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We Put A C2 In Your Notetaking App: OffensiveNotion

A Red Teaming Science Fair Project

HuskyHacks · Follow

6 min read · Feb 27, 2022

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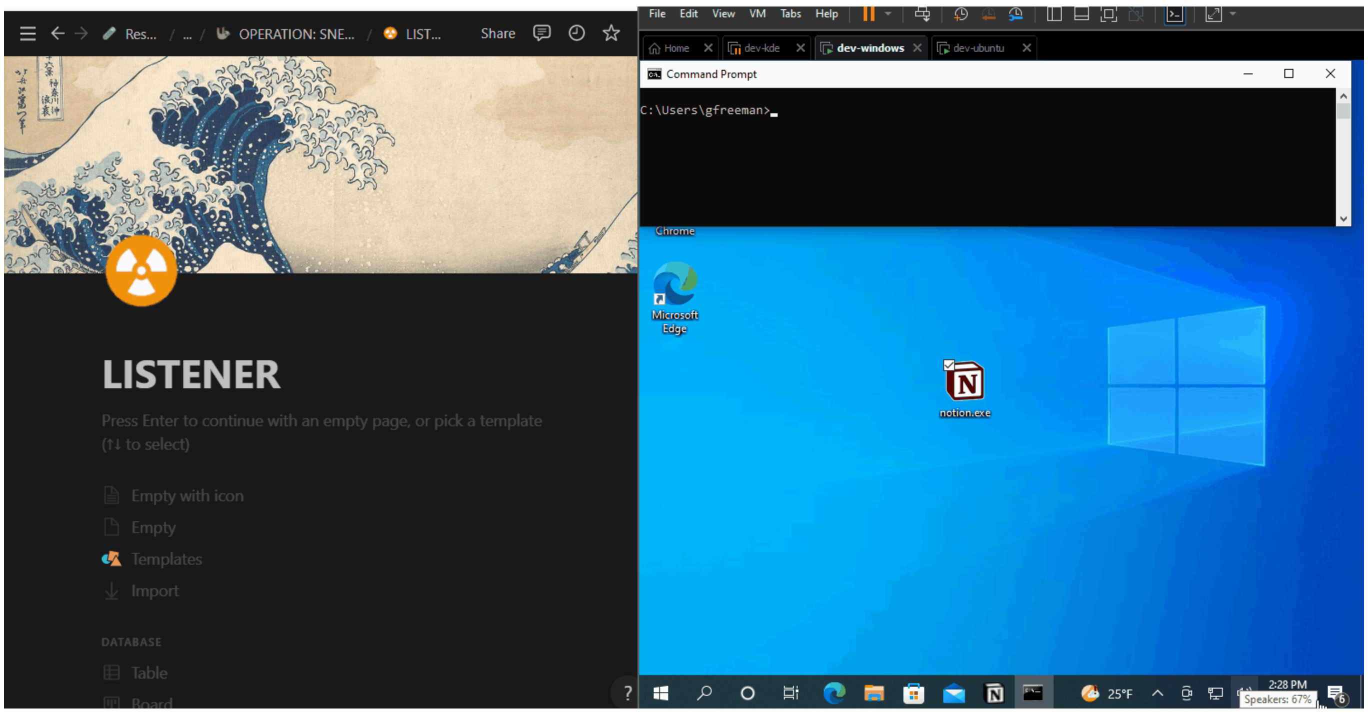

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tl;dr: We realized you can use the Notion developer API to build a C2 platform. We wrote a cross-platform agent in Rust. It runs on Linux and

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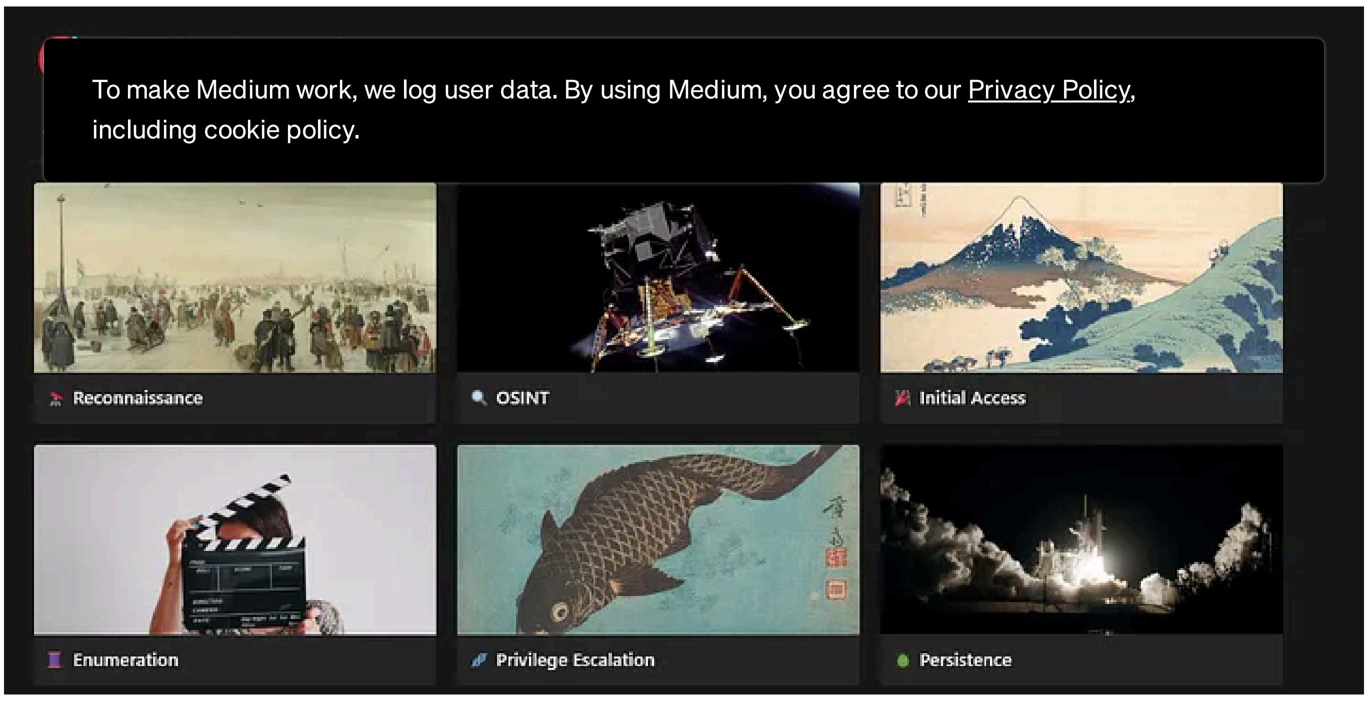
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An example of one of my notebooks within Notion

One of the features of the Notion platform is the Notion developer API. This API allows you to perform web requests that can add and change data within your Notion notebook. This is accomplished via a standard set of API web request methods. This allows you to create pages, add blocks to pages, and do just about anything else that you can do with the Notion app itself.

This is a story about how we (mttaggart and HuskyHacks) built an entire C2 platform around the Notion developer API.

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The long and short of it was that after speaking to the Notion developers, they informed me that this was intended functionality for the platform. Unlimited S3 AWS phishing links! Sweet!

This was the genesis of our interest in Notion for red team operations.

Shortly after this, Taggart examined the Notion developer API. Taggart is an absolute wizard when it comes to web application shenanigans, so I watched on in awe as he formed a Python script to programmatically read blocks, evaluate their contents, perform some kind of command as a result of those contents, and post the results to a specified Notion page in his notebook. We topped it off with my personal favorite feature: the command was evaluated if and only if there was a 🎯 emoji at the end. This led to a code snippet that I believe deserves to be in the Smithsonian as a relic of landmark technology:

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… then could we make a C2 that uses the Notion platform to control an ag

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Narrator: Yes, indeed, they could.

Coding began in mid January. The first attempt was to make an agent in Nim.

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The “Listener” page with multiple agent sessions.

As of the end of February 2022, OffensiveNotion is in version 1.0.0 “Iron Age.” We call it this because every time we thought of a cool feature to implement, having drawn inspiration from other C2s we love like Cobalt Strike and Empire, we’d try to remind ourselves that we were still in the Stone Age of this project’s development. We settled on a core set of features for the evolution into the Iron Age. Someday we’ll hit the Space Age and send a rocket ship to Alpha Centauri to achieve the Space Race victory condition.

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challenge to work through. In short, we needed to focus on granting robust
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Learning how to do this in Rust was a doozy for me! In Taggart's words, "Rust is the old school martial arts instructor that used to hit my legs with a pole when my stance was not low enough." I went several rounds with the Rust compiler night after night during this project and I can say that is 100% true. But I have no doubt it has made me into a better developer.

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Nothing to see here, blue teamers. Move along.

We wrote a whole section of the wiki on OPSEC. Check it out here if you’re interested:

7. OPSEC Considerations · mttaggart/OffensiveNotion Wiki

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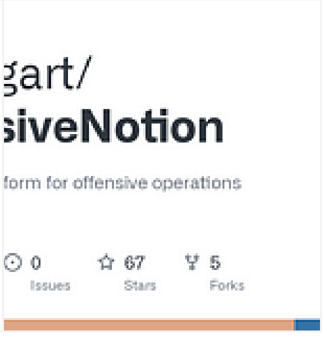

In short, this is a LOTS (living off trusted sites) goldmine and makes for incredibly sneaky C2 capacities.

Closing Thoughts

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edit 2/27: typo

edit 2/28: embeds instead of links

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Written by HuskyHacks

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