



P4 2022 Annual Report

P4 Community Momentum Accelerates in 2022

- **P4 code contributions increased by 69% in 2022**
 - Intel and VMware increased their contributions by 87% and 82% respectively in 2022
- **P4 Working Groups Continued to Evolve Technology**
 - P4 Language Specification v1.2.3 released July 2022
 - Portable Switch Architecture v1.2 Specification released Dec 2022
 - Significant progress on P4Runtime v1.4.0 development
 - Increased opportunities for community (tutorials and hackathons)
- **Spring P4 Workshop registrations increased by 34% in 2022 to 1,725**
 - ONF-hosted events: 5 events in 2022 vs 3 events in 2021
 - 3rd party hosted event participation increased in 2022 from 1 in 2021 to 5 in 2022
- **Significantly grew P4 community via social media**
 - Increased LinkedIn posts by 217% in 2022 over 2021; added 725 new followers (total now 2,421)
 - Twitter: added 203 followers in 2021 and 293 followers in 2022; total now 947
 - YouTube: video views ~43K in 2022 and 2021; added approximately 500 new subscribers in both 2021 and 2022 (total now 2,067)

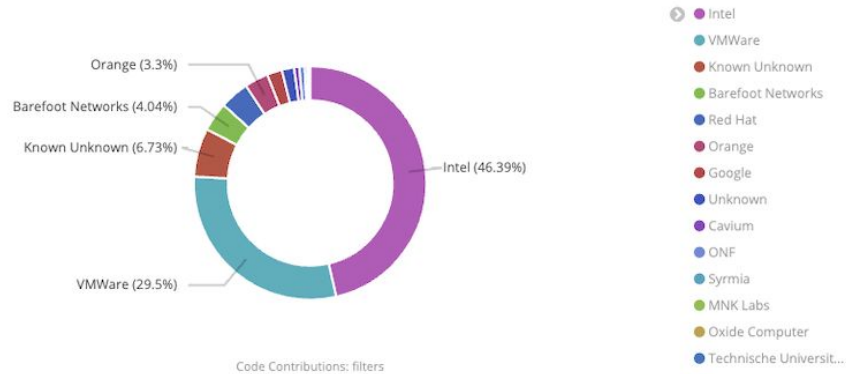


Project Contributions

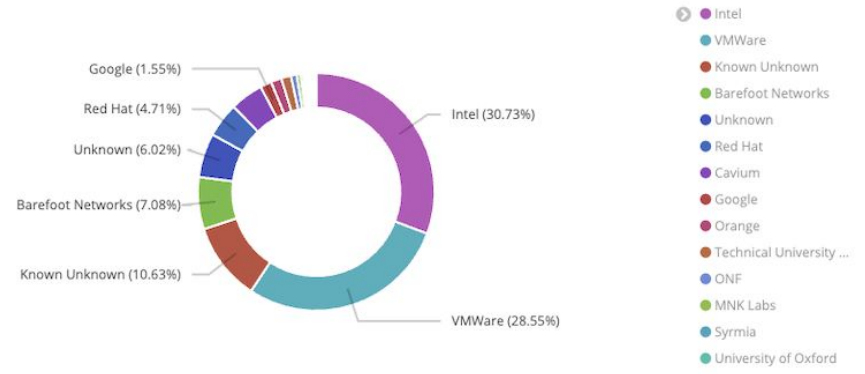
(Dec 16, 2021 - Dec 15, 2022)

817 Code Contributions, 70 Contributors

Code Contributions by Organization



Other Project Activity - contributions by organization

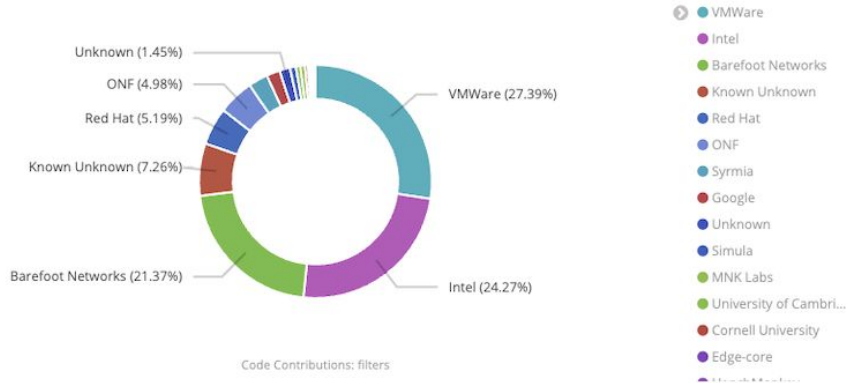


Project Contributions

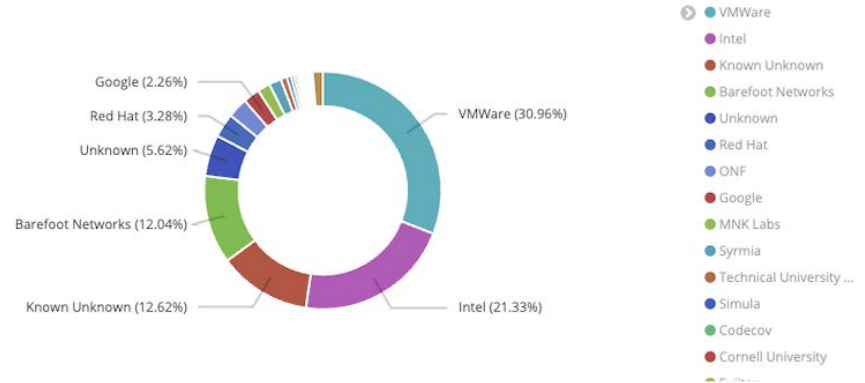
(Dec 16, 2020 - Dec 15, 2021)

482 Code Contributions, 79 Contributors

Code Contributions by Organization



Other Project Activity - contributions by organization



P4 Language Design Working Group Activity

- Met goal of releasing one specification annually
 - P4 Language Specification v1.2.3 released July 2022
 - P4 Language Specification v1.2.1 released May 2021
- Language evolution increasing slightly
 - Changelog from 1.2.3 to next version has 20 entries to date
 - Changelog from 1.2.2 to 1.2.3 had 17 entries

P4 Architecture Activity

- Portable Switch Architecture v1.2 Specification released Dec 2022



P4 API Working Group Activity

- Monthly meetings throughout the year
- Working on v1.4.0 release of P4Runtime which will be first release since end of 2020; so far have a dozen items in the changelog for v1.4.0

P4 Education Working Group Activity

- Tutorials and hackathon
 - [P4Pi Tutorial at NetSoft 2022](#) (June 27, 2022)
 - [P4Pi Hackathon at SIGCOMM 2022](#) (August 26, 2022)
 - [P4 Tutorial at netdevconf 0x16](#) (October 24, 2022)

P4 Applications Working Group Activity

- No meetings held in 2022



2022 P4 Events

P4 Hosted Events (8)

- [P4 Workshop 2022](#) (May 24-26, 2022); 1725 pre-event registrations
- [P4Pi Tutorial at NetSoft 2022](#) (June 27, 2022)
- [P4Pi Hackathon at SIGCOMM 2022](#) (August 26, 2022)
- [P4 Tutorial at netdevconf 0x16](#) (October 24, 2022)
- [Intel 2022 P4 China Hackathon](#) (November 18, 2022)
- [P4 Workshop Taiwan](#) (November 22, 2022)
- [P4 Users Japan](#) (November 24, 2022)
- [Euro P4 2022](#) (December 9, 2022)

3rd Party Events (3)

- [SmartNICS Summit](#) (April 26-28, 2022)
- [IDNOG 7](#) (July 28, 2022)
- [OCP Global Summit](#) (October 18-20, 2022)



2021 P4 Events

P4 Hosted Events (5)

- [P4 Workshop 2021](#) (May 18-20, 2021); 1286 pre-event registrations
- [P4Pi Hackathon at SIGCOMM](#) (August 23, 2021)
- [Japan P4 User Group 2021](#) (October 21, 2021)
- [Euro P4 2021](#) (December 13, 2021)
- [P4 Workshop Taiwan](#) (December 21, 2021)

3rd Party Events

- [OCP Global Summit](#) (November 9-10, 2021)



Social Media

LinkedIn (Dec 16, 2021 - Dec 15, 2022)

3,729 page views
764 new followers (total followers: 2,453)
3,019 reactions to posts
725 new followers 1/1/2022-11/21/2022 (total: 2,421)
365 posts

2021: 115 posts

Twitter (Jan 1, 2022 - Dec 15, 2022)

293 new followers (total followers: 947)
197 tweets

2021: 203 new followers

YouTube (Dec 16, 2021 - Dec 15, 2022)

493 new subscribers (total subscribers: 2,067)
44,925 video views

2021
502 new subscribers
42,554 video views



2022 P4 PR

Press Releases

- [ONF, in Collaboration with Microsoft, Google and Intel, Brings SDN to SONiC™](#) (February 17, 2022)

Blogs (12)

- [Community Member Profile: Nandita Dukkipati](#) (January 18, 2022)
- [Community Member Profile: Han Wang](#) (March 28, 2022)
- [P4 Workshop Showcases Expansion of Programmable Infrastructure](#) (June 8, 2022)
- [Tencent Implements Gateway Functionality in P4 Switching Appliance](#) (June 14, 2022)
- [Community Member Profile: Mihai Budiu](#) (July 25, 2022)
- [P4 Novel Use Award Winners!](#) (July 28, 2022)
- [Automatically Checking P4 Parser Equivalence with Leapfrog](#) (August 11, 2022)
- [Community Member Profile: Steffen Smolka](#) (August 12, 2022)
- [Mario Baldi, AMD, Appointed as Co-Chair of the P4 Architecture Working Group](#) (October 25, 2022)
- [Applications Open for the Next Round of the ICRP's Fast Forward Initiative \(FFI '22\)](#) (October 26, 2022)
- [The First In-Person P4Pi Hackathon at ACM SIGCOMM 2022 in Amsterdam](#) (November 4, 2022)
- [Intel © 2022 P4 China Hackathon Award Winners Announced!](#) (December 5, 2022)



2021 P4 PR

Press Releases

- [ONF Announces New SD-Fabric Project, an Open Source, Full Stack Programmable Network Fabric](#) (June 24, 2021)

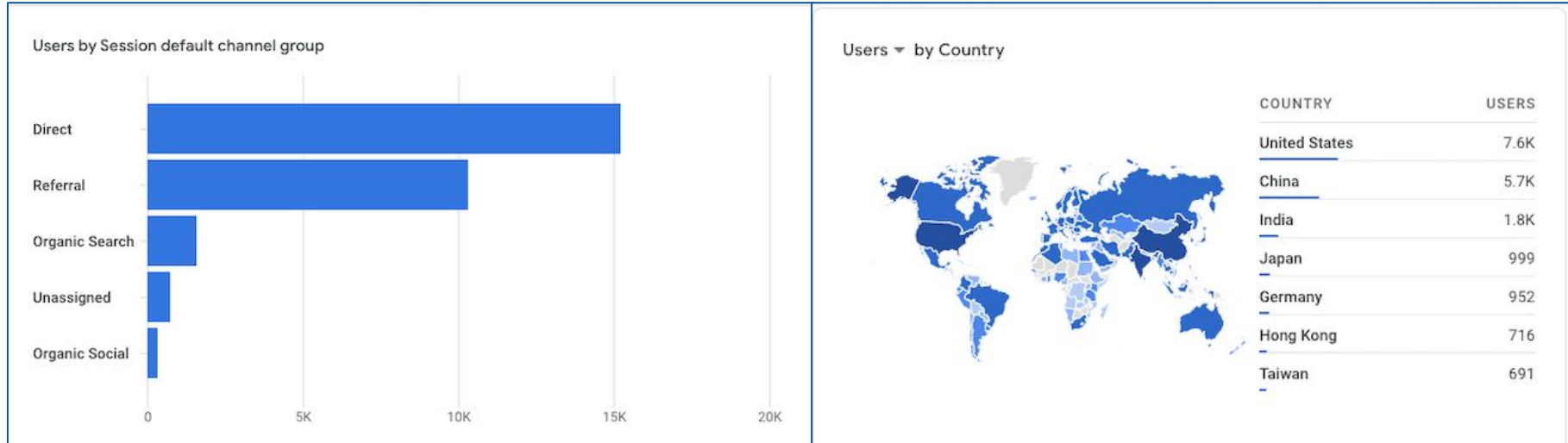
Blogs (18)

- [Community Member Profile: David Gengenbach](#) (February 19, 2021)
- [OpenFlow: Catalyst that Kickstarted the SDN Transformation](#) (March 3, 2021)
- [Flightplan: Dataplane Disaggregation and Placement for P4 Programs](#) (April 10, 2021)
- [Future Internet at Terabit Speeds: SCION in P4](#) (May 25, 2021)
- [PINS is Next Step in Software Revolution of Data Center Networking](#) (May 26, 2021)
- [Announcing 2021 P4 Workshop Novel Use Award Winners](#) (June , 2021)
- [2021 P4 Workshop Wrap up Blog](#) (June 7, 2021)
- [Community Member Profile: Noa Zilberman](#) (July 14, 2021)
- [Using P4 and Programmable Switches to Implement a 4G/5G UPF in Aether](#) (September 7, 2021)
- [Intel Takes Big Steps to Provide Open Access to Intel Tofino P4-Programmable Switch ASIC](#) (September 13, 2021)
- [Community Member Profile: Konstantin Weitz](#) (October 12, 2021)
- [ONF Releases SD-Fabric v1.0 Fully Programmable Network Fabric](#) (October 20, 2021)
- [2021 P4 TST Election Results](#) (October 27, 2021)
- [Table Drive interface API Opens P4-Programmable Data Plane Features](#) (November 9, 2021)
- [Intel Highlights P4 Research -Over 60 Papers Published by Members of Intel Connectivity Research Prog](#) (November 18, 2021)
- [New Network Equipment Grant Program from Intel Reduces Cost of University Networking Research](#) (December 8, 2021)
- [SD-Fabric: An End-to-End Programmable Data Plane - A Year in Review \(Part 1\)](#) (December 9, 2021)
- [SD-Fabric: An End-to-End Programmable Data Plane - What's Next](#) (Part 2) (December 9, 2021)



P4 Website

(Dec 16, 2021 - Dec 15, 2022)



Ongoing

- Additions to [P4 publications](#)
- Additions to [P4 Ecosystem](#)

