Lightweight and Scalable Two-Factor Authentication for IoT Devices using Historical Data

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The Hong Kong Polytechnic University

Abstract

With the increasing adoption of remote control and command execution at IoT devices, two-factor entity authentication is increasingly demanded for security compliance, which is challenging for typical IoT devices with the resource constraints. In this talk, I will present a novel two-factor authentication mechanism using the historical data exchanged between an IoT device and the backend server. Despite the potentially huge volume of historical data, a constant storage at the IoT device suffices. The mechanism demonstrates very good resilience to compromise at the server end. It is also scalable for different IoT platforms by adjusting the tradeoff between security and computational overhead at the IoT device.

About the Speaker

Jianying Zhou is a full professor at Singapore University of Technology and Design (SUTD), and Associate Center Director for iTrust. He received PhD in Information Security from Royal Holloway, University of London. His research interests are in applied cryptography and network security, cyber-physical system security, mobile and wireless security. He has published 200+ referred papers at international conferences and journals and received ESORICS’15 best paper award. He has 2 technologies being standardized in ISO/IEC 29192-4 and ISO/IEC 20009-4, respectively. He is a co-founder & steering committee co-chair of ACNS. He is also steering committee chair of ACM AsiaCCS, and steering committee member of Asiacrypt.

All are welcome!

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