THE APACHE®
SOFTWARE FOUNDATION

2023

Annual Report

Contents

We exist to provide software for the public good.

ASF software is integral to nearly every end-user computing device, from laptops to tablets to mobile devices across enterprises and mission-critical applications. ASF projects power most of the Internet, manage exabytes of data, execute teraflops of operations, and store billions of objects in virtually every industry.

Community over code is the ASF Way.

Governance

Board Members

The membership of the ASF elects a nine-member board to run the foundation, set policy, and ensure it is carried out. The directors of the board are:
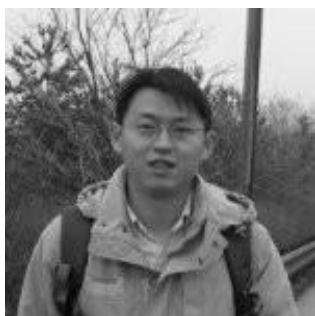
Rich Bowen

Bertrand Delacretaz

Christopher Dutz

Roy T. Fielding

Sharan Foga

Willem Ning Jiang

Sam Ruby

Roman Shaposhnik

Sander Striker

Officers

The Board has appointed the following corporate officers of the ASF:

Office	Individual
Board Chair	Sander Striker
Vice Chair	Sharan Foga
President	David Nalley
Exec. V.P.	Ruth Suehle
Treasurer	Craig McClanahan
Assistant Treasurer	Myrle Krantz
Assistant Treasurer	Roberto Galoppini
Secretary	Matt Sicker
Assistant Secretary	Craig L Russell
V.P., Legal Affairs	Roman Shaposhnik
Assistant V.P., Legal Affairs	Justin Mclean
V.P., Security	Mark J. Cox
V.P., W3C Relations	Andy Seaborne

Corporate Officers

The President has appointed the following corporate officers of the ASF:

Office	Individual
V.P., Brand Management	Mark Thomas
V.P., Conferences	Rich Bowen
V.P., Data Privacy	Christian Grobmeier
V.P., Diversity and Inclusion	Katia Rojas
V.P., Fundraising	Bob Paulin
V.P., Infrastructure	Myrle Krantz
V.P., Marketing and Publicity	Brian Proffitt
V.P., Travel Assistance	Gavin McDonald
Infrastructure Administrator	Greg Stein

VP, Fundraising has appointed the following corporate officers of the ASF:

Office	Individual
V.P., Sponsor Relations	Sally Khudairi

ASF Sponsors

The ASF could not exist without the continued generous support from the community. We would like to take this opportunity to thank the organizations and individuals who sustain our operations.

Platinum

Gold

Silver

Targeted Sponsors

ASF Targeted Sponsors provide the Foundation with contributions for specific activities or programs, such as donating cloud services, funding a project hackathon, providing legal services, offering a community member benefit, underwriting expenses for Apache events and conferences, or something entirely new. It's the Apache way of recognizing the sponsors that we rely on every day outside of and often in addition to funding our general operations.

Platinum

aws · GitHub · fastly · CloudBees · OSL OPEN SOURCE LAB · yahoo!

JFrog · DLA PIPER · JET BRAINS · Microsoft · leaseweb reliable hosting

Gold

ATLASSIAN · docker · phoenixNAP GLOBAL IT SERVICES · DINOSOURCE Open Source Software Consultancy

Silver

instaclustr · rackspace the #1 managed cloud company · mi

President's Report

by David Nalley

At the ASF, we prioritize community over code because the code does not write itself; a community keeps code alive and relevant. In FY23, we entered a post-pandemic era that required us to be resilient and adapt to change. The technology sector experienced extreme volatility, including multiple waves of layoffs, hiring freezes, supply chain challenges, and budget cuts.

Thanks to the support of our volunteer board members, officers, and sponsors, the ASF was able to continue its work as a steward of open source software for the public good. We streamlined processes; began evolving the ASF to better reflect where we are headed in the next 25 years; and found ways to support and recognize our communities amidst uncertain times.

We retired the ApacheCon name, now referring to our flagship conference as Community Over Code. We also began discussions about future changes to the foundation's brand in response to public posts from Natives in Tech and members of the open source community. We introduced campaigns, including #FirstASFContribution to ensure that we are truly modeling a 'community over code' mindset by recognizing all the individuals across the ASF who are

instrumental in making our communities vibrant and sustainable.

One of our core responsibilities is to help ensure that ASF's projects have the infrastructure and support needed to thrive. To do this we must ensure priority is given to ASF projects whose communities are active. For nearly 15 years, the ASF Attic has played a valuable role in providing oversight of ASF projects and marking the end of life for projects if and when the time comes. This helps ensure that our valuable volunteer resources are not wasted, as well as keeping potential innovation stronger by making sure no code is completely abandoned.

The ASF also continues to be called upon for advice and guidance around public policy. In June 2023, we established a new position, VP of Public Policy, and collaborated with other open source organizations to form a potential response to the EU's Cyber Resiliency Act (CRA). It is always a privilege to be part of critical conversations that will shape the future of open source technology.

As we're drawing to the end of FY23, I find myself looking back with pride at the accomplishments of the ASF and am ever more thankful for the amazing work contributed by our board, officers, and community. I look forward to another year of collaboration.

Treasurer's Report

by Craig McClanahan

The Treasurer, Craig McClanahan, and the Assistant Treasurer, Roberto Galoppini, with the help of our accounting firm IgniteSpot, continued to provide the Foundation with:

- Accounting services;

- Financial tooling;

- Budgeting and policy advice; and

- Financial reports.

We maintained and tracked the financial means that enable ASF communities to provide software for the public good.

In addition, we support our Fundraising efforts, including invoicing sponsors, interfacing with sponsor PO systems, late payment follow-up, and providing regular officer reports. We continued to work closely with the President, Infrastructure Administrator, and Fundraising Officers to continue the use of available tools, particularly in the following areas:

- Accounting Software, which includes both financial reports and invoicing sponsors (QuickBooks Online);

- Automated bill payment software, for both recurring and one time expenses paid by the Foundation (Bill.com);

- Virtual and physical credit cards for employees or volunteers that are authorized to purchase goods and services for the Foundation, without having to file expense reports (Ramp.com); and

- Payroll services (ADP TotalSource).

Accounting Practices

We have continued the practice of accrual-based accounting, which was started last fiscal year. The final cleanup of our relationship with Citizens Bank was completed at the very end of this fiscal year, so all of our financial assets are at TD Bank (for regular checking) and TD Wealth (for the Operating Reserve that was established, at Board direction, last year).

FY2023 Financial Statement

by Craig McClanahan

Profit and Loss

Revenue	2021/2022	2022/2023
ACA Event Sponsorship	$17,440	$259,500
Event Revenue	$53,540	$73,097
Programs	$11,200	$0
Public Donations	$122,213	$134,567
Sponsorship Program	$967,105	$1,827,228
Interest Income	$57	$0
Total Revenue	**$1,171,555**	**$2,294,392**

Expenses	2021/2022	2022/2023
General & Admin	$62,814	$98,841
Brand Management	$53,752	$0
Conferences	$35,131	$182,338
Fundraising	$108,296	$108,325
Infrastructure	$1,236,817	$1,395,207
Publicity	$243,369	$153,969
Treasury Services	$22,931	$35,070
Travel Assistance Committee	$0	$54,384
Uncategorized Expense	$6,000	$0
Total Expenses	**$1,544,253**	**$2,028,134**
Net Operating Revenue	**$(372,698)**	**$266,258**

Other Revenue	2021/2022	2022/2023
Interest Income/Foreign Exchange	$(129)	$308
Operating Reserve Interest and Dividends	$7,046.07	$48,489
Other Income	$0	$5,661
Total Other Revenue	**$6,917**	**$54,458**

Other Expenditures	2021/2022	2022/2023
Operating Reserve Fees	$3,533	$0
Operating Reserve Unrealized Loss	$58,746	$19,415
Foreign Exchange Expense	$0	$91
Total Other Expenditures	**$62,280**	**$19,506**
Net Other Revenue and Expenditures	**$(55,363)**	**$34,952**
Net Income	**$(652,917)**	**$301,210**

Receivable		
Operating Reserve Basis	$2,000,100	$2,000,100
Unrealized Gains/Losses	$(55,334)	$(35,896)
Total Operating Reserve	**$1,944,766**	**$1,964,204**
Total Assets	**$4,571,484**	**$5,247,821**

Balance Sheet

Assets	2021/2022	2022/2023
Cash and Equivalents	$2,334,305	$2,706,674
Other Current Assets	$74,416	$73,942
Total Current Assets	**$2,334,305**	**$2,780,616**
Total Accounts	**$218,000**	**$503,000**

Liabilities	2021/2022	2022/2023
Accounts Payable	$48,181	$19,680
Short Term Debt	$3,310	$8,046
Deferred Revenue	$801,242	$1,217,640
Conditional Gift	$500,000	$500,000
Restricted Donations	$78,048	$66,545
Total Liabilities	**$1,430,780**	**$1,811,913**

Equity	2021/2022	2022/2023
Opening Balance Equity	$1,570,838	$1,570,838
Retained Earnings	$2,222,783	$1,563,865
Net Revenue	$(652,917)	$301,204
Total Equity	**$3,140,704**	**$3,435,908**
Total Liabilities & Equity	**$4,571,484**	**$5,247,821**

Fundraising

by Robert Paulin

ASF Fundraising focused on two key areas for FY23: sponsor relations and administrative efforts.

Sponsor Relations

FY23 marked a time of great volatility in the technology industry including widespread layoffs and a challenging global political and economic landscape. It was a challenging year for our sponsor program; unfortunately, we saw a decline in engagement and support from ASF sponsors based in China. With so much out of our control, it was important to hone our energy where positive progress could be made. We focused our fundraising efforts on engaging with current sponsors, ensuring a smooth onboarding process for new sponsors, implementing a new Fundraising CMS, and increasing staffing resources.

In addition to cultivating and stewarding ASF Sponsors and Targeted (in-kind) Sponsorships, ASF Fundraising facilitated numerous corporate contributions (cash donations that lie outside of Sponsorship parameters). The ASF's Individual Giving program has raised more than $500K since the program's launch in May 2017, and we continue to welcome donations from corporate and individual donors worldwide via donate.apache.org.

Administrative Processes

ASF Fundraising collaborated closely with Treasury and Accounting teams to improve our workflow processes, expedite incoming payments, and fine-tune sponsor invoicing. We have implemented a new CRM integration for sponsor lifecycle management and created processes across ASF teams to ensure that our payment processes remain secure.

The ASF would not exist without the support of our sponsors. We are extremely grateful to have so many sponsors who value the work we do.

Legal Affairs

by Roman Shaposhnik

The ASF Legal Affairs committee is chartered directly by the Board of Directors. We work with pro-bono legal counsel to answer legal questions and address policy issues regarding license compatibility and intellectual property concerns within the ASF communities. We also help guide the ASF through an evolving legal landscape and serve as the first point of contact for any third-party individuals or organizations seeking to engage with us in a more formalized legal manner.

Some of the notable actions taken by ASF Legal Affairs in FY23 include:

- Educated EU government officials on the ramifications and impacts of various pieces of legislation concerning open source and the Apache License in particular;

- Handled multiple subpoenas and company witness requests;

- Collaborated with various members of the ASF leadership team to help evolve thinking around "Apache" branding from a legal perspective; help address community issues raised; and prepare for the ramifications of rebranding efforts;

- Prepared policies for usage of generative AI coding assistant tools (such as GitHub's co-pilot), as it pertains to ASF project contributions;

Looking forward, we hope to expand the network of attorneys willing to do pro-bono work for the ASF to ensure we can sufficiently address all incoming needs and continue to adequately support ASF projects. We would like to thank DLA Piper and Mark Radcliffe for their exemplary service to the ASF.

The Legal Affairs committee makes policy decisions based on the advice of legal counsel and the interests of the ASF. To provide legal support to ASF projects, we must consider the inclusion of a product's dependencies on other software and understand how those dependencies are or are not compatible with the Apache License.

We've maintained a record of our policy decisions at apache.org/legal/resolved.html. These decisions are listed as "resolved" licensing questions and serve as our Frequently Asked Questions (FAQs) resource. We frequently cite and inform others of this page, and infrequently, we update our policy based on the needs of our projects.

Additionally, the Legal Affairs Committee encourages the ASF community to use our JIRA instance at http://issues.apache.org/jira/browse/LEGAL for discussions that may lead to a policy decision. This work is even more critical as vendors experiment with COSS Commercial Open Source Software (COSS) licenses derived from the Apache License v2.

Infrastructure

by Myrle Krantz

The ASF Infrastructure team kept very busy in FY23 as we continued to enhance our systems and technology platforms to meet the growing needs of the ASF. We are thankful to have a dedicated and hardworking team who are always looking for ways to improve tools and processes and gain efficiencies without jeopardizing security or ease of use.

Key activities led by the ASF Infrastructure team in FY23 include:

- Migrated to Bitwarden as a LastPass replacement due to continuing service issues;

- Made the Infra workspace in Jira committer-only to ensure safety and security;

- Migrated our blogs.apache.org platform to a new set of options, in order to better match the needs of our projects, and launching news.apache.org in the process;

- Ran many "Roundtable" discussions with members of the communities;

- Launched a rebuilt self-serve portal to make it easier for maintenance, improved workflow, and feature add-ons;

- Implemented a new policy for GitHub pull requests from outside contributors to improve security and workflow efficiencies;

- Completed our planned upgrade of our LDAP system for authenticating accounts across our services;

- Finally replaced one of our key mail servers with a modern system, managed and configured by our standard deployment mechanisms;

- Built a new BackupPC-based server and separated rsync-based backups to create more space and more reliability at a similar cost, across all provided services;

- Implemented a new strategy for scheduling standard maintenance operations on all machines;

- Developed a new Slack bot to assist Infrastructure primarily, with some additional features for the broader community;

- Upgraded Confluence (cwiki.a.o) to deal with issues related to password resets on non-LDAP-based accounts; and

- Rolled out a tool for web-based moderation of mailing list messages, and management of list moderators.

Security

by Mark Cox

Over the course of FY2023, ASF security received over 21,900 emails. After spam filtering and thread grouping, this became 1,396 non-spam threads, a figure comparable to FY2022.

The breakdown of these 1,396 threads is as follows:

- **Apache License Confusion:** A total of 336 threads (24%) originated from individuals encountering confusion regarding the presence of the Apache License on their devices. This figure aligns with FY2022 numbers, indicating a continued influx of such reports. Most commonly, these reports pertain to software released under the Apache License but not developed by the ASF, such as the majority of the Android OS.

- **Support and Dependency Questions:** We received 338 threads (24%) encompassing support-related inquiries and questions concerning dependencies. This figure is consistent with FY2022.

- **Website Issues:** A subset of 88 threads (6%) highlighted issues affecting our infrastructure, specifically pertaining to websites. The majority of these reports were deemed invalid, encompassing instances of open directory listings, public source code, SPF email issues, and similar matters. It is worth

noting that this number represents a nearly 50% decrease compared to FY2022.

- **Vulnerability Reports:** Our team received 634 reports regarding potential vulnerabilities across 127 top-level ASF projects, indicating a 12% increase from FY2022. The Security Committee diligently oversaw the lifecycle of these reports, conducting triaging and investigations in collaboration with each project's security team or PMC. When we confirmed the issues were valid, we addressed them with updates. This process led to 214 CVE names being issued, reflecting a 12% increase from FY2022.

During FY23 we hired an administrator to work with the volunteer resources on security issue handling. This has enabled us to spend time looking at security initiatives such as SBOM and VEX, working with projects to publish security model pages, and reviewing third-party vulnerability sites and databases to correct and enhance their data about vulnerabilities in ASF projects.

Open Issue Challenges

At the beginning of FY23 we had 91 open issues across 42 projects, with a median age of 78 days. However, by the end of FY23, the number of open issues had increased to 173 across 62 projects, with a median age of 69 days. While it is not uncommon for lower-severity issues to take time before

being incorporated into new releases, the overall number of open issues remains relatively high.

Consistency of Security Advisories

We recognize the need for enhanced consistency and accuracy in ASF security advisories. Over the course of the fiscal year, we made significant efforts to automate the creation and publishing of advisories, transitioning from the CVE JSON v4 format to the new v5 schema. This transition has allowed us to push CVE details directly to cve.org and provided an opportunity to enrich our security advisories with additional information and links. However, further improvements are necessary, and we may do this by updating the tooling and introducing reviews.

More metrics, including noteworthy vulnerabilities and events, are available in the 2022 ASF Security Report: https://security.apache.org/blog/asf-security-report-2022.

We encourage those who discover ASF project security issues to report them promptly to our private mailing list at security@apache.org. Additionally, we invite you to share your feedback and comments on this report by reaching out to our public mailing list at security-discuss@community.apache.org. To gain a deeper understanding of our comprehensive security process, we invite you to visit our website at https://apache.org/security/.

Data Privacy

by Christian Grobmeier

FY23 built upon efforts that were kickstarted in FY22; most notably the migration to Matomo Analytics from Google Analytics. By the end of FY23, 36 ASF websites had migrated to Matomo. Most importantly, the migration has not impacted our user privacy or site visits.

We also developed a privacy policy for public websites for all ASF projects to follow. Looking forward to FY24, the Data Privacy office would like to grow a committee of privacy-interested community members and develop a training program to help educate the ASF ecosystem, including employees, volunteers, and projects.

Conferences

by Rich Bowen

In FY23 we held ApacheCon North America and ApacheCon Asia while also planning for the next iteration of our flagship event – Community Over Code. As we look to celebrate the ASF's 25th year, it is only appropriate for us to evaluate the largest annual gathering we host for the open source community and ensure it reflects our future direction.

ApacheCon Asia 2022

ApacheCon Asia was held July 29-31, 2022 in Beijing, China. In total, there were 2,566 registrations received and 172 individual donation tickets sold. ApacheCon Asia included approximately 192 sessions with 256 speakers, 18 keynotes, and 17 conference tracks. In addition, 91,000 people watched the free, online sessions during the conference with peak attendance at any one time totaling 2,200 people.

We would like to thank ApacheCon Asia 2022 sponsors:

- Strategic sponsor: Huawei

- Platinum sponsors: SelectDB and Baidu

- Gold sponsors: Timecho and Amazon

- Silver sponsor: API7

ApacheCon North America 2022

ApacheCon North America 2022 was held in New Orleans, USA, October 3-6 2022.

ApacheCon North America received 450 registrations, of which 345 actually checked in on-site. Attendee sentiment seemed overwhelmingly positive – Birds of a Feather evening sessions, lightning talks, and attendee reception were all well attended, with event keynotes being standing-room-only.

Many thanks to our ApacheCon North America sponsors:

- Platinum sponsors: AWS, Cloudera, Google Cloud, and Gradle

- Gold sponsors: DataStax, Instaclustr, Red Hat, Salesforce, and Sonatype

- Silver sponsors: Apple and OpenSearch

- Bronze sponsors: Aiven, Datagrate, Bloomberg, and DBeaver

Special thanks also go to ApacheCon North America track chairs, event photographer Kris Traquair, Travel Assistance Committee (TAC) staff and recipients, and to Ruth Suehle and Brian Proffitt, who were instrumental in the event's production and overall success.

Introducing Community Over Code

In FY23, the ASF announced the next iteration of its flagship event, ApacheCon. The event, now named "Community Over Code," will be the annual convention of the ASF, offering a chance for the community to gather in person and showcase content from many of the project communities at the ASF.

We believe the new name of our event reflects a defining core value of the ASF: that an open source community is ultimately more vital than open source code. Our flagship event should reflect this as we celebrate the ASF's 25th year.

Community Over Code will feature four days of sessions, with tracks focusing on Search, Big Data, Internet of Things, Community, Geospatial, Financial Tech, and many other topics. Each evening will also feature Birds of a Feather (BoF) sessions, where communities will have an opportunity for freeform discussion and planning around our various projects.

Community Over Code will be held in Halifax, Nova Scotia October 7-10, 2023.

Community Development

by Swapnil M Mane

A key responsibility for the ASF Community Development team is to help encourage and oversee the involvement of participating Apache projects while also raising awareness of ASF projects and their communities. In FY23 we focused efforts on the Apache Local Community program, Google Summer of Code mentorship program, and ASF presence at key industry events.

We nurtured the Apache Local Community (ALC) initiative and fostered their growth and engagement. By the end of FY23, there were seven active ALCs operating in five different countries:

- ALC Budapest (Hungary)
- ALC Warsaw (Poland)
- ALC Lagos (Nigeria)
- ALC Indore (India)
- ALC Beijing (China)
- ALC Shenzhen (China)
- ALC Xi'an (China)

The ALC chapters consist of open source enthusiasts who have been active and engaged in spreading ASF awareness through physical and virtual events, workshops, webinars, and participation in conferences. The collaboration with universities and the establishment of new ALCs contribute to the growth and impact of the ASF community.

Some highlights of ALC FY23 activities include:

- Organized virtual events and webinars to spread awareness of ASF projects;
- Conducted sessions on ASF and open source awareness with student participants;
- Hosted tracks at key industry events including ApacheCon Asia and CCF China Open Source Conference;

- Organized face-to-face meetings, online meetups, and discussions for various Apache projects; and

- Contributed talks on building influence in the open source community and the Open Source Program Office (OSPO).

The ASF was once again chosen as a Google Summer of Code (GSoC) mentor organization for both 2022 and 2023. GSoC is a mentorship program focused on welcoming new contributors into the community and helping them learn best practices with the hope that they will become long-term OSS contributors. For Google Summer of Code 2022, we provided mentorship and guidance to 37 mentees who worked across 14 different ASF projects. We supported and empowered students to contribute to ASF projects in order to gain valuable experience in open source development; we are proud to report that 33 participants successfully passed. We look forward to next year's program!

Participation and representation at open source events remained a key initiative of the Community Development office in FY23. Events of interest included FOSDEM, FOSS Backstage, and Open Source India – events that provided valuable networking and collaboration opportunities. Our role included setting up booths and delivering presentations to showcase the ASF's contributions and engage with the open source community.

By focusing on these areas, we aimed to further strengthen the ASF's impact, nurture community growth, and spread awareness about the ASF and the communities it serves.

Diversity & Inclusion

by Katia Rojas

The Apache Diversity & Inclusion (D&I) project was established in 2019 to build equity in our ASF communities by developing tools and frameworks to foster inclusion and increase diversity in all phases of ASF projects. The foundation of our work is built on respect, empathy, openness, patience, candor, and dependability.

The D&I VP works in collaboration with a team that contributes towards generating a current description of the D&I landscape in the industry and for the foundation. The team also focuses on developing resources the projects can leverage to increase diversity and inclusion in their communities.

In FY23, the D&I project collaborated with Bitergia to conduct and analyze results from our second user experience survey aimed at new contributors. The survey was fielded in August 2022 and Bitergia submitted a draft of the report based on the data collected in the survey. The final report will be published in 2023.

Statistics

Projects and Code

The ASF stewards 299M+ lines of code in 2,500+ Apache repositories across 320+ active projects.

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: 209 PMCs manage 294 projects and sub-projects, 12 of which are newly graduated Top-Level Projects. 11 projects retired to the Apache Attic.

- Incubating podlings: 24 projects are currently developing in the Apache Incubator; 7 projects were new entrants, and 5 were retired.

There are currently 320+ open source initiatives at the ASF:

- 209 committees managing 294 projects
- 5 special committees
- 24 incubating podlings

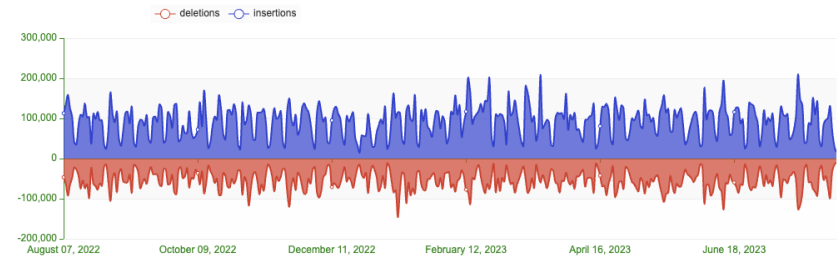# Project and Podlings Over Time
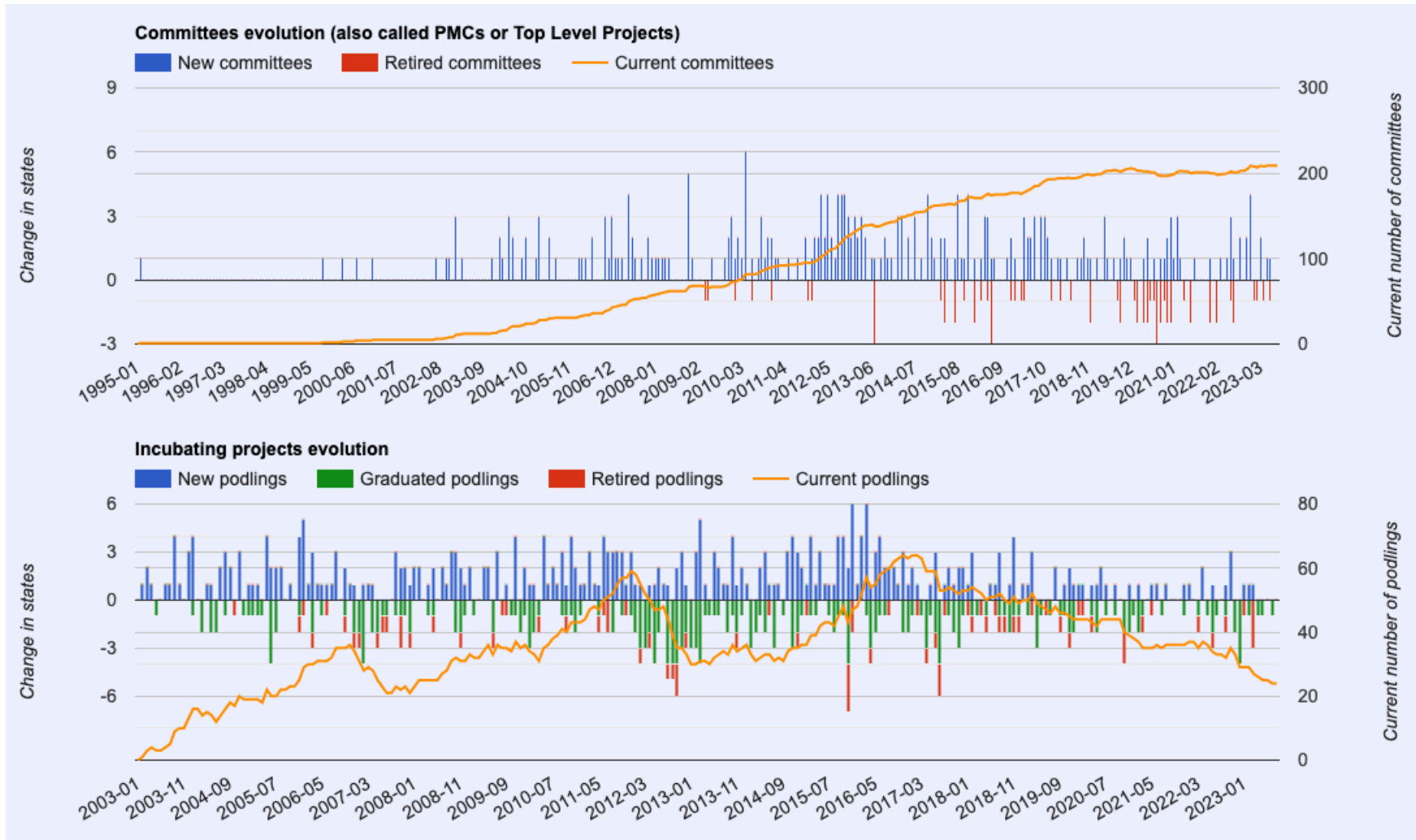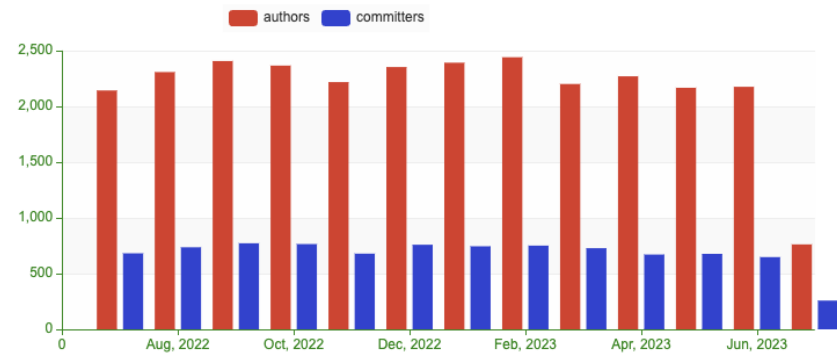
Codebase Statistics

LANGUAGE BREAKDOWN
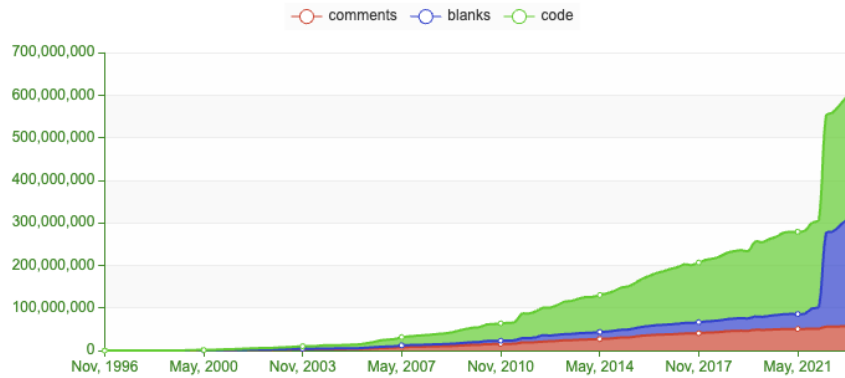
Commits and Changes
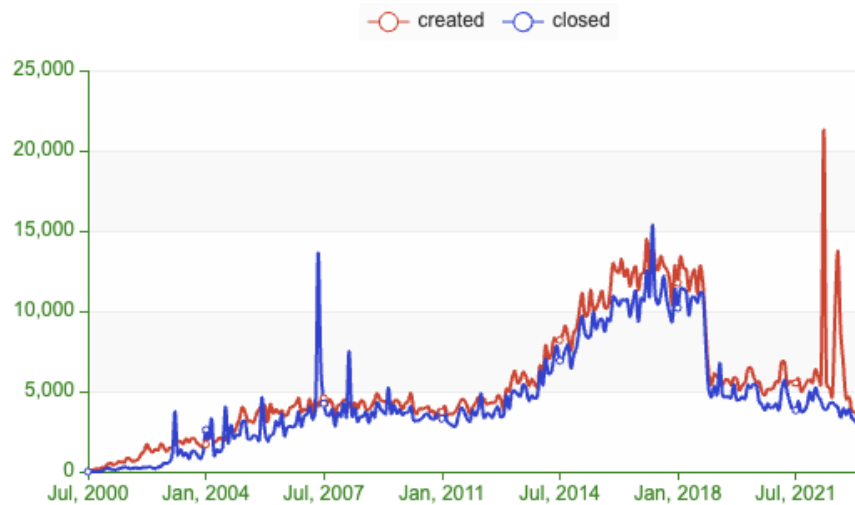
LINES CHANGED

EVOLUTION OVER TIME

COMMITTERS AND AUTHORS, PAST YEAR
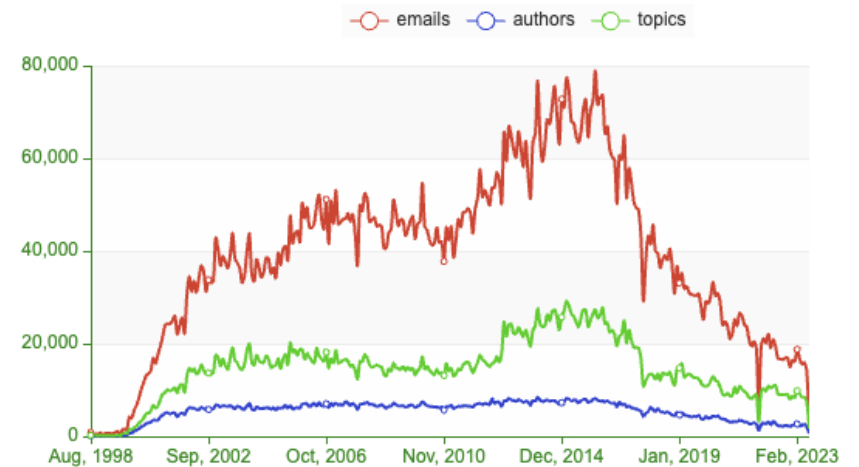
Issues and Emails

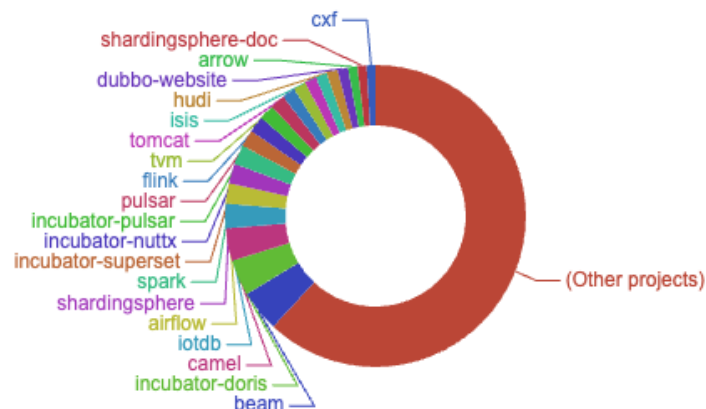## NUMBER OF ISSUES OPENED/CLOSED, ALL TIME

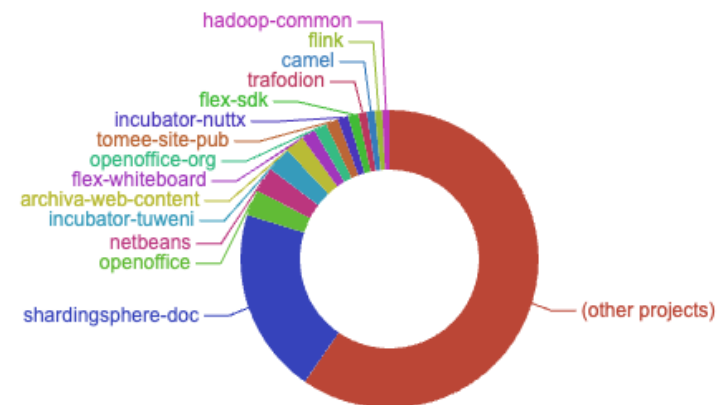## EMAILS, TOPICS, AND AUTHORS, PAST YEAR

Repositories

BY NUMBER OF COMMITS

BY NUMBER OF LINES OF CODE

Apache Top-Level Projects

294 PROJECTS
(NOTE: some projects are many, under one TLP/PMC, eg. Apache Commons):

.NET Ant Library
Accumulo
ActiveMQ
AGE
Airavata
Airflow
Allura
Ambari
Anakia
Ant
AntUnit
APISIX
Archiva
Aries
Arrow
AsterixDB
Atlas
Avro
Axiom
Axis2
Bahir
Batik
Beam
Bigtop
Bloodhound
BookKeeper
Brooklyn
bRPC
BuildStream
BVal
Calcite
Camel

CarbonData
Cassandra
Causeway
Cayenne
Celix
Chainsaw
CloudStack
Cocoon
Commons BCEL
Commons BeanUtils
Commons BSF
Commons Chain
Commons CLI
Commons Codec
Commons Collections
Commons Compress
Commons Configuration
Commons Crypto
Commons CSV
Commons Daemon
Commons DBCP
Commons DbUtils
Commons Digester
Commons Email
Commons Exec
Commons FileUpload
Commons Functor
Commons Geometry
Commons HttpClient
Commons Imaging
Commons IO
Commons JCI
Commons JCS
Commons Jelly
Commons JEXL
Commons JXPath
Commons Lang
Commons Logging
Commons Math
Commons Net
Commons Numbers
Commons OGNL
Commons Pool

Commons Proxy
Commons RDF
Commons RNG
Commons SCXML
Commons Statistics
Commons Text
Commons Validator
Commons VFS
Commons Weaver
Community Development
Compress Ant Library
Cordova
CouchDB
cTAKES
Curator
CXF
Daffodil
DataFu
DataSketches
DeltaSpike
Derby
Directory
Directory Server
Directory Studio
DolphinScheduler
Doris
Drill
Druid
Dubbo
ECharts
Empire-db
EventMesh
Felix
Fineract
Flagon
Flex
Flink
Flume
Fluo
Fluo Recipes
Fluo YARN
FOP
Fortress

FreeMarker
FtpServer
Geode
Geronimo
Giraph
Gobblin
Gora
Griffin
Groovy
Guacamole
Gump
Hadoop
HAWQ
HBase
Helix
Hive
Hop
HTTP Server
HttpComponents Client
HttpComponents Core
Hudi
Iceberg
Ignite
Impala
InLong
IoTDB
Ivy
IvyDE
Jackrabbit
JAMES
jclouds
Jena
JMeter
Johnzon
JSPWiki
Juneau
Kafka
Karaf
Kerby
Kibble
Knox
Kudu
Kvrocks

Kylin
Kyuubi
Libcloud
Linkis
log4cxx
Log4j
log4net
log4php
Lucene Core
Lucene.Net
MADlib
Mahout
ManifoldCF
Maven
Maven Doxia
Mesos
MINA
Mnemonic
mod_ftp
mod_perl
MXNet
MyFaces
Mynewt
NetBeans
NiFi
Nutch
NuttX
OFBiz
Olingo
Oozie
OpenJPA
OpenMeetings
OpenNLP
OpenOffice
OpenWebBeans
OpenWhisk
ORC
Ozone
Parquet
PDFBox
Petri
Phoenix
Pig

Pinot
Pivot
PLC4X
POI
Portable Runtime
Portals
Props Ant Library
Pulsar
PyLucene
Qpid
Ranger
Rat
Ratis
Rivet
RocketMQ
Roller
Royale
Rya
Samza
Sandesha2
Santuario
SeaTunnel
Sedona
Serf
ServiceComb
ServiceMix
ShardingSphere
ShenYu
Shiro
SINGA
SkyWalking
Sling
Solr
Solr Operator
SpamAssassin
Spark
Spatial Information System
SSHD
Steve
Storm
StreamPipes
Streams
Struts

Submarine
Subversion
Superset
Synapse
Syncope
SystemDS
Tapestry
Tentacles
Texen
Tez
Thrift
Tika
TinkerPop
Tobago
Tomcat
TomEE

Torque
Traffic Control
Traffic Server
Turbine
TVM
UIMA
Unomi
VCL
Velocity
Velocity DVSL
Velocity Tools
VSS Ant Library
Vysper
Websh
Whimsy
Whisker

Wicket
Woden
Xalan for C++ XSLT Processor
Xalan for Java XSLT Processor
Xerces for C++ XML Parser
Xerces for Java XML Parser
Xerces for Perl XML Parser
XML Commons External
XML Commons Resolver
XML Graphics Commons
XMLBeans
Yetus
YuniKorn
Zeppelin
ZooKeeper

Apache Incubating Podlings

24 PODLINGS

Annotator
Baremaps
Celeborn

DataLab
DevLake
HugeGraph
KIE
Liminal
Livy
Teaclave
Milagro
Nemo
NLPCraft
OpenDAL
Paimon
Pegasus
Pekko

Pony Mail
SDAP
StreamPark
Training
Toree
Uniffle
Wayang

Retired Apache Projects in the Attic

83 PROJECTS

Abdera
ACE
Any23
Apex
Aurora
Avalon
AxKit
Axis Sandesha2/C
Axis Savan/C
Axis Savan/Java
Beehive
Buildr
Chemistry
Chukwa
Clerezza
Click
Open Climate Workbench
Crimson
Continuum
Crunch

Deltacloud
DeviceMap
DirectMemory
DRAT
Eagle
ESME
Etch
Excalibur
Falcon
Forrest
Hama
Harmony
HiveMind
iBATIS
Jakarta
Jakarta Cactus
Jakarta ECS
Jakarta ORO
Jakarta Regexp
Jakarta Slide
Jakarta Taglibs
Joshua
jUDDI
Labs
Lens
Lenya
Lucy
Marmotta
MetaModel
Metron
MRUnit
ODE

ObJectRelationalBridge (OJB)
Oltu (previously Amber)
Onami
OODT
Polygene
PredictionIO
Quetzalcoatl
Rave
REEF
River
Sentry
Shale
Shindig
Sqoop
Standard C++ Library (STDCXX)
Stanbol
Stratos
Tajo
Tiles
Trafodion
Tuscany
Twill
Usergrid
VXQuery
Whirr
Wink
Wookie
WS Muse
Xang
Xindice
XML

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