



Securing Smart Homes Using NDN

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Motivation

- IoT technology has great potential in a wide range of fields
- Numbers of IoT devices is increasing at high speed
- Security issues is emerging and posing a challenging problem

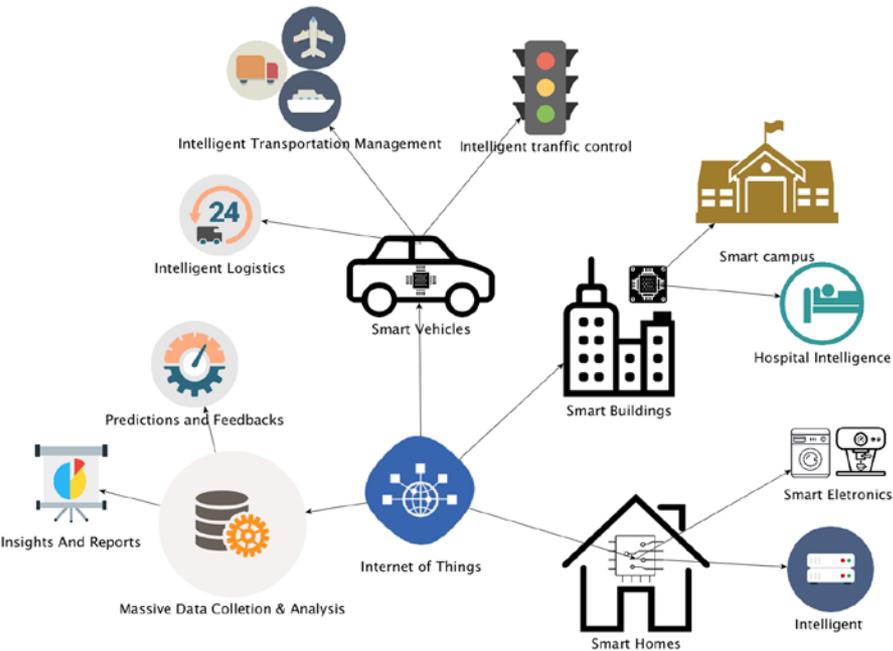


Figure 1: smart applications based on IoT

NEWS
 Researchers hack Philips Hue smart bulbs from the sky
 Send in the drones.

By **Ian Dault** | Editor
 Cont
RSAC17: More ransomware and IoT-enabled attacks on the way, warns expert

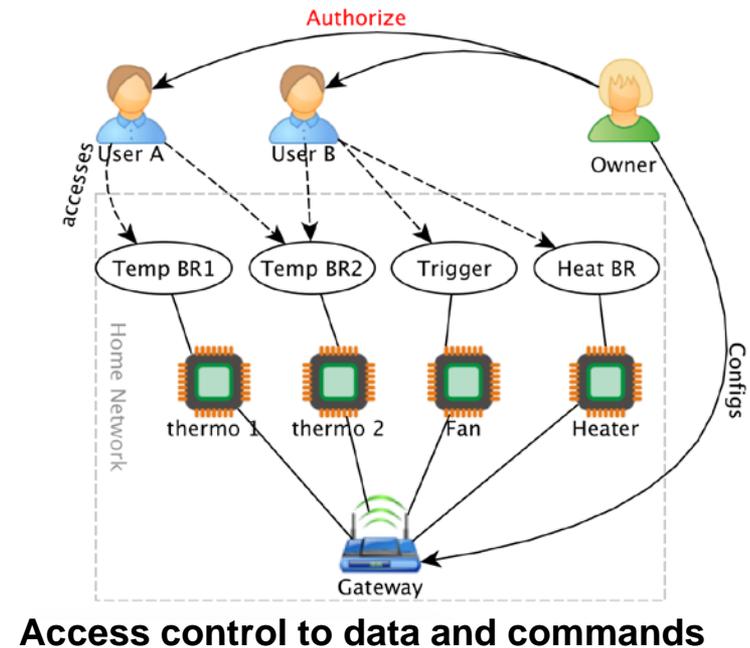
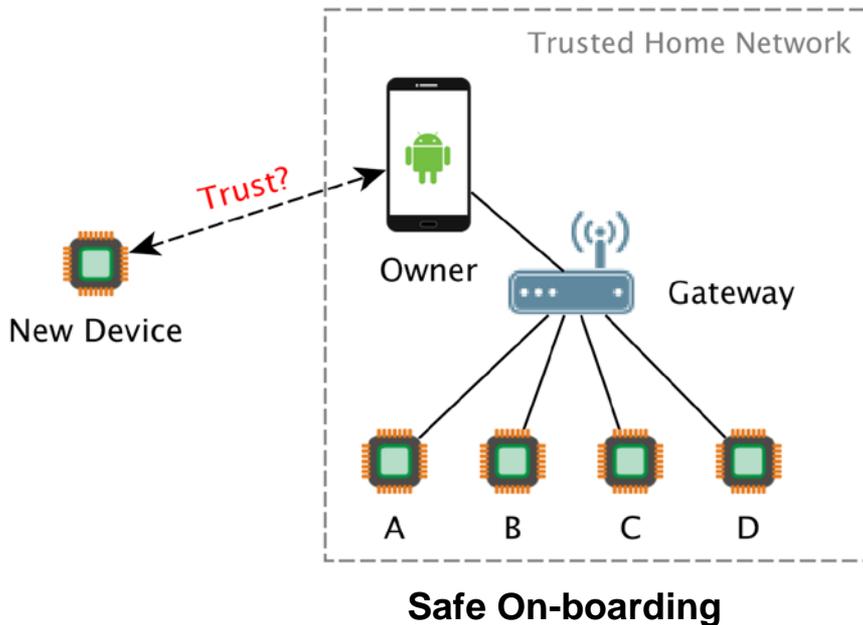
Warwick Ashford
 Security expert Ed Skoudis says that in 2017 organisations need to prepare for evolving ransomware attacks on the
University attacked by its own vending machines, smart light bulbs & 5,000 IoT devices
 A university, attacked by its own malware-laced soda machines and other botnet-controlled IoT devices, was locked out of 5,000 systems.

Network World | FEB 12, 2017 8:15 AM PT



Figure 2: Reported IoT security problems

Research Problems



- Challenges:
 - Easy configuration
 - Scalable to multiple gateways and homes

Design

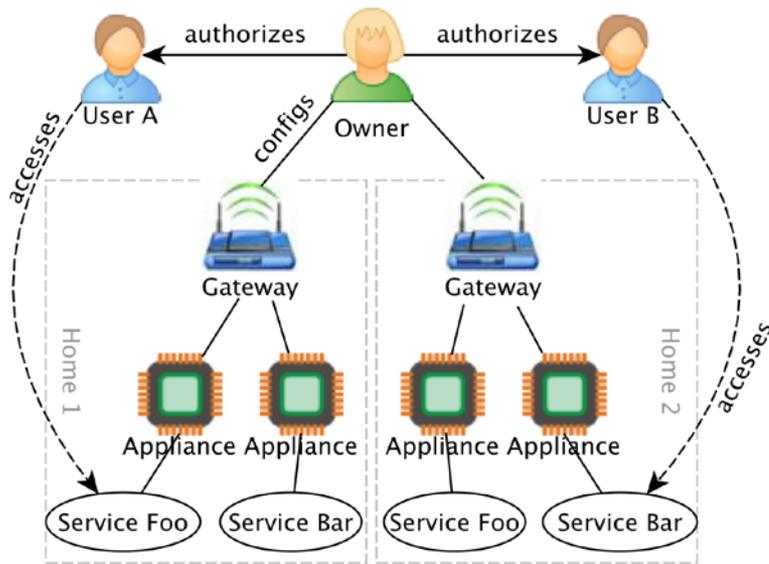


Figure 3: Architecture

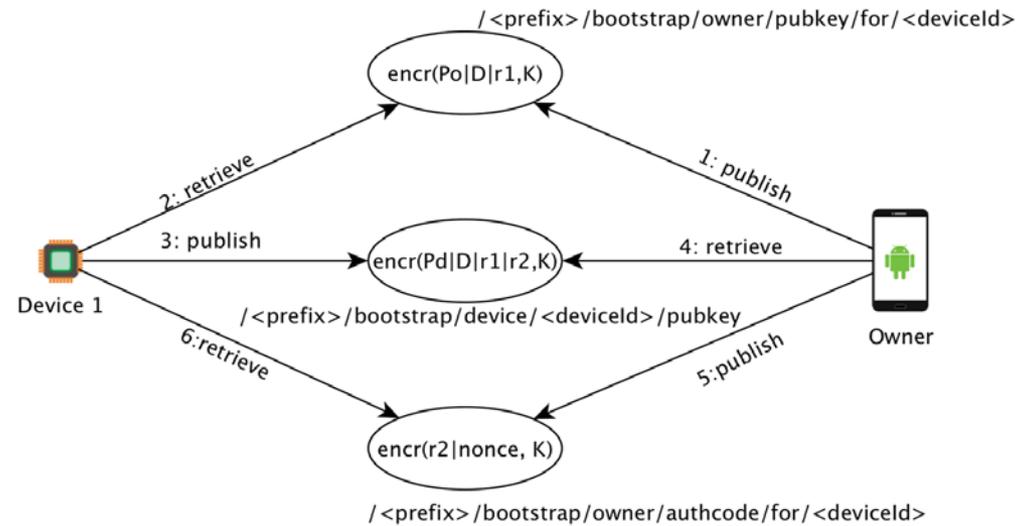


Figure 4: Bootstrapping

Prototype

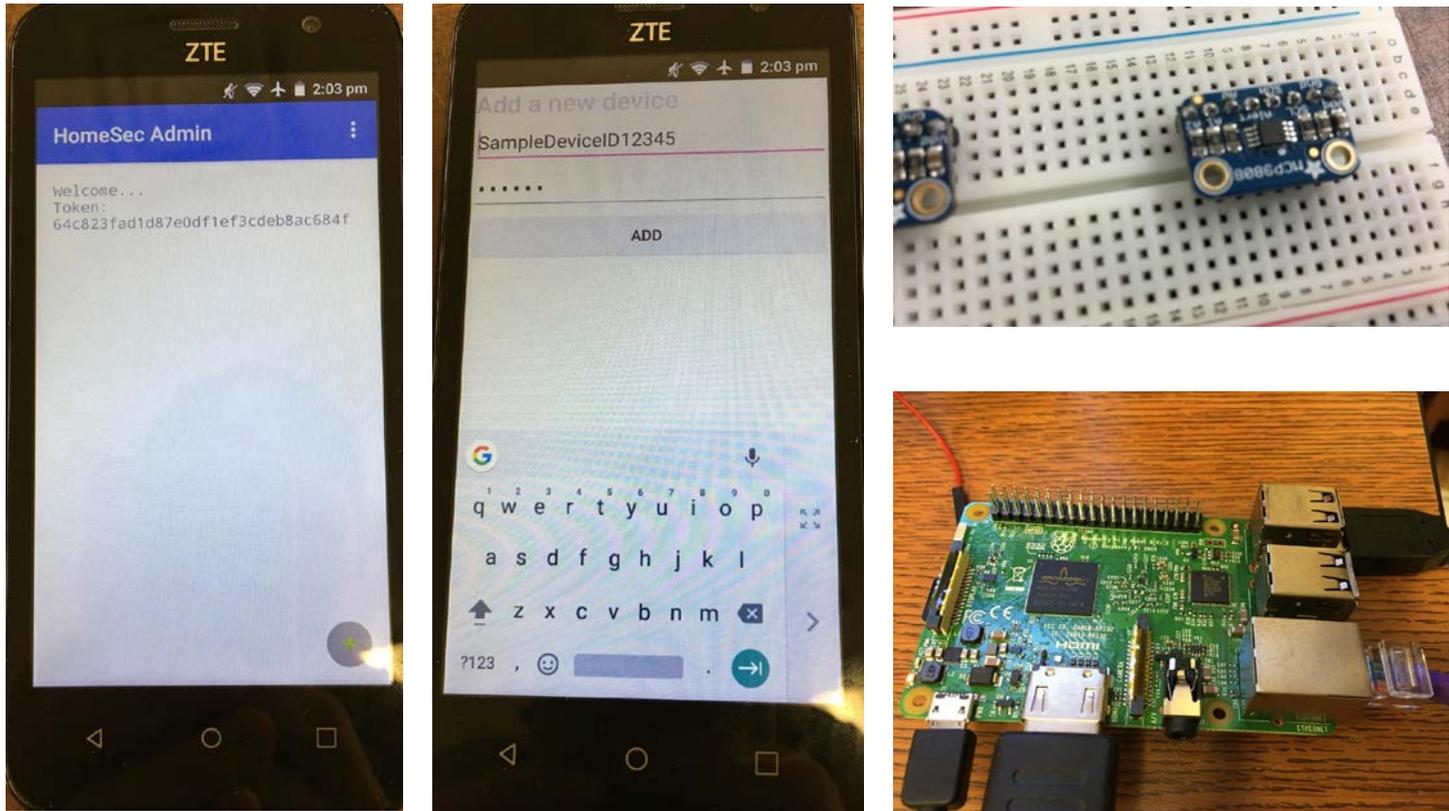


Figure 5: Prototype: Android app and RPi client