



# ANNUAL REPORT

FY2021 (01 May 2020 - 30 April 2021)

# Contents

|                                   |           |
|-----------------------------------|-----------|
| <b>The ASF at-a-Glance</b>        | <b>4</b>  |
| <b>President's Report</b>         | <b>6</b>  |
| <b>Treasurer's Report</b>         | <b>8</b>  |
| <b>FY2021 Financial Statement</b> | <b>12</b> |
| <b>Fundraising</b>                | <b>14</b> |
| <b>Legal Affairs</b>              | <b>19</b> |
| <b>Infrastructure</b>             | <b>21</b> |
| <b>Security</b>                   | <b>22</b> |
| <b>Data Privacy</b>               | <b>25</b> |
| <b>Marketing &amp; Publicity</b>  | <b>26</b> |
| <b>Brand Management</b>           | <b>40</b> |
| <b>Conferences</b>                | <b>43</b> |
| <b>Community Development</b>      | <b>44</b> |
| <b>Diversity &amp; Inclusion</b>  | <b>46</b> |
| <b>Projects and Code</b>          | <b>48</b> |
| <b>Contributions</b>              | <b>65</b> |
| <b>ASF Members</b>                | <b>72</b> |
| <b>Emeritus Members</b>           | <b>77</b> |
| <b>Memorial</b>                   | <b>78</b> |
| <b>Contact</b>                    | <b>79</b> |

# The ASF at-a-Glance

*"The Switzerland of Open Source..."*

— Matt Asay, InfoWorld

## The World's Largest Open Source Foundation

The Apache Software Foundation (ASF) incorporated in 1999 with the mission of providing software for the common good. Today the ASF is the world's largest Open Source foundation, stewarding 227M+ lines of code and providing \$22B+ worth of software to the public at 100% no cost. ASF projects are integral to nearly every aspect of modern computing, benefitting billions worldwide.

## Change Agents

The ASF was founded by developers of the Apache HTTP Server to protect the core interests of those contributing to and using our open source projects.

The ASF's all-volunteer community now includes over 8,200 committers, involved in over 350 projects that have been organized by about 200 independent project management committees, and is overseen by 850+ ASF members. The Foundation is a globally-distributed, virtual organization with contributors on every continent.

Apache projects power countless mission-critical solutions worldwide, and have spearheaded industry breakthroughs in dozens of categories, from Big Data to Web Frameworks. More than three dozen future projects and their communities are currently being mentored in the Apache Incubator. The ASF is the top-ranked Open Source not-for-profit organization with the most stars on GitHub.

## Global Impact

The ASF provides millions of dollars in value to users each day, with Web requests from every Internet-connected country on the planet. Apache projects power more than half the Internet, manage zettabytes of data, execute teraflops of operations, store billions of objects in virtually every industry, and are essential to personal computing and mobile devices across enterprises and mission-critical applications.

## The Apache Way

The ASF's meritocratic process of community-led development, dubbed "The Apache Way", serves as the model for open development and is recognized through

- ✓ *Earned Authority*: all individuals are given the opportunity to participate, but their influence is based on publicly earned merit —what they contribute to the community.
- ✓ *Open Communications*: all communications related to code and decision-making are publicly accessible to ensure asynchronous collaboration, as necessitated by a globally-distributed community.
- ✓ *Consensus Decision Making*: Apache Projects are overseen by a self-selected team of active volunteers who are contributing to their respective projects.
- ✓ *Responsible Oversight*: the ASF governance model is based on trust and delegated oversight.
- ✓ *Independence*: no organization is able to gain special privileges or control a project's direction, irrespective of employing Committers to work on Apache projects or sponsorship status.

The ASF's vendor-neutral, collaborative environment ensures that Apache projects and their communities are governed independently of commercial influence. The ASF does not take sides, endorse, or support any particular vendor, and does not discourage the development of "competing" projects.

The maxim "Community Over Code" is reinforced throughout the ASF: healthy communities are essential to developing long-term projects to satisfy the public's needs in an ever-changing world.

### **The Apache License**

The permissive, commercially-friendly, and popular Apache License v2 is an Open Source industry standard, enabling third parties to create new products that incorporate and extend our work in both for-profit and not-for-profit projects, provide end-user support, and bootstrap new industries..

### **Support Apache**

The ASF is a US 501(c)(3) not-for-profit charitable organization funded by corporate sponsors as well as individual and corporate donations.

# President's Report

by David Nalley

Fiscal year 2021 was challenging for the world, and by extension, the ASF. As a volunteer-driven organization, we faced a lot of uncertainty and were forced to change a lot of our plans, as did most of the world. The uncertainty for us centered around our sponsors and our volunteers.

I wondered if our volunteers would continue their open source work? With the widespread disruption I wondered what the impact would be on the ASF and on the broader open source ecosystem. Despite my worries, the statistics displayed a very slight growth in contributions and contributors compared to the previous year. In many ways this disruption highlighted the distributed asynchronous community decision-making structure that defines governance for our projects. I consider the flat governance structure of our project communities a key part of the resilience and their ability to continue to make progress and ship software.

I also worried about whether our sponsors would still care and be able to support us? Many industries were shuttered during the pandemic and while we have adequate reserves in place to weather a disruption, we have ongoing operational costs to provide our services to the public. Some of our sponsors were impacted by the pandemic, and we hope to see them back in the future, but the majority of our existing sponsors continued their support, and a few new sponsors came into the fold.

From rewriting budgets to cancelling in-person conferences the behind the scenes work of the Foundation increased during this fiscal year. I was amazed to see the amount of work involved in cancelling a conference, and then again to see a virtual conference delivered with more content, in more languages, and with more attendees at ApacheCon@Home than we've ever had at an ApacheCon. While I miss getting to talk to folks in person, I am amazed at the sheer number of folks who came together to learn from each other.

We didn't aim for maintaining the status quo. In fact, a significant amount of modernization and process streamlining happened under the direction of the Treasurer this fiscal year. Those changes give the operational bits of the foundation increasing levels of transparency and accountability while dramatically decreasing the amount of work necessary.

This hasn't been the happiest year or the best year the Foundation has enjoyed, but I am happy to report that we've weathered it well and even excelled a bit. The Foundation is in good health fiscally and operationally and continues to execute on its mission of delivering software for the public good and acting as a steward for the tremendous amount of software already developed by our community.



# Treasurer's Report

by Myrle Krantz

The Treasurer, Myrle Krantz, and the Assistant Treasurer, Trevor Grant, with the help of our accounting firms, IgniteSpot, and Virtual, continue to provide The Foundation with...

- accounting services,
- financial tooling,
- budgeting and policy advice, and
- financial reports

We maintain and track the financial means that enable our communities to provide software for the public good.

In addition, we provide sponsorship “soft collections” for The Foundation which consists of invoicing sponsors, interfacing with sponsor PO systems, following up when payments aren’t made, and providing regular reports on accounts receivable aging to Fundraising.

This last year in collaboration primarily with the President, David Nalley, the Infrastructure Administrator, Greg Stein, and Fundraising, we completely revamped multiple financial processes, financial tools, and relationships within The Apache Software Foundation. We did so while fulfilling our responsibilities, improving our service levels in multiple areas, and also reducing our costs. We are extremely proud of our work over the past year.

## Completing Tax and Audit

WernerCPA with support from Virtual created the latest public filings and generated our audit for the fiscal year ending on April 30, 2020. We received an unqualified result. (For those not familiar with accounting-speak, this is a good result.) The full audit report and the 990’s were published via GuideStar. We will employ WernerCPA again for the tax filings for the fiscal year that ended on April 30, 2021. Historically, we have undergone an audit every three years. Continuing that pattern, the next audit will be for the fiscal year ending on April 30, 2023.

## Budgeting During a Period of Financial Uncertainty

Early in 2020, in an environment of high economic uncertainty, the Treasurer advised officers to minimize expenses. Throughout the fiscal year, officers did so by delaying new investments and freezing costs. This was most notable in the area of Infrastructure spending. Despite our initial concerns, Fundraising had a very successful year. Our sponsors have been very generous; we are grateful. Conferences was also able to reshape successful events and avoid losses. As a result of the good stewardship the officers displayed, the Foundation had ~\$600k more at the end of the fiscal year 2020-2021 than at the beginning of it.

Because of The Foundation's high degree of fiscal discipline, even if our sponsors had been unable to support us, we would still have been able to serve our communities this year.

The Treasurer's office continues to support the President in financial planning processes. We are pleased with the highly effective and cash-efficient execution of the officers in the previous year. We are confident that The Foundation will continue to find the right balance between managing financial risk and investing in our communities.

## Changing our Accounting Service Provider

At the end of December, The Foundation switched accounting and fundraising collections from our previous provider Virtual Inc to a new provider IgniteSpot. We are grateful for the many years of service that Virtual has provided us, bringing our books up to date, and initiating many processes at The Foundation necessary for proper governance.

We are thrilled with the work that IgniteSpot has done up until now moving our books to QuickBooks Online, integrating our various systems for better assurances of accuracy and transparency, and making iterative improvements on our financial reporting capabilities to enable better decision-making by the officers. We conduct weekly meetings between The Foundation and IgniteSpot to coordinate the various changes and improvements we've made together in the accounting and tooling for The Foundation. We have also set up shared mailing lists and a shared Slack channel with our new accountants.

The transition was mostly smooth. Our books were imported without difficulties. Thanks to the introduction of bill.com, there were no interruptions in our vendor

payments. And thanks to heightened attention by Sally Khudairi, Daniel Ruggeri, and IgniteSpot, there were no interruptions to sponsor invoicing. We have had some difficulties with transition of some systems previously under Virtual's umbrella, but we have resolved most of them.

In the process of transitioning accountants, we have also transitioned PEO providers. We are now served by ADP TotalSource as the employer of record for our non-contractor employees. In addition, we have transitioned to a new physical mailing address and a new registered agent. We thank Greg Stein, David Nalley, and Ruth Suehle for the truly excellent collaboration which made a change of this extent possible.

## **Adjusting Accounting and Reporting**

We made a technical adjustment to our accounting to recognize the income of \$892,882 from the very generous Pineapple fund donation as a public donation. This is reflected in the financials as a reduction in liabilities and an increase in public donations. The donation was originally made at the beginning of 2018. We have also adjusted reporting to include more detail on the remaining restricted funds, and improved our accounting for project-targeted donations.

We also used the last couple of months of the fiscal year to prepare for a change from cash-based to accrual-based accounting at the beginning of the next fiscal year. To improve transparency in the context of that change we will also be adding a cash flow report to the reports we share with the public and with the board.

We have plans for improving budget-based reporting to the individual officers as well. These service enhancements are enabled by other changes we have made this past year to tooling and service relationships.

## **Introducing New Tooling**

The Treasurer's office, with the assistance of the Infrastructure Administrator, Greg Stein, completed a transition to the vendor invoicing approval system bill.com last year. This has vastly improved the accuracy and auditability of our vendor payments and reduced the level of expertise required of the volunteers and staff who manage vendor payments. We continue to be pleased with the workflows this enables.

The Treasurer's office, with the assistance of Virtual and IgniteSpot, completed a transition from QuickBooks Enterprise to QuickBooks Online. Replacing an on-premise tool with a SaaS tool makes it possible for members of our fully-remote

volunteer team to access our financial data directly without having to go through the accountant for all questions. This in turn creates a higher level of empowerment and transparency for our volunteers. Using a SaaS accounting system also makes automatic integration with other SaaS systems such as bill.com, ramp.com, and our banks easier and cheaper, leading to less opportunities for error in the reconciliation of data between systems.

The Treasurer's office began introducing ramp.com. We spent several months at the beginning of 2021 preparing to make the introduction of virtual credit cards possible. This SaaS finance solution makes it possible for us to issue a separate credit card for each vendor, giving officers more control over our spend. It also makes it possible for us to track pre-approval of credit card spend by our officers. Ramp.com also gives us better functionality for user management than the previous system we had been using. And finally, this service refunds a small portion of our card payments. We evaluated multiple systems before settling on Ramp.

## Maintaining our Asset Accounts

During the first half of 2021, we have moved most of our primary banking activities to a new bank account at TD Bank, including sponsorships, and bill pay. We plan to close the Citizen's account once the last few sponsorship/donor systems are converted.

The majority of our cash remains in a CDARS account at Boston Private which provides FDIC insurance for the full amount with good liquidity.

We have ended acceptance of cryptocurrencies by The Foundation.

We also performed a review of account access as part of succession planning for our all-volunteer organization. We made multiple minor improvements to ensure that the appropriate officers are listed on all our financial accounts. We documented this landscape to ensure that a full understanding of our tools and the way they interrelate is available to all officers and board members.

# FY2021 Financial Statement

| Profit & Loss                  |                    |                    |
|--------------------------------|--------------------|--------------------|
| The Apache Software Foundation | 2019/2020          | 2020/2021          |
| <b>Revenue</b>                 |                    |                    |
| ACA Conference                 |                    |                    |
| Sponsorship                    | \$0                | \$21,993           |
| Conference/Event Revenue       | \$610,161          | \$57,595           |
| Programs                       | \$15,578           | \$11,000           |
| Public Donations               | \$76,893           | \$994,975          |
| Sponsorship Program            | \$1,510,100        | \$1,949,992        |
| Interest Income                | \$20,854           | \$12,308           |
| <b>Total Revenue</b>           | <b>\$2,233,586</b> | <b>\$3,047,862</b> |
| <b>Expenses</b>                |                    |                    |
| Unapplied Cash Bill            |                    |                    |
| Payment Expense                | \$0                | \$9,091            |
| General & Administrative       | \$23,666           | \$30,737           |
| Taxes (Business)               | \$0                | \$20               |
| Brand Management               | \$49,385           | \$93,267           |
| Conferences                    | \$708,925          | \$39,348           |
| Fundraising                    | \$141,561          | \$192,239          |
| Infrastructure                 | \$1,091,179        | \$908,504          |
| Publicity                      | \$317,855          | \$240,362          |
| Programs Expense               | \$25,597           | \$90               |
| Treasury Services              | \$42,509           | \$52,953           |
| Travel Assistance Committee    | \$50,362           | \$17,412           |
| Diversity and Inclusion        | \$60,000           | \$15,000           |
| Brand Management               | \$0                | \$297              |
| <b>Total Expenses</b>          | <b>\$2,511,038</b> | <b>\$1,599,320</b> |
| <b>Operating Profit</b>        | <b>(\$277,452)</b> | <b>\$1,448,543</b> |
| <b>Other Income</b>            |                    |                    |
| Interest Income/Foreign        | \$0                | (\$39)             |

|   |             |             |
|---|-------------|-------------|
| Exchange                                  |             |             |
| <b>Earnings Before Interest &amp; Tax</b> | (\$277,452) | \$1,448,504 |
| <b>Net Income</b>                         | (\$277,452) | \$1,448,504 |

| <b>Balance Sheet</b>                    |                    |                    |
|---|--------------------|--------------------|
| <b>The Apache Software Foundation</b>   | <b>2019/2020</b>   | <b>2020/2021</b>   |
| <b>ASSETS</b>                           |                    |                    |
| Cash & Equivalents                      | \$3,561,269        | \$4,095,397        |
| Other Current Assets                    | \$0                | \$95,224           |
| <b>Total Current Assets</b>             | <b>\$3,561,269</b> | <b>\$4,190,621</b> |
| Investments or Other Non-Current Assets | \$24,900           | \$24,900           |
| <b>Total Non-Current Assets</b>         | <b>\$24,900</b>    | <b>\$24,900</b>    |
| <b>Total Assets</b>                     | <b>\$3,586,169</b> | <b>\$4,215,521</b> |
| <b>LIABILITIES</b>                      |                    |                    |
| Short Term Debt                         | \$0                | \$2,064            |
| Other Current Liabilities               | \$1,425,860        | \$604,645          |
| <b>Total Current Liabilities</b>        | <b>\$1,425,860</b> | <b>\$606,709</b>   |
| <b>Total Non-Current Liabilities</b>    | <b>\$0</b>         | <b>\$0</b>         |
| <b>Total Liabilities</b>                | <b>\$1,425,860</b> | <b>\$606,709</b>   |
| <b>EQUITY</b>                           |                    |                    |
| Retained Earnings                       | \$2,437,760        | \$2,160,308        |
| Current Earnings                        | (\$277,452)        | \$1,448,504        |
| <b>Total Equity</b>                     | <b>\$2,160,308</b> | <b>\$3,608,812</b> |
| <b>Total Liabilities &amp; Equity</b>   | <b>\$3,586,169</b> | <b>\$4,215,521</b> |

# Fundraising

by Daniel Ruggeri

As always, we would like to start our fundraising report by thanking our Sponsors for their continued support. As a 501(c)(3) charity, our Sponsors are our primary source of funding, supported by individual and corporate donations. Everything we are able to do is because their generosity has made it possible. THANK YOU!

As was reported last year at this time, we were entering a very worrisome time as the COVID-19 pandemic gripped the world. Indeed, at the time of writing, the world had mostly been locked down for about two months. Despite this, and in the face of the uncertainty we and our Sponsors faced, we maintained a hopeful outlook as our Sponsors continued to support our important mission by maintaining their sponsorship. To address the potentially troublesome waters ahead, we adjusted our budget targets for a much more conservative approach to the year and assumed that we would remain "flat" as a best-case scenario.

The way our Sponsors and supporters responded was magnificently inspiring! Through the course of the pandemic, we were humbled to see that most of our Sponsors continued to support us exactly as they had in prior years. We even welcomed some new Sponsors to the family. As a result, we not only met our budget target to remain steady, but we modestly exceeded our conservative income target! Seeing our Sponsors keep the mission of providing software for the public good alive through all that has happened is an uplifting note for a very difficult year.

We otherwise continue our focus on keeping "business as usual" activities moving along well. Our Ambassador program remains active with engagement for our sponsors, new/renew sponsorships are processed efficiently, and our internal data management has improved to the point that we're able to use scripts and minor automation to take action on it. We're pleased to also report that processes designed and implemented a few years ago have held up well to the pressures of running virtual conferences. That is to say: we're quite proud that there is little news to share on the process and "back office" front.

As this report began, it's worth repeating in closing: everything we are able to do is because of the generous support of our Sponsors. We are tremendously grateful for the support of our excellent Sponsors. They are:

## ASF Sponsors

### Platinum Sponsors



FACEBOOK



### Gold Sponsors

Anonymous



cloudera



### Silver Sponsors



Alibaba Cloud



COMCAST



## Bronze Sponsors

Bestecasinobonusen.nl  
Bookmakers  
Cafe24  
Casino2k  
Cerner  
Curity  
Goread.io Followers  
GridGain  
Gundry MD  
Host Advice  
HotWax Systems

Journal Review  
LeoVegas Indian Online Casino  
Miro-Kredit AG  
Mutuo Kredit AG  
Online Holland Casino  
Paf  
ProPrivacy  
PureVPN  
RX-M  
RenaissanceRe  
SCAMS.info

SevenJackpots.com  
Start a Blog by Ryan Robinson  
The Best VPN  
The Blog Starter  
The Economic Secretariat  
Top10VPN  
Twitter  
Writers Per Hour



## Targeted Sponsors

### Targeted Platinum Sponsors



## Targeted Gold Sponsors

 **ATLASSIAN**

 **DATADOG**

 **docker**

 **phoenixNAP<sup>®</sup>**  
GLOBAL IT SERVICES

  
**Quenda**  
Enterprise Edition Open-Source Software

## Targeted Silver Sponsors

 **HOTWAX  
SYSTEMS**

 **MANNING**

 **rackspace**  
the #1 managed cloud company

## Targeted Bronze Sponsors

Bintray  
Education Networks of America  
Friend of Apache Cordova  
Google  
Hopsie

No-IP  
PagerDuty  
Peregrine Computer  
Consultants Corporation  
Sonic.net

SURFnet  
Virtru

## Individual Giving

Supporting Apache through one-time or recurring individual donations and corporate contributions are made possible year-round via <https://donate.apache.org/> as well as through annual gifting campaigns that include:



## #GIVINGTUESDAY

Giving Tuesday kicks off the ASF's end-of-year Individual Giving and Corporate Gifts campaigns.



The ASF is ranked by GuideStar with a Gold Seal of Transparency for voluntarily and publicly describing its goals, strategies, and accomplishments.



# Legal Affairs

by Roman Shaposhnik

The Apache Software Foundation (ASF) Legal Affairs committee has been chartered directly by the Apache Board of Directors to work with our pro-bono legal counsel on answering legal questions and addressing policy issues regarding license compatibility and intellectual property concerns within the Apache Software Foundation communities. Another part of our mission is to help guide the Foundation through an evolving legal landscape and be the first point of contact for any third party individuals or organizations seeking to engage with us in a more formalized legal manner.

In the past year, Roman Shaposhnik continued as a VP Legal Affairs and was joined by Justin Mclean as Assistant VP, Legal Affairs. Of course, the work of the Legal Affairs committee wouldn't be possible without countless hours put in by volunteers. Folks like Roy Fielding, David Nalley, Craig Russell, and Mark Thomas, just to name a few.

We would also like to thank Mark Radcliffe and the DLA Piper team for always being willing to work with us even under very tight deadlines.

Over the past year, the team has worked through a number of issues including:

- Evaluating our Privacy Policy in compliance with GDPR and working closely with VP, Data Privacy on the matter.
- Responding to a handful of subpoenas and C&D requests for data removal.
- Working on the Conflict of Interest policy.
- Educating our sponsors and commercial legal counsels on how to best engage with Apache communities while still protecting their patent portfolios.
- Educating U.S. Federal agencies on the role that open source software in general and ASF communities in particular play in shaping the competitive landscape of the public cloud computing providers.
- Reviewing and advising on ASF entering into relationships with sister Open Source and commercial Foundations.

- Working on the data privacy implications of using technologies similar to Google Analytics on the web properties maintained by the ASF.
- Assisting ASF projects with their questions around the use of licenses in their codebases.
- Clarifying the structure of the Legal Affairs committee and a formal line of communications with our pro-bono legal counsel.
- Continuing to diversify the pool of corporations and legal professionals available to work with the Foundation on a pro-bono basis.
- Continuing a robust dialogue and collaboration between legal committees of ASF and other major open source organizations (Linux Foundation, OSI, and Eclipse Foundation).
- Providing feedback to various individuals and entities around permissible modifications to the Apache License.

In general the goal of the Legal Affairs committee is to provide support to Apache projects as they consider inclusion of dependencies in their products, and understanding of how those dependencies are or are not compatible with the Apache License. We provide a list of “resolved” questions, available at <https://www.apache.org/legal/resolved.html> which can be thought of as a “Frequently Asked Questions (FAQ)” page that represents decided policy as recorded over the years. We frequently cite and inform others of this page and infrequently we update policy based on understanding and the needs of our projects. In addition, the Legal Committee encourages its customers to use our JIRA instance, available at <http://issues.apache.org/jira/browse/LEGAL> for discussion that may lead to a policy decision. In the past year, this work has become ever so more important since the world of open source has started seeing vendors experimenting with COSS (Commercial Open Source Software) licenses derived from the Apache License v2.

We have had a busy year and are eager to meet and serve the needs of our projects, in collaboration with our pro-bono counsel.

# Infrastructure

by David Nalley

This past year has seen a struggle due to the global pandemic. The Infrastructure team has remained safe and healthy, and were able to continue their work without interruption. As we are normally a work-from-home team, no real changes were required. The Apache community at-large continued their work, and the Infrastructure team kept the systems running to support them.

The Foundation runs a large Jenkins installation, managed by the Cloudbees Operations Center within AWS. This has allowed us to create clusters dedicated to individual projects (where supporters have donated build resources), and a shared cluster for all projects to use. The availability and management of build systems remains a high priority, as usage continues to grow across our many communities. We have started monthly conference calls for interested people, and are looking at new and innovative solutions to increase capacity.

One of our major innovations this past year is a feature we call "ASF.yaml" which enables communities to self-serve many features around their code repositories (particularly in regards to their presence on [github.com](https://github.com)). Projects can define/configure website publishing, mailing list notifications, and GitHub metadata such as Topics. This puts management directly in the hands of the community, rather than projects needing the Infrastructure team to apply changes.

The team worked with Marketing and Publicity to create a series of interviews called "Inside Infra" to put a face on our people and the work we do. This was a fun set of blog posts that let us make visible what is normally a faceless series of tasks to support our communities.

In conjunction with the Treasurer's office, we have shifted our back office financial systems over to new platforms: accounting, PEO, invoicing, and credit card handling. This has been a large shift, but has significantly streamlined Infrastructure's operations. While Infrastructure may be the largest cost center, these benefits have extended throughout the Foundations operations, with great success.

# Security

by Mark Cox

The Security committee of The Apache Software Foundation (ASF) perform the following functions:

- handling and triage of incoming security reports in our projects
- working closely with the project teams, communities, and reporters to ensure that issues get handled quickly and correctly.
- maintaining a consistent process for projects to follow in handling Vulnerabilities
- providing advice to projects and assisting with complex or critical issues
- being a CVE Project Candidate Naming Authority, allocating CVE names

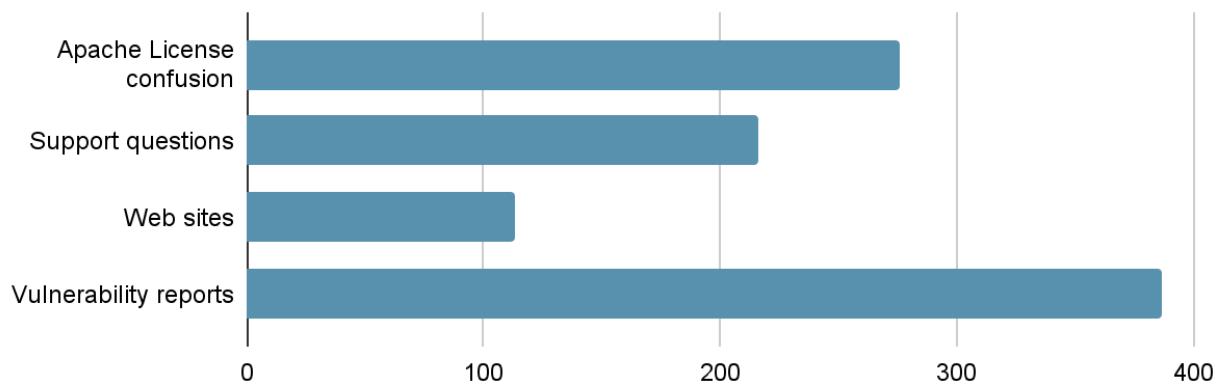
## Volume

In the course of the year our security addresses received in total over 17,000 emails.

After spam filtering and thread grouping this becomes 992 non-spam threads, an increase of 40% since last year's report.

Diagram 1 gives the breakdown of those 992 threads.

**Breakdown of incoming security email threads**



276 of the 992 threads (28%) were people confused by seeing the Apache License on their devices. We continue to get a large number of these reports mostly due to software which has been released under the Apache License but was not created by the ASF (such as the majority of the Android OS).

The next 216 (21%) are threads that were not reports of new vulnerabilities. These are generally people asking support-type questions or how old, public, vulnerabilities were dealt with.

While [security@apache.org](mailto:security@apache.org) is not the designated place to report issues affecting our infrastructure such as web sites, we still received 113 reports in this category (11%). The vast majority of these were rejected as they are invalid reports of us having open directory listings, clickjacking attacks, lack of framing protection, public source code, and so on.

That left 387 reports of possible vulnerabilities, and these spanned across 95 of the top level ASF projects. The reports are overseen by the security team through their lifecycle and further triaged and investigated by each project's security team or PMC. Issues that are confirmed valid are addressed with updates and this led to 155 CVE names being issued.

## Noteworthy events

During the year there were a few noteworthy events; issues that were severe and high risk, ones that had readily available exploits, issues spanning multiple projects, or otherwise due to media attention. These included:

- May 2020: The Cybersecurity and Infrastructure Security Agency (CISA) released a list of [Top 10 Routinely Exploited Vulnerabilities](#) including [CVE-2017-5638](#), the remote command execution (RCE) vulnerability in Apache Struts 2 disclosed and fixed in 2017. This issue is [known to be exploited in the wild](#), however the first exploitation was discovered after the advisory and fix was published.
- July: Versions of Apache Guacamole 1.1.0 and earlier were vulnerable to issues in RDP, [CVE-2020-9497](#) and [CVE-2020-9498](#). If a user connects to a malicious or compromised RDP server it could lead to memory disclosure and possible remote code execution.
- August: A vulnerability in Apache Struts ([CVE-2019-0230](#)) could lead to arbitrary code execution. In order to exploit the vulnerability, an attacker

would need to inject malicious Object-Graph Navigation Language (OGNL) expressions into an attribute that is used within an OGNL expression. Although Struts has mitigations to address potential injected expressions, versions before 2.5.22 left an attack vector open which was fixed in [updates for this issue](#). A metasploit exploit exists for this issue.

- November: Previously each ASF project was responsible for writing up their own CVE entries and submitting them to Mitre. This leads to many delays in the CVE database being updated with Apache issues as entries are often rejected as the legacy format causes issues. We released an internal tool providing projects dealing with security issues a way to edit, validate, and submit their entries to Mitre. We aim to have the CVE database updated within a day of an issue being published.
- December: The CVE project released a new automation API and the ASF became the first organisation to get a live CVE name using it. Instead of the security team holding a pool of names requested in advance we now allocate them on demand, with the service taking care of emails to the PMC and other previously manual parts of the process. We expect more automation available during 2021 allowing us to streamline the CVE process for projects even further.
- January 2021: A Cross-Site scripting (XSS) flaw affected the default error page of Apache Velocity, [CVE-2020-13959](#). The issue was addressed in the code repository in November, however a version containing the fix was not released or the vulnerability announced until January, leading to a press report about how the issue affected sites using Velocity.

We welcome reports from anyone finding security issues in any Apache project to [security@apache.org](mailto:security@apache.org), or read more about the process at <https://apache.org/security/>

# Data Privacy

by Christian Grobmeier

Privacy discussed questions related to committer privacy. Only a few privacy requests have been made and were handled.

We also have a new website: <https://privacy.apache.org>. This website aims to guide committers for maintaining their project websites, but also will publish policies.

We also created a SVN directory where we store log files of privacy activities, DPAs and similar.

In the next months we hope to learn more about our information flow, help to make project websites privacy compliant and collect more DPAs.



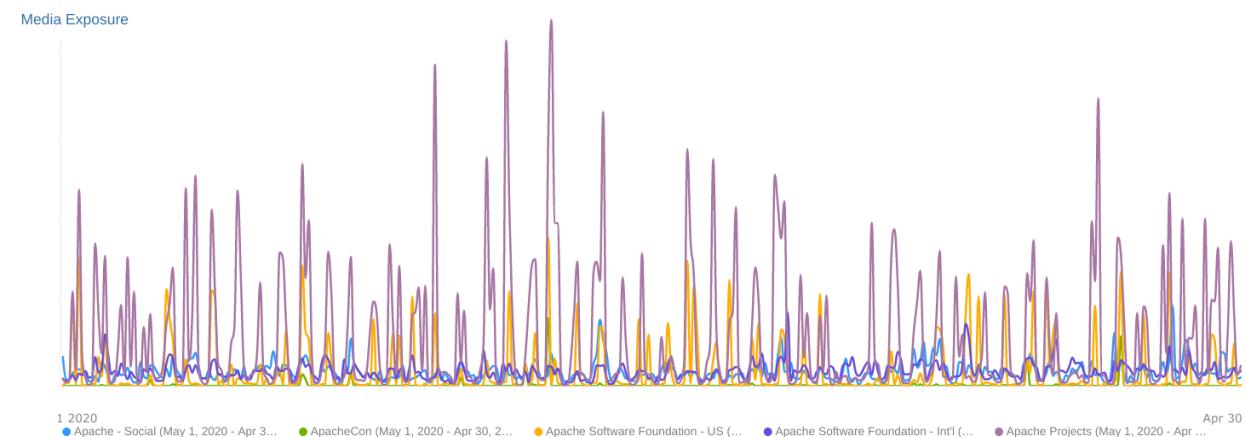
# Marketing & Publicity

by Sally Khudairi

The ASF's marketing, publicity, and promotional activities are executed by HALO Worldwide, who have been leading Foundation-level outbound strategic communications and day-to-day tactics since 2006. In addition to performing in-house marketing and publicity, HALO also provides support and counsel to:

- Apache Projects and their Communities
- ASF Fundraising and Sponsor Relations
- ASF Trademarks and Brand Management
- Apache Community Development
- Apache Conferences and Events

## FY2021 highlights

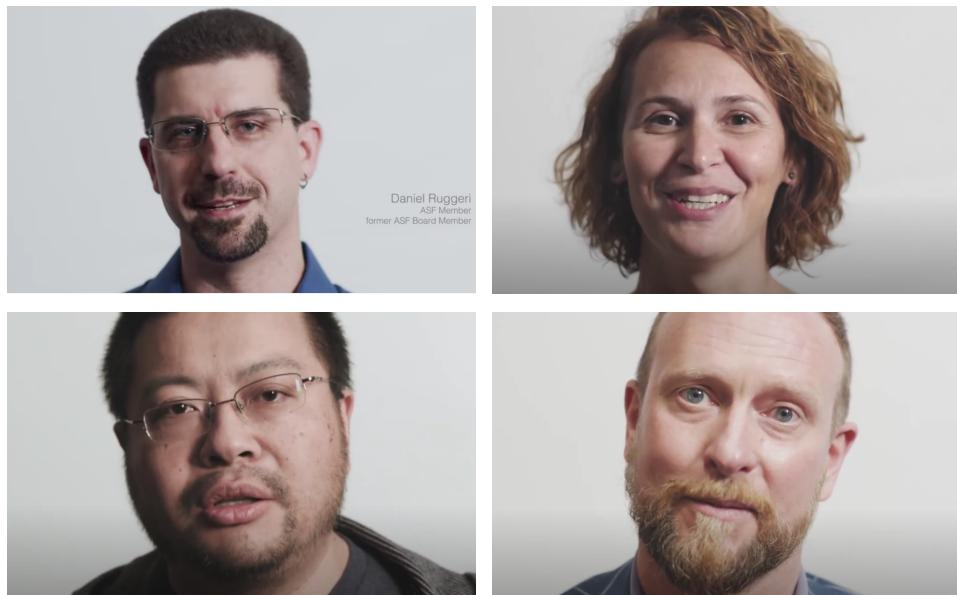


- 18 Press Releases
- 74 Informal Announcements
- 257 Tweets
- 59.8K Twitter followers
- 271 LinkedIn posts
- 48.5K LinkedIn followers
- 71 Media Queries
- 31.1K Media Clips
- 22 Analyst Briefings and Queries

- 248 Analyst Reports
- 64 Apache News Summaries (Weekly Round-Ups + Months in Review)
- 7 video highlight summaries posted
- 316 video presentations posted, including ApacheCon and Community events
- 181.6K Apache video views on YouTube
- 3 Quarterly Reports/Operations Summaries
- Published FY2020 Annual Report <https://s.apache.org/FY2020AnnualReport>

## Special Projects

### Documentary: "Trillions and Trillions Served"



"Trillions and Trillions Served" highlights the ASF's monumental growth from its incorporation by 21 individuals overseeing the Apache HTTP Server in 1999 to becoming the world's largest Open Source foundation. "Trillions" features perspectives and experiences from dozens of individuals from the global Apache community that include ASF Founders, Members, Project Management Committee members, Committers, Sponsors, users, and enthusiasts.

Filmed on location in 2019 during ApacheCon North America in Las Vegas and ApacheCon Europe in Berlin, "Trillions and Trillions Served" is the result of more than 65 hours and 8 terabytes of footage filmed and edited by Wyona Pictures (founded by ASF Member Michael Wechner). The final product is a collection of four films:

- 1) "Why Apache" teaser <https://s.apache.org/WhyApache-short>
- 2) "Apache Everywhere" short <https://s.apache.org/ApacheEverywhere>
- 3) "Apache Innovation" short <https://s.apache.org/ApacheInnovation>
- 4) "Trillions and Trillions Served" full feature <https://s.apache.org/Trillions-Feature>



[click image to launch "Why Apache?" promo short]



[click image to launch "Apache Everywhere" promo short]



[click image to launch “Apache Innovation” promo short]



[click image to launch “Trillions and Trillions Served” feature documentary]





## Inside Infra



### INSIDE INFRA



DANIEL GRUNO

The "Inside Infra" interview series launched towards the end of FY2020, and featured members of the ASF Infrastructure team. The project provided rarely experienced insight into the 7-person team who keep the ASF's Infrastructure running 24/7/365 — 99.75% average uptime over FY2021! Meet:

- Chris Thistletonwaite <https://s.apache.org/InsideInfra-Chris>
- Drew Foulks <https://s.apache.org/InsideInfra-Drew>
- Greg Stein
  - Part I <https://s.apache.org/InsideInfra-Greg>
  - Part II <https://s.apache.org/InsideInfra-Greg2>
  - Part III <https://s.apache.org/InsideInfra-Greg3>
- Daniel Gruno
  - Part I <https://s.apache.org/InsideInfra-Daniel1>
  - Part II <https://s.apache.org/InsideInfra-Daniel2>
- Gavin McDonald
  - Part I <https://s.apache.org/InsideInfra-Gavin>
  - Part II <https://s.apache.org/InsideInfra-Gavin2>
- Andrew Wetmore
  - Part I <https://s.apache.org/InsideInfra-Andrew>
  - Part II <https://s.apache.org/InsideInfra-Andrew2>
- Chris Lambertus
  - Part I <https://s.apache.org/InsideInfra-ChrisL>
  - Part II <https://s.apache.org/InsideInfra-ChrisL2>

## "Success at Apache"



Launched in 2016, "Success at Apache" focuses on the people and processes behind why the ASF "just works". During FY2021 we augmented the Success at Apache series (posts authored by members of the Apache community) with Inside Infra interviews, as detailed in the above section. In addition, we published our first "Sponsor Success at Apache" post, featuring ASF Targeted Platinum Sponsor Leaseweb.

Sponsor Success at Apache: The Fork  
by Wei Zhou

Success at Apache: I Became an Apache Solr Committer in 4,662 Days. Here's how you can do it faster!

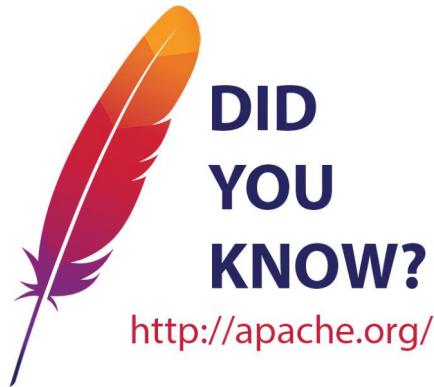
by Eric Pugh

Success at Apache: Remote Collaboration in the Time of Coronavirus  
by Marvin Humphrey

Success at Apache: bringing the Apache Beam firefly to life  
by Julián Bruno

For more Success at Apache posts, visit  
<https://blogs.apache.org/foundation/category/SuccessAtApache>

## Did you know?



---

Launched in 2015, the ASF's "Did you know?" campaign features a trio of Apache-related factoids in every Apache Weekly News Round-up. Highlights in FY2021 include:

- Did you know that Apache projects support COVID-19 pandemic-related efforts in myriad ways, including training large-scale, distributed deep learning libraries over clusters of hospital machines?
- Did you know that Feathercast --the voice of Apache-- features hundreds of recordings on Apache projects and their communities, ApacheCon

presentations, and more? New interviews include Apache Airflow, Ignite, Mahout, OFBiz, and Sling

- Did you know that the permissive and commercially-friendly Apache License 2.0 is one of the most popular Open Source licenses?
- Did you know that Tencent uses Apache Pulsar to process tens of billions of dollars in financial transactions each day?
- Did you know that John Deere's data platform is powered by Apache Flink and Apache Spark to scalably receive and process millions of sensor measurements per second, and adapt to continually increasing volumes of data?
- Did you know that the "Trillions and Trillions Served" feature documentary is now available with Chinese subtitles?
- Did you know that your employer can join companies such as American Express, Bloomberg, IBM, and Microsoft in matching contributions and volunteer hours made by their employees?
- Did you know that projects undergoing development in the Apache Incubator are in a variety of categories that include AI, Annotation, Big Data, Blockchain, Cryptography, Data Visualization, Distributed Computing, Email, Embedded Systems, Geospatial Data, Graphing, Hardware Acceleration, IoT, Messaging, Monitoring, Natural Language Processing, Scheduling, Streaming, Training, Usability Testing, and more?
- Did you know that there were 150 TB+ in source code downloads from Apache mirrors (excludes convenience binaries) in FY2020?
- Did you know that workflows for the Creative Commons Catalog project are powered by Apache Airflow?
- Did you know that you can learn about Apache Beam, Calcite, Camel, CarbonData, Groovy, Hadoop, Karaf, Labs, NetBeans, OFBiz, OpenOffice, PLC4X, Rya, Spark, Tomcat, Unomi, and more in the "Apache Innovation" short segment of the "Trillions and Trillions Served" documentary?
- Did you know that Shopify is building a new streaming analytics pipeline powered by Apache Beam, Druid, and Kafka?
- Did you know that Apache Royale Jewel UI set already provides 60+ components to quickly build Web applications?
- Did you know that Target uses Apache Druid to ingest more than 3 trillion rows of data across 3,500+ data sources?
- Did you know that Apache Kylin enables SQL developers and BI users to achieve sub-second response times for queries against petabytes of data?
- Did you know that Apache MXNet (incubating) was listed among the best machine learning and deep learning libraries for building and training machine learning and deep learning models?

- Did you know that you can download and use a variety of ASF Templates and Badges for personal, project, and corporate promotions?
- Did you know that Apache Druid powers real-time analytics for Airbnb, Alibaba, British Telecom, Cisco, Didi Chuxing, eBay, Hulu, Lyft, Netflix, and many more?
- Did you know that Apache Airflow, Arrow, Druid, and Superset (incubating) were awarded InfoWorld's Bossies for the Most Innovative Open Source Projects & Next Generation Tools?
- Did you know that Pinterest's real-time analytics platform is powered by Apache Druid?
- Did you know that Apache Roadshow China will be held online 24-25 October, alongside COSCon 2020?
- Did you know that the ASF Infrastructure team have added more self-serve features to .asf.yaml?
- Did you know that Salesforce uses Apache Druid as their real-time analytical database to store application performance metrics extracted from billions to trillions of log lines per day?
- Did you know that the Apache OFBiz community is deliberating deployment on AWS production environments?
- Did you know that Oak Ridge National Laboratory uses Apache Spark and Parquet to solve high-performance computing solutions on some of the world's fastest supercomputers?
- Did you know that Orange's media center is powered by Apache Wicket?
- Did you know that Alibaba's real-time computing platform processed data streams totaling 4 billion items per second during Singles Day, the largest global online shopping event, using Apache Flink?
- Did you know that Apache TVM is the ASF's first full stack software and hardware co-optimization project?

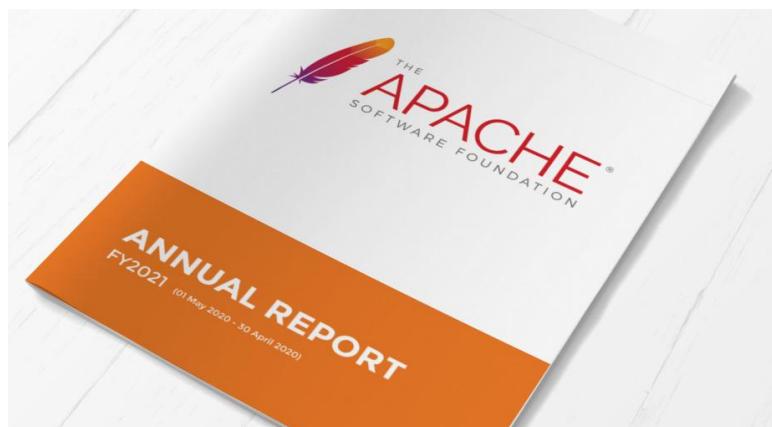
## Central Services

Established early 2019, the ASF Central Services team assists in two areas:

- 1) Creative projects that range from logo development to apache.org redesign and content refreshes and support for individual Apache Projects and initiatives.
- 2) Editorial projects that support Marketing & Publicity promotional activities that include Weekly News Round-ups, Months-in-Review, and special reports.

Highlights include:

## Graphics and Website Production



The Official Global Conference Series  
of The Apache Software Foundation

See Events Watch Video

Tomorrow's Technology Today

The latest innovations from dozens of Apache projects and their communities in a

APACHECON

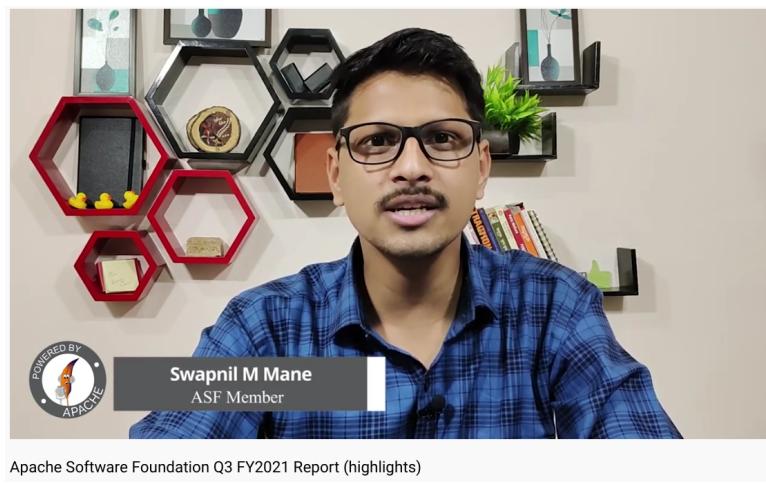
Sponsors Conduct History Photos Contact

A screenshot of the ApacheCon website, showing a banner for the conference series, event links, and a call to action for technology innovation.

Creative projects include updating ASF logo assets, assisting Apache Projects and initiatives with logo updates, "Powered by Apache" project badges, conference signage and event promotional materials, Website redesign, UX optimization, and look-and-feel refreshing. Ongoing activities include updates to the apache.org

Website and master templates, as well as coordination with ASF Infrastructure on the new content management system.

## Video Highlights



In the latter part of FY2021 we introduced video highlights to provide additional promotion for Foundation news, as well as activities from ASF committees such as Security, and initiatives such as ApacheCon.

- 1 April 2021: [Apache Month in Review - March 2021 Highlights](#)
- 22 March 2021: [Apache Software Foundation Q3 FY2021 Report Highlights](#)
- 1 March 2021: [Apache Month in Review - February 2021 Highlights](#)
- 23 February 2021: [Apache Software Foundation Security Report: 2020](#)
- 1 February 2021: [Apache Month in Review - January 2021 Highlights](#)
- 1 January 2021: [Apache in 2020 - By the Digits](#)

## Press Releases

- 8 April 2021: [The Apache Software Foundation Announces Apache® DolphinScheduler™ as a Top-Level Project](#)
- 24 March 2021: [The Apache® Software Foundation Celebrates 22 Years of Open Source Innovation "The Apache Way"](#)
- 4 March 2021: [The Apache Software Foundation Announces Apache® Daffodil™ as a Top-Level Project](#)
- 23 February 2021: [The Apache® Software Foundation Sustains its Mission of Providing Software for the Public Good through Corporate Sponsorships and Charitable Giving](#)

16 February 2021: [The Apache Software Foundation Announces Apache® Gobblin™ as a Top-Level Project](#)

3 February 2021: [The Apache Software Foundation Announces Apache® DataSketches™ as a Top-Level Project](#)

26 January 2021: [The Apache Software Foundation Announces Apache® ECharts™ as a Top-Level Project](#)

21 January 2021: [The Apache Software Foundation Announces Apache® Superset™ as a Top-Level Project](#)

19 January 2021: [The Apache CloudStack Project Releases Apache® CloudStack® v4.15](#)

30 November 2020: [The Apache Software Foundation Announces Apache® TVM™ as a Top-Level Project](#)

14 October 2020: [The Apache Software Foundation Celebrates 20 Years of OpenOffice®](#)

23 September 2020: [The Apache Software Foundation Announces Apache® IoTDB™ as a Top-Level Project](#)

29 July 2020: [The Apache® Software Foundation Announces Annual Report for 2020 Fiscal Year](#)

15 July 2020: [The Apache Software Foundation Announces Apache® Wicket™ v9](#)

15 July 2020: [The Apache Software Foundation Announces Apache® APISIX™ as a Top-Level Project](#)

4 June 2020: [The Apache Software Foundation Announces Apache® Hudi™ as a Top-Level Project](#)

28 May 2020: [The Apache Software Foundation Announces Apache® CloudStack® v 4.14](#)

13 May 2020: [The Apache Software Foundation Announces the 10th Anniversary of Apache® HBase™](#)

## Foundation Statements



Quarterly and Annual Reports, as well as the ASF 2020 Security Report, Apache in 2020 - By The Digits, and select Foundation statements, including the statement on the COVID-19 Coronavirus Outbreak, are available at  
<http://www.apache.org/foundation/reports.html>



# Brand Management

by Mark Thomas

## Operations

The work of the Brand Management team falls broadly into one of five Categories:

- providing advice to projects
- helping companies building products based on Apache software use our marks correctly
- trademark registrations
- granting permission to use our marks
- addressing potential infringements of our marks

The statistics suggest activity has been down a little this year compared to the previous year but that isn't something I have noticed. My impression is that things have been about the same.

Compared to many processes at the ASF, trademark related activities take a long time. It isn't unusual for some tasks to take six months or more and some can take years. Our tracking system continues to be up to task - ensuring that even if things take a long time, they do not get forgotten about.

As the year started, the impact of Covid-19 on events triggered a series of updated requests to use our marks for external events as those events moved on-line. We were happy to be able to accommodate all those requests. As with in-person events, we worked with the organisers and the ASF Conferences team to minimise scheduling conflicts.

The remainder of the requests fell into the usual categories of merchandise and publications, with nearly all requests being granted, subject to our Trademark Usage Policy.

This year we also worked with the KAFKA project and counsel to develop a KAFKA specific branding policy for KAFKA clients and connectors.

We provide advice to both ASF projects and podlings. The advice to podlings, and occasionally, prospective podlings is typically around naming. Naming projects is

hard. Fortunately, we don't have to come up with the names. We provide advice around the suitability of a name and how easy it is likely to be to protect going forwards.

This year we received an infringement claim for a non-ASF controlled website that just happened to be hosted on the Apache Web Server. We provided the lawyers with some advice on how to correctly identify the entity that controls a website.

The total expenditure on Brand Management is up this year. This increase has been driven by two more complex - for different reasons - registrations in China and again demonstrates how a small number of tasks can quickly dominate the expenditure. The breakdown of expenditure for this year and the previous two years is:

| Area         | FY2019 | FY2020 | FY2021 |
|--------------|--------|--------|--------|
| Registration | 30%    | 70%    | 60%    |
| Renewal      | 10%    | 10%    | 1%     |
| Assignment   | 15%    | 10%    | 15%    |
| Infringement | 45%    | 10%    | 10%    |
| Maintenance  | —      | —      | 14%    |

The appearance of maintenance is largely driven by the change in the ASF's registered address. The process for updating registrations can vary considerably by jurisdiction.

## Registrations

Our US registration of CLOUDSTACK completed this year, as did the registrations for FLINK in the EU and APACHE in the EU.

We also started a small number of new registrations this year.

## Infringements

Potential infringements are brought to our attention from both internal and external sources. The majority of infringements we see are accidental and our project communities are able to resolve these quickly and informally with occasional input from the Brand Management team. A small number of issues take longer to resolve.

This year a number of potentially infringing works were reported as being sold via Amazon. The ASF is in the process of registering our marks with the Amazon Brand Registry which will enable us to tackle these more easily.

And finally...

The Brand Management team welcomes your comments and suggestions as well as any questions you might have. Please see <https://www.apache.org/foundation/marks/contact> for our contact details.



# Conferences

by Rich Bowen

During FY2021, we ran one major event, and began planning for the CY2021 event schedule.

ApacheCon 2020, originally planned for New Orleans, was moved online due to the global pandemic. We held ApacheCon @Home, our first online event, September 29 through October 1. There were 5,714 registrations, of which we had a 58% turnout rate. Registrations were from all over the world, and content was delivered in English, German, and, for the first time, Spanish and Hindi.

The event was sponsored by Codethink, RX-M, AWS, IBM, Red Hat, Apple, DataStax, VMWare Tanzu, Instaclustr, and Imply. Additionally Manning was a media partner, and Muse.dev hosted a code contest during the event.

We had keynotes from Thomas Huang (Nasa), Jonathan Ellis (DataStax), Camille Fournier, Kim Huang (Red Hat), Catherine McGarvey (VMWare), Edmon Begoli (ORNL), Anil Inamdar (Instaclustr), and Gian Merlino (Imply.io).

As of this writing, we are planning ApacheCon @Home 2021, which will be held September 21 - 24, and ApacheCon Asia 2021, which will be held August 6 - 9. Both events will be held online. Registration, and more details, are available at <https://apachecon.com/>

We also run a number of smaller topic/project-focused events throughout the year, and these events are listed at <https://events.apache.org/>

At this time, we fully expect to return to in-person events in 2022, but we will continue to monitor the global travel situation and begin making those decisions closer to the end of 2021.

# Community Development

by Sharan Foga

The focus of the first quarter was adapting our approach to help mitigate the impact of the Covid-19 pandemic on our community activities. With the moving of ApacheCon to an online conference we helped to support and promote the event. Our Community track was well supported and attracted a good CFP response.

Our Apache Local Community (ALC) initiative is working and growing, and we were happy to report that we are in the process of establishing a new ALC chapter in Lagos, Nigeria. With the help of Kenneth Paskett from the ASF Central Services team, we have also worked to help strengthen the Apache brand locally by introducing custom branding for the Apache Local Communities (ALC). Each chapter can create a logo customised for their location.

We spent August and September preparing for and participating in ApacheCon@Home. Our Community track ran over 3 days and 2 time zones and began with a presentation in Hindi. This was very significant for us as it was the first time that we have presented community content at ApacheCon in a language other than English. Being accessible in other languages is helping reach other potential contributors. Our track attracted a good audience and many of the sessions achieved good interaction and participation.

During December an Apache Roadshow China was held in conjunction with COSCon. The event was a great success and we are looking forward to participation at future events.

Another key theme in the third quarter was communication and ensuring that our community was being kept informed of what is happening. As a result, we experimented with a new format for the Apache News Roundup and trialled it with the community. A range of short videos were created focussed on different topics. Feedback from the community has been extremely positive so we will be continuing this initiative.

The ASF was once again chosen as a Google Summer of Code (GSoC) mentor organisation and a key responsibility for the Community Development team is to help oversee the involvement of any participating Apache projects. Several students will be mentored by the ASF throughout the coming year.

In April we welcomed a new PMC Chair, Swapnil M Mane as our previous PMC Chair Sharan Foga decided to step down as she was recently elected to the ASF Board.

The latest statistics from our mailing list shows that we have 993 subscribers and during the year we have had over 2,958 emails sent discussing over 1,838 different topics.



# Diversity & Inclusion

by Katia Rojas

The D&I committee was established in 2019 in order to build equity in our community by developing tools and frameworks to foster inclusion and increase diversity in all phases of Apache projects. The committee selected the following values as the foundation of their work: Respect, empathy, openness, patience, candor & dependability.

## Goals

### FY 2021 Goals

- Instrument the Apache contributor funnel to establish a participation baseline for underrepresented groups
- Create a toolkit to address the top 3 entry barriers for new contributors from underrepresented groups
- Be the trusted, go-to partner for PMCs when it comes to D&I
- Have committer on-boarding and retention plans, built with and shared with the PMCs
- Improve the accessibility of Apache projects by increasing participation of at least one underrepresented group by 20% across all Apache projects

### Noteworthy Achievements

- Enhanced our position as an Outreachy community
  - Hosted 10 Outreachy interns in 8 projects.
  - Developed a work structure to ensure continuity of the program and promote the participation of the community.
  - Created an entry point for newcomers from underrepresented groups.
- Research on the current status of Diversity and Inclusion at the ASF
  - This project was composed of two initiatives: The ASF Community Survey and a User Experience Research for contributors of underrepresented groups.
  - The survey application was wrapped up with 622 completed responses.
  - We recorded a read-out, which you can watch in our official YouTube channel <https://s.apache.org/pnkzw>, and read the slides shared in the D&I wiki

[https://cwiki.apache.org/confluence/display/EDI/\\*\\*+Files+and+Resources](https://cwiki.apache.org/confluence/display/EDI/**+Files+and+Resources)

- - We conducted 19 one-on-one interviews, which provided insightful information on how we can help our community to ease the challenges experienced by contributors in our Apache community, especially those coming from underrepresented backgrounds. You can find early results on these interviews in this document  
<https://docs.google.com/document/d/1aoCCrsWmE-Pp6kxiUgHJ9lTlrM3XOmX4nCDGJ7kyjCI/edit>.

## Future Goals

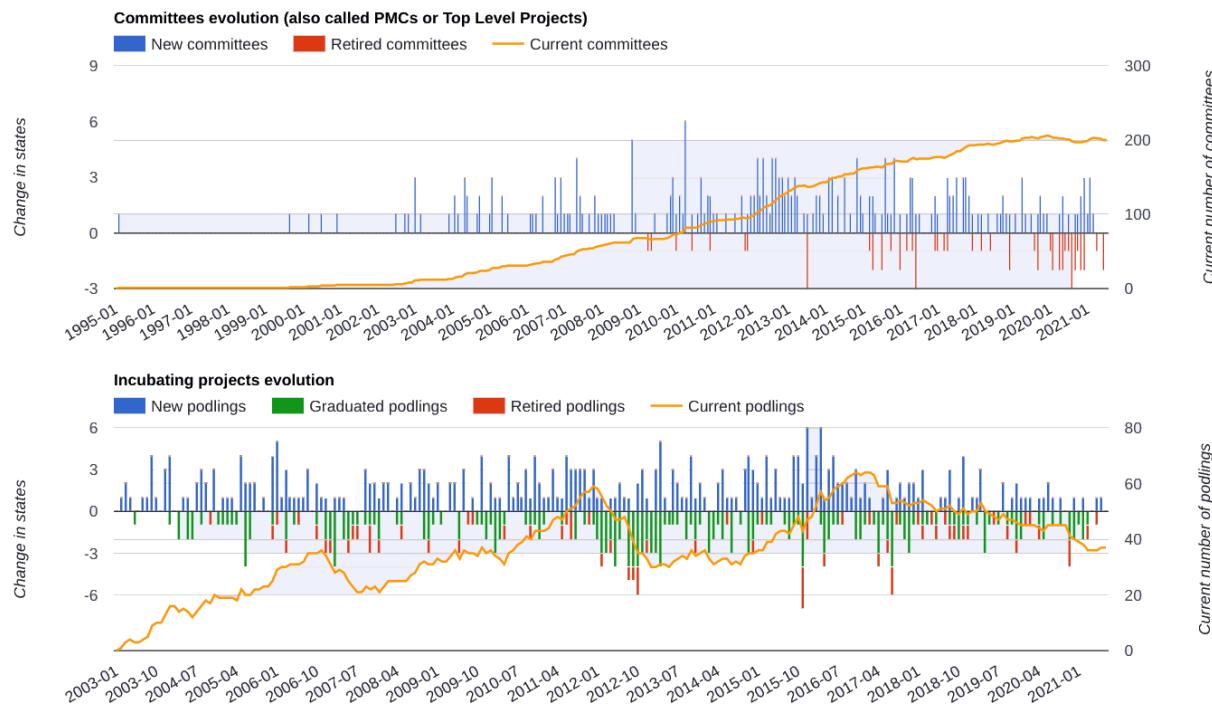
- Improve current work structure to ensure continuity of the Outreachy program. Boost the entry point for underrepresented groups in our community.
- Standardize a friction log feedback process to identify the main barriers for newcomers from underrepresented groups in the Outreachy program.
- Set a two-years cycle process for the survey to keep track of the influential factors on the contributor experience.
- Act on the findings and recommendations from the research done in FY2021. Deal with some of the most common barriers to contribution that were previously identified from underrepresented groups.
- Centralize D&I efforts in Confluence to maximize community outputs.
- Publish a website to improve the visibility of our projects and attract new contributors. Increase the number of contributors by at least 20%.

# Projects and Code

The ASF stewards 227M+ lines of code in 2,254 Apache repositories across 350+ projects. The ASF served ~2 Petabytes in source code downloads over the past year from Apache mirrors (excludes convenience binaries), 35M+ apache.org page views each week, and Web requests from every Internet-connected country on the planet.

Each Apache Project is overseen by a Project Management Committee (PMC), that guides its day-to-day operations, including community development and product releases..

- Apache Top-Level Projects —200 PMCs are managing 351 projects and sub-projects; 14 of which are newly-graduated Top-Level Projects. 13 projects retired to the Apache Attic.
- Incubating podlings —35 projects are currently undergoing development in the Apache Incubator; 8 projects were new entrants to the Incubator, and 2 were retired.



# Apache Top-Level Projects



## Apache Incubating Podlings

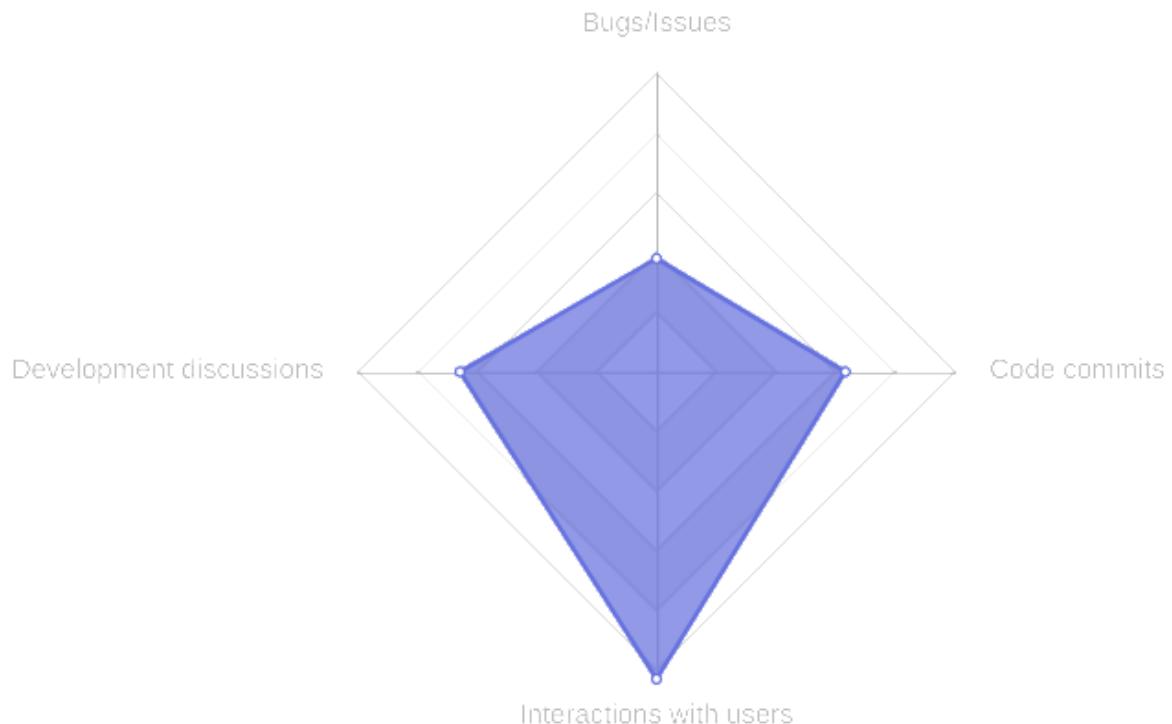


## Retired Apache Projects in the Attic

|                        |                              |                               |
|------------------------|------------------------------|-------------------------------|
| Abdera                 | Forrest                      | PredictionIO                  |
| ACE                    | Hama                         | Quetzalcoatl                  |
| Apex                   | Harmony                      | Rave                          |
| Aurora                 | HiveMind                     | Sentry                        |
| Avalon                 | iBATIS                       | Shale                         |
| AxKit                  | Jakarta                      | Shindig                       |
| Axis Sandesha2/C       | Jakarta Cactus               | Sqoop                         |
| Axis Savan/C           | Jakarta ECS                  | Standard C++ Library (STDCXX) |
| Axis Savan/Java        | Jakarta ORO                  | Stanbol                       |
| Beehive                | Jakarta Regexp               | Stratos                       |
| Chukwa                 | Jakarta Slide                | Tajo                          |
| Click                  | Jakarta Taglibs              | Tiles                         |
| Open Climate Workbench | Labs                         | Trafodion                     |
| Crimson                | Lens                         | Tuscany                       |
| Continuum              | Lenya                        | Twill                         |
| Crunch                 | Lucy                         | VXQuery                       |
| Deltacloud             | Marmotta                     | Whirr                         |
| DeviceMap              | MetaModel                    | Wink                          |
| DirectMemory           | Metron                       | Wookie                        |
| DRAT                   | MRUnit                       | WS Muse                       |
| Eagle                  | ODE                          | Xang                          |
| ESME                   | ObjectRelationalBridge (OJB) | Xindice                       |
| Etch                   | Oltu                         | XML                           |
| Excalibur              | Onami                        |                               |
| Falcon                 | Polygene                     |                               |

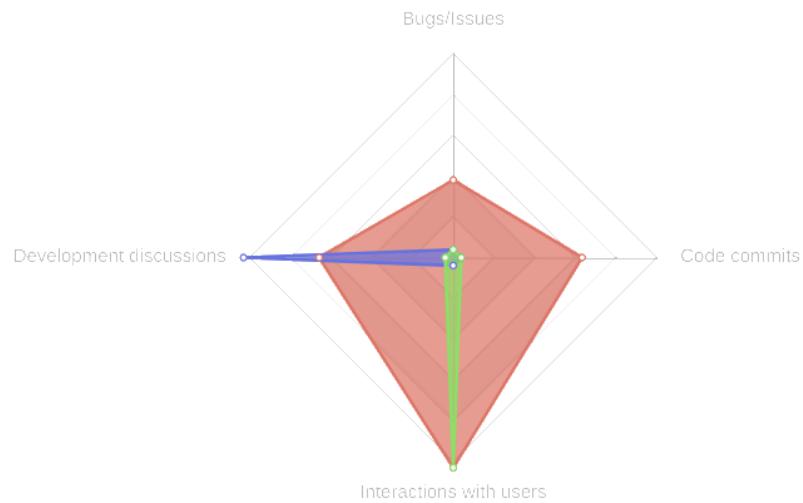
## Organizational Activity (at-large)

■ Current activity, organisational average



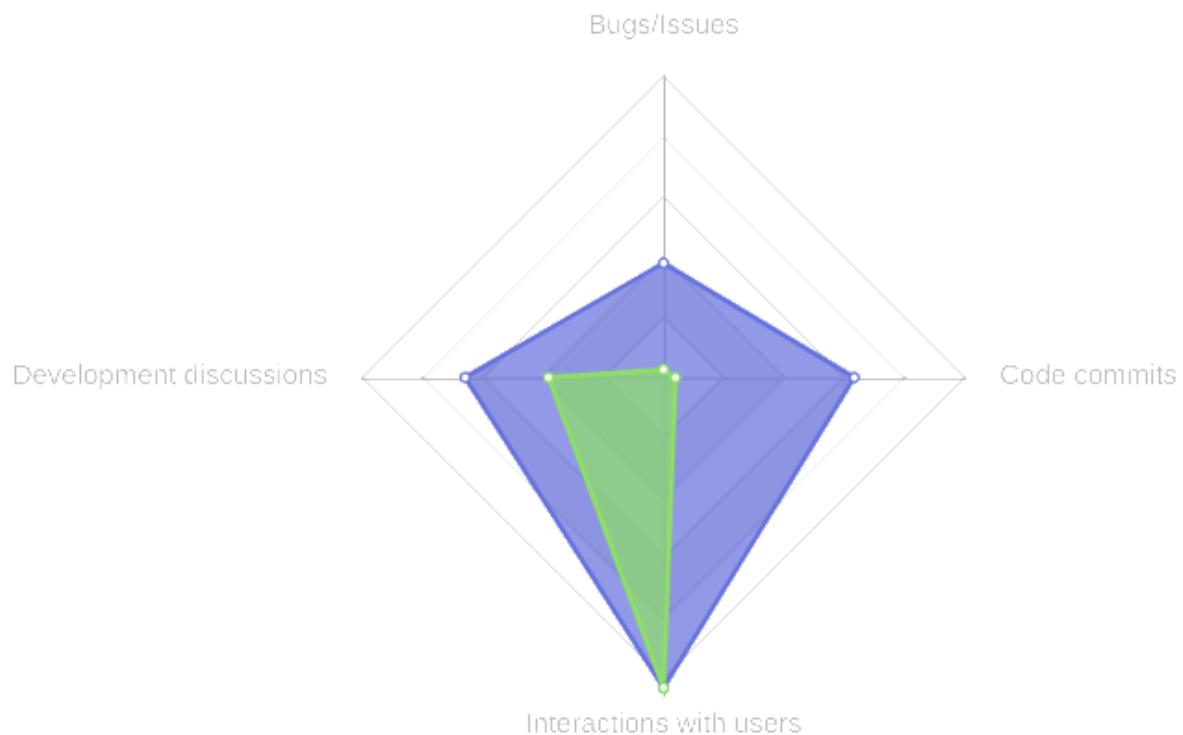
## Apache Big Data Projects vis-à-vis ASF at-large

■ Current activity, organisational average ■ Current activity, Big Data Dev Mailing Lists ■ Current activity, Big Data User Mailing Lists



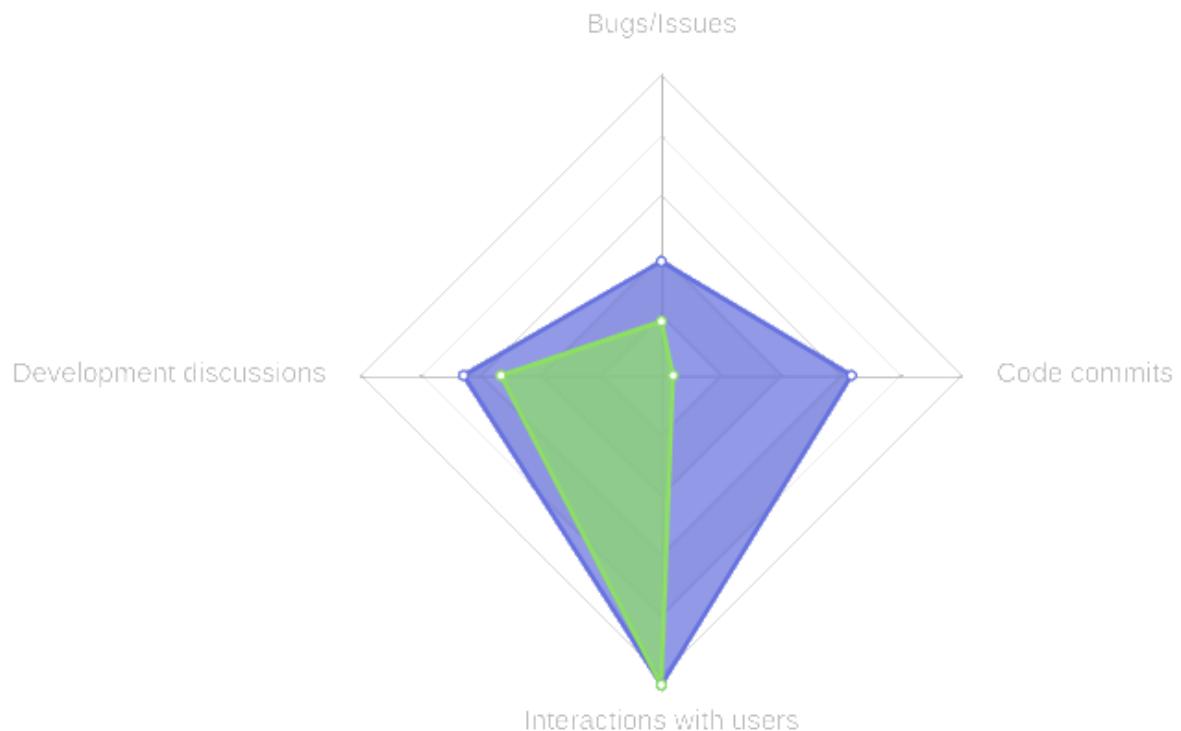
## Apache Build Management Projects vis-à-vis ASF at-large

Current activity, organisational average    Current activity, Build Management



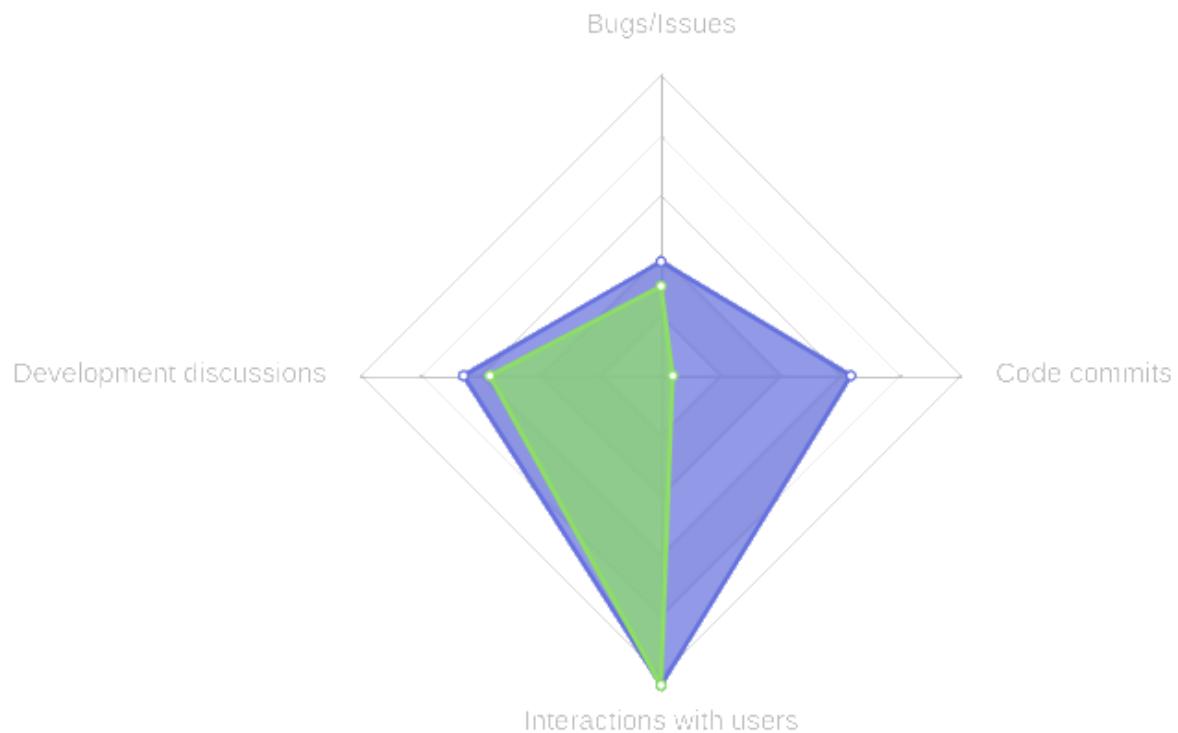
## Apache Cloud Computing Projects vis-à-vis ASF at-large

Current activity, organisational average    Current activity, Cloud Computing



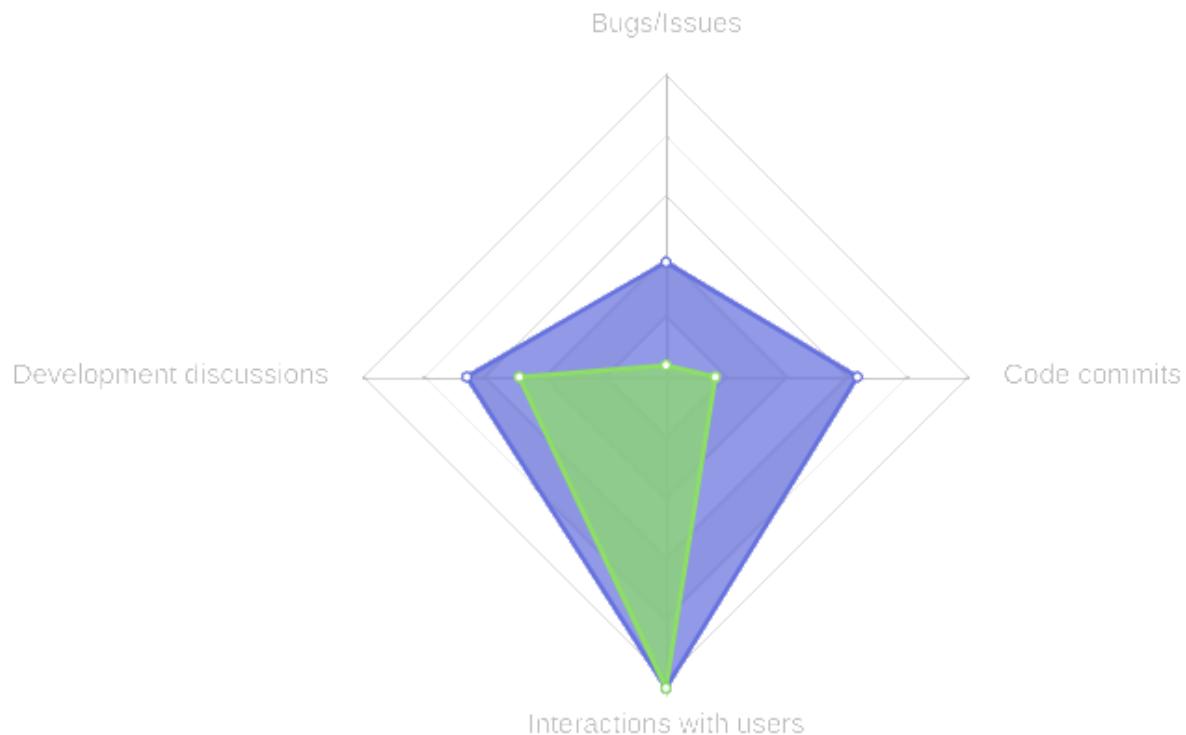
## Apache Database Projects vis-à-vis ASF at-large

█ Current activity, organisational average   █ Current activity, Database Projects



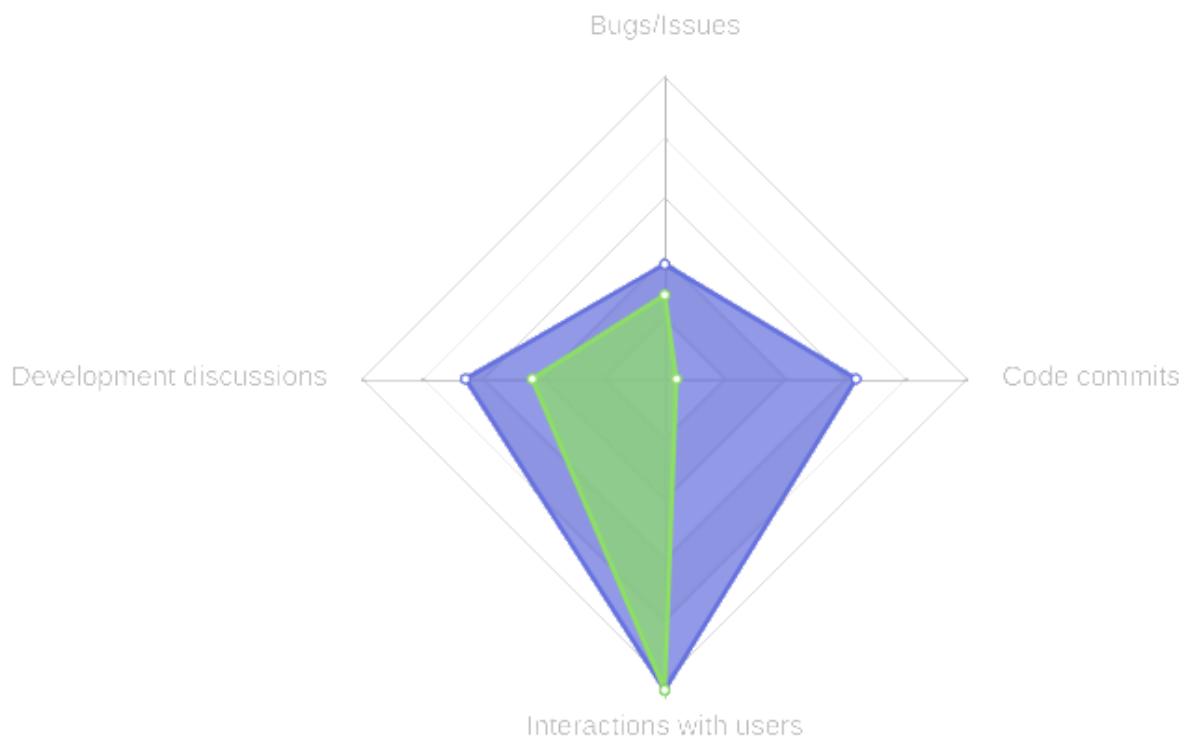
## Apache HTTP Server Projects vis-à-vis ASF at-large

■ Current activity, organisational average   ■ Current activity, HTTP Servers



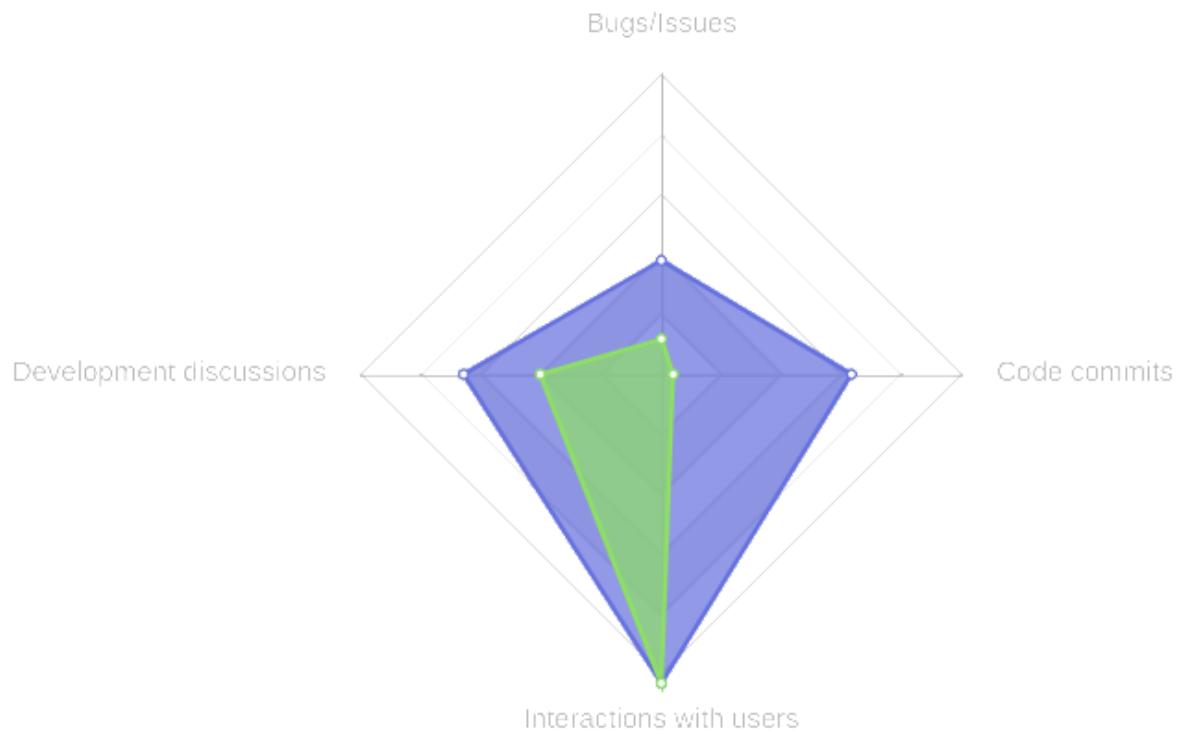
## Apache Maven Projects vis-à-vis ASF at-large

Current activity, organisational average    Current activity, Maven



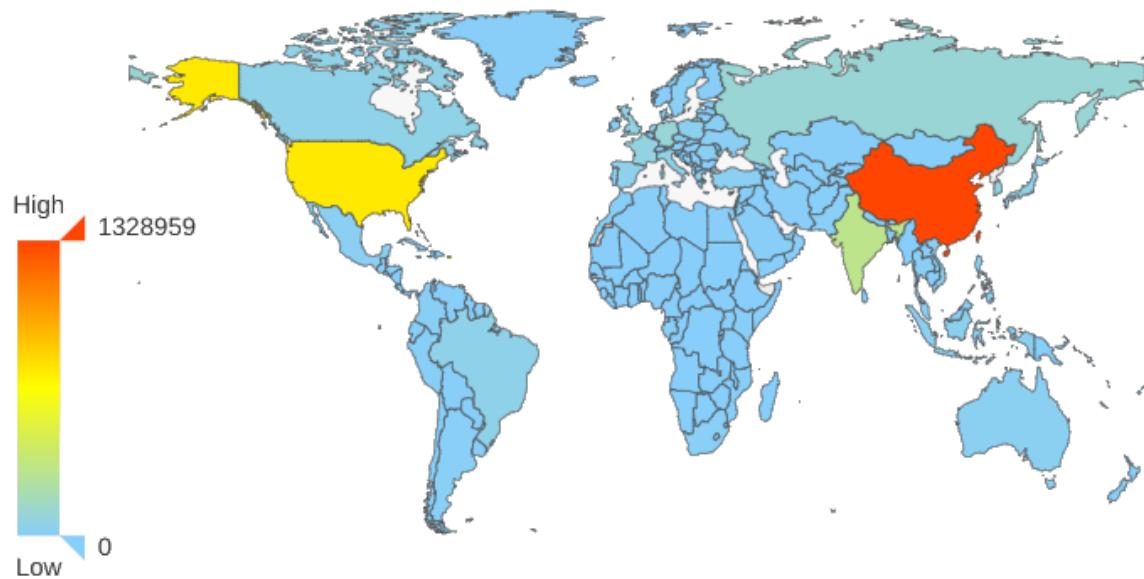
## Apache Maven Projects vis-à-vis ASF at-large

Current activity, organisational average    Current activity, Web Frameworks



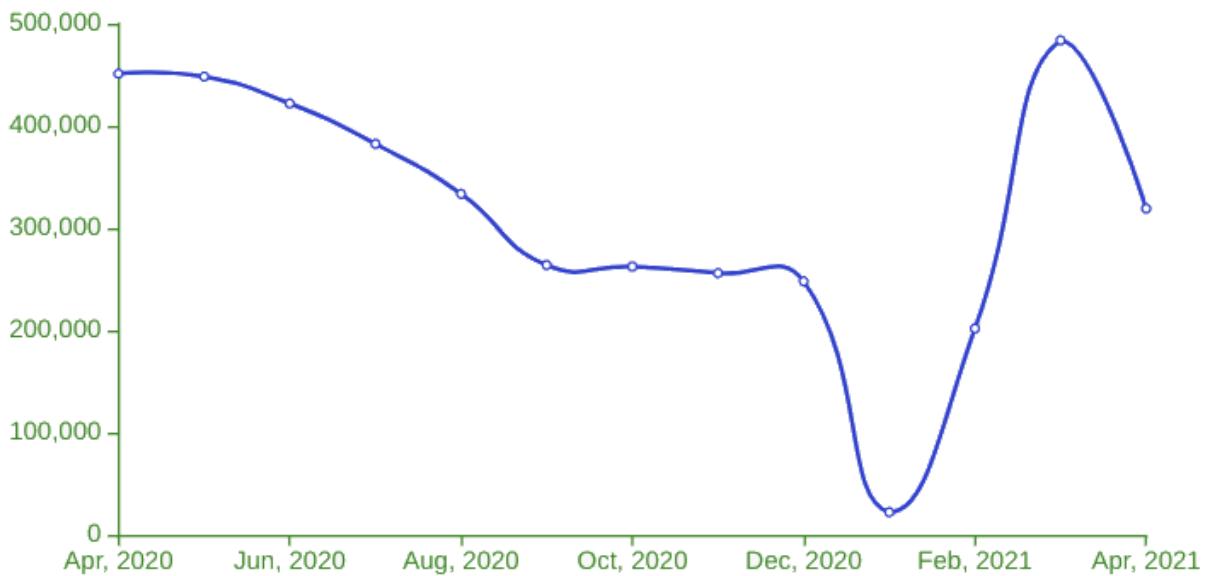
## Worldwide Activity

Representing 4,095,908 visits from 228 countries

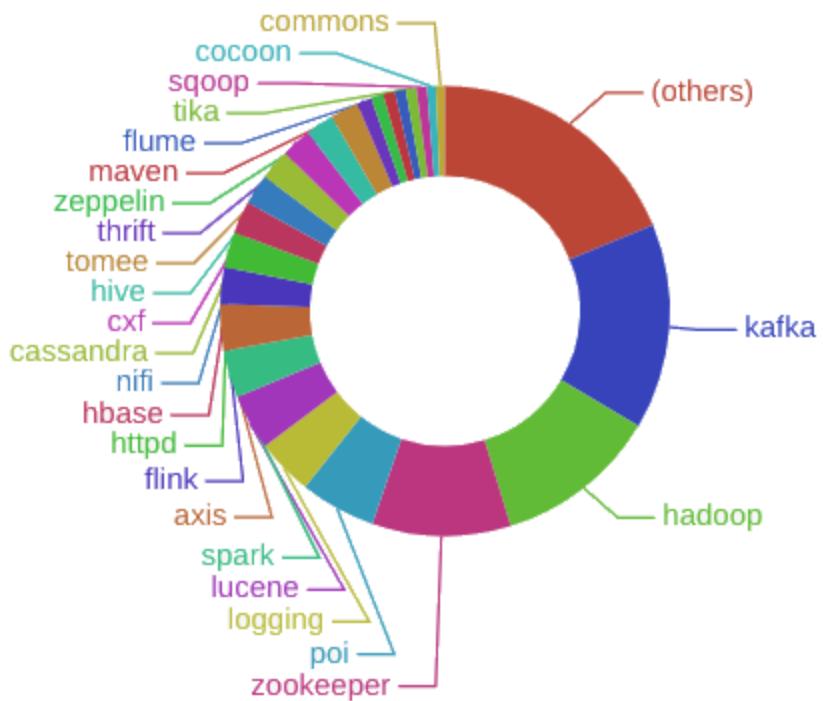


### Activity history

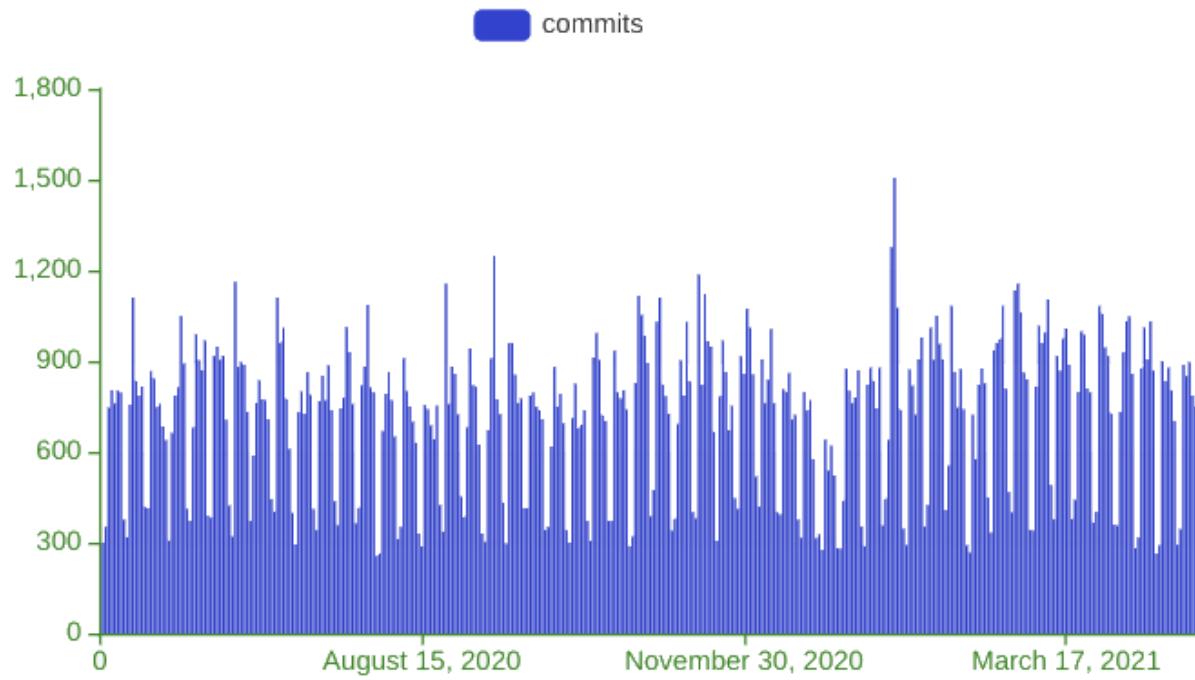
—○— count



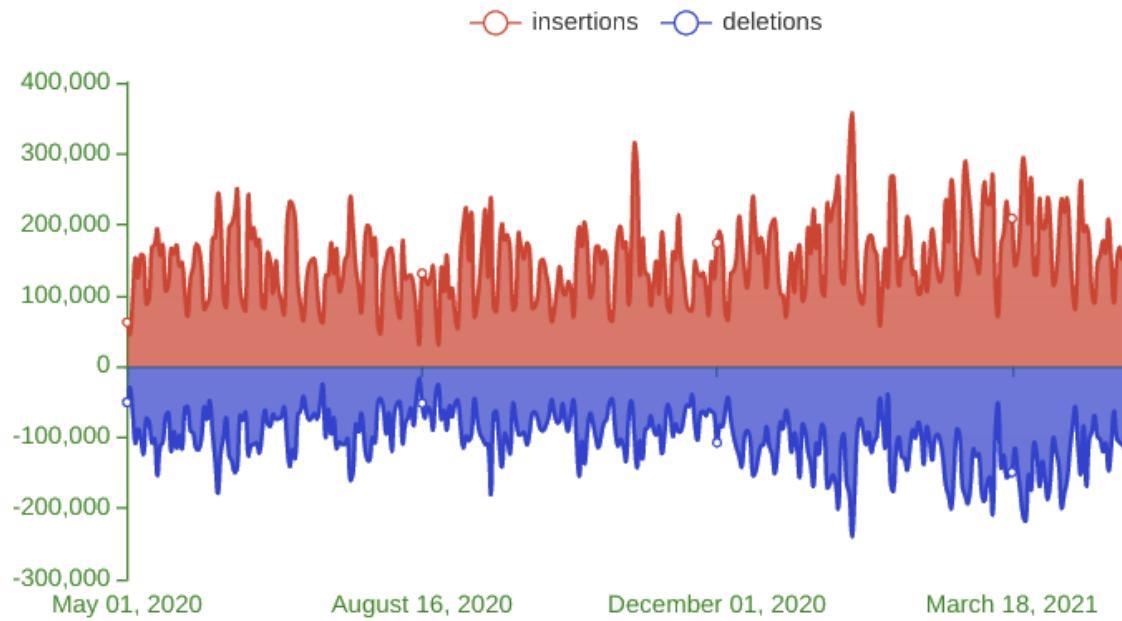
## Most Active Sources Accessed



## Commit History

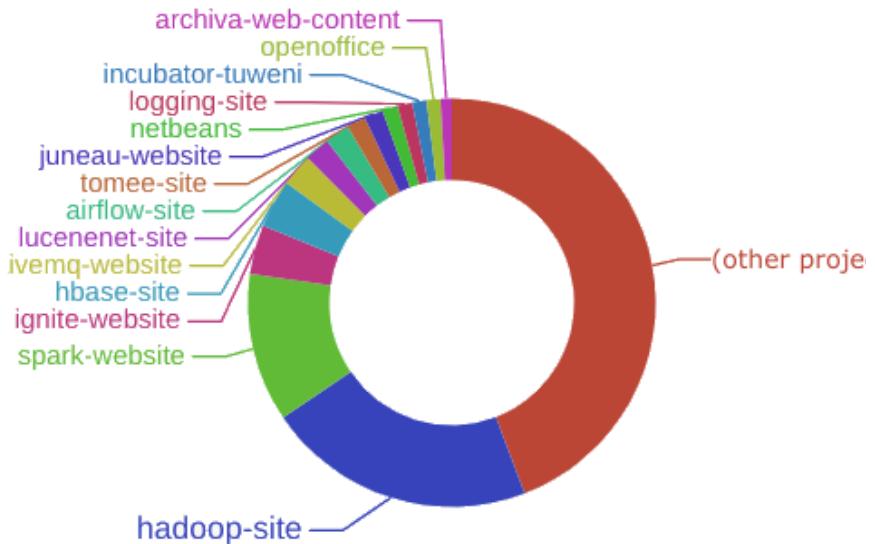


## Lines Changed



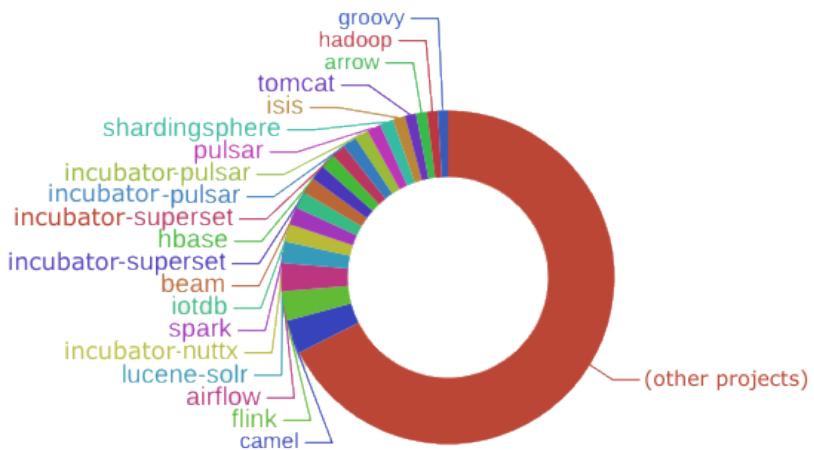
## Top Repos by Size (SLoC)

|                     |           |
|---------------------|-----------|
| other projects      | 309388228 |
| hadoop-site         | 149346920 |
| spark-website       | 82432488  |
| ignite-website      | 27274559  |
| hbase-site          | 26801192  |
| activemq-website    | 17877988  |
| lucenenet-site      | 14049745  |
| airflow-site        | 13735392  |
| tomee-site          | 10513262  |
| juneau-website      | 10396946  |
| netbeans            | 8603630   |
| logging-site        | 8272989   |
| Incubator-tuweni    | 7859985   |
| openoffice          | 7825776   |
| archiva-web-content | 6106231   |



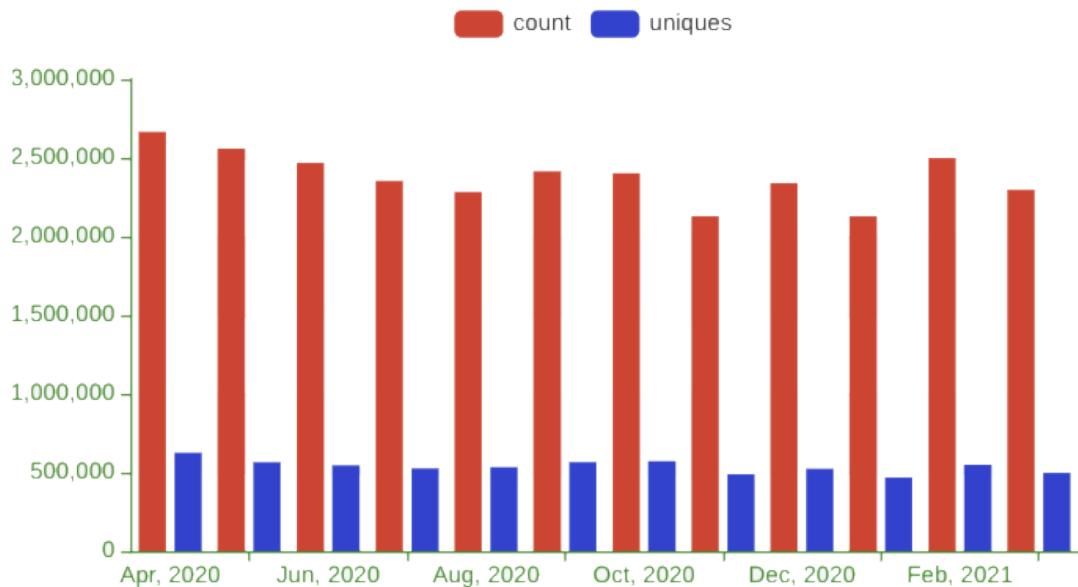
## Top Repos by Commits

|                  |        |
|------------------|--------|
| other projects   | 176549 |
| camel            | 8488   |
| flink            | 7407   |
| airflow          | 7179   |
| lucene-solr      | 5396   |
| incubator-nuttx  | 4466   |
| spark            | 4412   |
| iotdb            | 4240   |
| beam             | 4081   |
| incub-superset   | 3875   |
| hbase            | 3715   |
| incub-superset   | 3610   |
| incubator-pulsar | 3500   |
| incubator-pulsar | 3500   |
| pulsar           | 3491   |
| shardingsphere   | 3412   |
| isis             | 3090   |
| tomcat           | 2860   |
| arrow            | 2779   |
| hadoop           | 2728   |
| groovy           | 2545   |

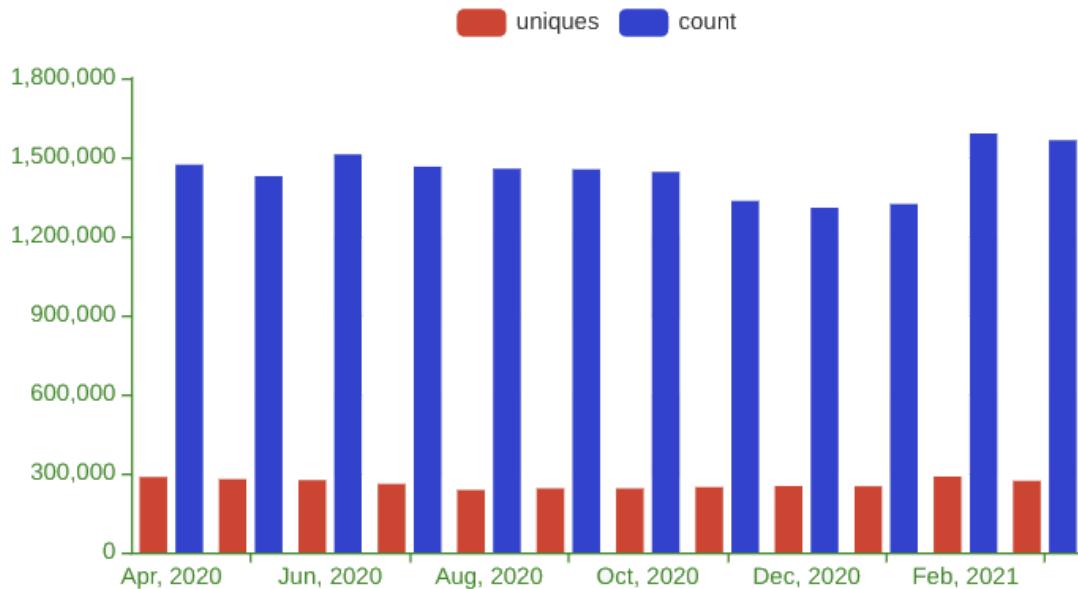


# GitHub Traffic

## Repository Page Views

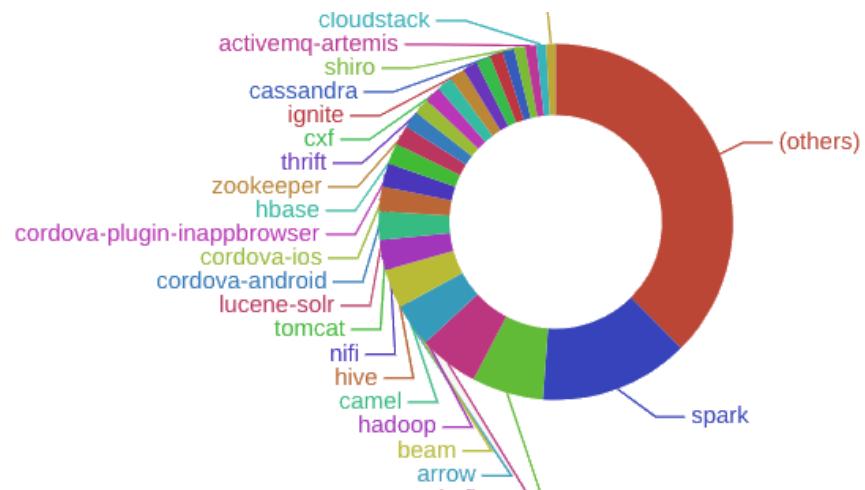


## Repository Clones



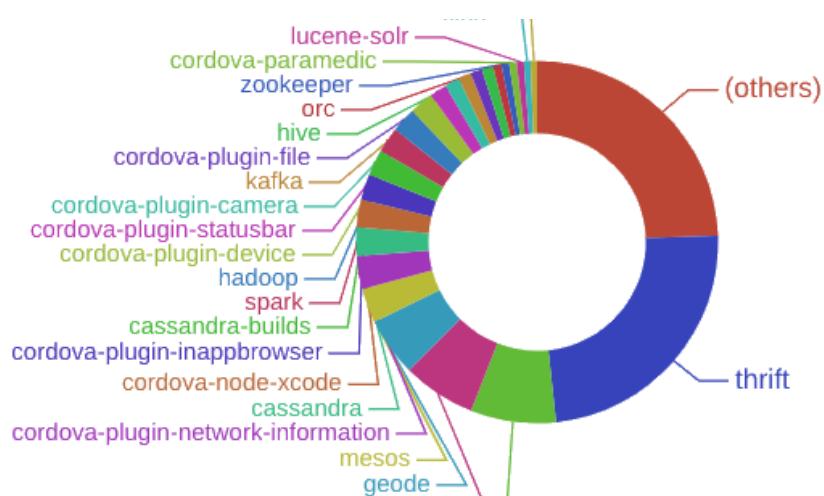
## Most Active Sources - Visits

|                             |          |
|-----------------------------|----------|
| others                      | 10806890 |
| spark                       | 3928065  |
| flink                       | 1878604  |
| kafka                       | 1570104  |
| arrow                       | 1130327  |
| beam                        | 1024981  |
| hadoop                      | 782059   |
| camel                       | 743485   |
| hive                        | 652560   |
| nifi                        | 612910   |
| tomcat                      | 536288   |
| lucene-solr                 | 520806   |
| cordova-android             | 440896   |
| cordova-ios                 | 427044   |
| cordova-plugin-inappbrowser | 422102   |
| hbase                       | 408822   |
| zookeeper                   | 400349   |
| thrift                      | 383713   |
| cxfr                        | 378785   |
| ignite                      | 343793   |
| cassandra                   | 310928   |
| shiro                       | 288286   |
| activemq-artemis            | 288279   |
| cloudstack                  | 257832   |
| cordova-plugin-camera       | 254523   |



## Most Active Sources - Clones

|                   |         |
|-------------------|---------|
| (others)          | 4259989 |
| thrift            | 4170914 |
| arrow             | 1329264 |
| beam              | 1143832 |
| geode             | 912803  |
| mesos             | 539545  |
| cordova-plugin... | 510269  |
| cassandra         | 445703  |
| cordova-node...   | 429572  |
| cordova-plugin... | 404861  |
| cassandra-builds  | 402272  |
| spark             | 397171  |
| hadoop            | 387099  |
| Cordova-plugin... | 372746  |
| cordova-plugin... | 269150  |
| cordova-plugin... | 228380  |
| kafka             | 200927  |
| cordova-plugin... | 179756  |
| hive              | 177677  |
| orc               | 130511  |
| zookeeper         | 119187  |
| cordova-para...   | 117984  |
| lucene-solr       | 110567  |
| flink             | 105239  |
| cordova-plugin... | 99377   |



# Contributions

Code for all Apache projects is written by more than 8,200 volunteer individuals and employees of corporations across six continents and contributed to the ASF at no cost. During FY2021, 3,058 Committers changed 134,517,884 lines of code over 258,860 commits.

All individuals who are granted write access to the Apache repositories must submit an Individual Contributor License Agreement (ICLA). Corporations that have assigned employees to work on Apache projects as part of an employment agreement may sign a Corporate CLA (CCLA) for contributing intellectual property via the corporation. Individuals or corporations donating a body of existing software or documentation to one of the Apache projects need to execute a formal Software Grant Agreement (SGA) with the ASF. During FY2021, the ASF Secretary processed:

- 672 ICLAs
- 23 CCLAs
- 32 Software Grants

## Top 5 Committers

|   |   |
|---|---|
|  | <b>Andrea Cosentino</b> [filter]<br>7,335 commits during this period.<br>2,181,772 lines changed (1,230,378 insertions, 951,394 deletions). |
|  | <b>Jean-Baptiste Onofré</b> [filter]<br>3,198 commits during this period.<br>285,378 lines changed (190,936 insertions, 94,442 deletions).  |
|  | <b>Gary Gregory</b> [filter]<br>3,050 commits during this period.<br>342,277 lines changed (194,658 insertions, 147,619 deletions).         |
|  | <b>Claus Ibsen</b> [filter]<br>2,826 commits during this period.<br>1,726,034 lines changed (1,135,234 insertions, 590,800 deletions).      |
|  | <b>xiang xiao</b> [filter]<br>2,372 commits during this period.<br>636,464 lines changed (345,698 insertions, 290,766 deletions).           |

## Mailing Lists

**"If it didn't happen on-list, it didn't happen..."**

The transparency-forward Apache Group set the precedent of collaborating entirely on email lists.

Today, the ASF's day-to-day operations, Apache project development, and community engagement continues on ~1,450 public and ~700 private mailing lists.

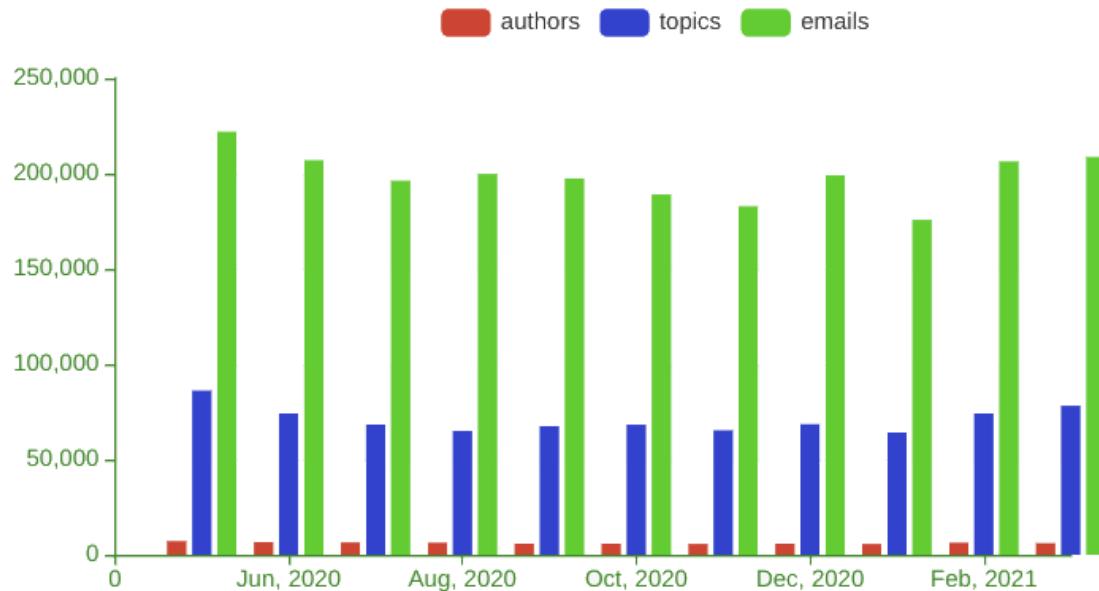
Millions of messages are archived on Apache publicly-accessible mailing lists.

During FY2021, 17,758 authors sent 2,184,671 emails on 780,274 topics.

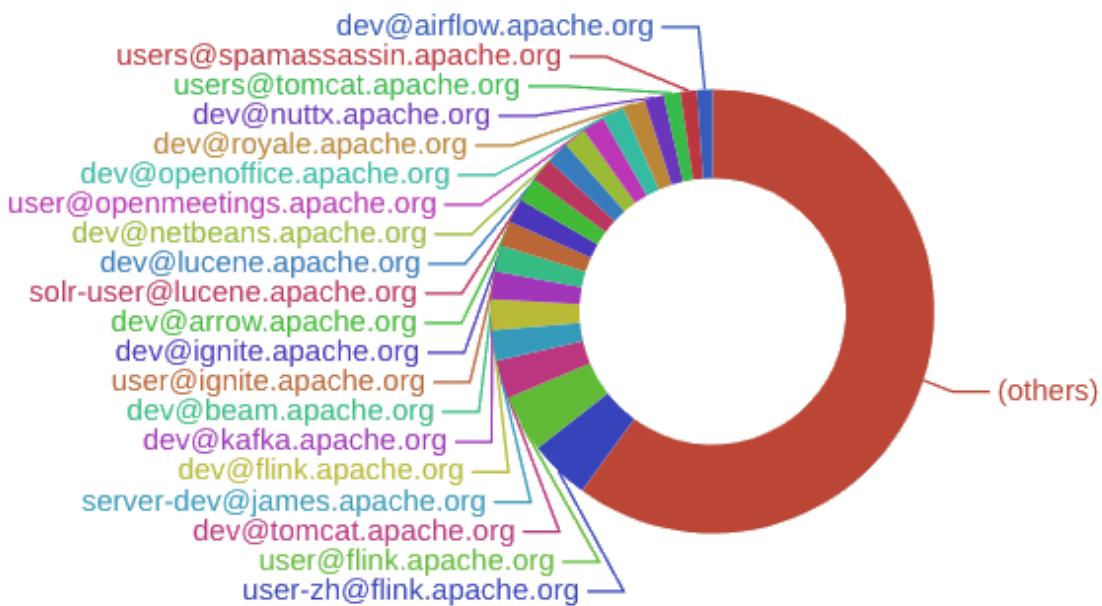
### Top 10 Senders

- Andrea Cosentino (11,832 emails)
- Gary Gregory (5,228 emails)
- Jean-Baptiste Onofré (4,586 emails)
- Mark Thomas (4,332 emails)
- Claus Ibsen (4,179 emails)
- Jarek Potiuk (4,166 emails)
- Kaxil Naik (3,413 emails)
- Jim Jagielski (2,712 emails)
- Andi Huber (2,570 emails)
- Mark Miller (2,520 emails)

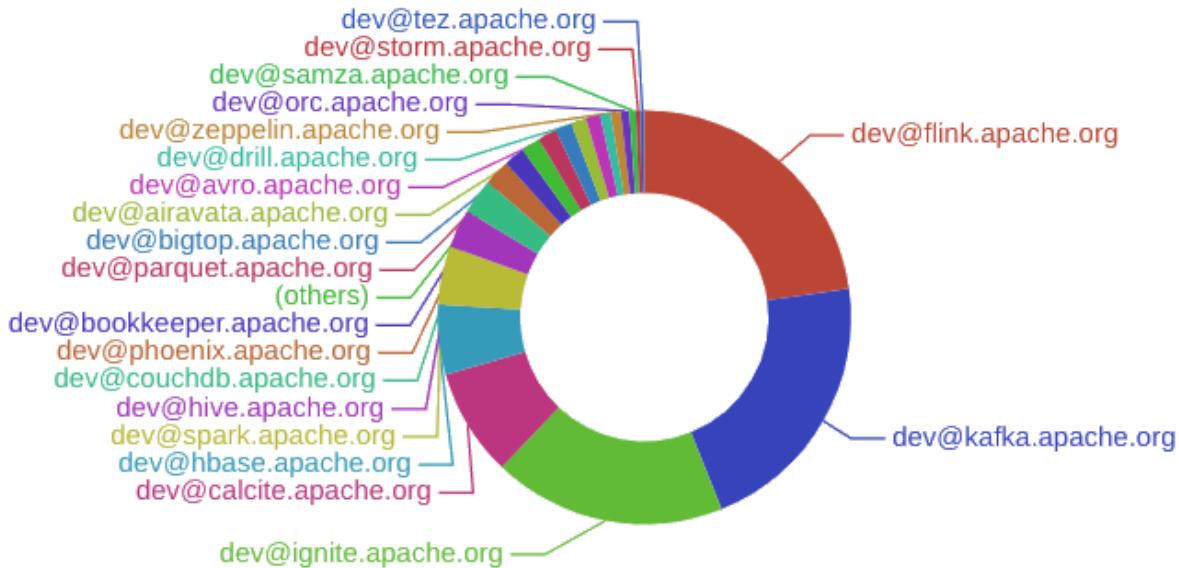
## Mail History



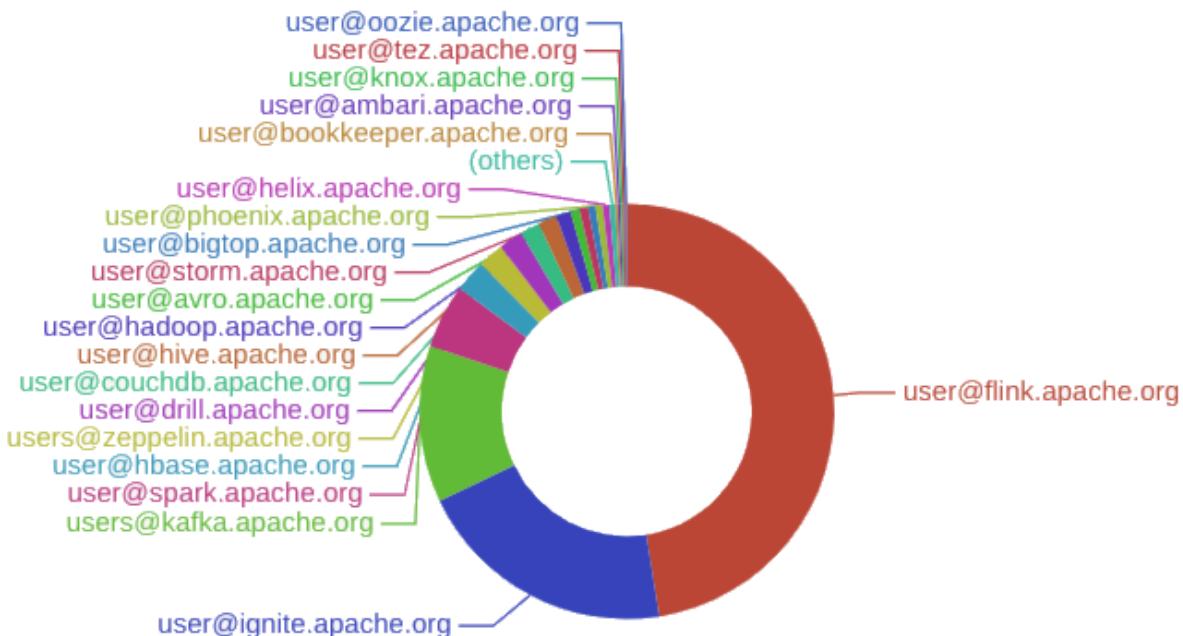
## Top 20 ASF Lists (user + dev)



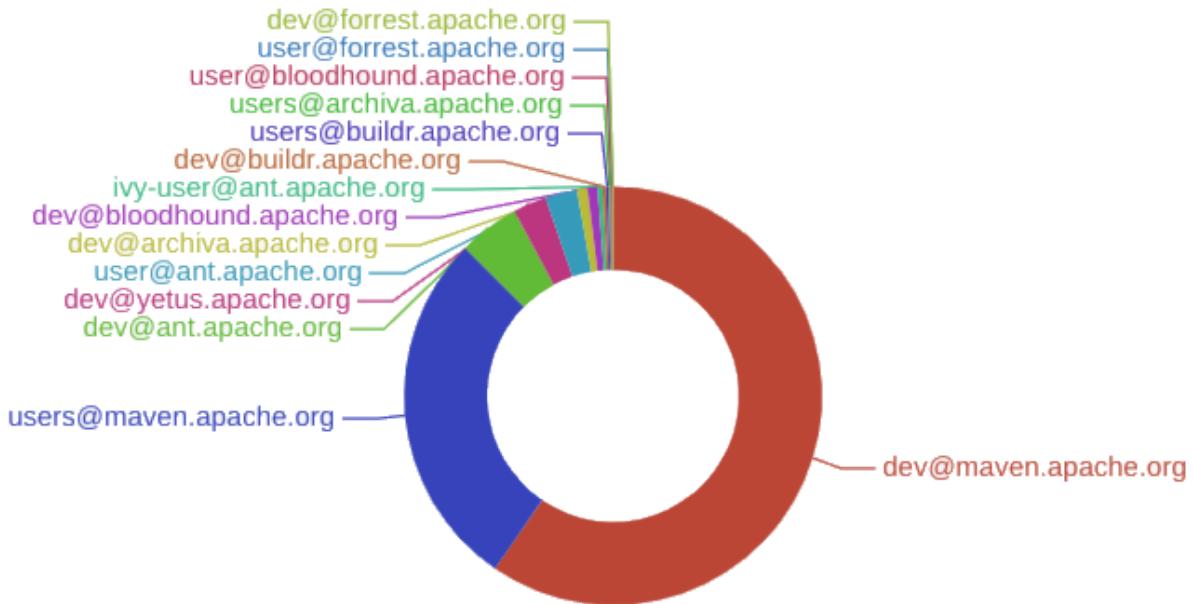
## Top 20 Big Data Lists (dev)



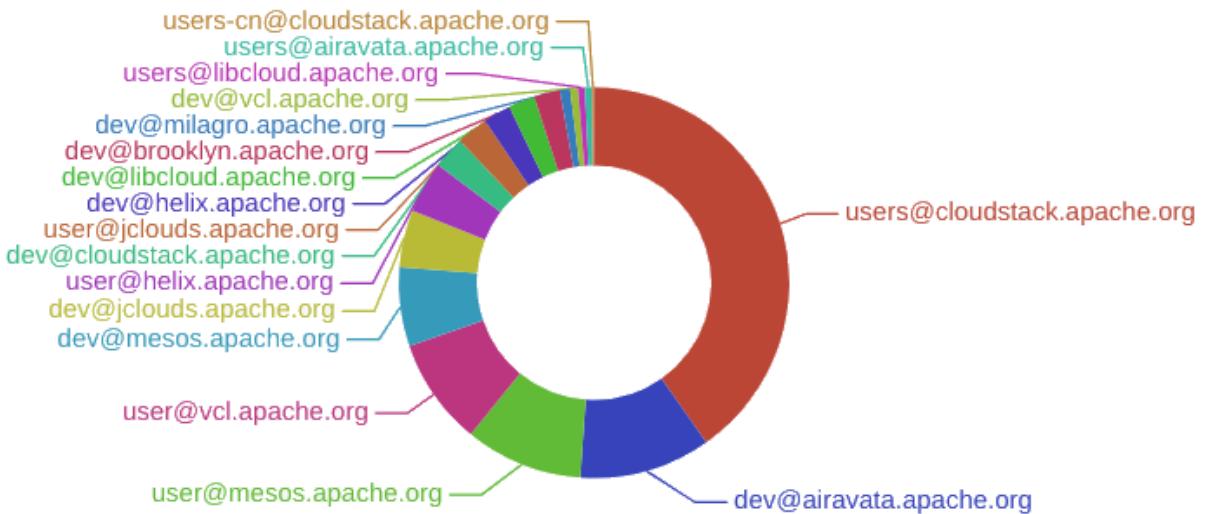
## Top 20 Big Data Lists (user)



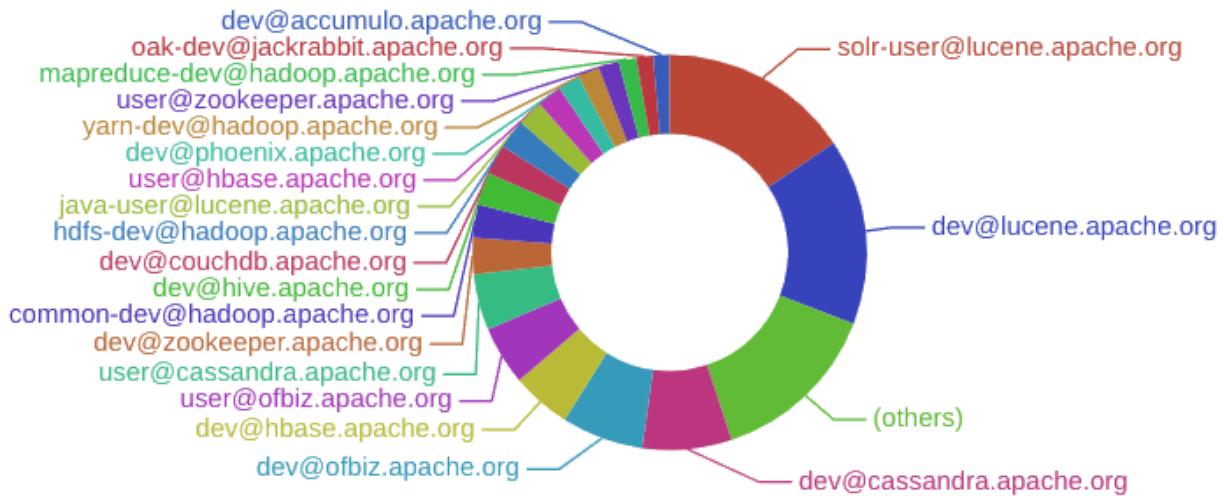
## Top 20 Build Management Lists (user + dev)



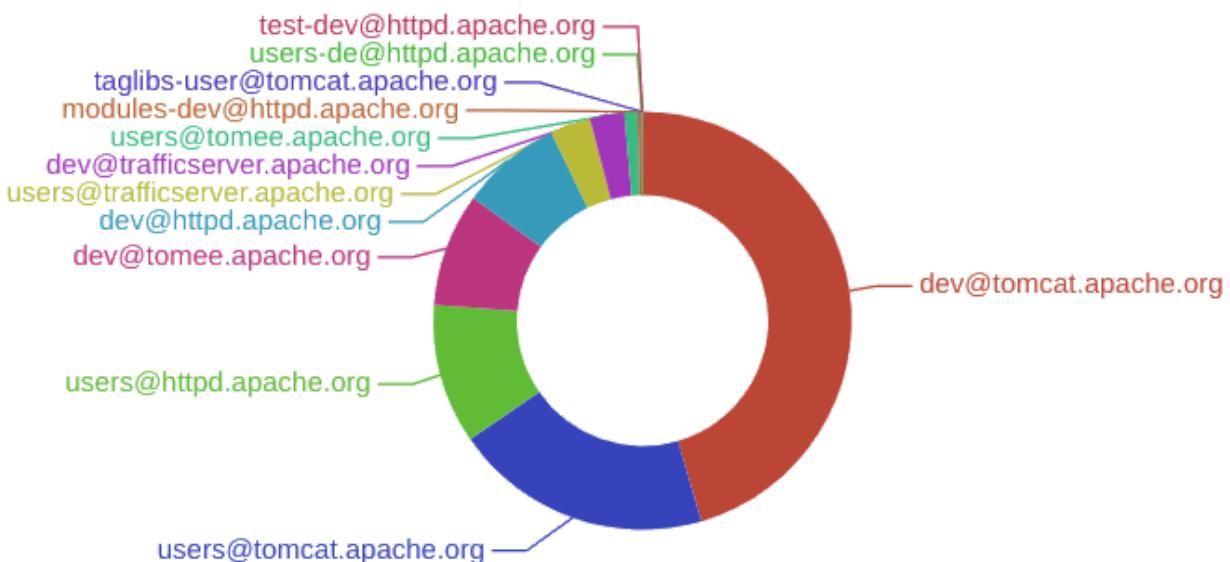
## Top 20 Cloud Computing Lists (user + dev)



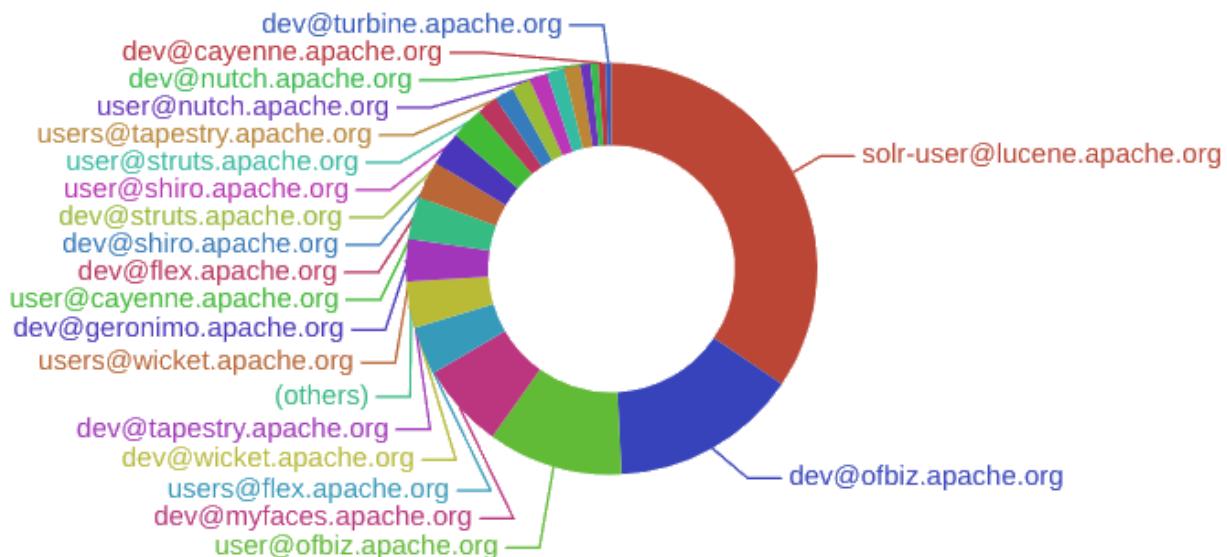
## Top 20 Database Lists (user + dev)



## Top 20 HTTP Server Lists (user + dev)



## Top 20 Web Framework Lists (user + dev)



# ASF Members

|                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| A. J. David Bosschaert  | Angela Schreiber        | Brian E Fox             |
| Aaron Bannert           | Anil Patel              | Brian Fitzpatrick       |
| Aaron Morton            | Ankit Singhal           | Brian Foster            |
| Aaron Myers             | Ann Bryant Burgess      | Brian Geffon            |
| Abhishek Tiwari         | Anthony Baker           | Brian Havard            |
| Achim Nierbeck          | Anthony Elder           | Brian James LeRoux      |
| Adam Estrada            | Anthony Shaw            | Brian McCallister       |
| Adam Fuchs              | Antoine Levy-Lambert    | Brock Noland            |
| Adam R. B. Jack         | Antoine Toulme          | Bruce Snyder            |
| Adina Crainiceanu       | Antonio Gallardo Rivera | Bruno Demion            |
| Aditya Sharma           | Antonio Sanso           | Bruno P. Kinoshita      |
| Adriano Crestani Campos | Aram Mirzadeh           | Bryan Bende             |
| Adrien Grand            | Aristedes Maniatis      | Bryan Call              |
| Aizhamal Nurmamat kyz   | Arje Cahn               | Bryan Duxbury           |
| Ajith Ranabahu          | Arnaud Heritier         | Bryan Pendleton         |
| Akitoshi Yoshida        | Arpit Agarwal           | Byung-Gon Chun          |
| Alan Cabrera            | Arun Murthy             | C. Michael Pilato       |
| Alan Gates              | Arun Patidar            | Carl B. Marcum          |
| Alan M. Carroll         | Arvind Prabhakar        | Carl C. Trieloff        |
| Alejandro Abdenur       | Asankha Chamath Perera  | Carl Johan Erik Edstrom |
| Alek Slominski          | Ashish Vijaywargiya     | Carl Steinbach          |
| Alex Boisvert           | Ashutosh Chauhan        | Carlos Rovira           |
| Alex Harui              | Astrid Malo             | Carlos Sanchez Gonzalez |
| Alex Karasulu           | Ate Douma               | Carsten Ziegeler        |
| Alexander Broekhuis     | Atri Sharma             | Casey Stella            |
| Alexander Shorin        | Avery Ching             | Cédric Champeau         |
| Allen Wittenauer        | Awasum Yannick          | Ceki Gulcu              |
| Amareshwari Sriramadasu | Becket Qin              | Cezar Cristian Andrei   |
| André Malo              | Ben Laurie              | Chathura Herath         |
| Andrea Cosentino        | Ben Reser               | Chathuri Wimalasena     |
| Andrea Del Bene         | Benedikt Ritter         | Chip Childers           |
| Andrea Pescetti         | Benjamin Hindman        | Chris Bowditch          |
| Andreas Beeker          | Benoit Tellier          | Chris Custine           |
| Andreas Lehmkühler      | Berin Lautenbach        | Chris Lambertus         |
| Andreas Veithen         | Bernd Bohmann           | Chris M. Hostetter      |
| Andrew Bayer            | Bernd Fondermann        | Chris Nauroth           |
| Andrew Grieve           | Bert Huijben            | Chris Riccomini         |
| Andrew Hart             | Bertrand Delacretaz     | Chris Thistletonwaite   |
| Andrew Kurth            | Bikas Saha              | Christian Geisert       |
| Andrew Kyle Purtell     | Bilgin Ismet Ibryam     | Christian Grobmeier     |
| Andrew Musselman        | Bill Cole               | Christian Mueller       |
| Andrew Palumbo          | Billie Rinaldi          | Christian Schneider     |
| Andrew Wang             | Blair Zajac             | Christine Koppelt       |
| Andrew Wetmore          | Bob Paulin              | Christine Poerschke     |
| Andriy Redko            | Bob Schellink           | Christofer Dutz         |
| Andrus Adamchik         | Bolke de Bruin          | Christopher Douglas     |
| Andrzej Bialecki        | Bradley Nicholes        | Christopher R Rhodes    |
| Andy Konwinski          | Branko Čibej            | Christopher Schultz     |
| Andy Seaborne           | Brett Porter            | Christopher Tubbs       |
| Andy Wenk               | Brian Behlendorf        | Claude Warren           |

Claus Ibsen  
Clay Leeds  
Cliff Schmidt  
Cliff Skolnick  
Colin McCabe  
Colm MacCarthaigh  
Colm O hEigearaigh  
Conor MacNeill  
Costin Manolache  
Coty Sutherland  
Craig L Russell  
Craig R. McClanahan  
Dain Sundstrom  
Damitha N.M. Kumarage  
Damjan Jovanovic  
Dan Crichton  
Danese Cooper  
Daniel Dai  
Dániel Dékány  
Daniel Gruno  
Daniel John Debrunner  
Daniel Keir Haywood  
Daniel Kulp  
Daniel Rall  
Daniel Ruggeri  
Daniel Shahaf  
Daniel Takamori  
Danny Angus  
Daryl C. W. O'Shea  
Daryn Sharp  
Davanum Srinivas  
Dave Fisher  
Dave Grove  
Dave Jones  
Dave Lester  
David Blevins  
David Crossley  
David E. Jones  
David Jencks  
David M. Johnson  
David Meikle  
David Nalley  
David Neuman  
David Philip Brondsema  
David Sean Taylor  
David Smiley  
David Woppard  
Davor Bonaci  
Dawid Weiss  
Deepak Dixit  
Deepal Jayasinghe  
Denis A. Magda  
Dennis Lundberg  
Devaraj Das  
Dirk-Willem van Gulik

Dominik Psenner  
Dominik Stadler  
Don Samisa Abeysinghe  
Donald Woods  
Doug Cutting  
Drew Farris  
Drew Foulks  
Duo Zhang  
Ed Korthof  
Edward J. Yoon  
Emmanuel Bourg  
Emmanuel Lécharny  
Emmanuel Venisse  
Enis Soztutar  
Enrico Olivelli  
Eran Chinthaka  
Eric Charles  
Eric Covener  
Eric Evans  
Eric Yang  
Erik Abele  
Erik Hatcher  
Evans Ye  
Evgeny Kotkov  
Fabian Christ  
Fabian Hueske  
Felix Cheung  
Felix Schumacher  
Filip Hanik  
Flavio Paiva Junqueira  
Florian Müller  
Fokko Driesprong  
Francesco Chicchiriccò  
Francois Papon  
Frank McQuillan  
Freeman Yue Fang  
Furkan Kamaci  
Gareth Reakes  
Gary D. Gregory  
Gary Martin  
Gavin McDonald  
Geertjan Wielenga  
Geir Magnusson Jr  
Geoff Macartney  
Geoffrey Young  
Georg Henzler  
Georg Kallidis  
George Percivall  
Gerhard Petracek  
Gert Vanthienen  
Giacomo Pati  
Gian Merlino  
Gianugo Rabellino  
Gilles Sadowski  
Giridharan Kesavan

Giuseppe Totaro  
Glen Daniels  
Gomez Henri  
Gordon Sim  
Graham Leggett  
Grant Ingersoll  
Greg Ames  
Greg Stein  
Greg Trasuk  
Gris Cuevas  
Guenter Knauf  
Guergana K. Savova  
Guillaume Laforge  
Guillaume Nodet  
Guo William  
Gurkan Erdogan  
Hadrian Zbarcea  
Harbs  
Hasan Hasan  
Hemapani Srinath Perera  
Henning Schmiedehausen  
Henri Yandell  
Henry Saputra  
Herve Boutemy  
Hiram R. Chirino  
Hitesh Shah  
Holden Karau  
Howard Lewis Ship  
Huxing Zhang  
Hyrum Kurt Wright  
Hyunsik Choi  
Ian Boston  
Ignasi Barrera  
Igor Galić  
Igor Vaynberg  
Imesha Sudasingha  
Ioannis Canellos  
Isabel Drost-Fromm  
Ismaël Mejía  
Issac Goldstand  
Ivan Zhakov  
J. Aaron Farr  
Jacek Laskowski  
Jacopo Cappellato  
Jacques Le Roux  
Jacques Nadeau  
Jaikiran Pai  
Jake Farrell  
Jakob Homan  
James Peach  
James R. Taylor  
James W. Carman  
Jamie Mark Goodyear  
Jan Høydahl  
Jan Iversen

Jan Lehnardt  
Jan Materne  
Jan van Doorn  
Janne Jalkanen  
Jarek Gawor  
Jarek Jarcec Cecho  
Jarek Potiuk  
Jaroslaw Cwiklik  
Jason Dai  
Jason Darrell Lowe  
Jason Hunter  
Javen O'Neal  
Jay Kreps  
Jay Vyas  
Jean-Baptiste Onofré  
Jean-Frederic Clere  
Jean-Louis Monteiro  
Jean-Sebastien Delfino  
Jeff Genender  
Jeff Jirsa  
Jeff Trawick  
Jeff Turner  
Jeff Zemeric  
Jeff Zhang  
Jeffery Painter  
Jeremias Maerki  
Jeremy Boynes  
Jeremy Hughes  
Jeremy Quinn  
Jeremy Ryan Thomerson  
Jerome Charron  
Jerry Shao  
Jesse MacFadyen  
Jesús Camacho Rodríguez  
Jim Jagielski  
Jincheng Sun  
Jing Lv  
Jitendra Nath Pandey  
Jochen Theodorou  
Jochen Wiedmann  
Joe Brockmeier  
Joe Orton  
Joe Witt  
Joerg Pietschmann  
Joerg Schaible  
Joey Frazee  
Johan Corveleyn  
Johan Oskarsson  
Johannes Geppert  
John Andrunas  
John D. Ament  
John Dennis Casey  
John Kinsella  
John McNally  
John Plevyak

Jon Deron Eriksson  
Jon Scott Stevens  
Jonathan Ellis  
Jonathan Gray  
Jonathan Hsieh  
Jonathan Turner Eagles  
Jordan Zimmerman  
Jorge Luis Betancourt Gonzalez  
Jörn Kottmann  
Josh Elser  
Josh Rosen  
Josh Thompson  
Josh Tynjala  
Josh Wills  
Juan Pan  
Jukka Zitting  
Julian Feinauer  
Julian Foad  
Julian Hyde  
Julian Reschke  
Julien Le Dem  
Julien Vermillard  
Jun Jie Cai  
Jun Rao  
Junping Du  
Justin Erenkrantz  
Justin Mason  
Justin Mclean  
Justyna Horwat  
Kalle Korhonen  
Kanchana Pradeepika  
Welagedara  
Karanjeet Singh  
Karl Fogel  
Karl Heinz Marbaise  
Karl Pauls  
Karl Wright  
Karsten Braeckelmann  
Kasper Sørensen  
Katherine Marsden  
Katia Rojas  
Kay Ousterhout  
Kay Schenk  
Keiichi Fujino  
Keith Turner  
Keith Wannamaker  
Kellen Sunderland  
Ken Coar  
Kenneth Knowles  
Kenneth William Krugler  
Kevan Lee Miller  
Kevin A. McGrail  
Kevin Jackson  
Kevin Joseph Menard, Jr.  
Kevin Minder

Kevin Monroe  
Kevin Ratnasekera  
Kihwal Lee  
Kim Whitehall  
Kiran Ayyagari  
Kishore G  
Koji Sekiguchi  
Konrad Windszus  
Konstantin Gribov  
Konstantin I Boudnik  
Konstantin Kolinko  
Konstantin Shvachko  
Korale Gamaralalage Nandika  
Chandrasiri Jayawardana  
Kristian Rosenvold  
Kristian Waagan  
Krzysztof Sobkowiak  
Kurt Young  
Lahiru Gunathilake  
Larry McCay  
Lars Eilebrecht  
Lars Francke  
Lars George  
Lars Hofhansl  
Lee Moon Soo  
Leif Hedstrom  
Leonardo Uribe  
Les Hazlewood  
Lewis John McGibbney  
Liang Chen  
Liang Zhang  
Lieven Govaerts  
Luc Maizonobe  
Luca Cinquini  
Luca Toscano  
Luciano Resende  
Luís Filipe Nassif  
Luke Han  
Madhav Sharan  
Madhawa Kasun Gunasekara  
Mads Toftum  
Mahadev Konar  
Malcolm Edgar  
Manfred Geiler  
Manoj Kasichainula  
Marcel Kinard  
Marcel Offermans  
Marcel Reutegger  
Marcus Lange  
Maria Odea B. Ching  
Mark Bretl  
Mark Giaconia  
Mark Hindess  
Mark J. Cox  
Mark Kessler

Mark Phippard  
Mark Radcliffe  
Mark Robert Miller  
Mark Struberg  
Mark Thomas  
Markus Weimer  
Marlon Pierce  
Marshall Schor  
Martijn Dashorst  
Martin Cooper  
Martin Desruisseaux  
Martin Kraemer  
Martin Sebor  
Martin Tzvetanov Grigorov  
Martin van den Bemt  
Martin Veith  
Maruan Sahyoun  
Massimo Manghi  
Matei Alexandru Zaharia  
Matt Franklin  
Matt Massie  
Matt Post  
Matt Richard Hogstrom  
Matt Sicker  
Matteo Merli  
Matthew Jason Benson  
Matthias Seidel  
Matthias Wessendorf  
Matthieu Riou  
Max Oliver Bowsher  
Maxim Solodovnik  
Maxim Valyanskiy  
Maxime Beauchemin  
Maximilian Michels  
Maziyar Boustani  
Melissa Warnkin  
Michael Armbrust  
Michael Bouschen  
Michael Brohl  
Michael Busch  
Michael Dürig  
Michael Glavassevich  
Michael James Joyce  
Michael McCandless  
Michael Osipov  
Michael Semb Wever  
Michael Sokolov  
Michael Stack  
Michael Starch  
Michael Wall  
Michael Wechner  
Mihai Chira  
Mike Drob  
Mike Kienenberger  
Milinda Pathirage

Ming Wen  
Mladen Turk  
Mohamed Afkham Azeez  
Mohammad Asif Siddiqui  
Mohammad Nour El-Din  
Myrle Krantz  
Myrna van Lunteren  
Nanayakkara Kuruppuge Thilina  
Gunarathne  
Naomi Slater  
Nate McCall  
Nathan Beyer  
Nathan Bubna  
Nathan Hartman  
Nathan Marz  
Neil C Smith  
Neil Graham  
Niall Pemberton  
Nicholas Kwiatkowski  
Nick Burch  
Nick Kew  
Niclas Hedhman  
Nicolas Malin  
Nigel Daley  
Nikita Ivanov  
Niklas Gustavsson  
Nikolas Wellnhofer  
Noel J. Bergman  
Norman Maurer  
Olaf Flebbe  
Oleg Kalnichevski  
Oleg Tikhonov  
Oliver Heger  
Olivier Lamy  
Om  
Otis Gospodnetic  
Owen O'Malley  
P. Taylor Goetz  
Pablo Estrada  
Par Daniel Fagerstrohm  
Patrick D. Hunt  
Patrick O'Leary  
Patrick Wendell  
Paul Angus  
Paul Benedict  
Paul Burba  
Paul Fremantle  
Paul Joseph Davis  
Paul King  
Paul Querna  
Paul Ramirez  
Paul Zimdars  
Pei Chen  
Pepijn Noltes  
Perrin Harkins

Peter A Royal Jr.  
Peter Ent  
Peter Firmstone  
Peter Klügl  
Peter Rossbach  
Peter Thygesen  
Phil Sorber  
Phil Steitz  
Philip M. Gollucci  
Philip Martin  
Philipp Ottlinger  
Philippe Chiasson  
Philippe Mouawad  
Piergiorgio Lucidi  
Pierre-Arnaud Marcelot  
Pinaki Poddar  
Piotr Zarzycki  
PJ Fanning  
Pranay Pandey  
Prescott Nasser  
Radu Cotescu  
Rahul Akolkar  
Rainer Jung  
Rajith Muditha Attapattu  
Ralph Goers  
Raphael Luta  
Ray Gauss II  
Raymond Augé  
Reinhard Pötz  
Remko Popma  
Remy Maucherat  
Renato Javier Marroquín  
Mogrovejo  
René Gielen  
Reto Gmür  
Reynold Xin  
Rich Bowen  
Richard Downer  
Richard Eckart de Castilho  
Richard Frovarp  
Richard Hirsch  
Richard N. Hillegas  
Richard S. Hall  
Ricky Nguyen  
Rob Tompkins  
Rob Vesse  
Rob Weir  
Robbie Gemmell  
Robert Joseph Evans  
Robert Kowalski  
Robert Metzger  
Robert Muir  
Robert Munteanu  
Robert Newson  
Robert Scholte

Roberto Galoppini  
Robin Anil  
Rodric Rabbah  
Rohini Palaniswamy  
Romain Manni-Bucau  
Roman Shaposhnik  
Ron Grabowski  
Rony Flatscher  
Ross Gardler  
Ross Laidlaw  
Roy Lenferink  
Roy T. Fielding  
Ruchith Udayanga Fernando  
Ruediger Pluem  
Rupert Westenthaler  
Ruth Suehle  
Ruwan Linton  
Ryan Blue  
Sally Khudairi  
Sam Ruby  
Sami Siren  
Sander Striker  
Sander Temme  
Sandro Martini  
Santiago Gala  
Sascha Schumann  
Scott Carey  
Scott Deboy  
Scott Eade  
Scott Gray  
Scott Sanders  
Sean Busbey  
Sean Kelly  
Sean R. Owen  
Sebastian Nagel  
Sebastian Schelter  
Sebastien Goasguen  
Sebb  
Selvaratnam Uthaiyashankar  
Senaka Fernando  
Serge Huber  
Serge Knystautas  
Sergey Beryozkin  
Sergio Fernández  
Shakeh Elisabeth Khudikyan  
Shane Cururu  
Shao Feng Shi  
Sharad Agarwal  
Sharan Foga  
Shawn McKinney  
Shazron Abdullah  
Sheng Wu  
Sheryl John  
Shivaram Venkataraman  
Siddharth Seth

Sidney Markowitz  
Siegfried Goeschl  
Sijie Guo  
Simon Laws  
Simon Nash  
Simon Steiner  
Simon Willnauer  
Simone Gianni  
Simone Tripodi  
Srikanth Sundarajan  
Stefan Bodewig  
Stefan Eissing  
Stefan Fuhrmann  
Stefan Hett  
Stefan Seifert  
Stephan Ewen  
Stephane Bailliez  
Stephen Connolly  
Stephen Mallette  
Stephen O'Neil Butler  
Sterling Hughes  
Steve Blackmon  
Steve Gill  
Steve Hay  
Steve Loughran  
Steven Noels  
Steven Rowe  
Stian Soiland-Reyes  
Sujen Shah  
Suneel Marthi  
Supun Kamburugamuva  
Suresh Marru  
Susan Hinrichs  
Sven Meier  
Sven Vogel  
Swapnil Mane  
Sylvain Wallez  
T Jake Luciani  
Taher Alkhateeb  
Tammo van Lessen  
Ted Dunning  
Ted Leung  
Ted Liu  
Thamme Gowda  
Thejas Nair  
Theo Schlossnagle  
Thiago Henrique De Paula  
Figueiredo  
Thom May  
Thomas Andraschko  
Thomas Dudziak  
Thomas Graves  
Thomas Mueller  
Thomas Vandahl  
Thomas Weise

Thomas White  
Thorsten Scherler  
Tianqi Chen  
Till Westmann  
Tilman Hausherr  
Tim Allison  
Tim Ellison  
Tim Williams  
Timothy Chen  
Tobias Bocanegra  
Todd Lipcon  
Tom Chiverton  
Tom Hobbs  
Tom Jordahl  
Tom Pappas  
Tomaž Muraus  
Tommaso Teofili  
Tony Stevenson  
Torsten Curdt  
Torsten Förtsch  
Travis Loren Pinney  
Trevor Grant  
Tsz-wo Sze  
Tyler Bui-Palsulich  
Udo Schnurpeil  
Ugo Cei  
Ulrich Stärk  
Uma Maheswara Rao G  
Upayavira  
Uwe Schindler  
Vadim Gritsenko  
Val Mallder  
Venkat Ranganathan  
Venkatesh Seetharam  
Victor J. Orlikowski  
Vincent Siveton  
Vinod Kumar Vavilapalli  
Violeta Georgieva Georgieva  
Volker Weber  
Von Gosling  
Wangda Tan  
Wei-Chiu Chuang  
Wendy Smoak  
Werner Punz  
Wes McKinney  
Wido den Hollander  
Wilfredo Sanchez  
Will Stevens  
Willem Ning Jiang  
William A. Rowe Jr.  
William Colen  
Woonsan Ko  
Wu Yue Hao  
Xiangdong Huang  
Xiangrui Meng

Xiao-Feng Li  
Xiaorui Wang  
Xuefu Zhang  
Yann Ylavic  
Yegor Kozlov

Yishay Weiss  
Yonik Seeley  
Yoshiki Hayashi  
Yu Li  
Zaheda Bhorat

Zhaohui Feng  
Zhe Zhang  
Zhijie Shen  
Zoe Slattery



# Emeritus Members

Aaron Kimball  
Alexei Kosut  
Amila Chinthaka Suriarachchi  
Andi Gutmans  
Andreas Hartmann  
Andrei Zmievski  
Andrew C. Oliver  
Andrew Rist  
Andrew Savory  
Andy Clark  
Arved Henn Sandstrom  
Ask Bjørn Hansen  
Assaf Arkin  
Ben Collins-Sussman  
Ben Hyde  
Benson Margulies  
Berin Loritsch  
Bill Stoddard  
Bojan Smoijver  
Brian Dube  
Brian James Minchau  
Brian Pane  
Bruno Dumon  
Cameron Goodale  
Ceki Gülcü  
Chris Mattmann  
Chuck Murcko  
Cliff Woolley  
Clinton Begin  
Curtis William Arnold  
Damien F. Katz  
Damon Courtney  
Daniel Lopez Ridruejo  
Daniel Quinlan  
Davanum Srinivas  
Dave Cottlehuber  
David Eric Pugh  
David N Bertoni  
David Nuescheler  
David Reid  
David Robinson  
David Samuel Glasser  
David Welton  
Dean Gaudet  
Dennis E. Hamilton  
Donald Athelstan Ball Jr.  
Donald J. Brown

Doug MacEachern  
Edward O'Neil  
Eric Cholet  
Eric Pugh  
Federico Barbieri  
Felix Meschberger  
Francis De Brabandere  
Fred Moyer  
Garrett Rooney  
Georg Richter  
Glen Stampoultzis  
Glenn L. Nielsen  
Graham Phillip Dumpleton  
Greg Hudson  
Gregor Rothfuss  
Gregory K. Brown  
Gregory Trubetskoy  
Grzegorz Kossakowski  
Hiroaki Kawai  
Ian Holsman  
James Duncan Davidson  
James Paul Gallacher  
James Strachan  
Jan Willem Janssen  
Jason van Zyl  
Jean T. Anderson  
Jim Winstead Jr.  
Joan Touzet  
Joe Schaefer  
Joshua Slive  
Juergen Pill  
Julien Nioche  
Keiron Liddle  
Lawrence Rosen  
Leo Simons  
Lukasz Lenart  
M Linville  
Marc Slemko  
Mark Dwayne Womack  
Markus Jelsma  
Martin Marinschek  
Marvin Humphrey  
Morgan James Delagrange  
Niclas Hedhman  
Nicola Ken Barozzi  
Nicolas Lehuen  
Paul Hammant

Paul Jeffrey Smith  
Paul Lindner  
Paul Sutton  
Peter Kovacs  
Peter Samuelson  
Pier Fumagalli  
Ralf S. Engelschall  
Randy Terbush  
Rasmus Lerdorf  
Richard McGuire  
Rob Hartill  
Robert Burrell Donkin  
Rodney Waldhoff  
Roland Weber  
Ryan Bloom  
Sameer Parekh  
Sanjiva Weerawarana  
Scott Boag  
Sean Schofield  
Shane Caraveo  
Simon Kitching  
Simon Pepping  
Stas Bekman  
Stefan Fritsch  
Stefan Guggisberg  
Stefan Seelmann  
Stefan Sperling  
Stefano Mazzocchi  
Stephen Colebourne  
Sterling Hughes  
Stig Bakken  
Susan Wu  
Ted Husted  
Theo Van Dinter  
Thies Arntzen  
Thomas Neidhart  
Tom Barber  
Tony Finch  
Trustin Lee  
Vincent Hardy  
Vincent Massol  
William Barker  
William Glass-Husain  
Yoav Shapira

# Memorial

We celebrate our departed Members, rejoice in their contributions to our community, and honor them here to keep their memory alive.

|                   |                   |
|-------------------|-------------------|
| Russel Winder     | 23 January 2021   |
| Henk Penning      | 29 May 2019       |
| Greg Reddin       | 30 September 2016 |
| Adrian Crum       | 1 January 2016    |
| Nóirín Plunkett   | 29 July 2015      |
| Ian Lynch         | 24 May 2015       |
| Bruce Atherton    | 5 September 2013  |
| Dion Gillard      | 25 September 2008 |
| Maurice Marrink   | 1 August 2008     |
| Nicolas Chalumeau | 4 October 2005    |
| Martin Pöschl     | 29 January 2004   |



# Contact

For Media/Analyst queries, contact [press@apache.org](mailto:press@apache.org)

For Sponsorship/Fundraising queries, contact [fundraising@apache.org](mailto:fundraising@apache.org)

## Official ASF Communication Channels

- The Apache Software Foundation <https://apache.org/>
- ASF Blog <https://blogs.apache.org/>
- @TheASF Twitter feed <https://twitter.com/TheASF>
- The ASF on LinkedIn  
<https://www.linkedin.com/company/the-apache-software-foundation>
  - Receive the ASF's news and announcements by subscribing to announce(at)apache(dot)org at <http://apache.org/foundation/mailinglists.html#foundation-announce>

## ASF Community

- Apache Community Development <http://community.apache.org/>
- Apache Community Facebook page  
<https://www.facebook.com/ApacheSoftwareFoundation/>
- Apache Community Twitter feed <https://twitter.com/ApacheCommunity>

## ApacheCon

- ApacheCon <https://www.apachecon.com/>
- ApacheCon news mailing list  
<http://apache.org/foundation/mailinglists.html#foundation-apachecon>

Other ASF Foundation-level Lists can be found at  
<http://apache.org/foundation/mailinglists.html>

© 2021. This report was prepared by Sally Khudairi, former Vice President Marketing & Publicity, in collaboration with Sander Striker, ASF Board Chair; David Nalley, ASF President and Vice President Infrastructure; Myrle Krantz, Treasurer; Daniel Ruggeri, Vice President Fundraising; Roman Shaposhnik, Vice President Legal Affairs; Mark Cox, Vice President Security; Christian Grobmeier, Vice President Data Privacy; Mark Thomas, Vice President Brand Management; Rich Bowen, Vice President Conferences; Sharan Foga, former Vice President Community Development; and Katia Rojas, Vice President Diversity & Inclusion.