Blockchain-based Scalable Authentication for Internet of Things

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Abstract

Device identity management and authentication are one of the critical and primary security challenges in Internet of Things.To decrease the IoT attack surface and provide protection from security threats such as introduction of fake IoT nodes and identity theft, IoT requires scalable device identity management systems and resilient device authentication mechanisms.
Existing solutions for device identity management and authentication were not designed for huge number of devices and therefore are not suitable for Internet of Things environments. Our work presents results of a blockchain-based identity management approach with consensus authentication, as a scalable solution for IoT device authentication management. Our identity management approach relies on having a blockchain secure tamper-proof registry and lightweight consensus-based identity authentication.