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# Security and Privacy for the Internet of Things

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## Abstract

The Internet of Things (IoT) represents a great opportunity to connect people, information, and things, which will in turn cause a paradigm shift in the way we work, interact, and think. The IoT is envisioned as the enabling technology for smart cities, power grids, health care, and control systems for critical installments and public infrastructure. This diversity, increased control and interaction of devices, and the fact that IoT systems use public networks to transfer large amounts of data make them a prime target for cyber attacks. In addition, IoT devices are usually small, low cost and have limited resources. Therefore, any protocol designed for IoT systems should not only be secure but also efficient in terms of usage of chip area, energy, storage, and processing. This presentation will start by highlighting the unique security requirements of IoT devices and the inadequacy of existing security protocols and techniques of the Internet in the context to IoT systems. Next, we will focus on security solutions for the IoT, with special focus on protection against physical and side channel attacks. In particular, we will focus on mutual authentication protocols for IoT devices based on security primitives that exploit hardware level characteristics of IoT devices.



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