

Protecting Home Networks From Insecure IoT Devices

IEEE NOMS Experience Sessions

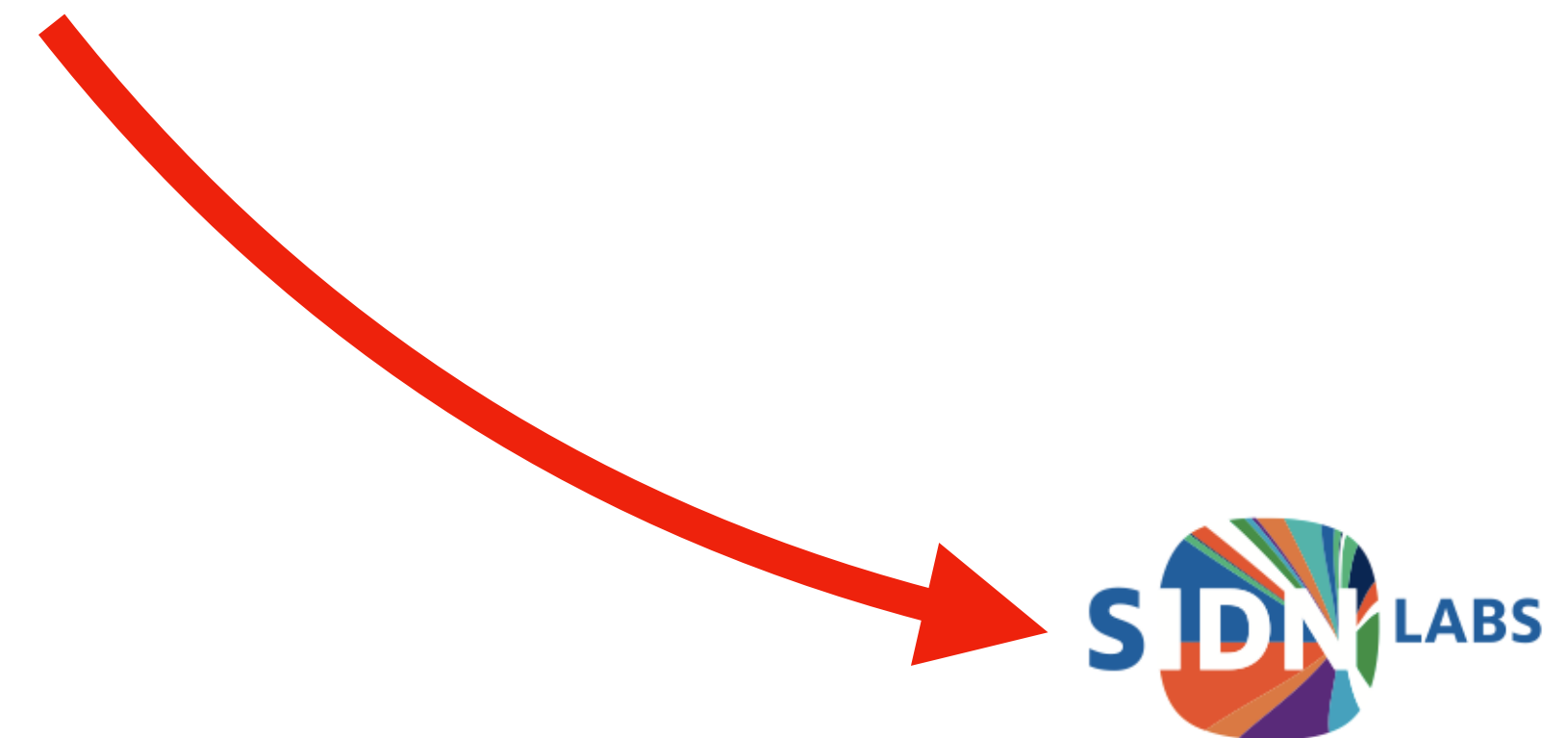
Elmer Lastdrager - 22 April 2020



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Operator of the .nl TLD

Stichting Internet Domeinregistratie Nederland (SIDN)

Critical infrastructure services

- Lookup IP address of a domain name (almost every interaction)
- Registration of all .nl domain names
- Manage fault-tolerant and distributed infrastructure

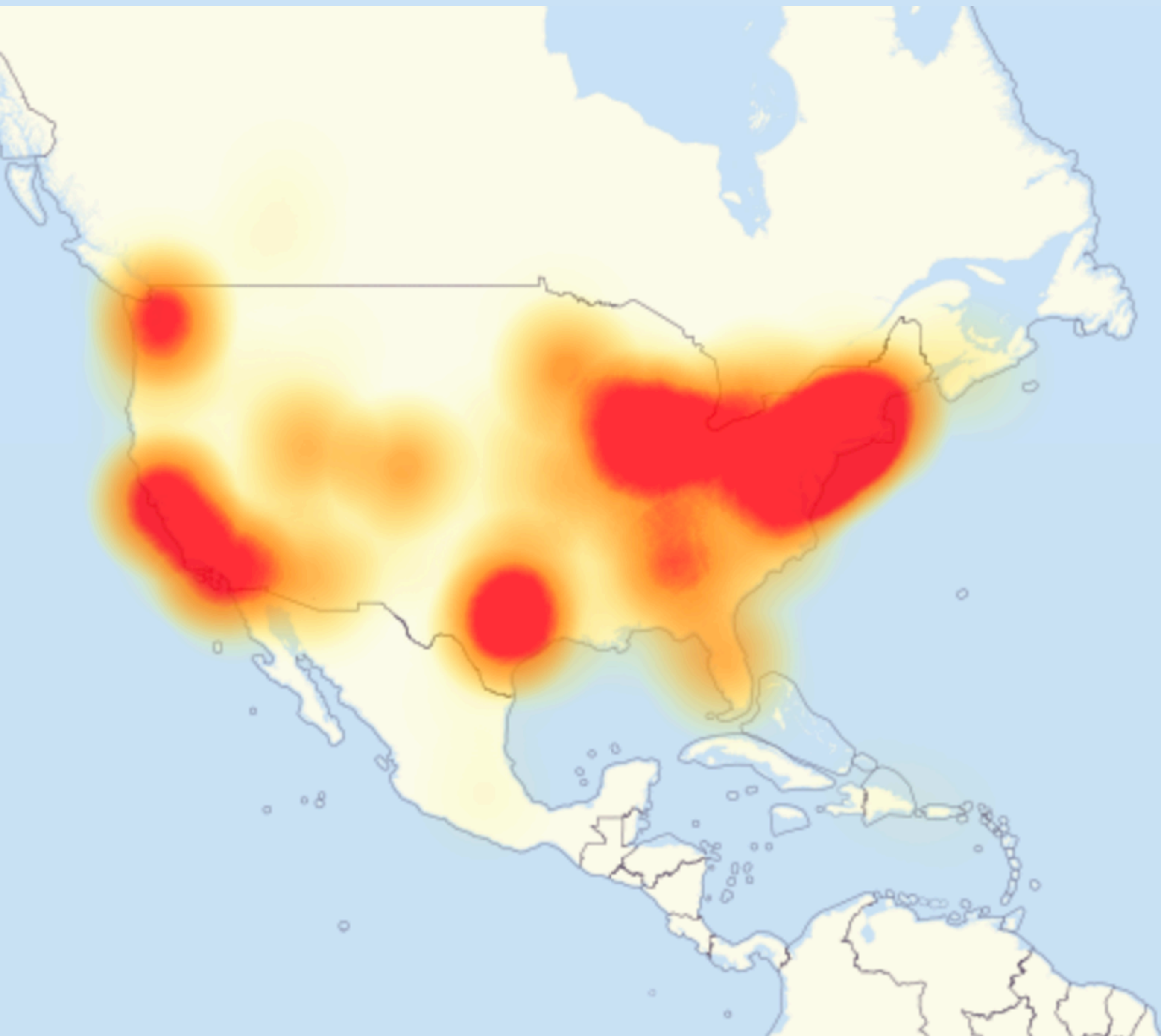
Increase the value of the Internet in the Netherlands and elsewhere

- Enable safe and novel use of the Internet
- Improve the security and resilience of the Internet itself

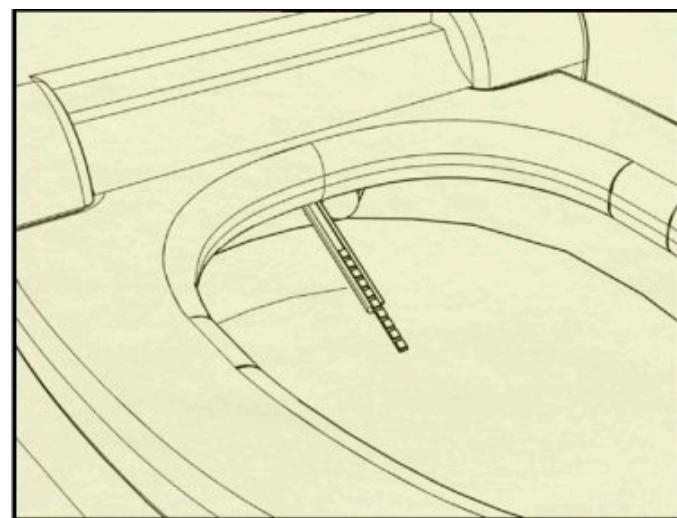


.nl = the Netherlands
17M inhabitants
5.9M domain names
3.2M DNSSEC-signed
1.3B DNS queries/day

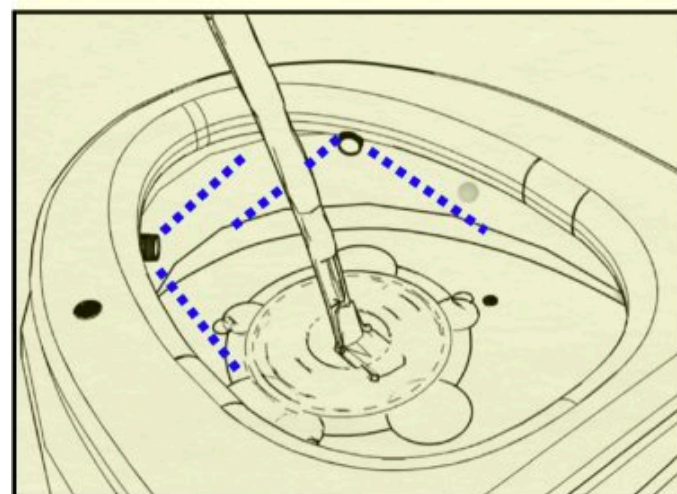




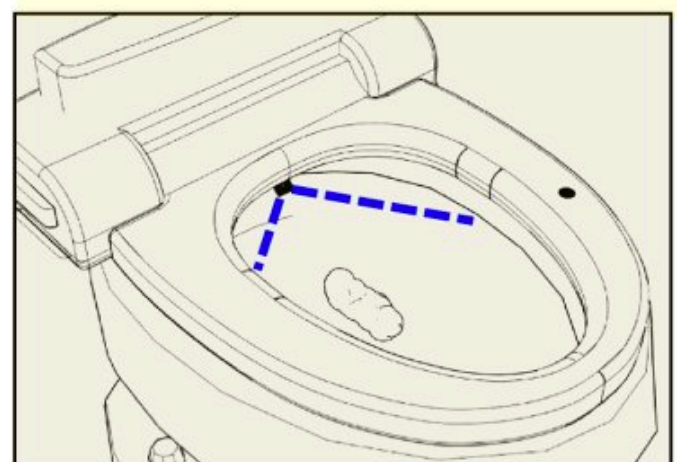




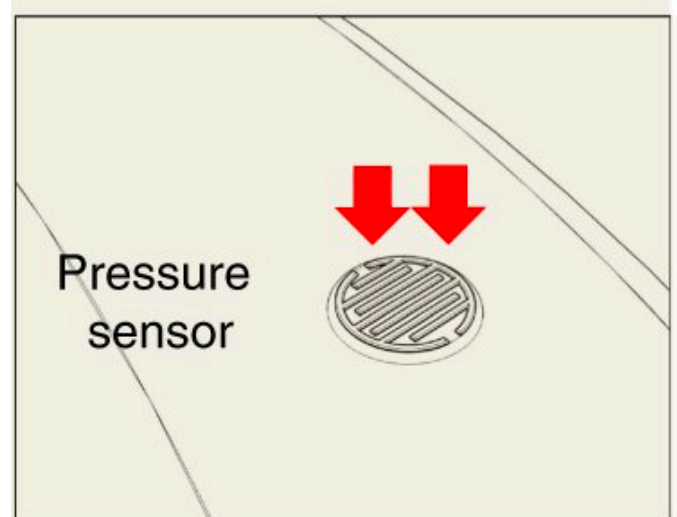
Urinalysis



Uroflowmetry



Bristol stool form scale

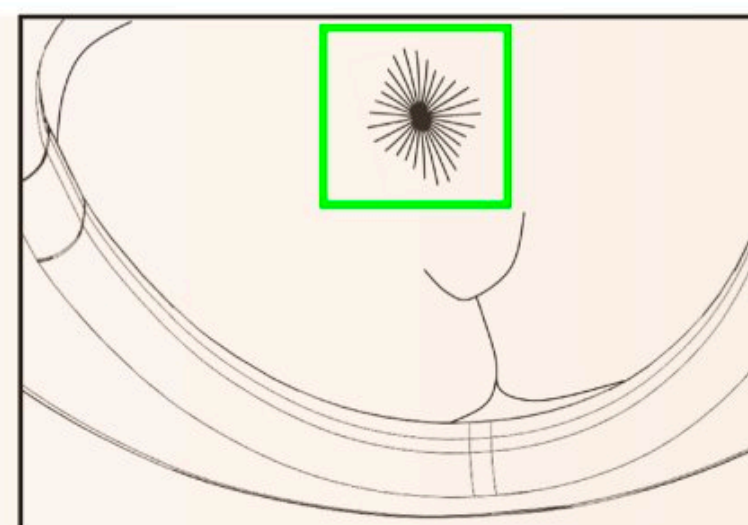


Pressure sensor

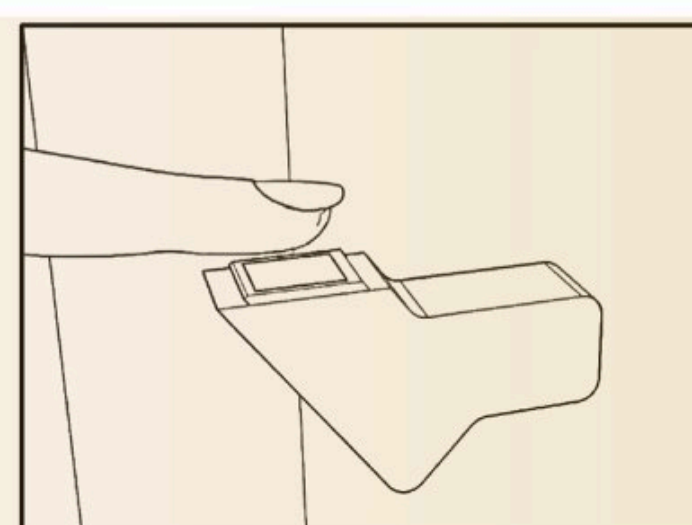
Seating time
defecation time

- (i) Pressure sensor
- (ii) Motion sensor (PIR)
- (iii) Urinalysis strip

- (iv) Stool camera
- (v) Anus camera
- (vi) Uroflow camera



Analprint scan



Fingerprint scan



Cloud-based
health portal

YOU GET CONNECTED!

AND YOU GET CONNECTED!

EVERYTHING GETS CONNECTED!

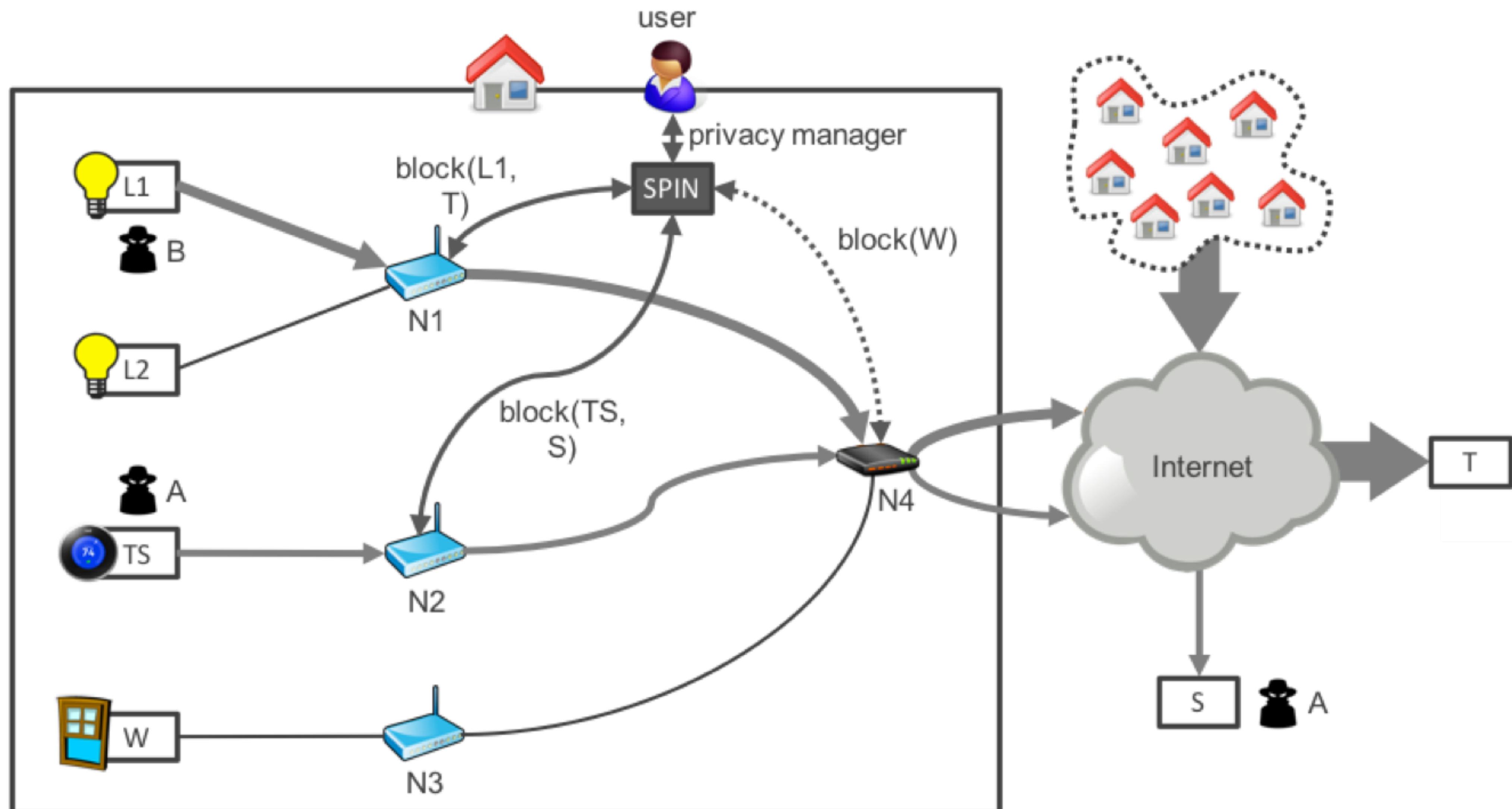


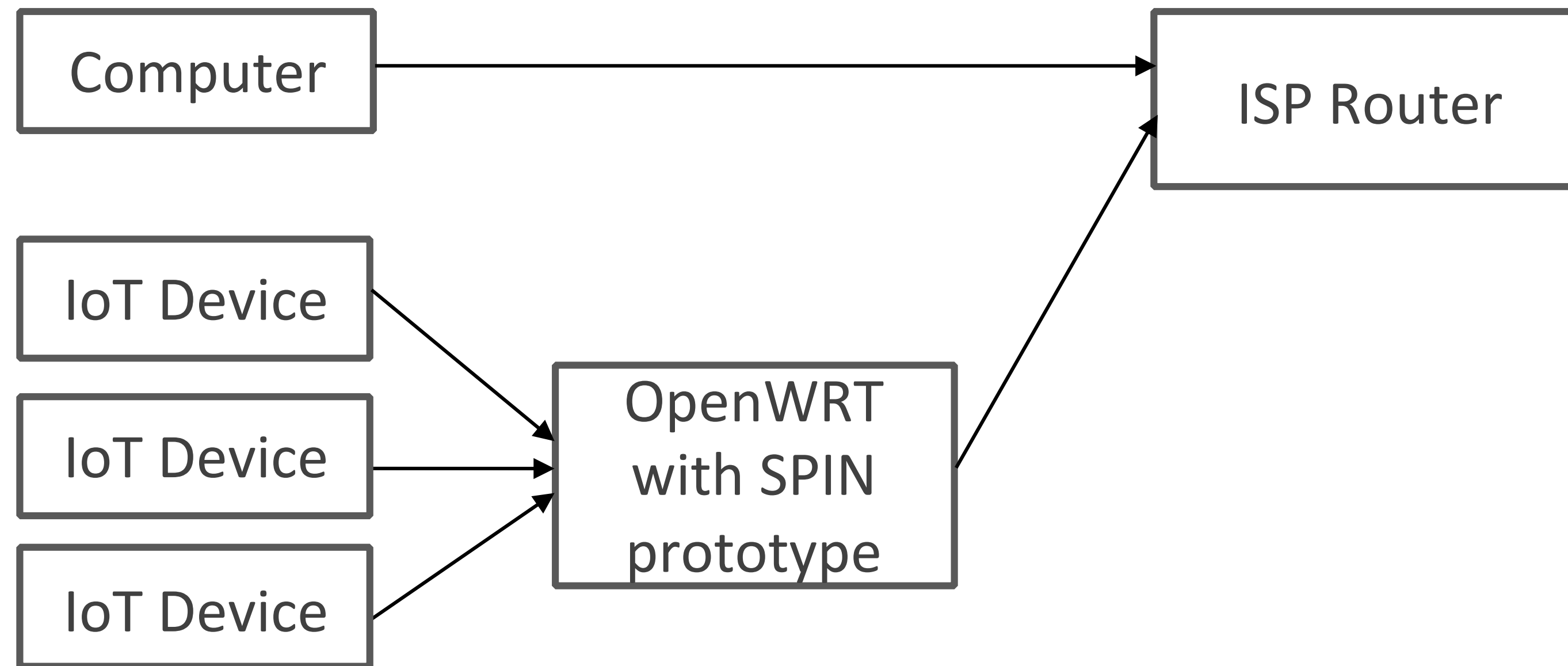




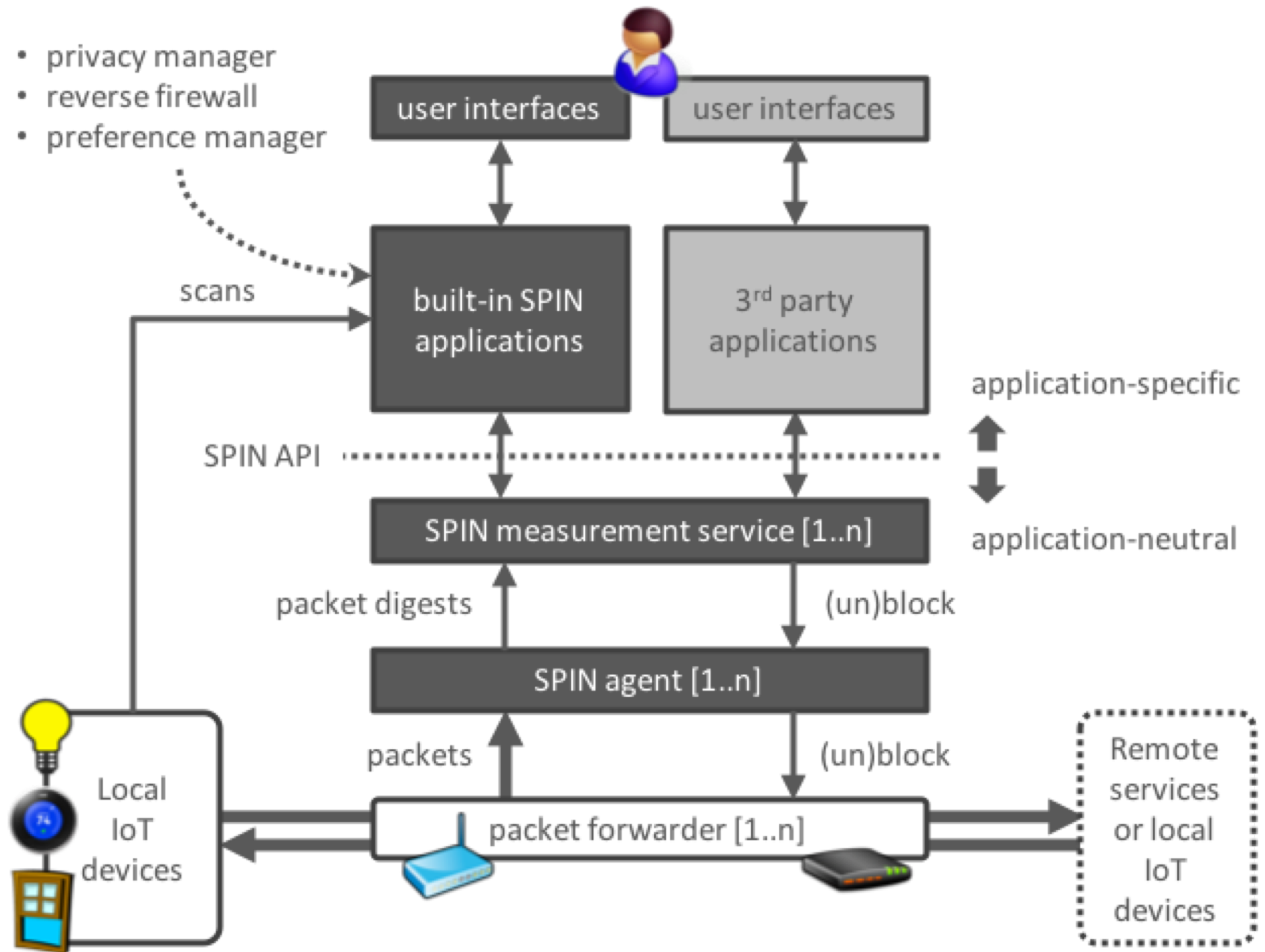
Security and Privacy for In-home Networks (SPIN)

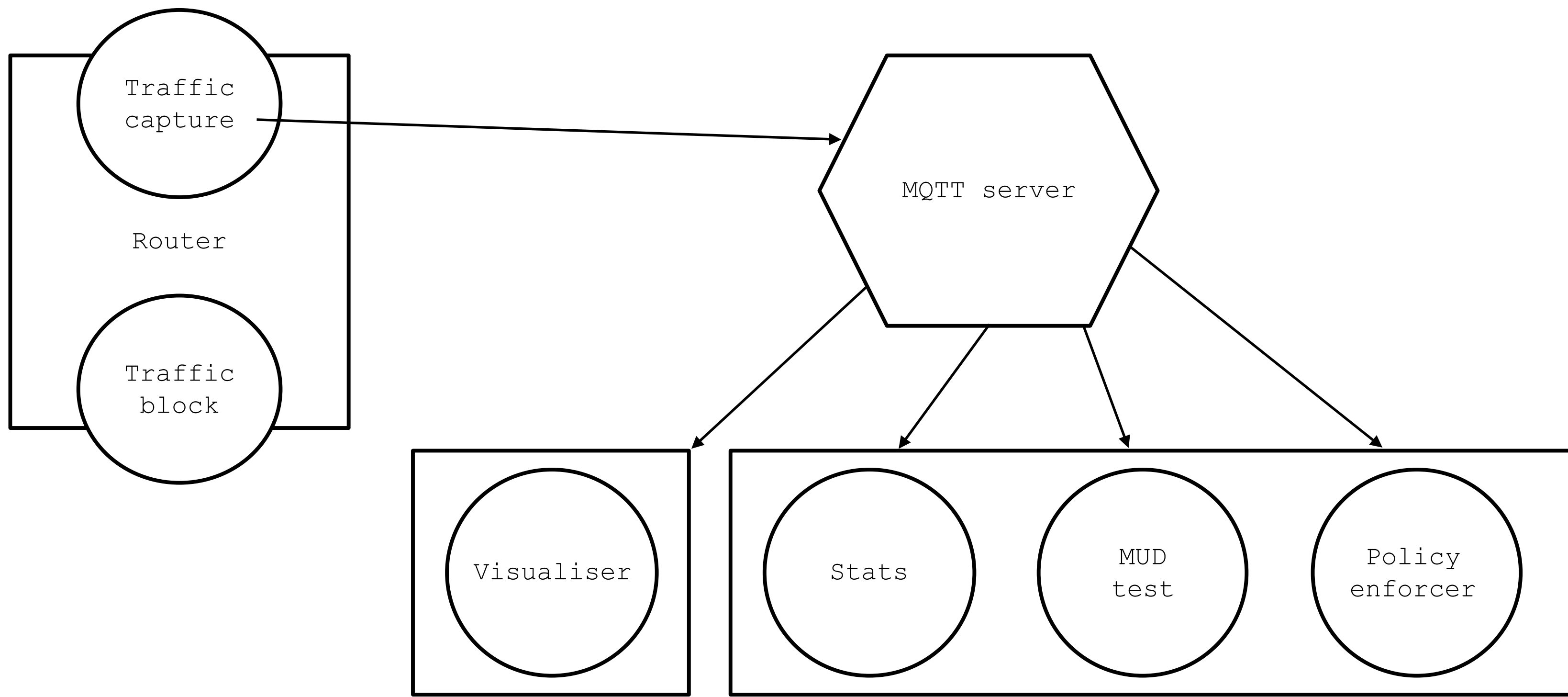


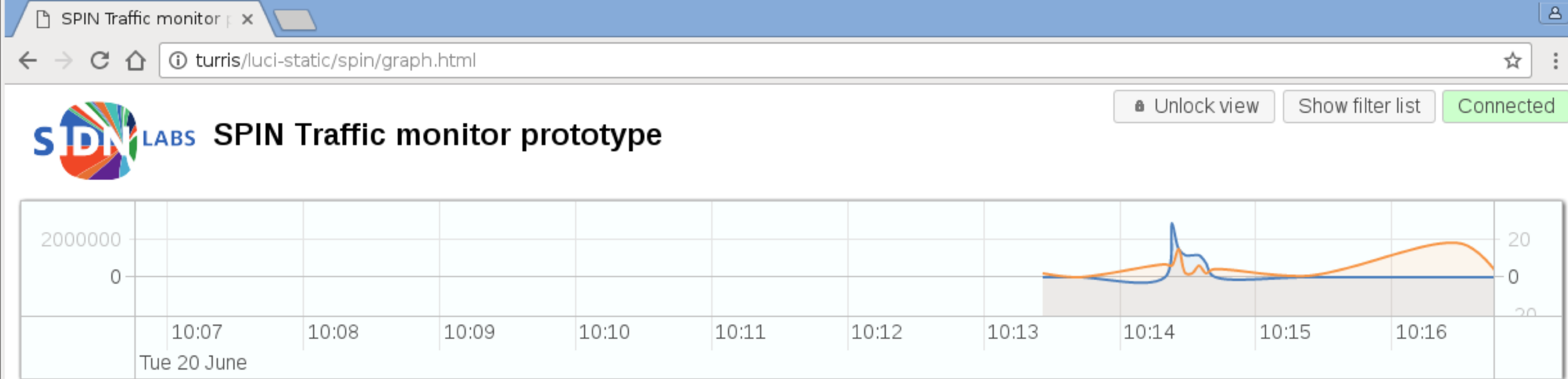




- privacy manager
- reverse firewall
- preference manager



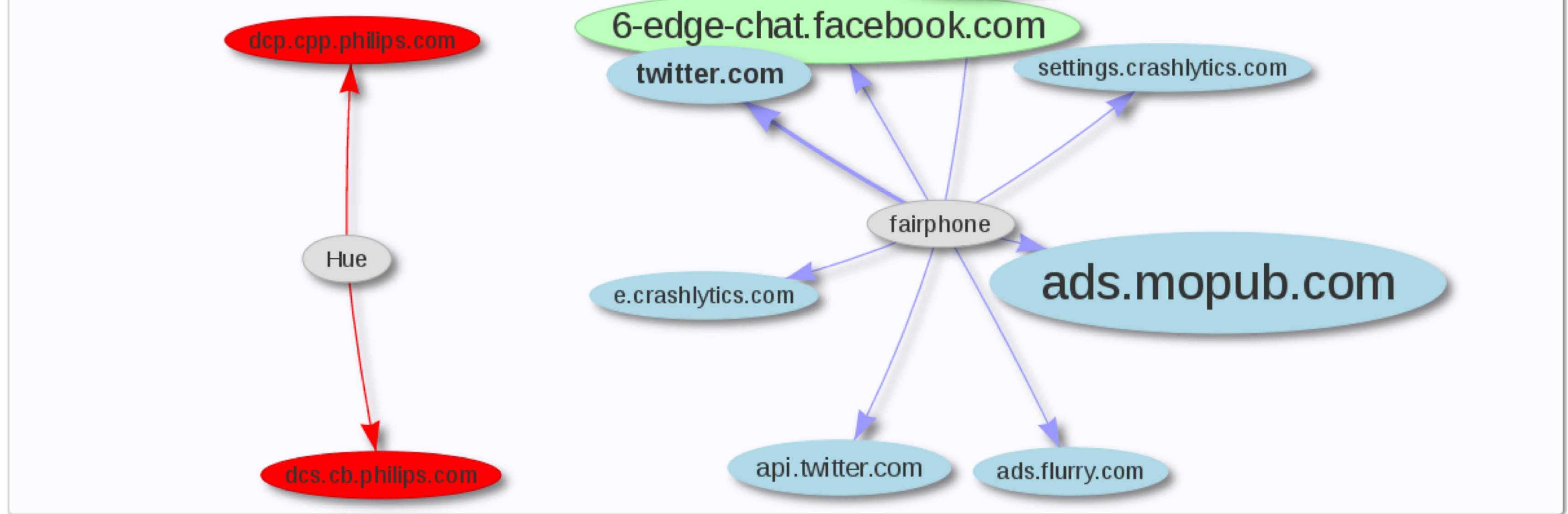




twitter.com [x]

Ignore this node
 Rename this node Block node

Node: 35
 Connections seen: 2
 Traffic size: 1850
 Last seen: Tue Jun 20 2017
 10:14:35 GMT+0200 (CEST)
 IP:
 104.244.42.129,104.244.42.193,104.244.42.201
 DNS: twitter.com,www.twitter.com



[\[Docs\]](#) [\[txt|pdf\]](#) [\[draft-ietf-opsa...\]](#) [\[Tracker\]](#) [\[Diff1\]](#) [\[Diff2\]](#) [\[Errata\]](#)

PROPOSED STANDARD

Errata Exist

Internet Engineering Task Force (IETF)

E. Lear

Request for Comments: 8520

Cisco Systems

Category: Standards Track

R. Droms

ISSN: 2070-1721

Google

D. Romascanu

March 2019

Manufacturer Usage Description Specification

Abstract

This memo specifies a component-based architecture for Manufacturer Usage Descriptions (MUDs). The goal of MUD is to provide a means for end devices to signal to the network what sort of access and network functionality they require to properly function. The initial focus is on access control. Later work can delve into other aspects.

This memo specifies two YANG modules, IPv4 and IPv6 DHCP options, a Link Layer Discovery Protocol (LLDP) TLV, a URL, an X.509 certificate extension, and a means to sign and verify the descriptions.

Status of This Memo





Max input: 230 V
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Q&A

spin.sidnlabs.nl
github.com/sidn/spin

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