

TWC: Small: Emerging Attacks Against the Mobile Web and Novel Proxy Technologies for Their Containment

Problem:

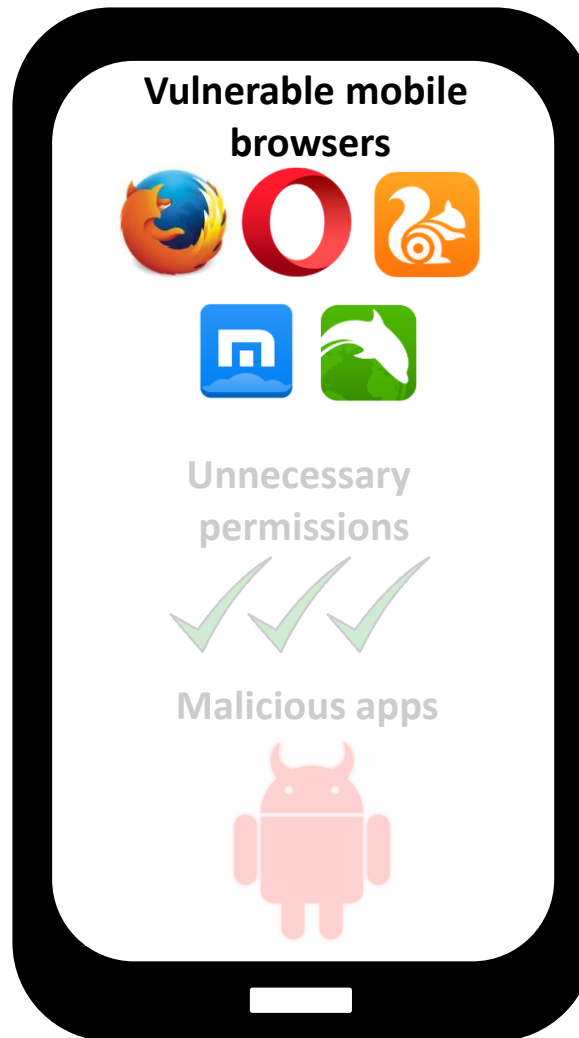
- Mobile browsers widely used and vulnerable to many traditional and new attacks
 - Especially due to limited screen real state
- Need novel solutions to uncover vulnerabilities and mitigate attacks

Two-Part Solution:

- **Uncover browser vulnerabilities:** browser-agnostic, fully automated and pluggable browser testing framework
- **Attack Mitigation:** host-based and proxy-based modular defenses tailored to mobile-specific threats

Challenges:

- 100s of browser families with different UIs and behavior
- 10s of versions per browser family
- 10s of Android SDK versions
- Need to balance security vs. privacy in proxy-based traffic inspection



Mobile Security Ecosystem

Scientific Impact:

- Advance the community's understanding of mobile web attacks
- Reusable testing framework to be used for continuous testing of new browser apps and always up-to-date security statistics
- Research into accurate and performant detection of mobile attacks using cloud-based emulators

Broader Impact:

- Increase the security of mobile browsers and strengthen a user's trust of the web platform
- Protect users of mobile devices who no longer receive OEM-controlled updates

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