2024-05-06 matrix

For those of you who are members of the Matrix project, I wanted to let you know that I am running for the Governing Board, and a bit about why. For those of you who are not, I hope you will forgive the intrusion. Maybe you'll find my opinions on the topic interesting anyway.

I am coming off of a period of intense involvement in an ill-fated government commission, and I wanted to find another way to meaningfully contribute to the governance of something I care about. Auspiciously, the newly constituted Matrix foundation is forming a governing board. I am up for one of the individual member seats.

Why do I care?

Instant messaging is a fascinating case study in the history of technology. It is nearly as old as networked computing, and you could make a decent argument that it is older, running only into dithering around the definitions. We've always wanted to communicate, and text has always been an obvious option. It is probably because of the obviousness of instant messaging that it has repeatedly been coopted by commercial interests.

You don't have to be very old to have lived through several iterations of this process. I'm not quite the right person to remember ICQ fondly; for me it was AIM. But what I remember most fondly is more obscure: XFire. It had an in-game overlay and killcounter integration, both critical features for my computer habits that consisted heavily of Jedi Knight: Jedi Academy. That isn't actually important, I'm just reminiscing, but I think most people have a story like this.

If you have read much of my back catalog you know that I am not always optimistic about federated systems. They face a lot of challenges, which range from the technical complexity of changing federated protocol specifications to a whole category of opposing forces that can be vaguely chalked up as capitalism. And yet, textual communications bring us what is probably federation's greatest and most enduring success: email. Email is also a cautionary tale in a lot of ways, but it gives us a cause for optimism.

The history of federated messaging is rather more varied. XMPP was, in its heyday, nearly on track to mass adoption. High quality clients emerged, XMPP was adopted by grassroots projects and then, as at least an implementation detail, by Facebook and Google. We all know what happened. I think most people today are too quick to blame XMPP's downfall on inconsistent implementation of protocol extensions (XEPs) rather than complete cooption by two of the era's largest internet companies, but to be clear, inconsistent implementation was indeed a problem.

Matrix and Me

I have used Matrix as my main, day-to-day messaging solution since 2016. I have also operated a homeserver with open registration for that entire span. In some ways this has been a rather passive venture, but as the user count of that homeserver has grown I've struggled more with performance and moderation issues. A few months ago things tipped over and I had to spend a weekend doing some serious work on both fronts. This lead me to pay a lot more attention to the Matrix project and the state of the art.

I wish that I had been more involved in the Matrix project to date, but I try very hard to avoid software engineering, and Matrix governance and community efforts, the area that matters to me most, have often been hard for me to follow. This situation has improved significantly recently, and I think that the Matrix foundation deserves enormous credit for the work they have done to pick up the level of community engagement.

Of course I come to the topic with some opinions. Who would expect anything less?

Polish over Features

The Matrix project, especially as personified by Element, has added a huge number of new features. It's hard to call this a bad thing, and some of them have been notable successes. For example, E2E is a challenging feature to deliver, but has indeed become table stakes for a messaging product that attracts a privacy-minded userbase.

Still, there is one criticism of Matrix that has remained constant over its entire lifespan, and its one that needs to be attended to: the level of consistency, usability, and polish.

Polish is tricky in a federated system. It's more the domain of clients than the protocol, but the protocol directly affects the situation by determining how easy it is to develop and maintain high-quality clients. For many years it was clear that the change rate in the Matrix protocol made it difficult to develop a good client. Element often felt like the only complete client, and even it was pretty rocky. Fortunately there has been a lot of progress; Element has greatly improved and the stable of third-party clients like my own choice, Nheko, has a lot to offer.

Still, there's a lot of progress to be made. Matrix competes directly with commercial products that come from vendors with a heavy focus on usability and user experience. It only takes one instance of the dreaded "Unable to decrypt" for casual users to bounce. Element continues to be a de facto "primary" implementation that can make the road more difficult for others.

I think that protocol changes should be evaluated conservatively, with an eye towards providing a level of stability that enables multiple top-tier clients. The Matrix Foundation should actively seek ways to support the enhancement and maintenance of clients beyond Element, supporting the healthy ecosystem of independent implementations that are required for an open protocol to be sustainable.

Moderation

Moderation is one of the great struggles of the internet, if not the greatest. Some advocates of federated systems opine that they make moderation easier or more tractable. I disagree;

while federation enables more flexibility in how users experience moderation it makes many of the underlying problems more difficult. Moderation decisions across the system are made in an ad-hoc, distributed way. The rich network of homeservers presents many opportunities for bad actors, including every poorly maintained (or unmaintained) node.

Matrix imposes a moderation challenge at two levels: within communities and within homeservers. Relatively good tools exist at the community level, but still, too many basic functions require introducing the Mjolnir moderation bot. At the level of the homeserver, moderation tools are frustratingly limited. The administration API is minimal in severely limiting ways and there do not appear to be any complete implementations of a client for it.

I applaud the various efforts that have popped up, things like the community moderation initiative's blocklist effort and the "awesome technologies" Synapse administration tool. But we need more, and we need more in two ways.

First, we need technical progress. The in-protocol moderation capabilities of Matrix should be improved over time with a north-star vision of eliminating Mjolnir, an approach to community moderation that was carried over from IRC but probably should have stayed there. The Synapse admin API should be improved and better tooling around it developed.

Second, we need progress in governance. I would like to see an open initiative to develop best practices for moderation of communities and homeservers. This can include the development of shared blocklists through a documented, auditable process (although not necessarily an open one, for reasons of user privacy). I would like to see a sincere effort to advance the state of the art in distributed moderation, bringing together diverse users to learn their concern and developing tools to make consistent and active moderation the default.

The number of independently operated homeservers in Matrix can be a strength, but in this area it can be a weakness. ActivityPub, with its heavier orientation towards public discussion, has served as a laboratory for abuse and moderation issues. Matrix could learn a lot from the efforts going on in the Mastodon community, for example, towards practical means of moderating across instances.

For homeserver operators, moderation is an immense practical concern due to risks from load and CSAM. The volume of CSAM traffic on Matrix, while not a problem beyond solving, seems badly under-discussed and particularly calls for some sort of distributed moderation program to relieve public homeserver operators of ongoing whac-a-mole. Sometimes a graph is only as strong as its weakest node---this is the kind of hard problem we have to take on to build a sustainable future for federated systems, and we should take it on enthusiastically.

I would like to see the Matrix project boldly take on moderation at multiple levels. First, improving the moderation tools and capabilities of the Matrix protocol should always be part of the discussion. Second, I would like to see the Matrix Foundation support the development of improved moderation and abuse tools, preferably including them as part of Synapse or providing a very easy setup process so that good abuse management can be the norm rather than the exception. Third, I would like the Matrix foundation to facilitate community discussion around best practices, tools, and techniques for moderation.

Not everyone will agree on the way to perform moderation, or even the goals of moderation. That's the nature of the internet, and more broadly of communications. We can't let it stop us from trying. This can be one of the hardest areas to build consensus, but that will always be the case, and so we need to include the inherent social complexity of moderation as part of the technical requirements. Once again: we need to be bold and take on the hard problems, and this might be the hardest.

Chat, First and Mostly

One of the concerning trends I have seen in a lot of adjacent nonprofit tech projects lately is dilution of mission. We could also call this "distractions." Unfortunately, Matrix has not been immune. The most obvious example is Third Room, the Matrix metaverse project. I want to temper my criticism by saying that the level of effort devoted to Third Room has evidently been low, but I think that the optical problem created by Third Room (the appearance that Matrix has been capered, one might even say Zuck'd, into a distracting focus on the latest trend) is certainly real. For a community venture, appearances are important, and this means applying discipline in how side projects are presented, especially in this era of so many projects presaging their downfall with some buzzword-reaction initiative.

I might go just a bit further. I don't think that the VoIP features of Matrix (voice and video communications) are a bad idea per se, but I think that that's a complex problem space and the current landscape of instant messaging products suggests that it's not a particularly important one. In other words, people seem happy to do their voice/video chat in a different product than their text chat. You could say that this presents an opportunity for Matrix: to double down on providing a best-in-class textual messaging experience, without having to expend significant resources on real-time media.

I wouldn't want to see existing features removed, but I think that features other than core instant messaging should be deprioritized, at least in the short term.

Onboarding

Sometimes caring a lot about onboarding can be kind of gross. It has the scent of focusing on conversions. But it's a really important issue for IM, when the onbarding experience of a lot of the other options is "you already have it." The Matrix Foundation is well-positioned to demonstrate leadership in the onbaording experience, across the protocol, clients, and public communications. Let's make Matrix easy to get into.

A Consistent Direction

I don't want to dwell too long on how many times a certain prominent Matrix client has been renamed, launched new App Store listings, etc. It's old news and fortunately things seem to have settled down. Still, I think a lot of reputational damage happened that has not fully been forgotten. This history serves as a reminder that significant user-facing changes need to be made carefully. New social applications in general, and especially federated ones, have a bad reputation for churn. The most successful are often the most boring. Let's think carefully about things, and look before we leap.

What Do You Think?

I have a lot of opinions and of course all of them are correct, but usually only in my eccentric construction of reality. Your experience may vary. Please feel free to reach out with your thought on the Matrix project, an offer that stands whether I'm elected or not, because I love to talk about it.

And that concludes my stump speech. I'll be back again soon with a normal post about some useless trivia. I think it might be about a specific kind of printer that you've probably seen but not thought much about, other than slight irritation. I'm also spending some time right now playing video gamesʷwˆw working on a more ambitious writing project that is out of my normal lane but you might still enjoy. It's about dogs. It's also very sad and I'm not entirely sure what to think about it. You'll see what I mean if I ever finish.