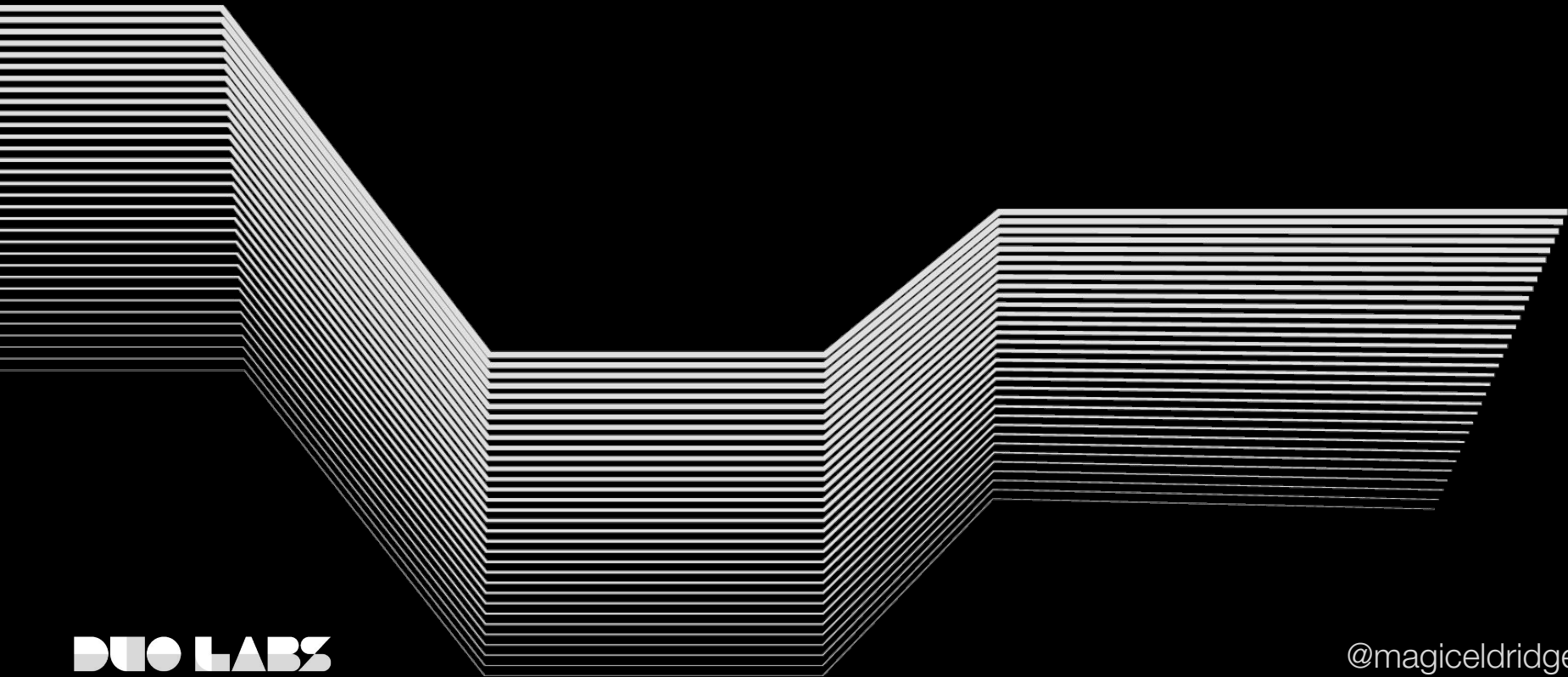


# Malicious Devices on Hostile Networks at Home

Eldridge Alexander

**DUO LABS**





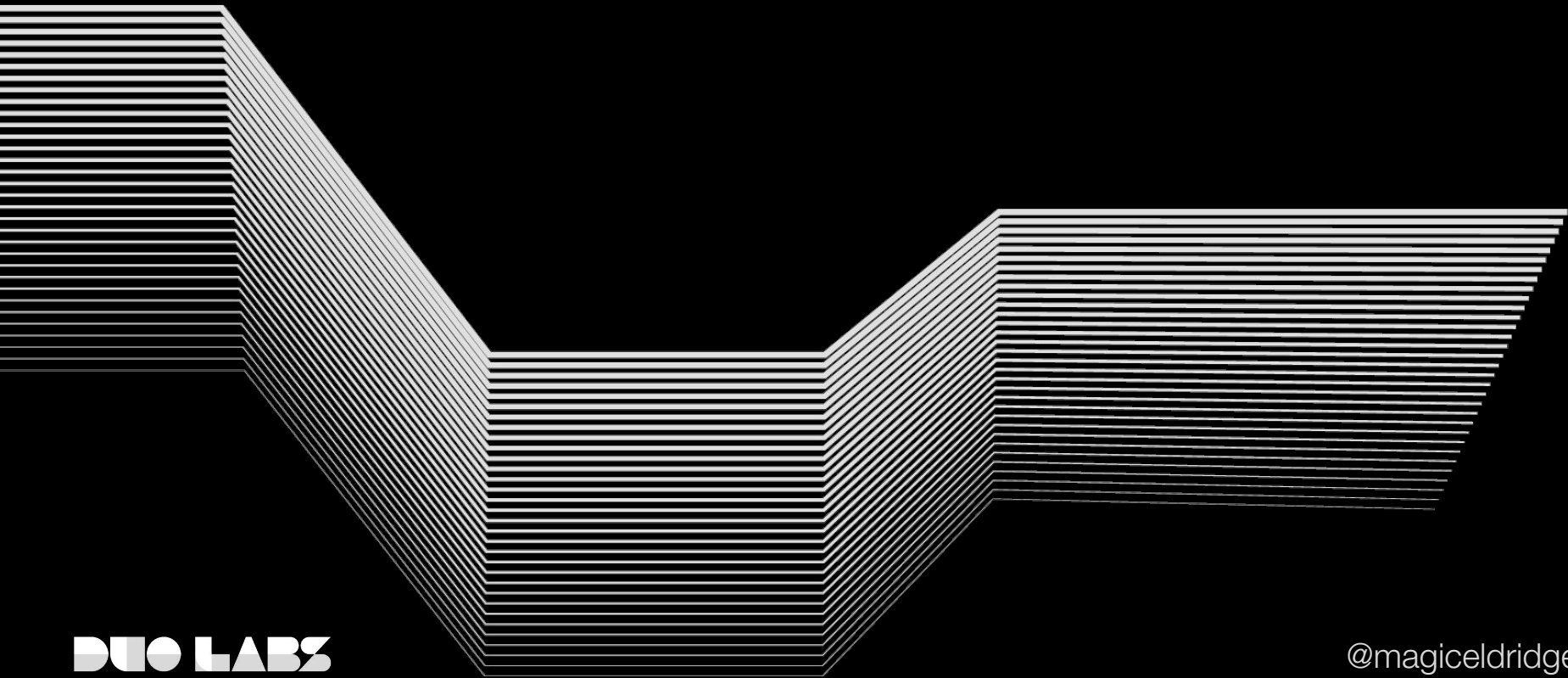
**DUO LABS**

@magiceldridge

# Present

# Predicted Threats

# How Zero Trust Can Help



**DUO LABS**

@magiceldridge

# Present

# IoT Security Sucks

A lot

# There's a lot

Currently over 7 billion IoT devices  
online

# Security Bugs Everywhere

Half of US companies have been hit  
with breaches due to IoT devices

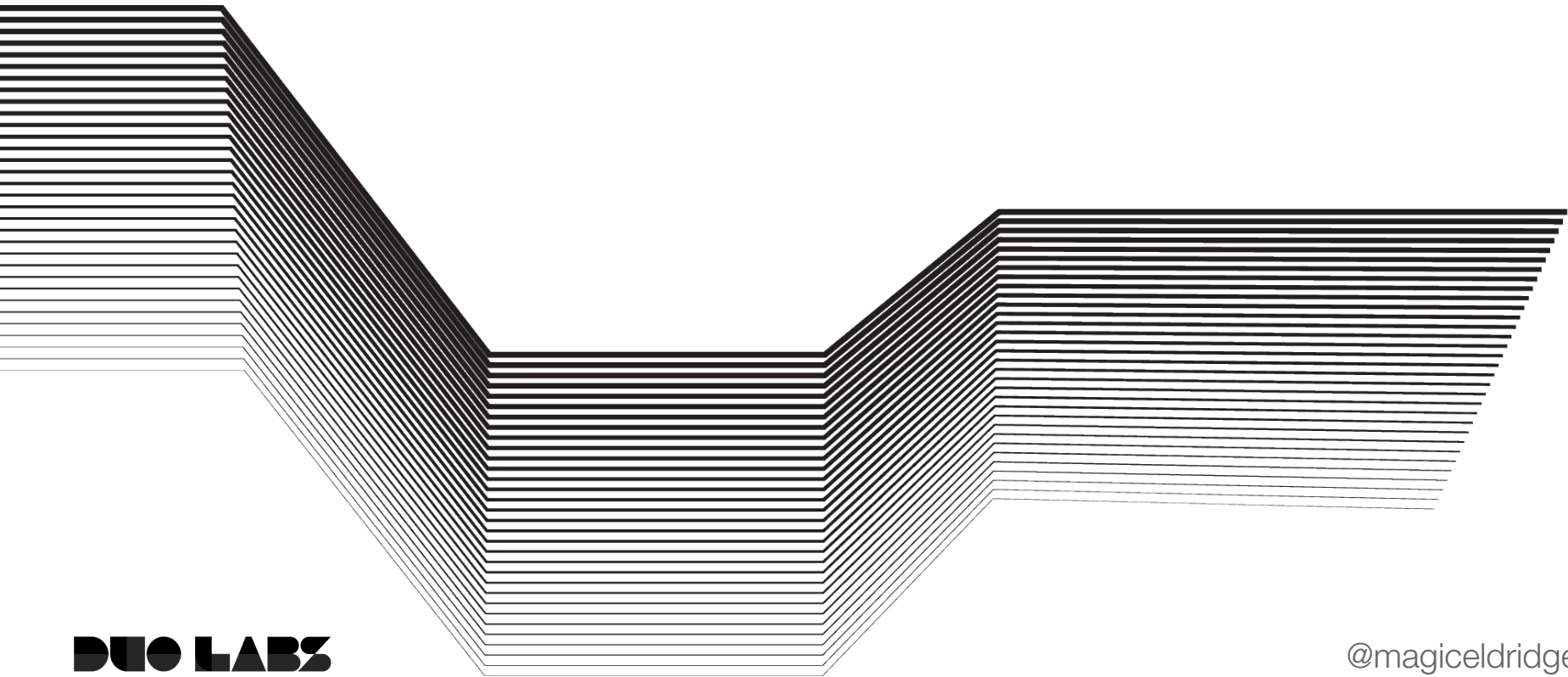
# Many Are Always Connected

**DUO LABS**

Kindles

Cars

@magiceldridge



**DUO LABS**

@magiceldridge

# Future

# More IoT

Gartner predicts over 20 billion IoT devices online by 2020

# More Cellular

Decreasing cost of 5G and desire to remove and ease configuration will encourage manufacturers to include 5G.

# 5G Use Cases

## eMBB

High Bandwidth

High Mobility

## URLLC

Ultra Reliability

Low Latency

## mMTC

High Density

Long Range

# 5G Use Cases

eMBB

Mobile Device

Home Internet/Video

URLLC

Mission Critical

Medica, Industrial devices

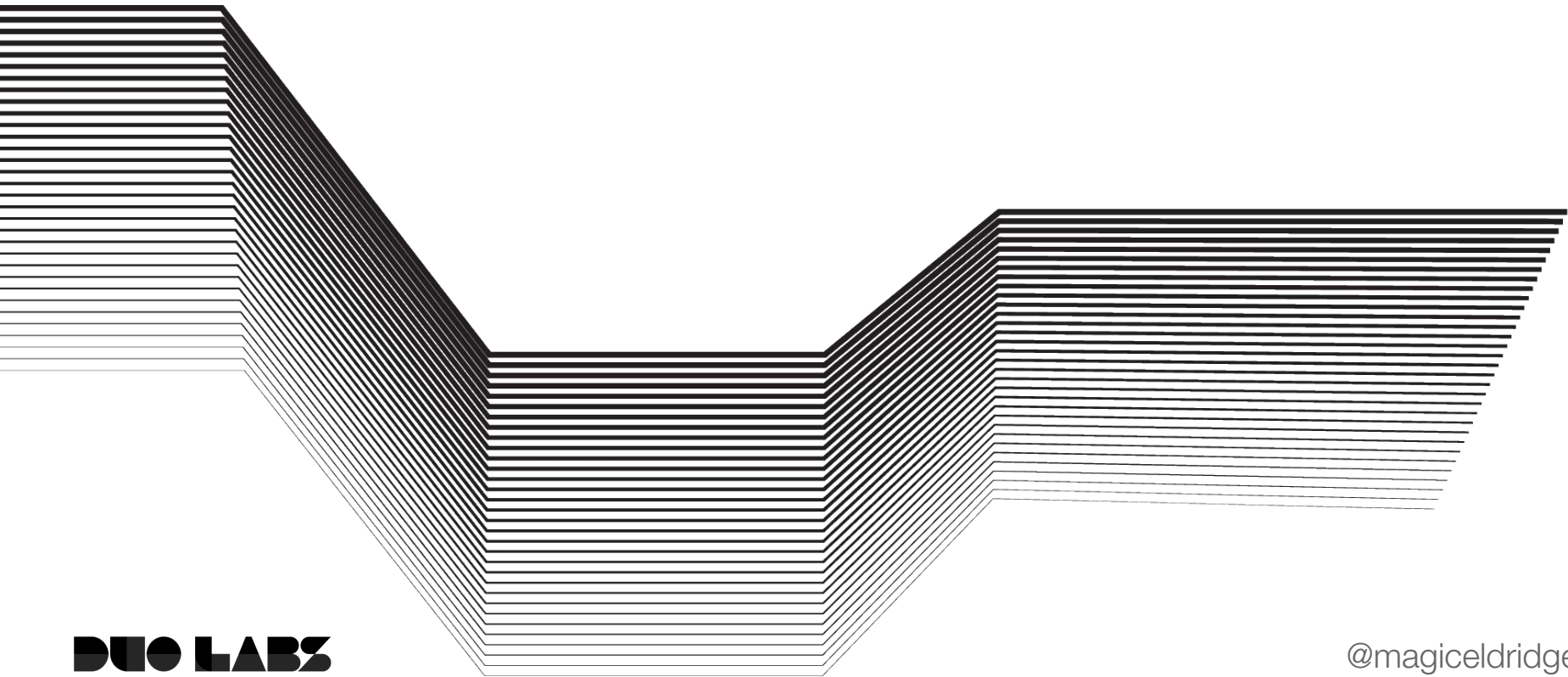
mMTC

Smart Home

Smart City

# Crossover Devices

Devices that have cellular and wifi in  
one

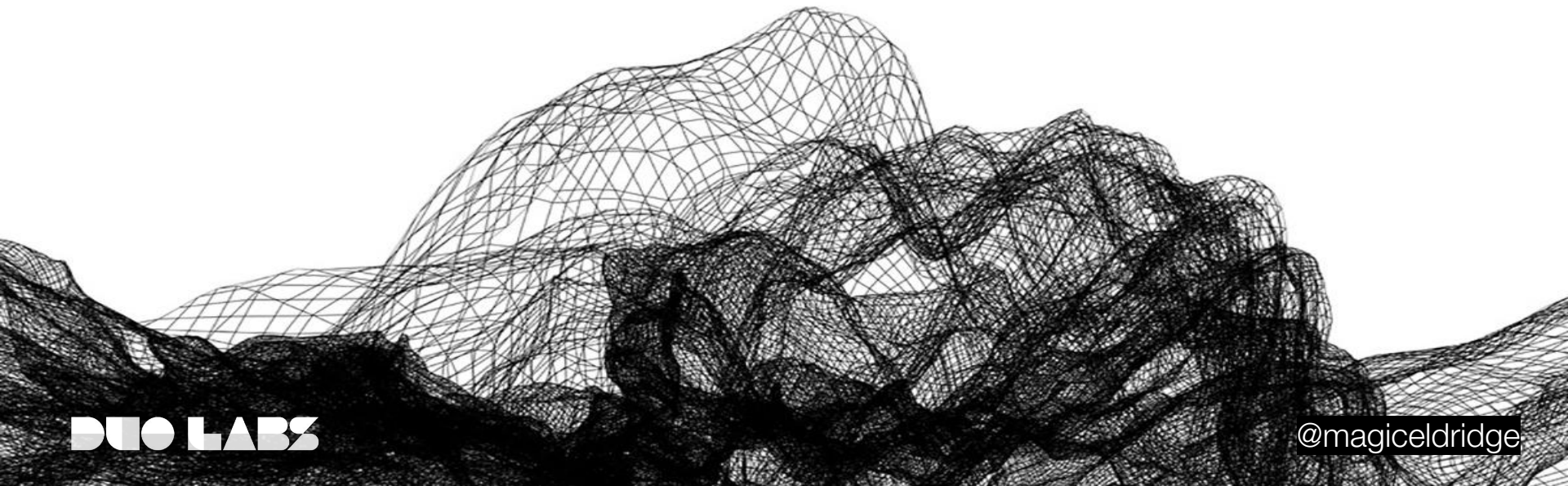


**DUO LABS**

@magiceldridge

# What to do?

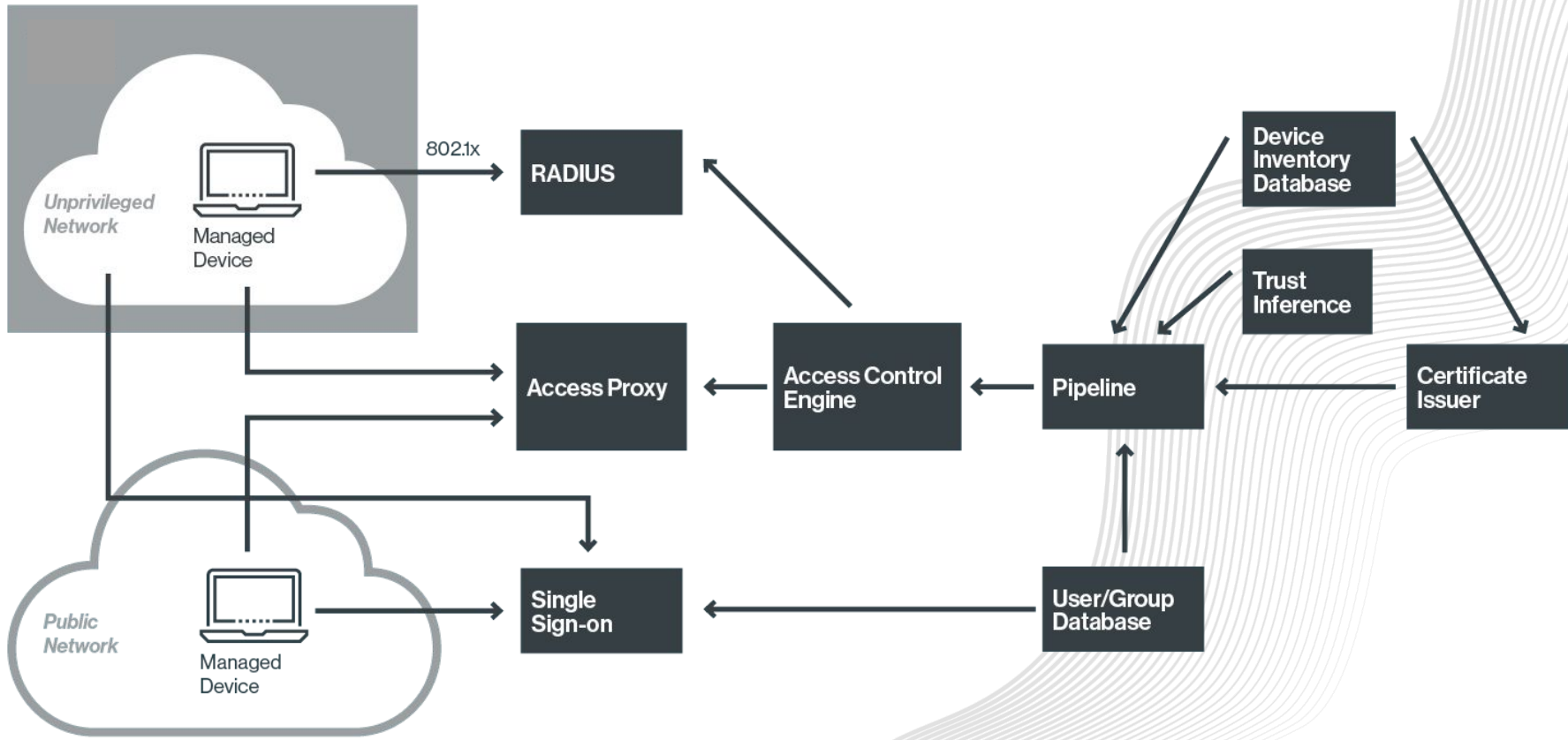
# Zero Trust



# Network Access Gives You Nothing

Every Request is  
Authenticated

It's a Spectrum



**How could this work in  
homes?**

# Router Manufacturers

What can they do?

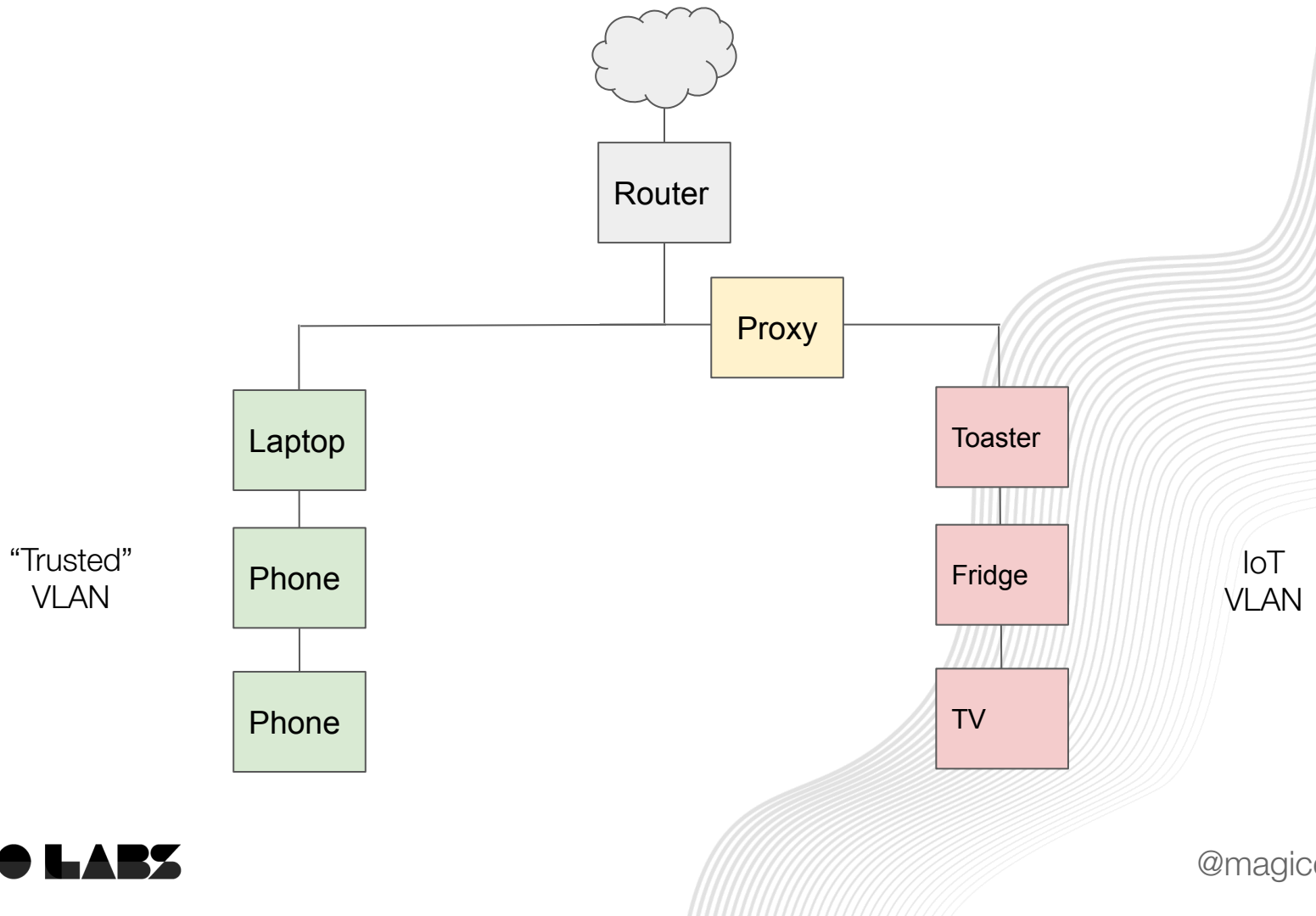
- Auto generate VLANs
- Centralized Services/Proxies
- Support standard configs

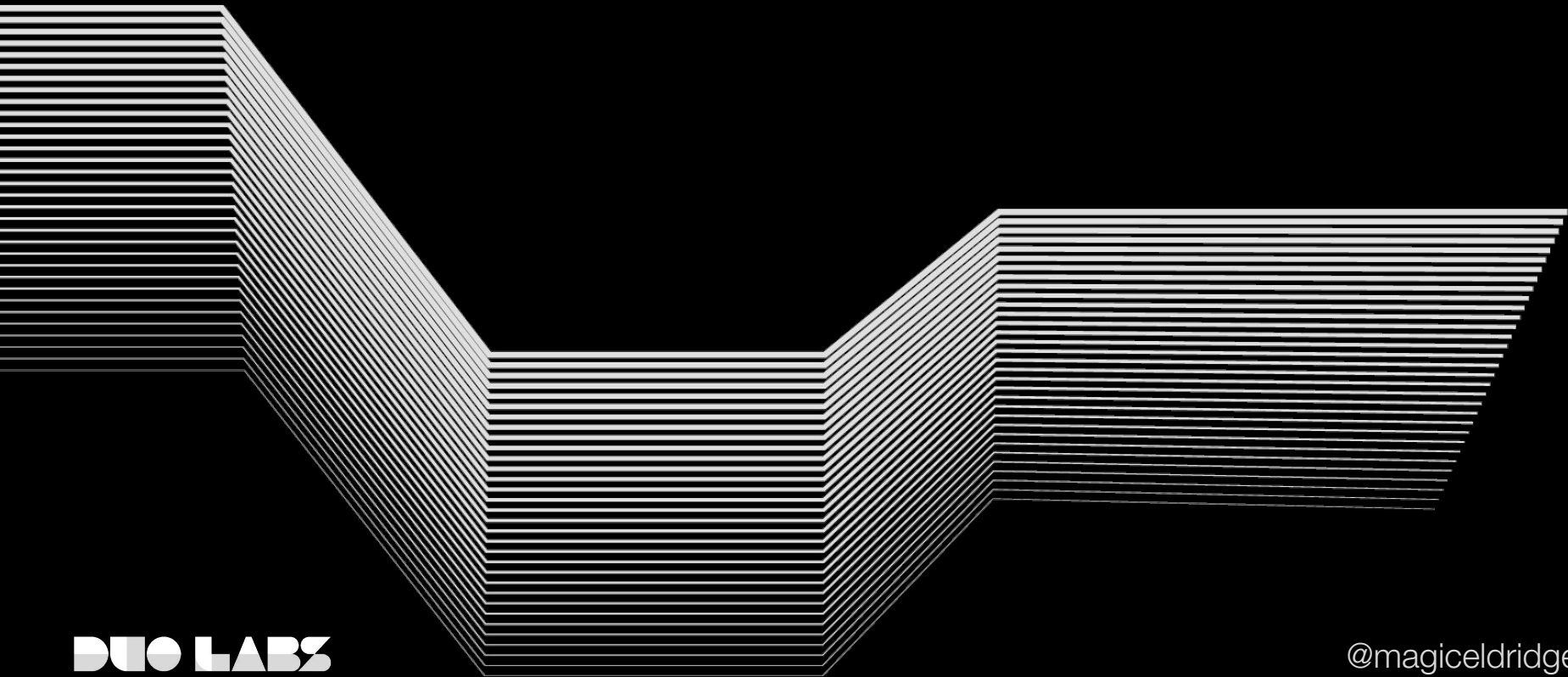
What can I do?

# Mitigations

What can I do?

- Manual VLAN configuration
- Centralized Services/Proxies
- Client Isolation





**DUO LABS**

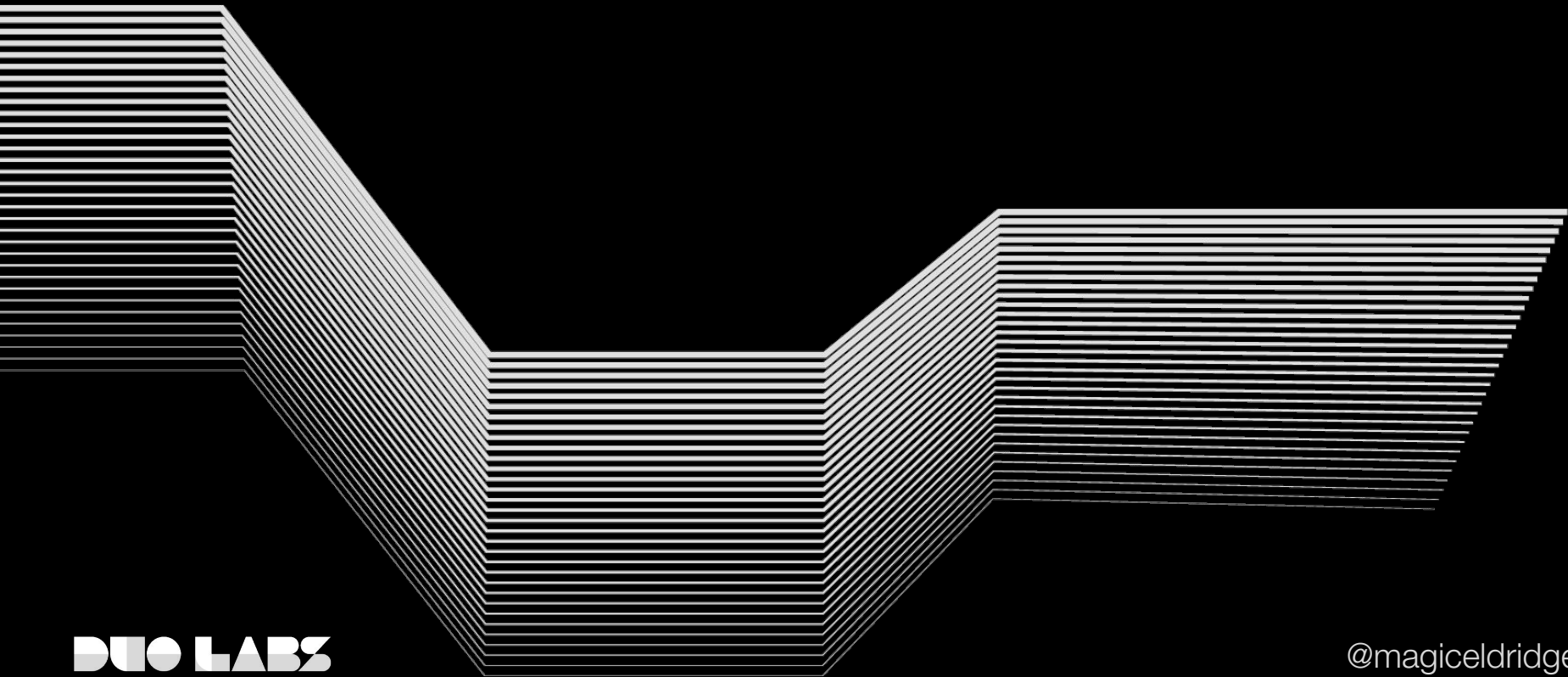
@magiceldridge

# Recap

# Present

# Predicted Threats

# How Zero Trust can help



**DUO LABS**

@magiceldridge

# Questions?

Eldridge Alexander

@magiceldridge

<https://eldrid.ge>

**DUO LABS**



# Citations

Miari: <https://securityintelligence.com/news/leaked-mirai-malware-boosts-iot-insecurity-threat-level/>

Current IoT: <https://iot-analytics.com/state-of-the-iot-update-q1-q2-2018-number-of-iot-devices-now-7>

Breach reports: <https://internetofbusiness.com/half-us-iot-security-breach/>

Future IoT: <https://www.forbes.com/sites/forbestechcouncil/2018/03/16/developing-the-connected-world-of-2018-and-beyond/>

5G: <http://www.rfwireless-world.com/Terminology/5G-eMBB-vs-mMTC-vs-URLLC.html>