411 media mentions of “Cloud Foundry” and 3,176 in media mentions of “Cloud Foundry Foundation” in global coverage. Cloud Foundry Foundation issued 19 press releases, with the communications teams and its member organizations pitching a wide range of news items throughout the year.

Some coverage highlights from the year, excluding Summit coverage, include:

- Forbes: [Cloud Foundry And The PaaS You’re Already Running](#) (12/21)
- The Stack: [Cloud computing in 2019: views of the industry](#) (12/19)
- EnterpriseTech: [Cloud Comfort Level is Growing, Survey Finds](#) (12/17)
- App Developer Magazine: [Open source, Kubernetes, and developers, according to Abby Kearns](#) (12/17)
- NetworkWorld: [Kubernetes vendors target container security, operations and management](#) (12/14)
- TechRepublic: [Improved understanding and familiarity of cloud drives adoption, survey shows](#) (12/13)
- Linux.com: [Cloud Foundry, Cloud Native, and Entering a Multi-Platform World with Abby Kearns](#) (12/6)



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- The New Stack: [What the Kubernetes Consolidations Mean for the Future of Cloud Native](#) (11/21)
- GeekWire: [Why some open-source companies are considering a more closed approach](#) (11/19)
- The New Stack: [An Interview with Cloud Foundry CTO Chip Childers](#) (11/5)
- Information Age: [A unique CTO: Helping the technical community navigate in the open](#) (11/5)
- Dice: [Tech Pros Name Programming Languages They Use at Work](#) (10/1)
- Datamation: [Top PaaS Providers](#) (7/3)
- Dynatrace: [PaaS, containers, and serverless all surging as companies take a multi-platform approach - Cloud Foundry report](#) (6/29)
- Develops.com: [DevOps and Digital Transformation: Q&A with Cloud Foundry Foundation's Chip Childers](#) (6/16)
- Computer Weekly: [Executive interview: Abby Kearns, Cloud Foundry Foundation](#) (5/18)
- Forbes: [Why Companies Are Adopting Serverless Cloud Technology](#) (5/18)
- CRN: [Cloud Foundry CTO: 8 Reasons Why Solution Providers Need To Take A Closer Look At The Technology](#) (4/26)
- The New Stack: [Kubernetes and Cloud Foundry: Better Together](#) (4/2)
- Enterprise Times: [Chip Childers talks about the Cloud Foundry Foundation](#) (3/23)
- TechTarget: [Look beyond public cloud giants for the right PaaS offering](#) (2/26)
- Telecompaper: [Swisscom appoints representative at Cloud Foundry Foundation](#) (2/8)
- SDxCentral: [15 Top Software and Tech Execs to Follow on Twitter](#) (1/17)

CLOUD FOUNDRY SUMMIT BOSTON

Twenty-three journalists attended Boston Summit. Ten briefings took place on-site with Abby Kearns, Chip Childers and Cloud Foundry users including Allianz, Allstate, Boeing and Zipcar.

Coverage of the event was published widely in publications including Forbes, TechCrunch, eWeek, FEDWeek, Light Reading, SDxCentral and others.





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Cover highlights are below:

- Light Reading: [Freedom From Lock-In Drives Cloud Foundry \(5/8\)](#)
- Forbes: [Kubernetes And The Open Service Broker Make Multi-Cloud A Reality \(4/29\)](#)
- SDxCentral: [Cloud Foundry's IBM Deal Will Help Resolve Container Challenges \(4/28\)](#)
- TechCrunch: [Kubernetes and Cloud Foundry Grow Closer \(4/20\)](#)
- eWeek: [Cloud Foundry Steps Up as De Facto Standard for Cloud-Native Development \(4/19\)](#)
- SDxCentral: [Cloud Foundry Scores Alibaba Cloud Deal, Access to China \(4/19\)](#)
- TechCrunch: [Cloud Foundry Foundation Looks East as Alibaba Joins as a Gold Member \(4/18\)](#)
- TechCrunch: [Cloud.gov Makes Cloud Foundry Easier to Adopt for Government Agencies \(4/18\)](#)

CLOUD FOUNDRY SUMMIT BASEL

Seventeen EMEA-based journalists attended Basel Summit: six from Germany, four from France, six from the UK and one from Switzerland. Three US-based journalists also attended the event.

More than 95 unique pieces of coverage published in publications including TechCrunch, ZDNet, ComputerWeekly, Enterprise Times, L'Informaticien, LeMagIT, LeBigData, JAXenter, Linux-Magazin and others. Fourteen journalists attended a Q&A / press conference with Abby Kearns and Chip Childers, and a further fourteen briefings took place on-site with Chip Childers and Cloud Foundry users including Air France-KLM, Boeing and SwissCom.



Coverage highlights are below:

- IT Magazine: [Cloud Foundry European Summit 2018 mit Besucherrekord \(10/15\)](#)
- VMBlog: [Huawei Cloud Becomes a Cloud Foundry Infrastructure Provider \(10/11\)](#)
- TechCrunch: [Cloud Foundry expands its support for Kubernetes \(10/10\)](#)
- ZDNet: [Cloud Foundry embraces Kubernetes \(10/10\)](#)
- ComputerWeekly: [Businesses must get ready for a multi-cloud strategy \(10/10\)](#)
- Heise Developer, Harald Weiss & Alexander Neumann: [Cloud Foundry Summit 2018: Neue Tools und Projekte \(10/10\)](#)
- L'Informaticien: [Suse étend la combinaison entre Kubernetes et Cloud Foundry \(10/10\)](#)



KEY LESSONS FROM 2018

- **Content Strategy:** The diversification of content in 2018 is only the beginning of a more varied content program to come. The team expanded its tactics to include more bite-size content for sharing on social, which included illustrations, an animated cartoon and shorter reports with more graphics. The creation of a webinar program was a successful endeavor that further engaged the community and served as yet another tool to reach our audience.
- **Cloud Foundry Summits:** We have collectively decided to lower the cap on attendance at Summits, as we feel that a more intimate event fosters better community. Our European Summit had just under 1,000 attendees and elicited the most positive feedback from attendees to date. We also need members to commit to sponsorships earlier in the process and more widely promote Summit events in marketing materials.
- **User Surveys:** Our users were not as responsive when we fielded the second survey in 2018, which ultimately did not yield enough data to generate a solid user report. We published only one user report in 2018 and will continue this practice (as opposed to a semi-annual report) so as not to oversaturate our user base.
- **Member Engagement:** Member marketing of Cloud Foundry is essential to the success of Cloud Foundry and we rely on our members' marketing teams to align with Foundation messaging and help promote Foundation initiatives. Our members-only dashboard delivers incentives to members to promote Cloud Foundry. Feedback from members indicated they did not know about the shared marketing and benefit program, were unclear about how to use the member dashboard or didn't have time to take advantage of the program.
- **The Foundry:** The Foundry has over 5,600 entries and provides good visibility to Cloud Foundry products and services. We will focus on usability of The Foundry with targeted campaigns for awareness and web traffic.
- **Social Media:** Social media engagement decreased in the second half of 2018. As a result, follower growth on Twitter slowed down and engagement rates decreased from the same period the previous year. We need to focus more heavily on engagement on a consistent basis going forward.
- **Web:** The amount of content and pages on our website continues to grow. A restructure for better usability, increased engagement and improved SEO will help drive organic traffic to the website.
- **Analyst Relations:** The Foundation took a targeted approach to Analyst Relations, focusing on messaging around the interoperability story, and clarifying use cases for Application Runtime,



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Container Runtime and other inflection points with Kubernetes. In 2019, we will continue this focus, but with increased emphasis on deepening relationships between the Foundation and influential analysts and encouraging analysts to turn to Cloud Foundry for information and commentary about industry trends and developments.

AREAS FOR IMPROVEMENT IN 2019

- **Member Engagement:** The Member Dashboard relies on participation from members. Activities and rewards will be updated on a bi-annual basis to keep the program relevant and valuable to the members. A refresh of the Member Dashboard will strive to improve usability and ease of member engagement.
- **Digital Marketing:** The Foundation will continue to hone our audience personas' journeys, including users, contributors and CIOs, through enhanced pathways on the website, heightened engagement on social media and awareness and education through campaigns and via email communications.
- **Internal marketing strategy:** Integrated campaigns will be more explicitly developed to align our internal tactic execution.
- **SEO:** We will have a focused effort on improving the SEO in our content and web to improve our organic search results. Paid search will be focused on specific campaigns such as Summit and Training.
- **Messaging:** Work to develop a more definitive POV from Cloud Foundry on topics pertaining to key technology and business issues.
- **Certification Marketing:** Developer Certification and Training is key to unifying the worldwide developer community for Cloud Foundry. The growth of Cloud Foundry awareness at the enterprise developer level will increase economic value to the entire ecosystem.
- **Cloud Foundry Days:** In 2019, we will no longer be holding co-located Cloud Foundry Days at Linux Foundation events. Instead, we will be pushing on our members to hold these events locally on a global scale to reach a wider audience.



- Cloud Foundry Summit Results: Total revenue for Summits was posted at \$2,491,040 for 2018. Cloud Foundry Summit Boston's total revenue came in at \$1,590,750 and Cloud Foundry Summit Basel's total revenue came in at \$900,390. Combined, these events ended up being net positive. However, our EU event itself was below expectations and, as a single event, the first to lose money in Cloud Foundry Foundation history. Member support for these events is the only way they will continue to sustain at their current levels.
- New members: In 2018, fourteen companies joined the Foundation as members. We added twelve new Silver members: Atomist, Aqua Security, Bracket Computing, Colorful Guizhou Big Data Talent Development Ltd., ITQ, LogDNA, Packet, RefineAI, Super Orbital, Tibco, Twistlock and Zettaset. Alibaba and HCL became the newest Gold members.
- Cloud Foundry PaaS Certification: The Cloud Foundry PaaS Certification program had eight distributions achieve the 2018 certification: Atos Cloud Foundry, Cloud.gov, Huawei FusionStage, IBM Cloud Foundry, Pivotal Cloud Foundry, SAP Cloud Platform, SUSE Cloud Application Platform and SwissCom Application Cloud.

KEY LESSONS FROM 2018

- The type of company interested in joining Cloud Foundry Foundation is shifting. While interest from users remains high, SIs and start-ups are starting to engage with Cloud Foundry Foundation.
- Churn slowed and the Foundation grew slightly by a measure of members in the last year. North America and Europe based companies remain the biggest contributors to membership. However, we saw a significant increase in interest and engagement from APAC in 2018, across companies that are both end users as well as providers.
- APAC became a source of new membership in 2018. The new members brought a willingness to engage -- a positive sign for the future in this region.

AREAS FOR IMPROVEMENT IN 2019

- Continue our focus on the APAC region, specifically focusing on Greater China and South Korea.
- Continued focus on expanding the Silver Membership tier with a mix of company sizes across multiple industries.
- Increase the focus on the Cloud Foundry Certified Developer Program, making it easier for more people to take the training and certification.
- Update messaging, sales, and web content outlining the value proposition for membership in the Foundation. Make it easier to find and access this information as a newcomer to the site.



Foundation Operations

Member engagement and support duties have been split among Abby Kearns, Paige O'Connor and Devin Davis.

Member satisfaction has remained high and is always a key focus for the Foundation with initiatives such as an annual member survey, quarterly member meetups, new member onboarding, and monthly From the Desk of the Executive Director emails. This has reduced member churn while increasing member satisfaction. As always, we continue to look for opportunities to increase engagement with our members and the community at large.

As a Foundation, we added five employees, and promoted one. See below for a detailed outline of our internal changes:

Foundation Promotions

- Deborah Giles to *Meeting and Event Planner*

Foundation New Hires

- Shannon Jesse: *Event Programming Coordinator*
- Kim McMahon: *Senior Director, Digital Strategy*
- Brie Rogers: *Digital Marketing Specialist*
- Roger Strukhoff: *User Stories Manager*
- Naomi Washington: *Meeting and Event Coordinator*

KEY LESSONS FROM 2018

- The focus on member engagement and satisfaction drove positive results. Feedback from our members, via surveys, offered tremendous insights into what members value, and influenced our communication and engagement with members, as well as updates to our member benefits. This will continue to be a focus area in 2019.
- Remaining agile as an organization allows us to grow and evolve alongside our members.

AREAS FOR IMPROVEMENT IN 2019

- Continued focus on member satisfaction, and deepened engagement with all of the members. We will continue to send out member surveys and use those to guide continuous improvements to member engagement and member benefits.



Foundation Operations

- Increase membership across Platinum, Gold and Silver tiers with an added focus on the APAC region.
- Continued cross-collaboration between other technologies and projects.

BUDGET V. ACTUALS V. VARIANCE 2018

REVENUE	2018 BUDGET	2018 ACTUAL	2018 VARIANCE
Membership	\$6,500,000	\$5,898,750	(\$601,250)
Event Sponsorship	\$3,250,000	\$3,135,737	(\$114,263)
Certification	\$400,000	\$300,000	(\$100,000)
Developer Certification + Training	\$244,000	\$101,516	(\$142,484)
TOTAL REVENUE	\$10,394,000	\$9,436,003	(\$957,997)

EXPENSES	2018 BUDGET	2018 ACTUAL	2018 VARIANCE
Marketing & Public Relations	\$1,948,500	\$2,143,171	(\$194,671)
Summits	\$3,500,000	\$2,678,718	\$821,282
Technology	\$287,000	\$98,767	\$188,233
Developer Certification + Training	\$160,000	\$103,423	(\$56,577)
Operations	\$1,280,152	\$1,111,865	\$168,287
Compensation	\$2,741,578	\$2,932,292	(\$190,714)
G&A	\$662,390	\$550,463	(\$111,927)
TOTAL EXPENSES	\$10,579,620	\$9,668,699	(\$910,921)
Holdover Deficit + General Reserve	\$730,945	\$542,337	(\$50,000)
NET INCOME/LOSS	(\$39,786)	(\$232,697)	(\$192,911)*

*Organization surplus of \$488,034



Conclusion

As a Foundation, we have grown our technology. As the platform continues to evolve to meet the needs of the ecosystem, the Foundation continues to mature and meet the needs of its members and users. We've learned a lot from the developers, end users, committers, contributors and technologists working on other open source projects, and we continue to flourish thanks to this loyal community.

As an open source foundation, we apply communal learnings to our strategy, allowing us to ensure we are constantly evolving alongside our community and ecosystem. In 2019, our key areas of focus will be:

- **Interoperability:** Continue building bridges to other open source technologies, ensuring that we are able to take advantage of the innovation happening in the greater cloud native ecosystem;
- **Ecosystem:** Encourage the continued expansion of the ecosystem of services and capabilities around Cloud Foundry;
- **Engagement:** Work with our member and user communities to drive more contribution back to Cloud Foundry, in whatever form that may take.

Our vision is to ensure all our members and users are able to rely on Cloud Foundry for the long term. Cloud Foundry is already in use by the majority of the Fortune 500 - going forward, we want to be the shared R&D for the Global 2000 and beyond.

We look forward to partnering with you - our community - to ensure this future.

CLOUD  **FOUNDRY**

Annual Report 2018