

**Subject:** An olive branch

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**To:** Daniel Micay <daniel.micay@grapheneos.org>

Our last exchange didn't go well. I'd like to try starting fresh; how would you feel about doing an interview, with you, or someone you trust, to speak for the project on your behalf? I want more people to know about this project and the benefits it provides the world.

I think question #7 would be of most interest, what you believe the largest misconceptions are about GrapheneOS. I think this could be a great opportunity to clear the air and get things out publicly. **If you think there are any questions I should be asking that I have not asked, please do let me know and I'll add them!**

GrapheneOS interview

**1) Can you describe what GrapheneOS is?**

**2) What got you to decide to laser focus in on security?**

**3) Can you describe some of the primary feature sets in GrapheneOS that set it apart from other Android Open Source Project forks?**

4) I think the most amazing part about your work is that, you do not need to use GrapheneOS to benefit from it. Some of your work winds up being featured upstream in, like hardware based attestation improvements, that are eventually shipped with stock google pixel phones. And some of these improvements in firmware & software wind up in stock android that ships with every phone! **Can you talk about some of the improvements & hardening you've done to the android open source project for GrapheneOS, that make their way to stock android?**

5) One of the amazing features of GrapheneOS is that I can decide how much Google, if any, is on my device. Many people see google as just a search engine, or an email/maps provider, and don't realize how much of the smartphone experience breaks when they remove Google Play services, Google Services Framework, and Google Play Store from the phone.

You've come up with a very interesting compromise - you ship the OS with no Google services running, but allow people to install them if they choose in a sandboxed environment.

Can you talk about:

**a) what this sandboxed approach is, and what it entails?**

**b) the security & privacy benefits your approach gives the user, opposed to**

**using a pixel phone with stock android?**

**c) the security & privacy benefits your approach gives the user over something like microG?**

6) I think the general public is unaware of how dependent most applications & functions are on Google services being present on the phone. I think they should be aware of how dependent they are on closed source libraries, coming from a company whose primary method of monetization is collecting private user data. **What are some of the usability issues that break down when these services are uninstalled?**

In my experience, many applications no longer have working push notifications, as they rely on google for them, as well as certain banking applications not installing/opening.

7) I recall reading that notifications "*don't work*" - apps like slack or signal were only showing me notifications when I clicked on them, which was annoying for an instant messenger. This was easily fixed by allowing unrestricted battery usage for google play services, and installing it. Now I have all the notifications I would have with stock android, without having to run google play services as a highly privileged user.

That misconception grew out of the ignorance of myself, and many others; out of the box, I had no notifications. I installed Google play services, and still had slow to non-existent notifications, so I gave up. I think something that might help make it idiotproof so even a dunce like me wouldn't have this misconception would be putting under "*Do notifications work properly on GrapheneOS?*" \*TL;DR - *if you're an idiot like Louis, install sandboxed google play services & give it unrestricted battery permissions*

**What do you believe some of the biggest misconceptions about GrapheneOS, and why do you believe these misconceptions exist?**

8) This project requires a high level of programming & development from very talented people. **Where do you get the funding to work on this project, and how can people contribute if they wish to see continued development?**

9) The most common question from my audience:

*So you want me to degoogle my life by buying Google hardware? Give me a break!*

You have said, that there are specific security features that Pixels have that make them ideal for a project focusing on security, such as *"hardware-backed keystores, verified boot, attestation and hardware-based exploit mitigation. Devices also need to have decent integration of IOMMUs for isolating components such as the GPU, radios (NFC, Wi-Fi, Bluetooth, Cellular), media decode / encode, image processor, etc"*

A good number of my audience care about security, but have no idea what these things mean.

**\*\*What are the practical security benefits to the end user, in plain English,**

**for hardware backed keystores, and verified boot?\*\* \*\*What does isolating components mean for security? \*\***

10) Since 2004, I have seen this "*the user is the product*" business model explode exponentially. People seem more than happy to give away their data & privacy in exchange for free services & convenience. **Do you think it is too late to steer people towards caring about privacy & security again? What do you think will have to happen before average users prioritize these things?**

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