Securing Smart Homes Using NDN

Lei Pi, Lan Wang

THE UNIVERSITY OF
MEMPHIS.

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
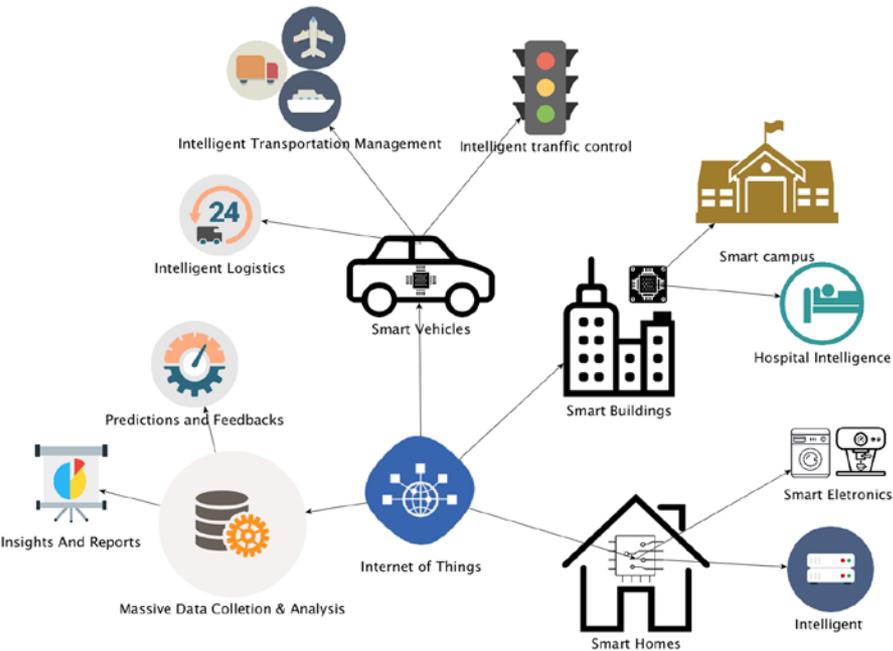

Figure 1: smart applications based on IoT

Figure 2: Reported IoT security problems

Research Problems

Safe On-boarding

Access control to data and commands
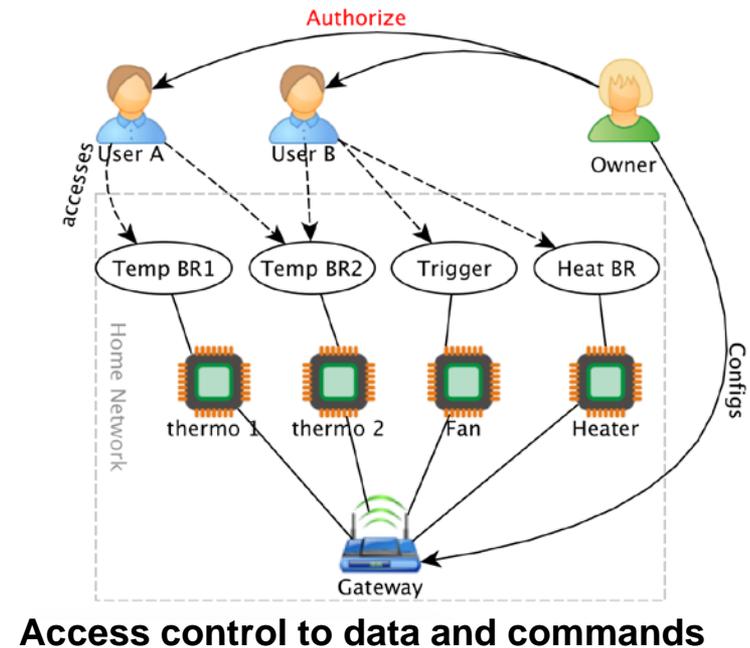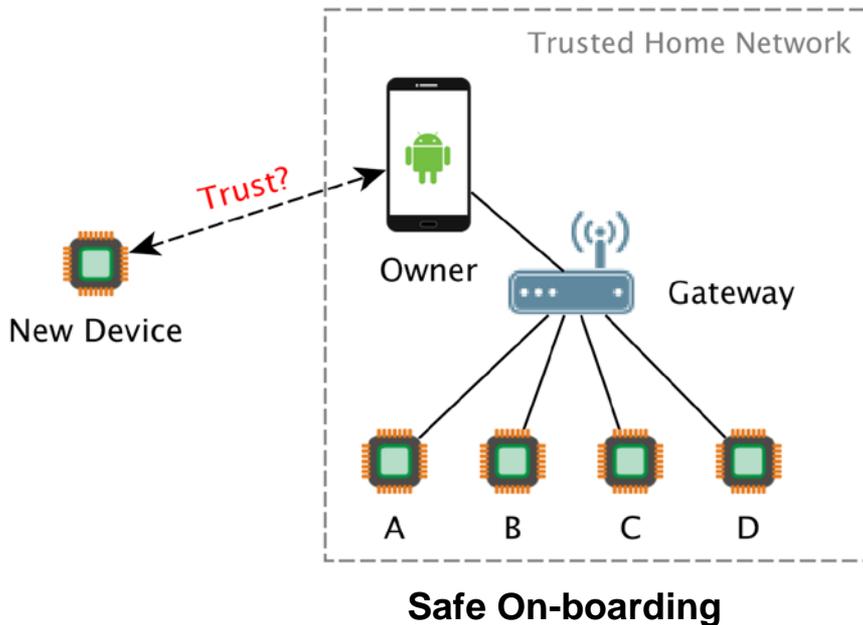
- Challenges:
  - Easy configuration
 - Scalable to multiple gateways and homes

Design
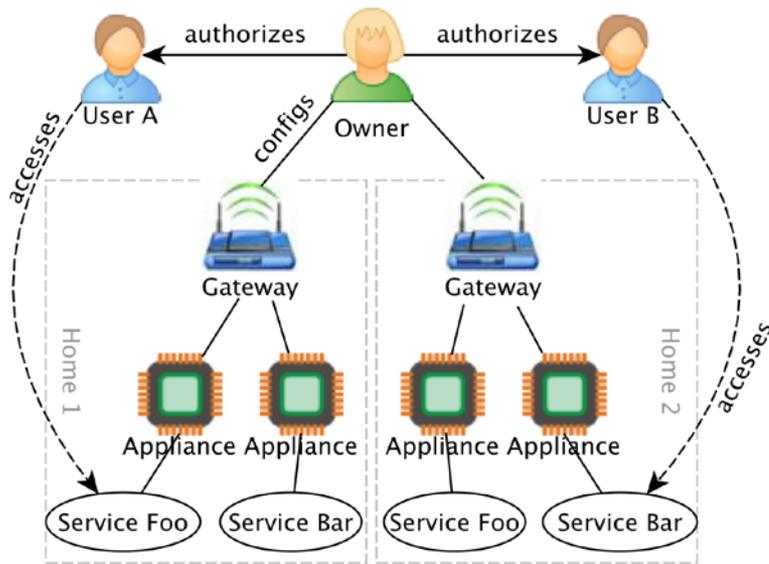
Figure 3: Architecture
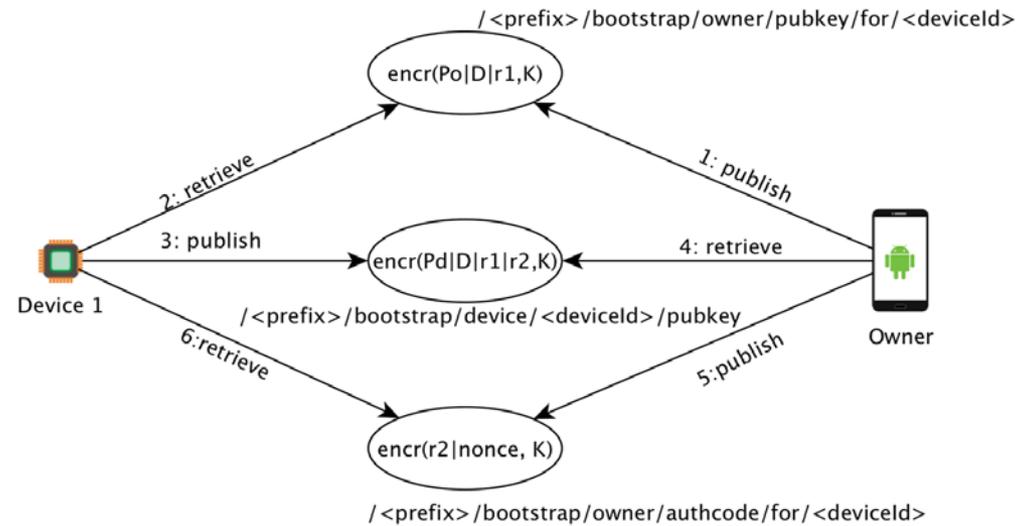
Figure 4: Bootstrapping

Prototype
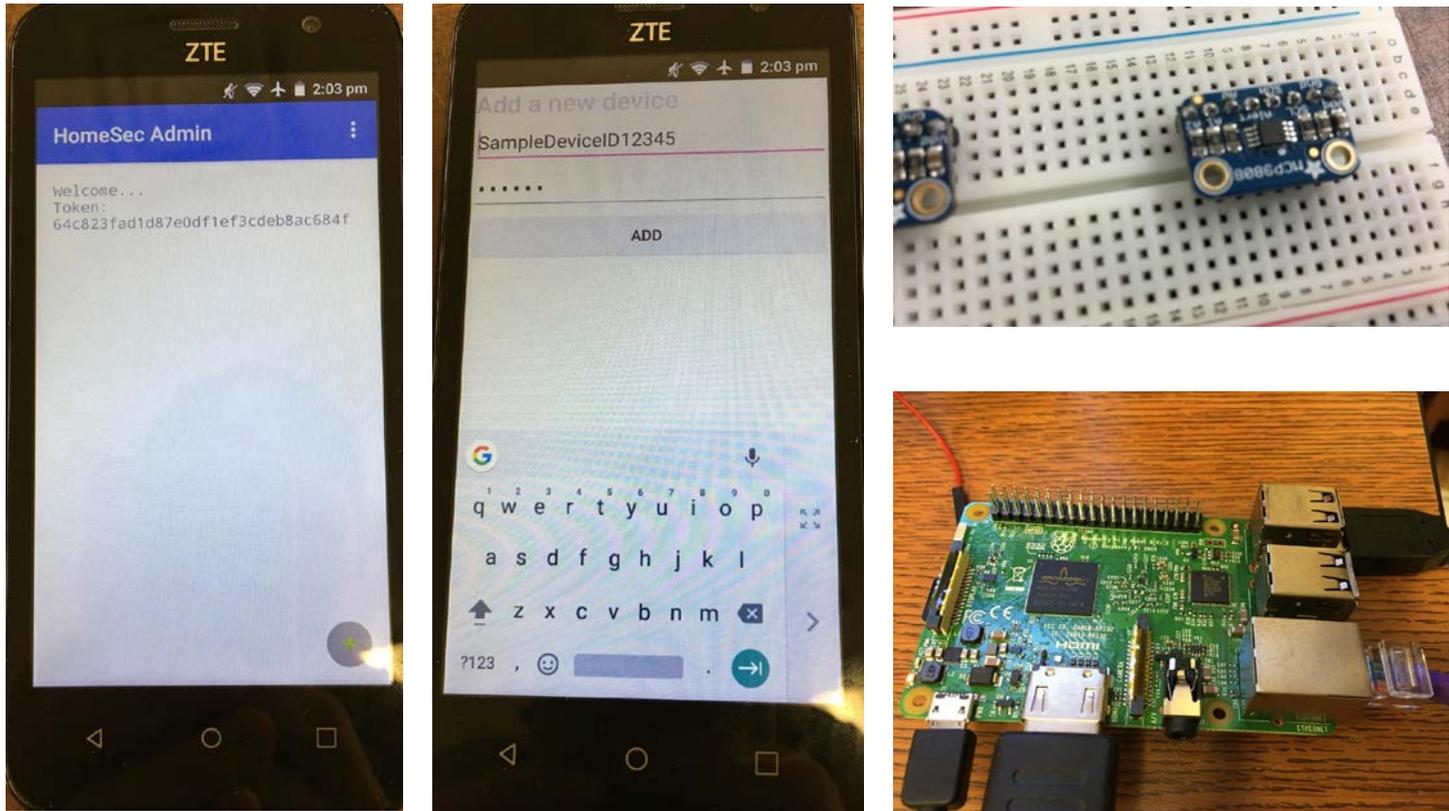
Figure 5: Prototype: Android app and RPi client