

Constrained Group Authentication Problem Statement

draft-zhu-core-groupauth-00

Author:

Judy Zhu<zhuhongru@chinamobile.com>,
Minpeng Qi<qiminpeng@chinamobile.com>

Outline

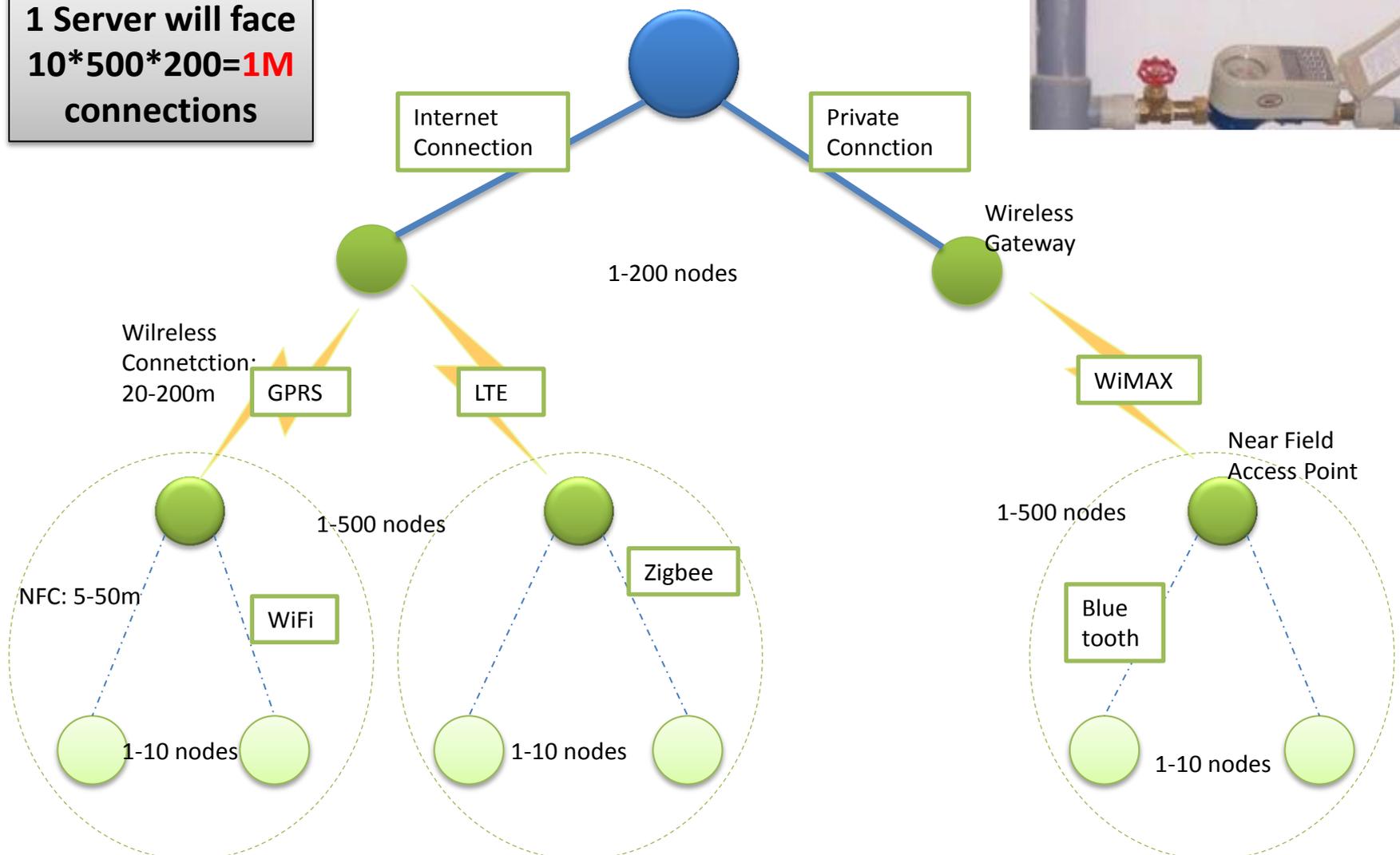
- What the problem is
 - Some Examples
- What we want

Problem Statement

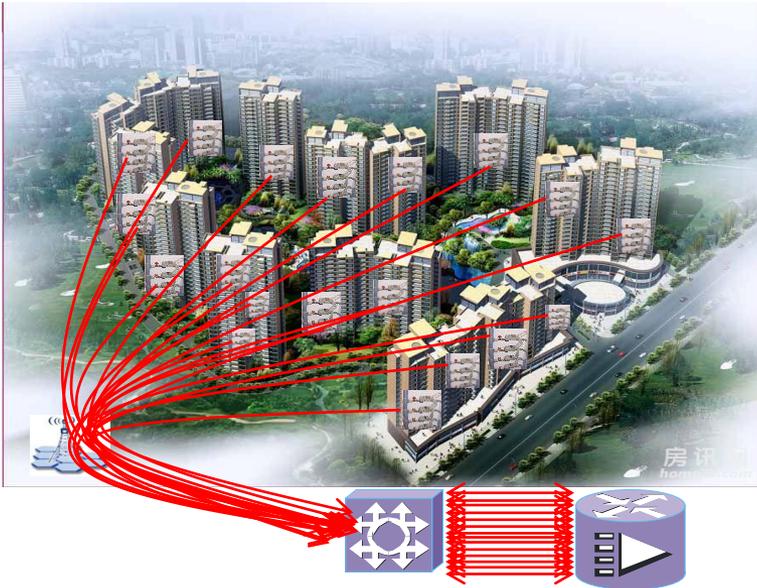
With the development of Internet of Things, the scale of IOT system become larger and larger. A large amount of smart meter terminals can be deployed in a block. Due to the limitation of network transportation and the Server capability, using uni-cast technologies will bring burden to the network link and server.

**1 Server will face
10*500*200=1M
connections**

Management Server



Smart Metering Examples



Example

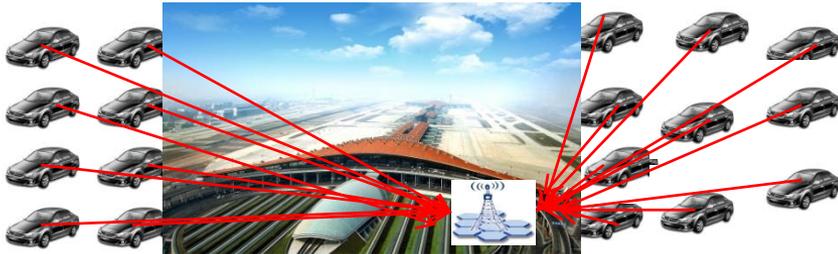
Use case:

4760 users in one block. Each owns one IOT devices for smart metering. They will report data at the same time. Authentication happens when these devices report data.

Issues:

The communication will be large and cause overload for the network when all smart metering devices report data at the same time.

Smart Metering Examples(Cont.)



Use case:

80,000 taxis in one city, 90% with IOT devices for monitoring. Authentication is needed when these IOT devices connects with network

Issues::

A plenty of taxis stay in the same area, the communication will be frequent and related authentication can cause overload for network.

Frequency for the issue happening:

- Every day in airplane
- Once per week when the taxi company call together of all taxi drivers.

Requirement

- To find a efficiency way to reduce the burden of network connection and server
 - Some lightweight solutions like group authentication (1-to-many authentication) based on existing protocols

Thanks