Everyone for Themselves?

A Qualitative Study about Individual Security Setups of Open Source Software Contributors

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Motivation

Companies typically offer various guidelines and rules for employees, including liability clauses.

This is generally not the case for open source (OS) projects: While highly relevant in the software supply chain, there are no contracts or mandatory policies.

We are therefore interested in which security measures OS developers take.

Research Questions

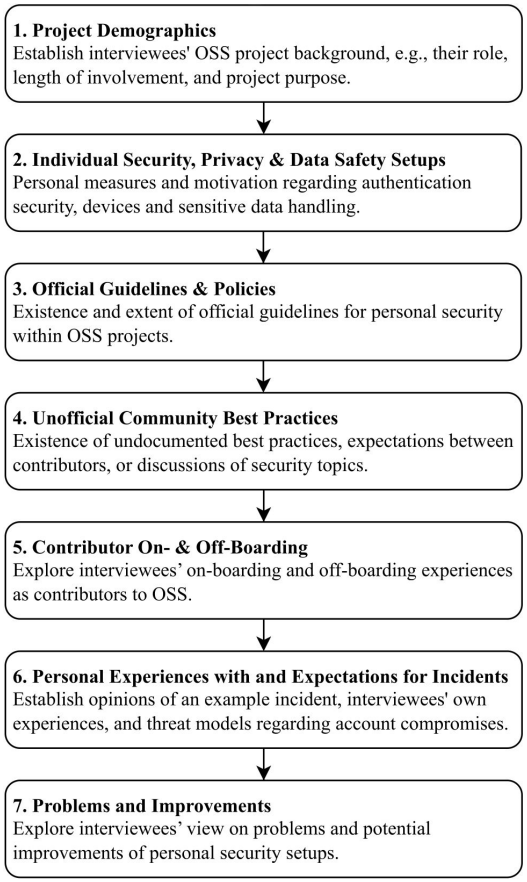
RQ1. Which technologies and practices do open source contributors deploy for their open-source related individual security setups?

RQ2. What are common challenges of securing open source contributors' individual security setups?

RQ3. How can open source contributors be better supported in maintaining their individual security setups?

Methodology

- 20 Semi-structured online interviews with OS developers of projects that were:
  - active: >40 commits, >20 contributors
  - critical: dependency counts, stars+forks
- Analysis: descriptive and inductive coding with 3 coders



Selected Challenges

Social Cues: *"I don't want to come across as a paranoid person all the time. You'll talk about it less [...]"*

Security is Rarely Communicated: *"Because I'm the person who presses merge on pull requests [...], I don't need to communicate the guidelines to anyone else."*

Ease of Trust: *"I got an email that I'm now the owner of <project>. That was a surprise for me, I didn't know him, but he trusted me a lot."*

Recommendations

Platform-Enforced Measures can circumvent social obstacles by enforcing, e.g., MFA through technical means, not other developers.

Manage Hierarchies and Access Rights to limit attack surfaces, as only selected individuals can deploy or access secrets.

Provide Basic Guidance on a project level, ideally by creating a basic template that can be easily copied and shared.

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