Mobile Platform and Application Security

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Yellow Zone, Academic 1  
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**ABSTRACT**

Smartphones become more and more popular. Android and iOS are two dominant mobile operating systems on the market. An interesting question is which one is more secure. We made a comparison by investigating applications that run on both Android and iOS and examining the difference in the usage of their security sensitive APIs (SS-APIs). We developed static analysis tools to perform massive static analysis for cross-platform applications on their SS-API usage. Our analysis showed that applications on iOS tend to use more SS-APIs compared to their counterparts on Android, and are more likely to access sensitive resources that may cause privacy breaches or security risks without being noticed.

We also proposed a generic attack vector that enables third-party applications to launch attacks on non-jailbroken iOS devices and constructed multiple proof-of-concept attacks, such as cracking device PIN and taking snapshots without user's awareness. Our applications embedded with the attack codes passed Apple's vetting process and work as intended on non-jailbroken devices. Our proof-of-concept attacks have shown that Apple's vetting process and iOS sandbox have weaknesses which can be exploited by third-party applications. Our work helped Apple to fix the vulnerabilities when iOS 7 was released.

**BIOGRAPHY**

Dr Jianying Zhou received PhD in Information Security from University of London. He is the head of Infocomm Security Department in Institute for Infocomm Research. His research interests are in applied cryptography, computer and network security, cyber-physical security, mobile and wireless security, and cloud security. He is a co-founder and steering committee member of International Conference on Applied Cryptography and Network Security (ACNS). More info at http://csd.i2r.a-star.edu.sg/staff/jianying/.

All are welcome!

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