Community Discussion on Open Standards

Event Report

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Acknowledgments

This community discussion organised by HasGeek was held at the office of the Centre for Internet and Society in Bangalore, India on June 20, 2019. We would like to thank **Anwesha Das** and **Zainab Bawa** for organising this event, **Jiten Vaidya** and **Bernd Erk** for leading the discussion, and **Kiran Jonnalagadda** and **Gurshabad Grover** for moderating it. We would also like to thank all of the individuals who participated in this community discussion.

Introduction

Open standards are important for the growth and evolution of technology and practices for consumers and industries. They provide a range of tangible benefits, including, for instance, a reduction in the cost of development for small businesses and organisations, facilitation of interoperability across different technologies in certain cases, and encouragement of competitiveness in the software and services market. Open standardisation also encourages innovation, expansion of market access, and transparency — along with a decrease in regulatory rigidity and volatility in the market — subsequently benefiting the surrounding economy as well.

The importance of open standards is perhaps most strikingly evident when considering the ardent growth and impact the Internet — and the World Wide Web in particular — has enjoyed. The modern Internet has been governed, for the most part, by the continuous development and maintenance of an array of inventive protocols and technical standards. Open standards are usually developed in a public-consultancy process, where the standards development organisations ("SDOs") involved follow a multi-stakeholder model of decision-making. Multi-stakeholder models ensure equity to groups with varying interests while also ensuring that any resulting technology, protocol or standard which is developed is in accordance with the general consensus of those involved.

This event report highlights a community discussion on the state of open standardisation in the age where immediately deployable cloud computing services are readily available to consumers — along with an imagined roadmap for the future; one which ensures steady ground for users, as well as the open standards and open source software communities.[1] Participants in the discussion focused on what they believed to be the key areas of advancement with regard to open standardisation, establishing a requirement for regulatory action in the domain, while also touching upon the effects of market forces on stakeholders within the ecosystem, which guide the actions of software companies, service providers, as well as consumers.[2]

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[1] *"Discussion on Open Standards with Bernd Erk and Jiten Vaidya"* — HasGeek https://hasgeek.com/rootconf/rootconf-community-event-on-open-standards/

[2] This community event adhered to the Chatham House rule on discussions, hence, individual opinions have not been attributed to the participants.

A Historic View

The participants began the discussion by briefly mentioning the obstacles which software companies faced in the past, owing to the many limitations of using specific "closed-source" libraries and software such as UNIX. During the nascent stages of advances in modern computing, few other options apart from UNIX were available to the public, and the lack of available options ended up acting as a *limiting factor* for users' ability to freely adapt and innovate.

Issues with interoperability were were only marginally resolved by the introduction of the Portable Operating System Interface ("POSIX") family of standards,[3] which helped users to perform basic (additional) functions on their systems. However, in 1990, individuals working in the software industry mobilised to address the deficiency of available tools and programs which would help them run their systems and networks in a more effective manner. Open source tools formulated within the community started surfacing, and ended up being used across different UNIX systems — in such a way that it became significantly easier for users to access alternative tools owing to choice, advantage and feasibility.

At the same time, Linux started to gain steady ground in the Information Technology industry as one of the most visibly prominent outputs of the *open source development* community. A participant specifically credited the Linux community for the quality and quantity of contributions made by its individual members, stating that this ensured "diversity through a technical perspective," which made working with different technologies and porting the same from one system to another more feasible, as they were no longer bound to a *specific technical facilitator.*

Standards in the Cloud Era

During the discussion, some participants expressed a growing concern over the loss of freedom for the consumer, by highlighting increasing adoption of proprietary services. Simultaneously, a steady increase in the number of users adopting cloud services was observed, as enterprises continue to shift the majority of their workload from self-hosted solutions off to *public cloud*

[3] *"Standard for Information Technology — Portable Operating System Interface (POSIX)"* (2001) — IEEE Computer Society https://mirror.math.princeton.edu/pub/oldlinux/download/c953.pdf

platforms.[4] In the era of cloud computing services which can be provisioned at the click of a button, the presence of open and interoperable standards is integral toward ensuring user accessibility across the multitude of available service providers; it should be easy for users to migrate services to their liking, and benefit. Throughout the discussion, participants emphasized the interdependence between *open source software* and *open standards* despite the apparent differences in their intents. For instance, a particular open standard can be used in conjunction with proprietary software, while parallel use of open source and proprietary software might cause compatibility and other performance issues.

Influence of Market Forces

The presence of Amazon and Microsoft in the cloud services market has arguably led to a significant imbalance in equity among consumers and competitors, with the dominance of Amazon Web Services ("AWS"), Azure, Google Cloud, IBM Cloud, VMware on AWS, Oracle Cloud and Alibaba Cloud,[5] effectively *unbounding* them from efforts surrounding the development of — and adherence to — fair standards. In addition to this, and due to the lack of agreed-upon standards in the domain of cloud computing, open-source tools like Terraform have started gaining steady popularity as acceptable alternatives amongst consumers.[6] The acceptance of such tools — *however efficient they may be* — effectively leads the wider community to perceive a state of affairs with regard to interoperability that is worse than the actuality. Further, users may believe that if they're willing to employ services like Azure or AWS, that they will ultimately have to sacrifice the level of usability which would be available to them in the case of the alternative.

It is apparent that, after a certain time, every open source company will need to generate revenue so that it can fund its developers who share their projects for

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[4] Columbus, Louis (2019) *"83% Of Enterprise Workloads Will Be In The Cloud By 2020."* — Forbes www.forbes.com/sites/louiscolumbus/2018/01/07/83-of-enterprise-workloads-will-be-in-the-cloud-by-2020/#5666fc566261

[5] Bourne, James (2019) *"RightScale State of the Cloud 2019: Azure Gains Again, Cost Optimisation Key, PaaS Explodes."* — CloudTech, 28 Feb. 2019, www.cloudcomputing-news.net/news/2019/feb/28/rightscale-state-cloud-2019-azure-gains-again-cost-optimisation-key-paas-explodes/

[6] Bourne, James (2019) *"RightScale State of the Cloud 2019: Azure Gains Again, Cost Optimisation Key, PaaS Explodes."* — CloudTech, 28 Feb. 2019, www.cloudcomputing-news.net/news/2019/feb/28/rightscale-state-cloud-2019-azure-gains-again-cost-optimisation-key-paas-explodes/

free. In these cases, cloud services take away income channels from open source companies, i.e., when cloud services host and integrate an open source product after a developer might have invested in identifying the product as their own service, it deprives the open source company and the developers behind it from receiving appropriate returns.

One participant illustrated the importance of proper compensation for open source development by citing the differences between how Google Cloud and AWS deal with open source software. To elaborate, Google Cloud announced their partnership with various open source vendors, by stating that users can avail services on the Google Cloud Platform by introducing uniformity in the purchase and usage of products on their website. Google also mentioned that in facilitation of these services any generated revenue earned will be contributed back to the open source community.[7] On the other hand, AWS is said to have *"cut into"* the market of the open source company *Elastic*, when they released a *separate open-source library* for *Elasticsearch* — which is a cornerstone product and is a critical part of Elastic's business, which caused some companies to attempt to protect their products through deploying software licenses governing public cloud usage.

Participants went on to mention how some open source software companies have adopted the MongoDB formula, which includes permitting usage of their product in a public cloud environment — only in cases where no functional modifications have been made — through the use of their server-side Public License.[8] Others, like Redis, have stated that their commercial modules cannot be used or resold in the public cloud environment, ostensibly to avoid revenue going to some other service provider.[9]

Regulating Open Standards

Currently, bodies like the World Wide Web Consortium ("W3C"),[10] or the Internet Engineering Task Force ("IETF") regulate the development of open technical

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[7] Asay, Matt (2019) *"Google's Open Source Partner Play Is Good Business, Not 'Some Sort of Generous Magical Deal.'"* — TechRepublic , 9 Apr. 2019, www.techrepublic.com/article/googles-open-source-partner-play-is-good-business-not-some-sort-of-generous-magical-deal/

[8] "*Server Side Public License FAQ."* — MongoDB https://www.mongodb.com/licensing/server-side-public-license/faq.https://www.mongodb.com/licensing/server-side-public-license/faq

[9] *"Licenses."* — Redis https://redislabs.com/blog/redis-labs-modules-license-changes/

[10] *"About W3C."* — World Wide Web Consortium https://www.w3.org/Consortium/

standards, along with the various operations which surround their maintenance. Standards development bodies like these work on a common objective, which includes convening stakeholders, determining the specification for a particular technology, and maintaining the same as a standard for the industry as well as other implementers to follow. At the same time, however, participants emphasized the issues that may arise from the lack of a consortium which can be tasked with structuring the development and maintenance of standards in the Function-as-a-Service ("FaaS") space, maintaining interoperability, as well as financing efforts eliciting substantial and meaningful contributions from the community.

Increasingly, the software community is also actively advocating for the establishment of regulated standards across the board, because they believe that through the establishment of such standards, the likelihood of them being locked in to a specific service provider or vendor would significantly decrease. As the standards would be accessible, it would also become easy for any third party to contribute in development and maintenance efforts, allowing for flexibility in modifications as and when needed.

Conclusion

Standardisation efforts in the FaaS and cloud computing domains needn't be an exclusive space where a few powerful market players are able to exert influence. Once developed by members of the community, an open standard may also ultimately be adopted by any company — under an appropriate usage license — as proprietary standards, as long as consensus and equity for those who possess a stake in the ecosystem is ensured.

In concluding the discussion, participants put forth a diverse set of ideas and approaches for developing and maintaining open standards. It is, in their view, crucial to maintaining the business competitiveness of the several companies working in the cloud computing space, and also for ensuring that consumers are afforded smoother, fair access to public cloud services. A sustainable model which enables the development and maintenance of open standards will take the software industry further ahead and help in fostering a culture where stakeholders have a significant interest in, and thus uphold the responsibility of maintaining equity for players across the ecosystem. A model such as this would also emphasize further innovation and development within the industry.

The discussion concluded with a hopeful call-to-action, in that the way forward for cloud computing service providers — as well as for the providers of other

consumer facing services in general — is to not restrict themselves to closed and inflexible proprietary systems and standards, but rather to build and incorporate open, reasonable and interoperable standards, effectively maintaining a position of equilibrium for users and other stakeholders.