

Securing the Internet of Things

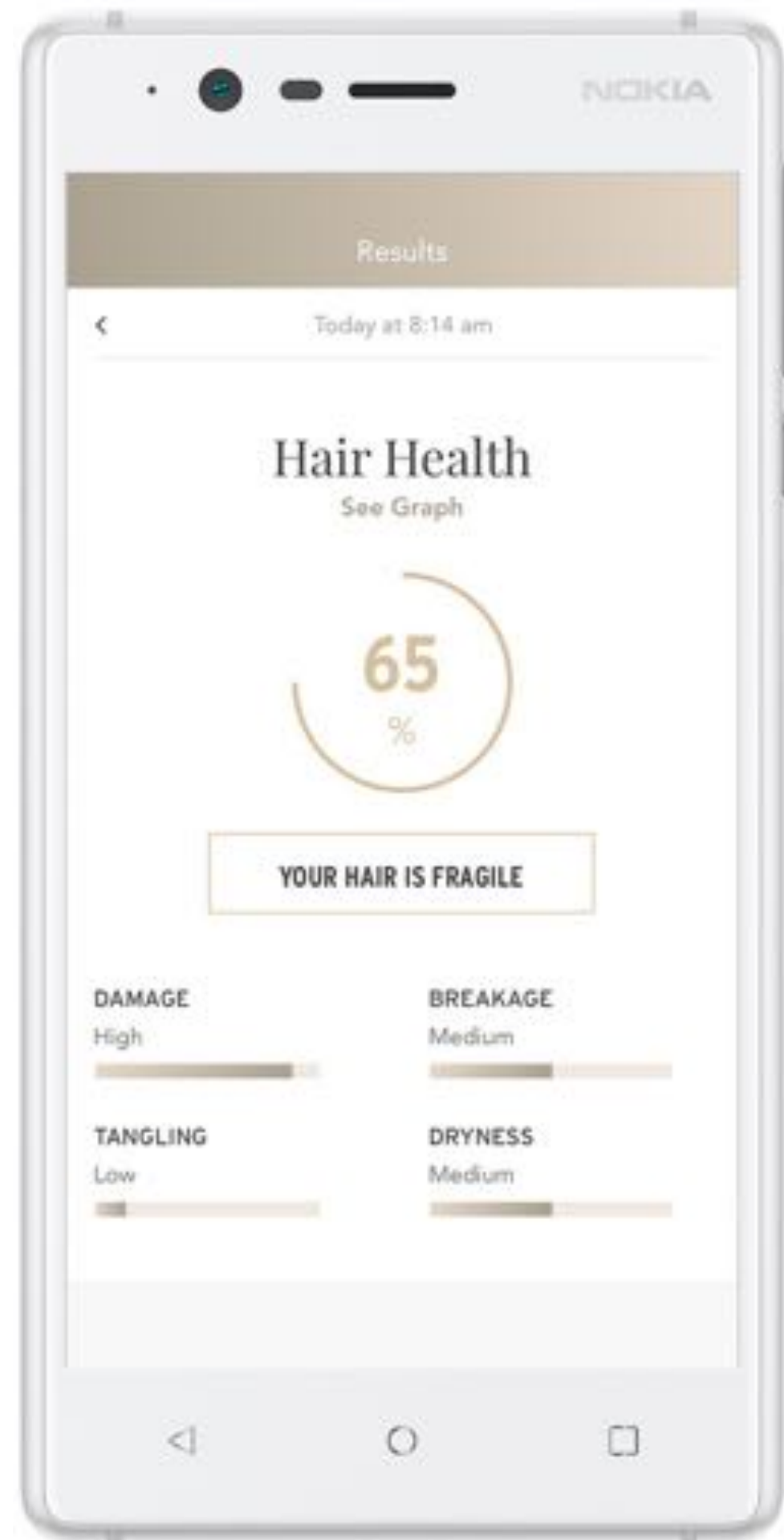
Elmer Lastdrager

26 April 2022





Internet of Things







Welcome to U by Moen

Demo the Controller and learn how easy it is to precisely control temperature, select shower outlets, and save your perfect shower as a preset for later.



Demo the Smartphone App to see how the same easy controls are available in the palm of your hand, along with up to 10 additional presets.





SMALT with voice

Connect SMALT with Amazon Echo and simply say "Alexa, dispense half a teaspoon of salt".



Bring the flavor

SMALT dispenses salt with a shake/pinch of your smartphone screen or simply turning the dial manually.

What does i.Con do with its data? Can I use it anonymously?

“Absolutely! All data will be kept anonymous but users will have the option to share their recent data with friends, or, indeed the world. You will be able to anonymously access stats that you can compare with i.Con users worldwide.”





Urinalysis



Uroflowmetry



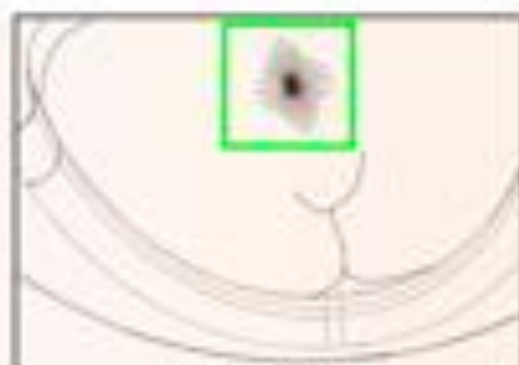
Bristol stool form scale



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!

— HOW LONG YOU'VE HAD YOUR SMART APPLIANCE —

6 MONTHS

1 YEAR

5 YEARS

10 YEARS

BEST-CASE

YOU'RE CONSTANTLY
BEING RESCUED FROM
PERIL BY A FACELESS
TEAM OF ENGINEERS
WHO COULD WANDER
AWAY AT ANY TIME

WORST-CASE

YOUR APPLIANCE IS
PART OF A BOTNET RUN
BY ORGANIZED CRIME

The "S" in IoT
stands for
SECURITY



Mirai vs DynSM

1.2 Tbps

From 'only' 100.000 devices



**The
Economist**

The Pearl River Delta is special report

Hospitals of the future

Israel's Duma must go

Parking, wrong on so many levels

Why computers will never be safe



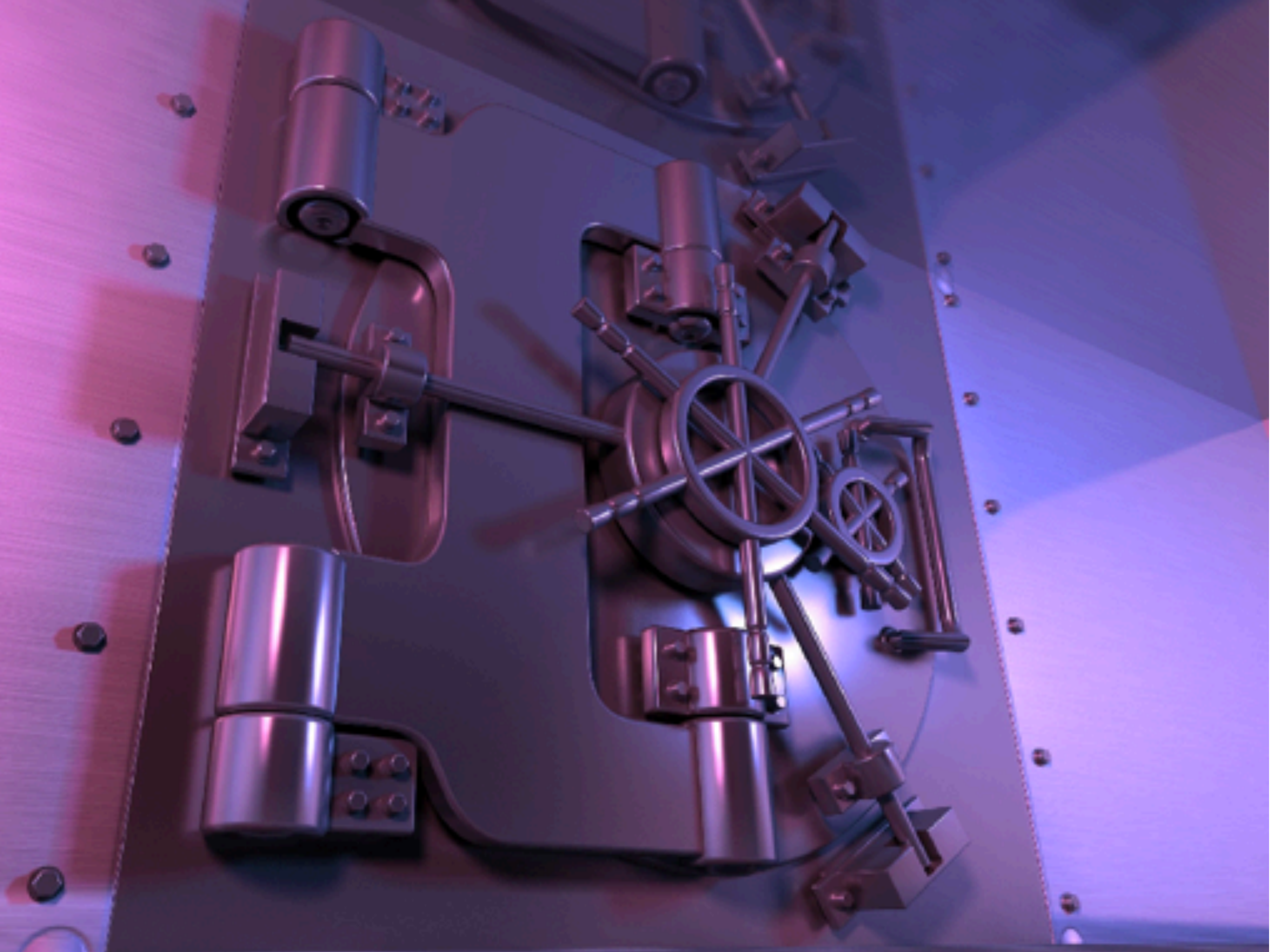
Computers will never be secure. To manage the risks, look to economics rather than technology

Market (vendors)

Government

Consumers







DETECT SMOKE
AND CO

CONTROL
SWITCHES AND
OUTLETS



CONTROL
LIGHTING

CONTROL
SHADES AND
BLINDS



ADJUST
CLIMATE

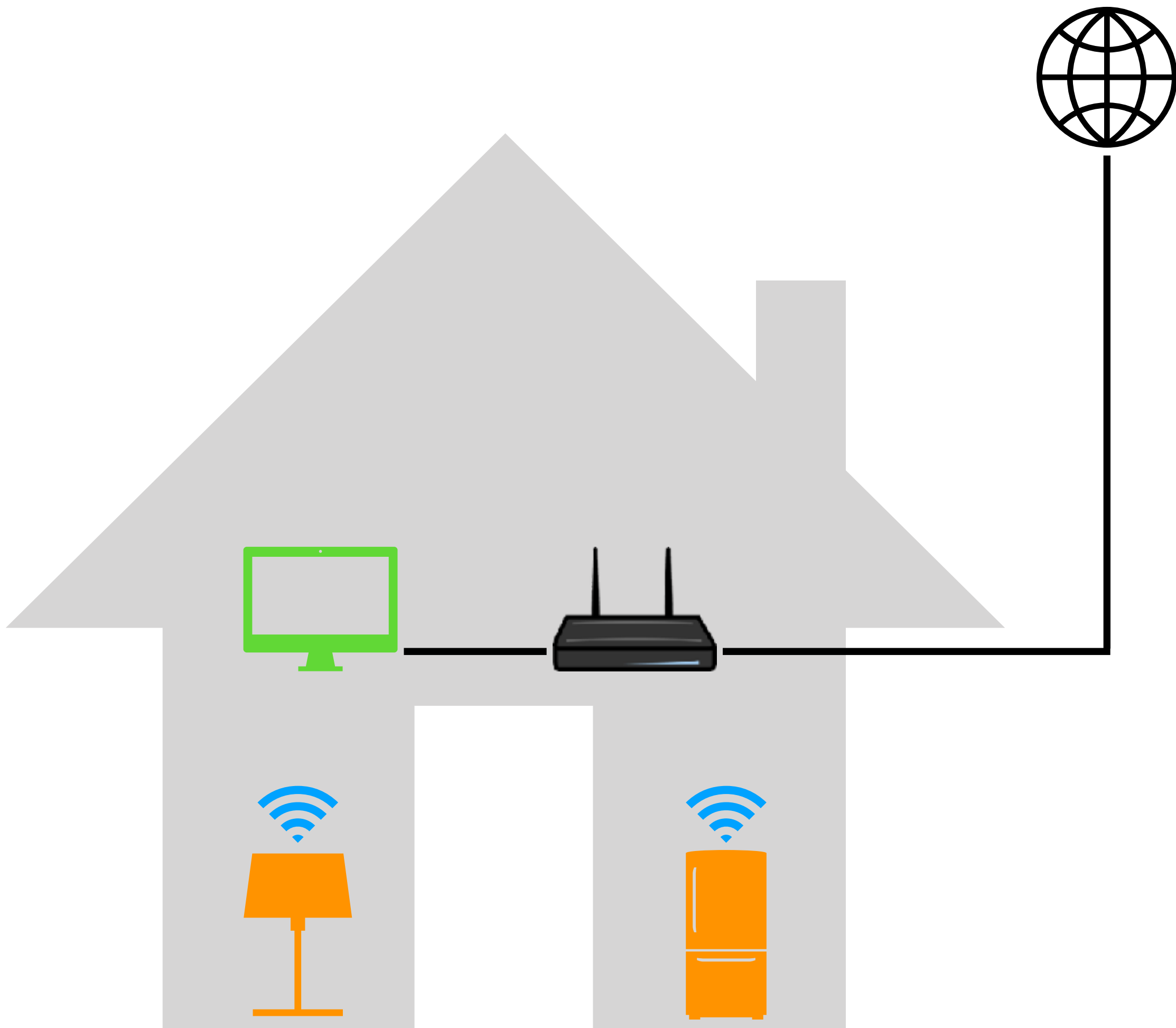
UNLOCK AND
LOCK DOORS

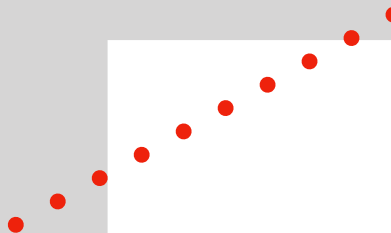
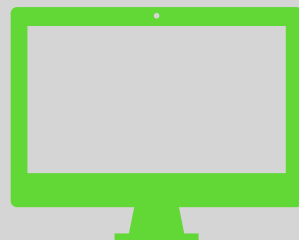
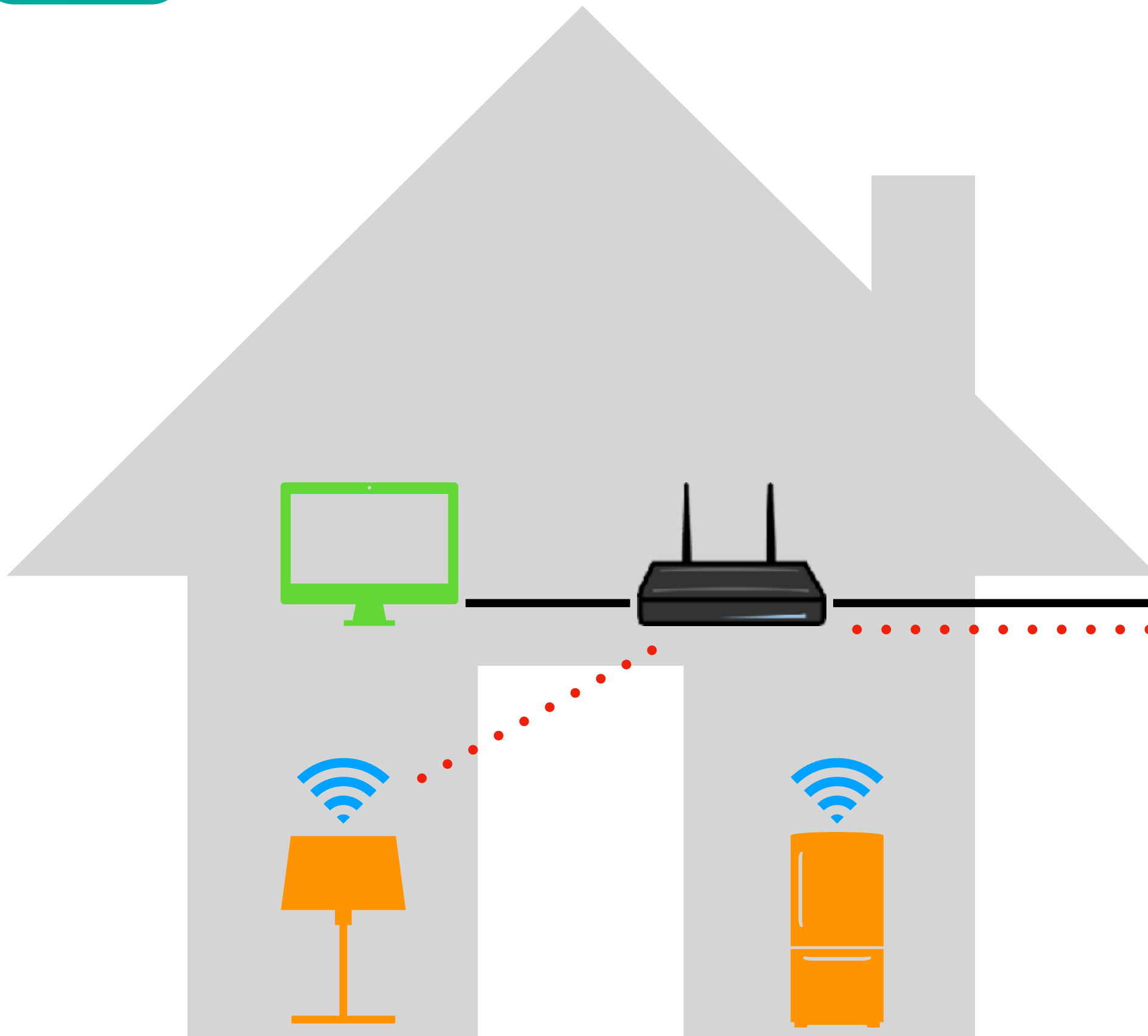
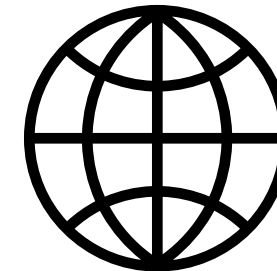


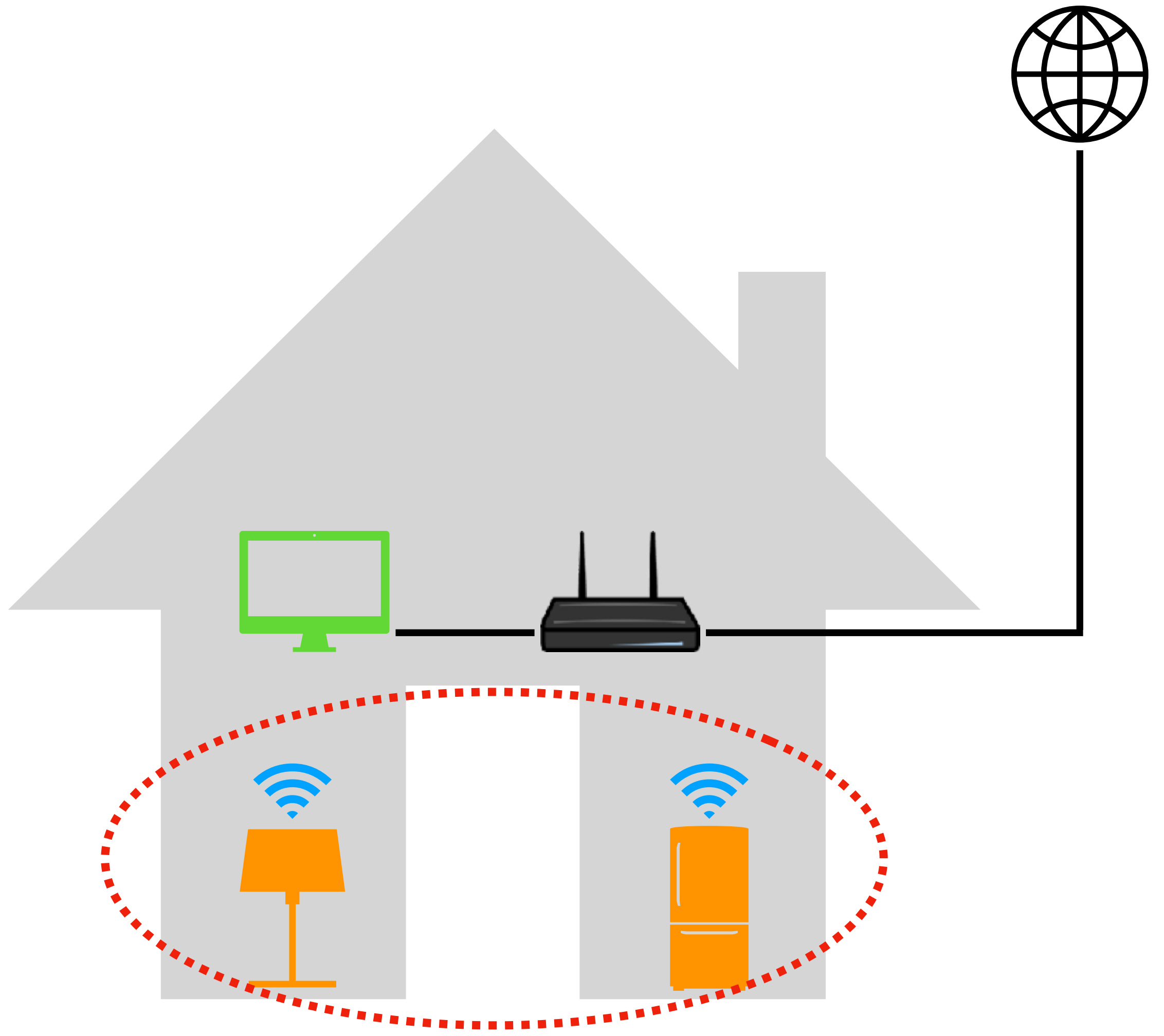
MONITOR
YOUR HOME

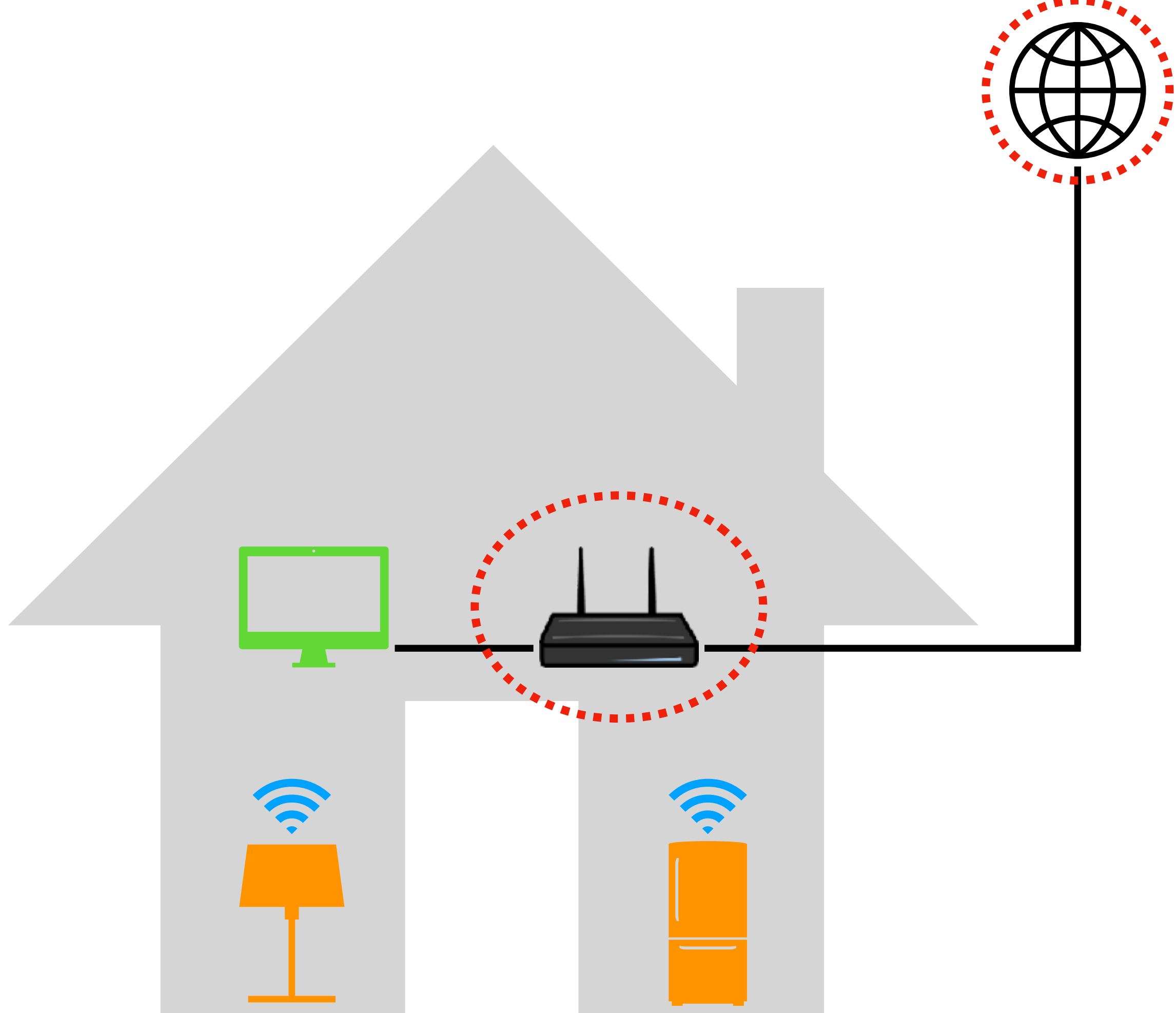
OPEN AND CLOSE
GARAGE DOORS

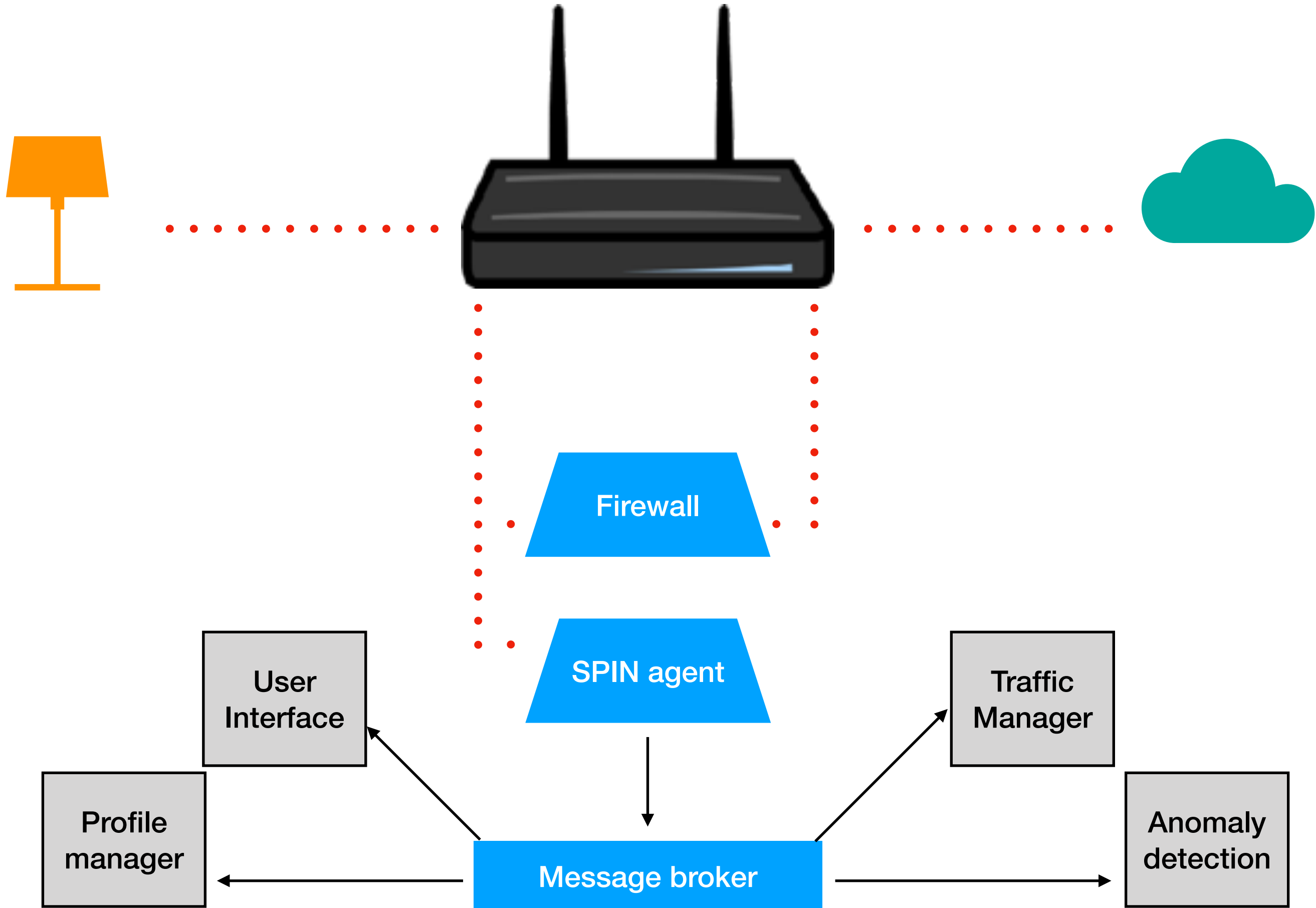


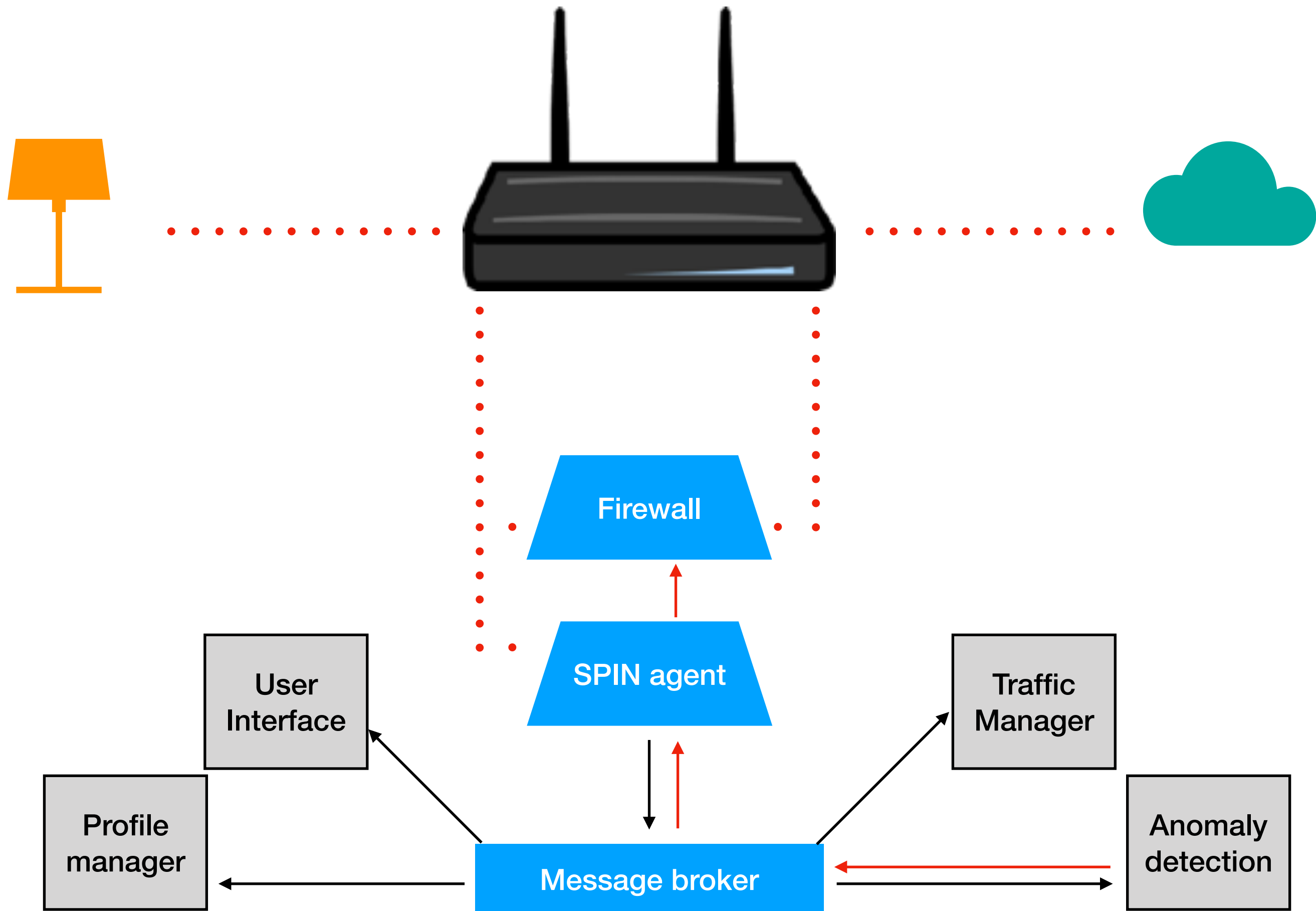














Internet Engineering Task Force (IETF)

Request for Comments: 8520

Category: Standards Track

ISSN: 2070-1721

E. Lear

Cisco Systems

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Google

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March 2019

Manufacturer Usage Description Specification

Abstract

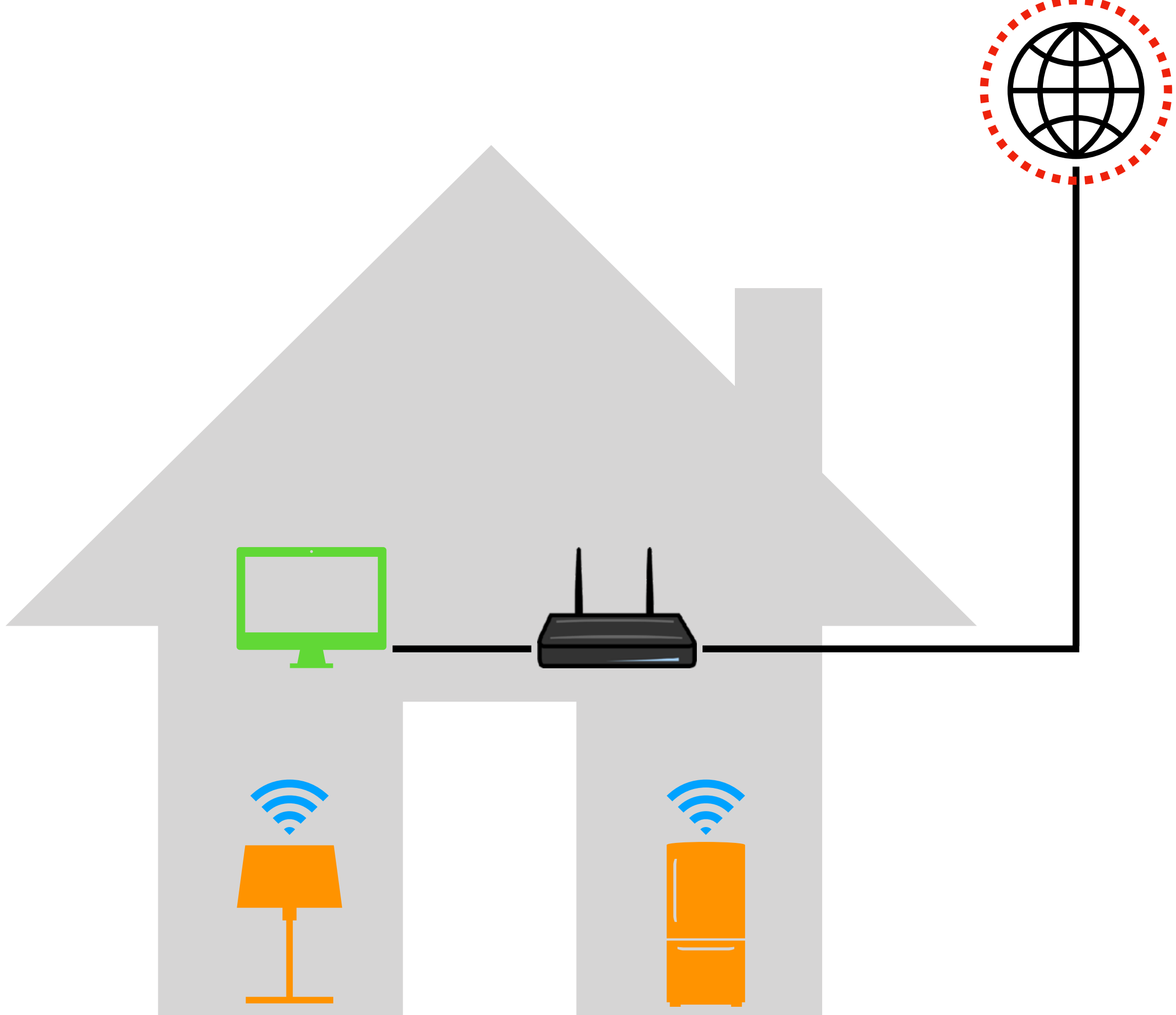
This memo specifies a component-based architecture for Manufacturer Usage Descriptions (MUDs). The goal of MUD is to provide a means for end devices to signal to the network what sort of access and network functionality they require to properly function. The initial focus is on access control. Later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

This is an Internet Standards Track document.

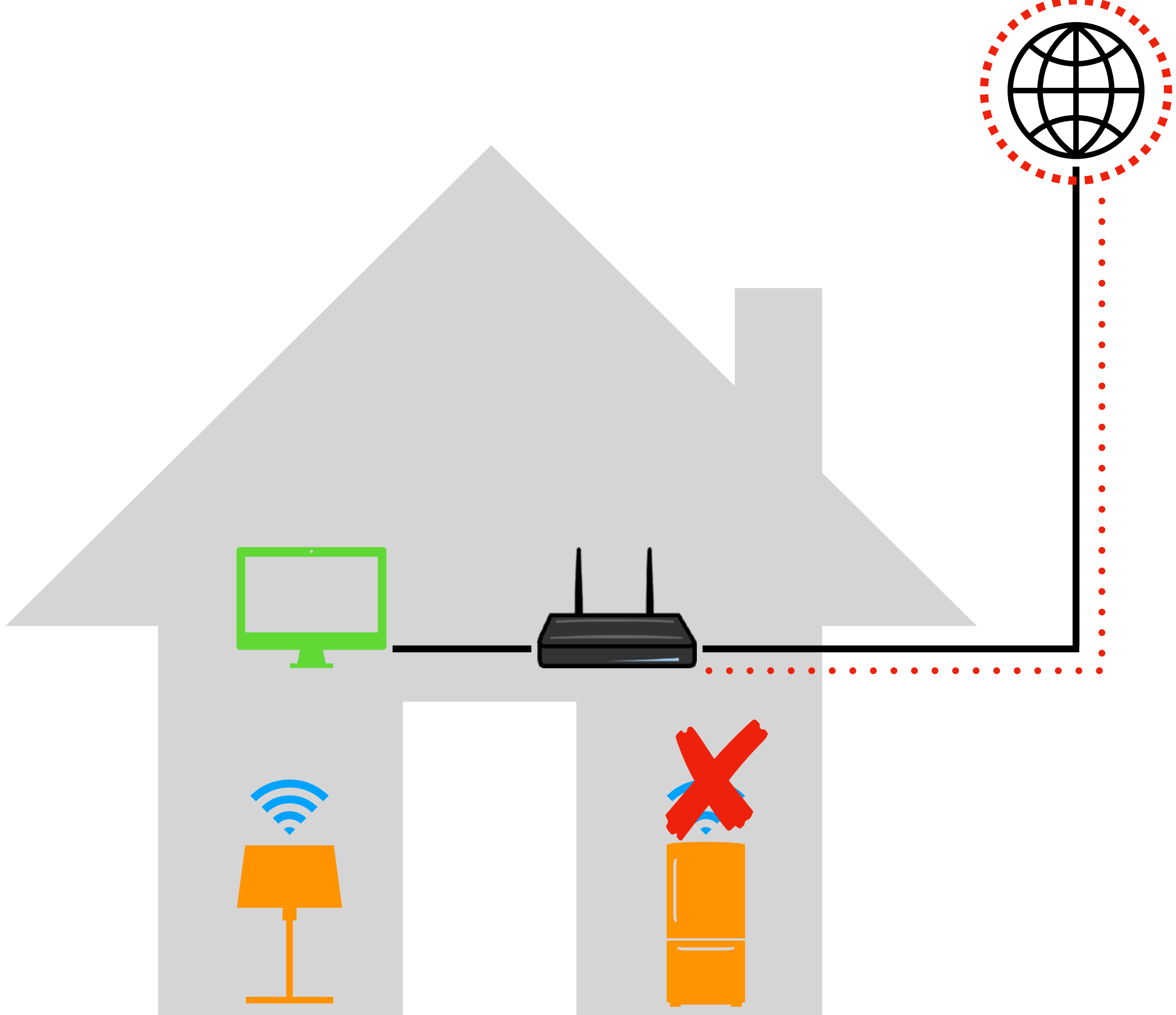
This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in [Section 2 of RFC 7841](#).



CAUTION

KEEP OUT

QUARANTINE





Security and Privacy for In-home Networks (SPIN)





facebook.com

Nodes: 63
Connections: none: 5
Traffic: none: 2048
Last seen: Fri May-06 2017
30.08.11 GMT+0100 (CET)
IP: 187.240.3.20
CPE: facebook.com

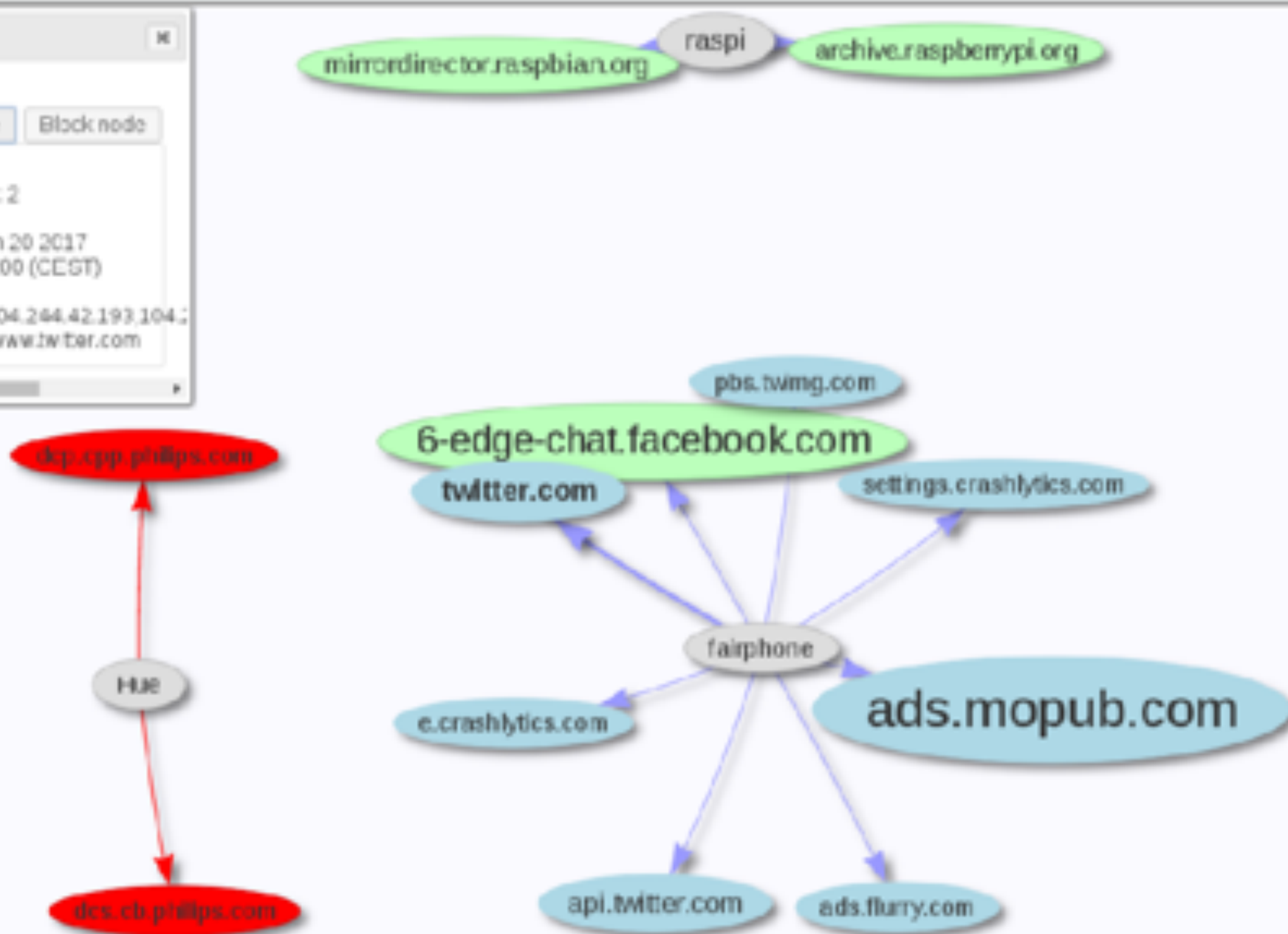


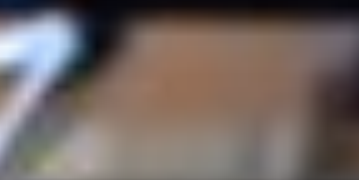


twitter.com

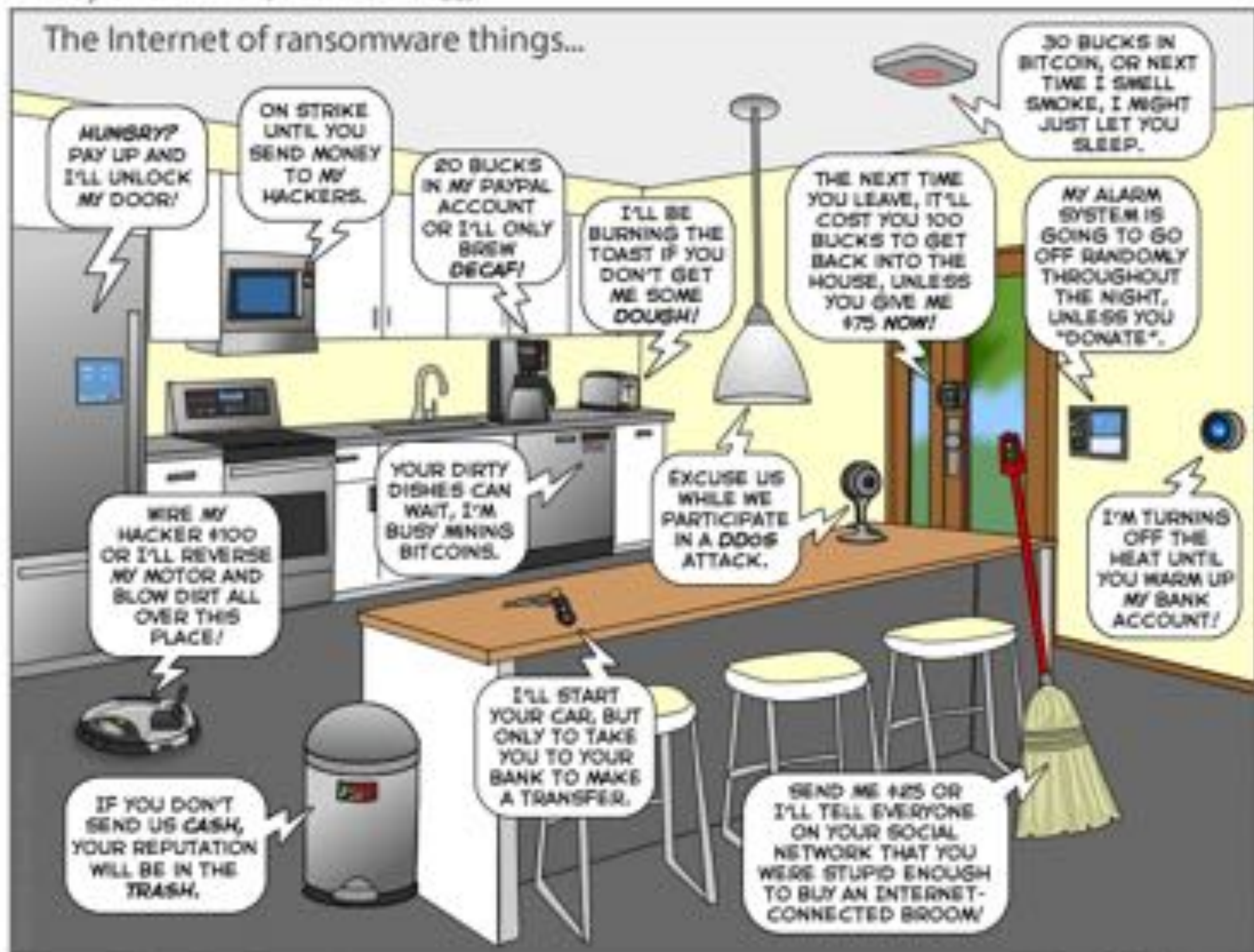
ignore this node
Rename this node
Block node

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, 104.244.42.193, 104.244.42.193
DNS: twitter.com, www.twitter.com









elmer.lastdrager@sidn.nl
<https://spin.sidnlabs.nl>

Q&A

<https://spin.sidnlabs.nl>

<https://github.com/sidn/spin>

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