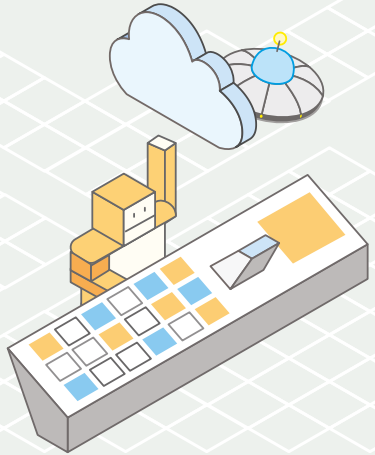
Pop-up Loft
LONDON

Introduction to AWS IoT

Pop-up Loft London – September 2017

Boaz Ziniman | Technical Evangelist | AWS

@ziniman



Agenda

- An introduction to IoT
- Challenges of running things at scale
- IoT on AWS
- Let’s build

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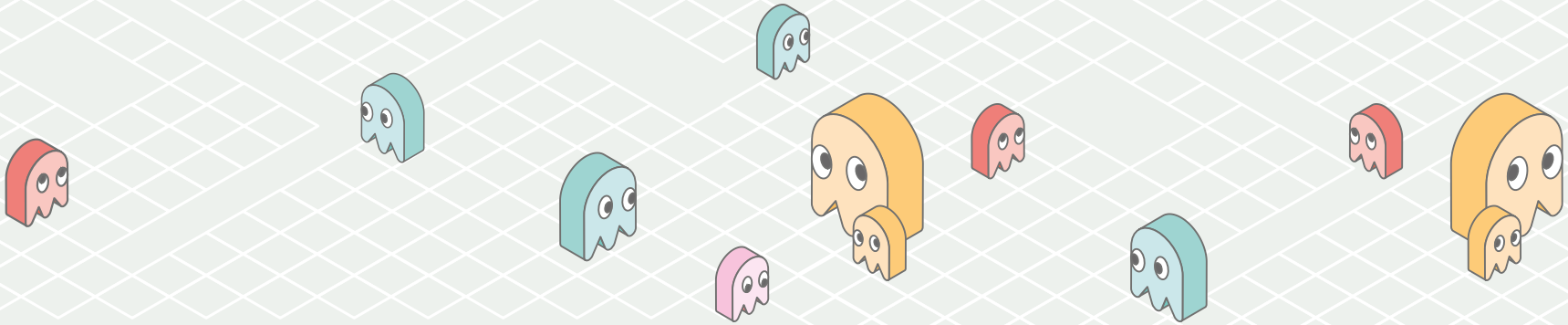
Internet of Things



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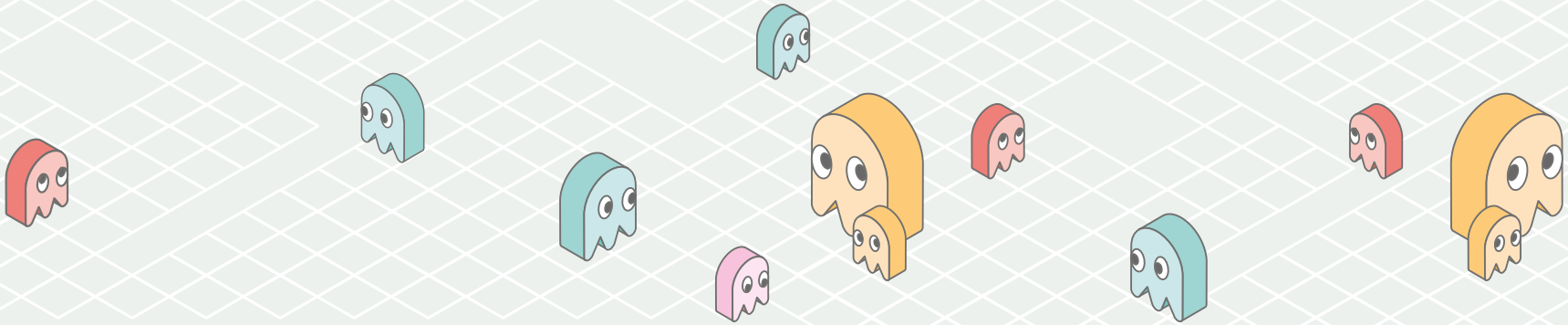
Internet of Things

Why there is so much interest?



All the music on earth, in every room of your home, wirelessly

SONOS

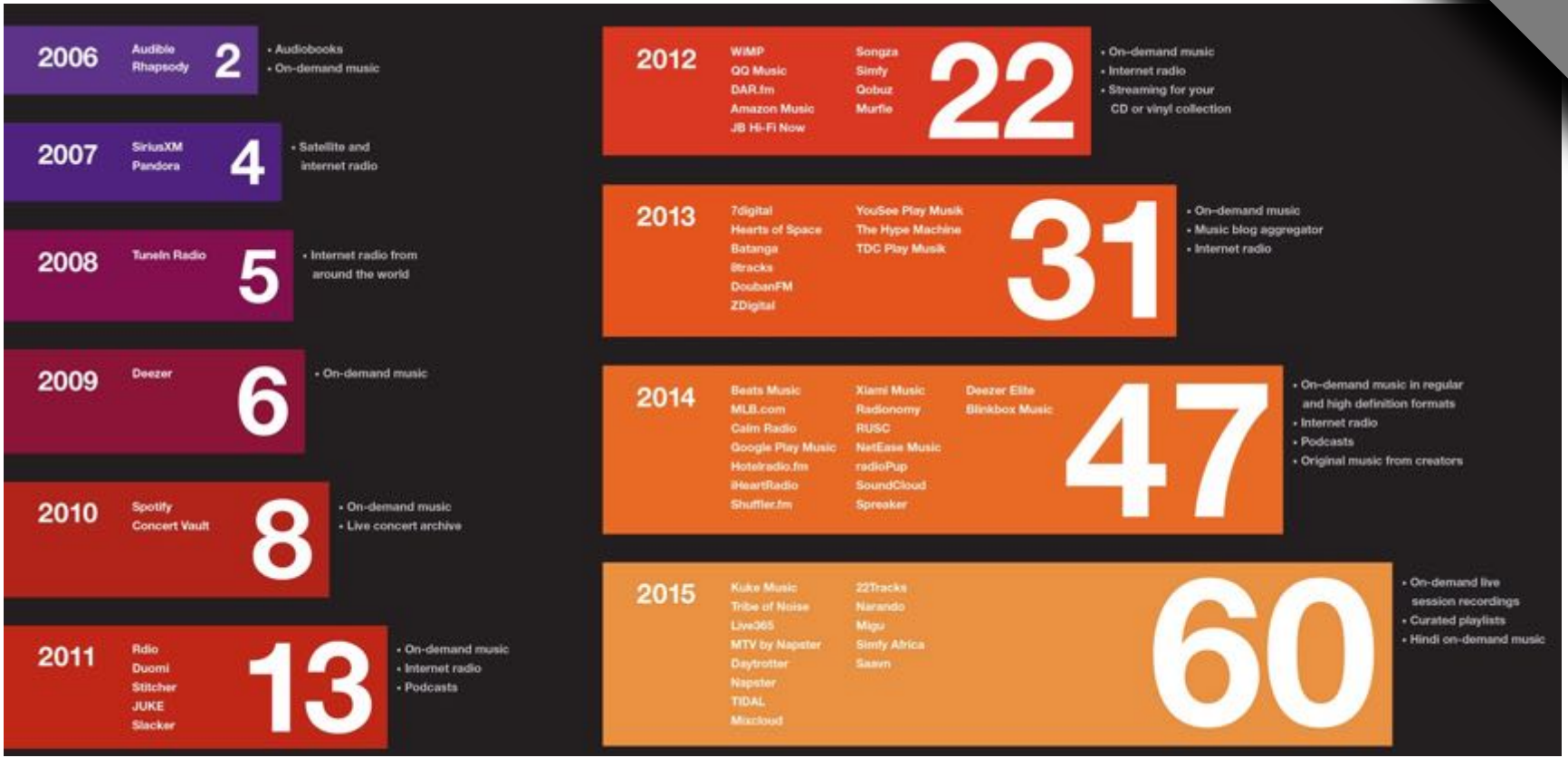
Sonos is the smart speaker system that streams all your favorite music to any room, or every room.

SONOS

Control your music with one simple app, and fill your home with pure, immersive sound.

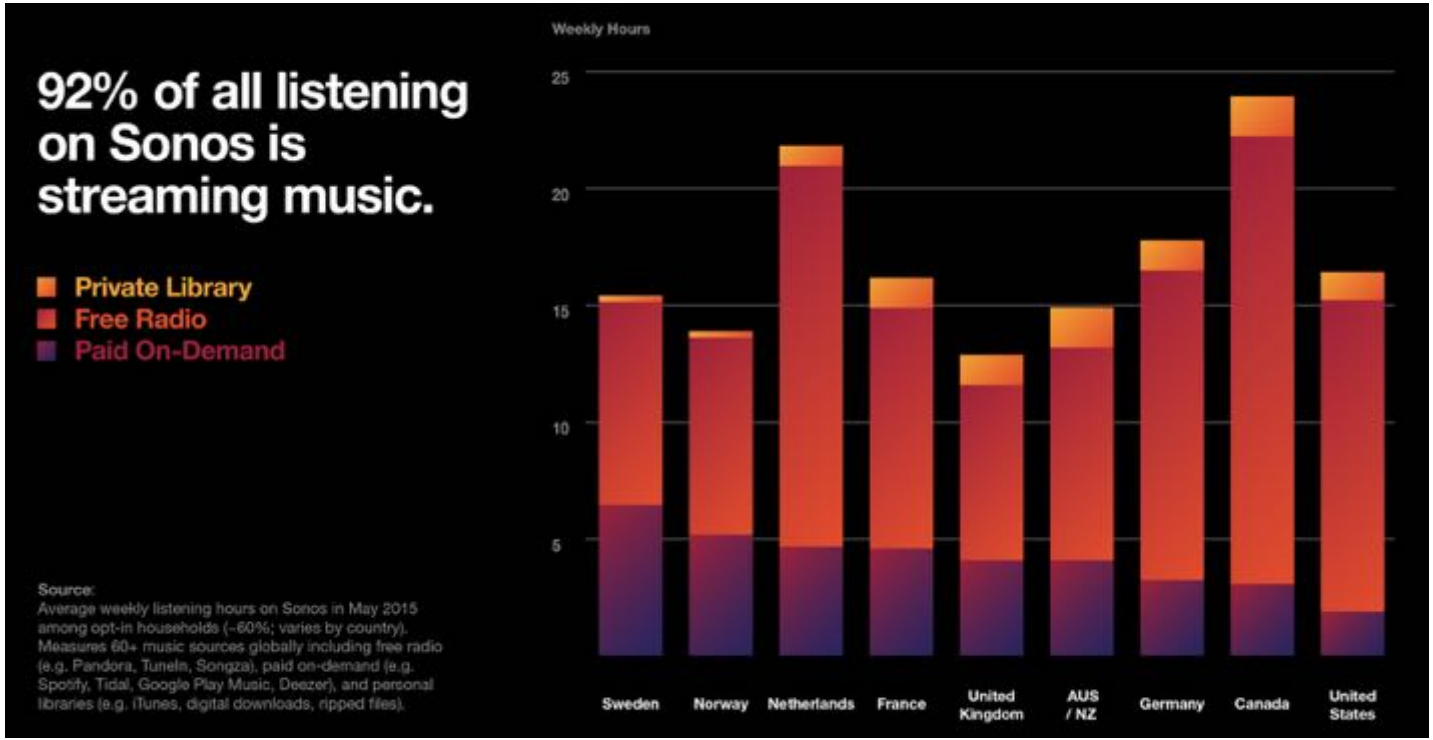
Connected products improve over time

SONOS

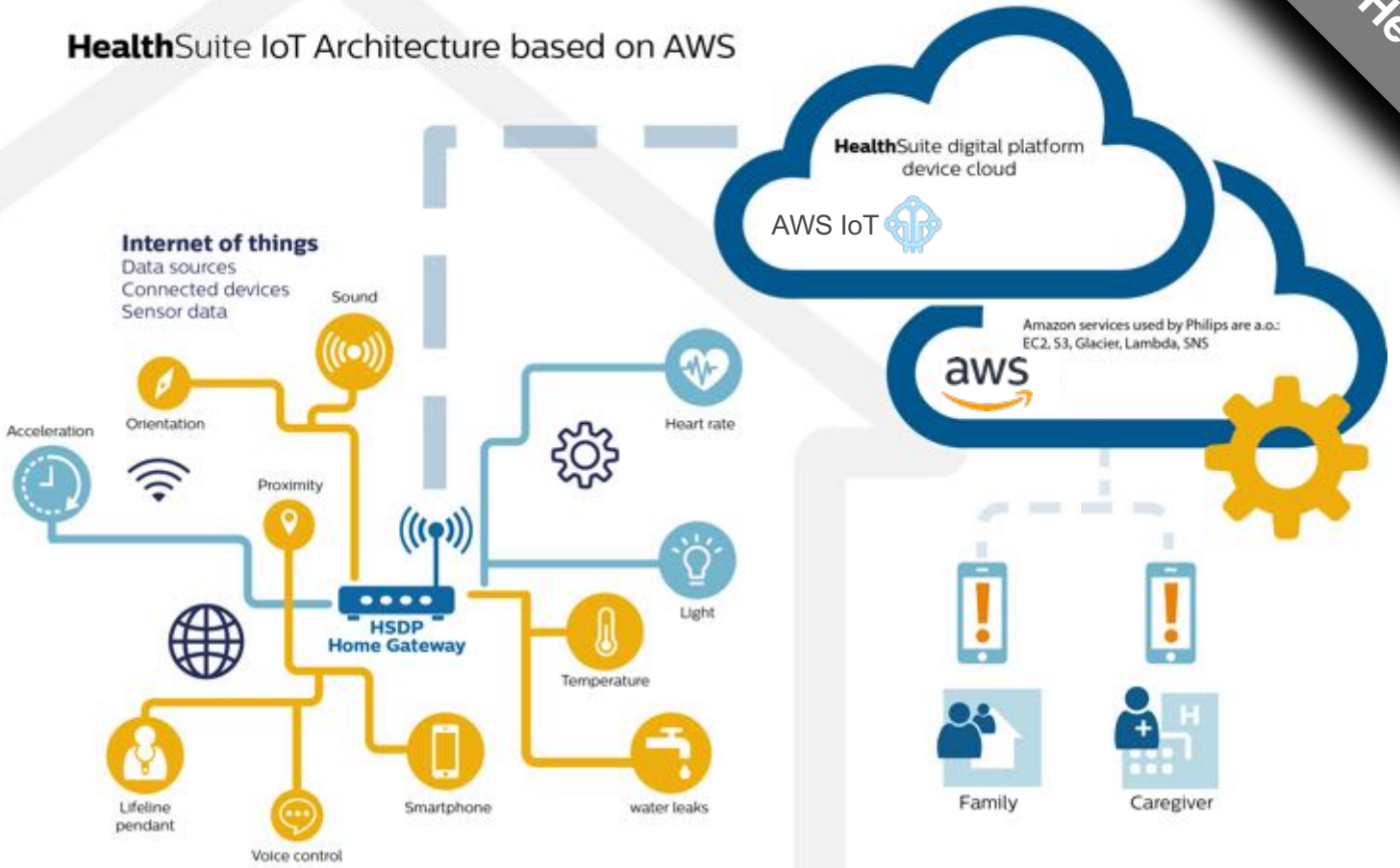


Connected products provide unique insights

SONOS



HealthSuite IoT Architecture based on AWS



Philips HealthSuite

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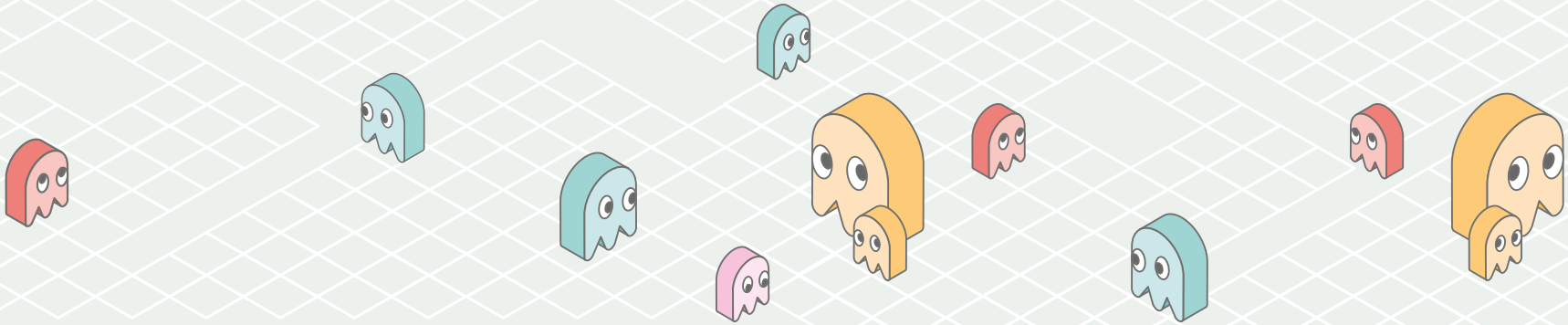
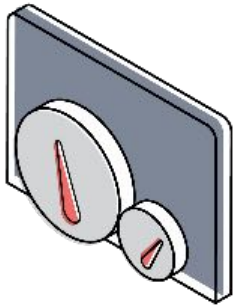
A Lot of Efforts Are Still Required…



Connecting devices to cloud applications requires undifferentiated heavy lifting.

Alternate Protocols



Scalability

Security & Management

Integration with Cloud and Mobile Applications

Many SDKs & Tools

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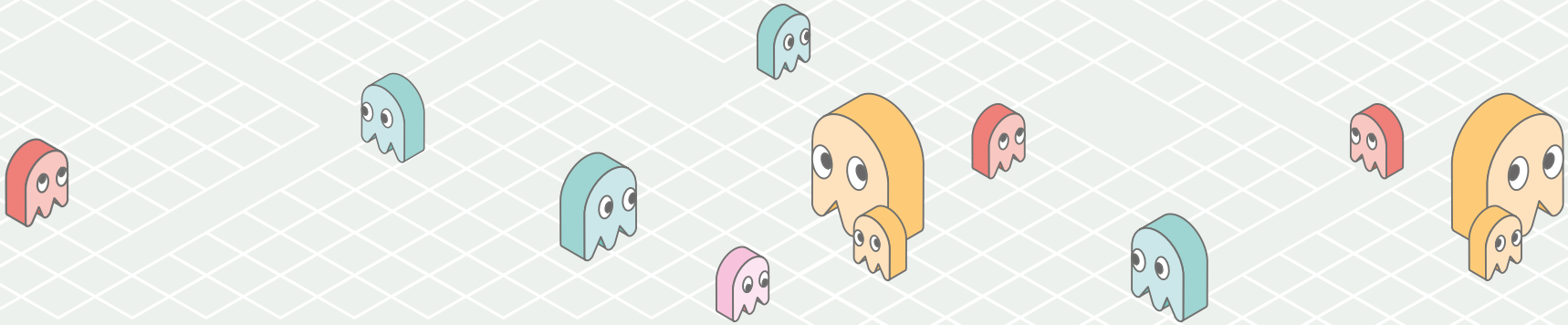
How to make IoT Simple ?



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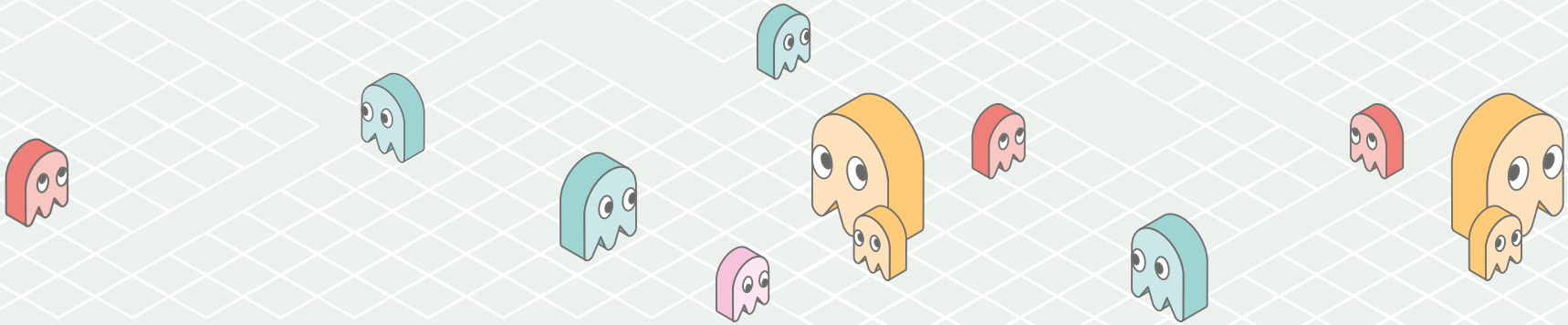
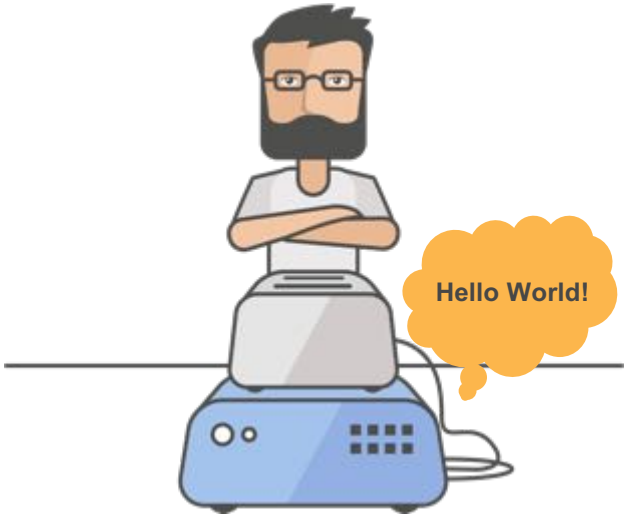
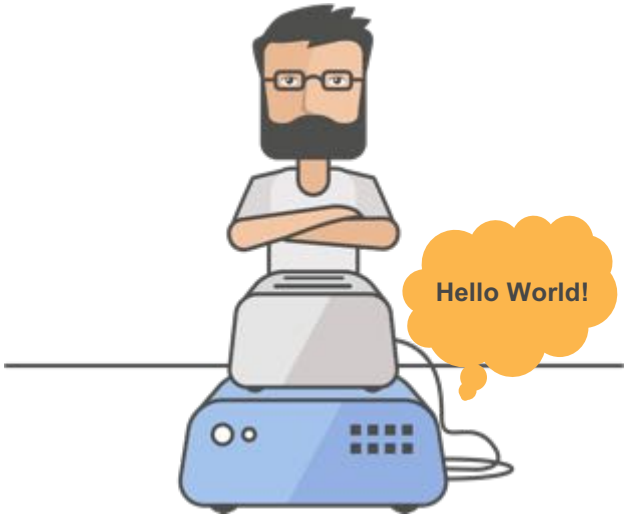
How to make IoT Simple ?

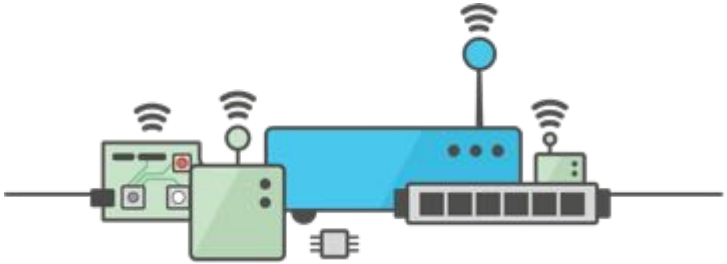
For Developers





Security





Security

Scalability

Introducing AWS IoT

"Securely connect one or one-billion devices to AWS, so they can interact with applications and other devices"

1

Securely connect any physical device to AWS

Connect any device via MQTT/HTTP securely. Quickly get started with AWS IoT Starter Kits and Scale to billions of messages across millions of devices

2

Respond to signals from your fleet of devices and take action with Rule Engine

Shift business logic from device to cloud and route data to AWS service of your choice for storage and analysis using rules engine.

3

Create Web and Mobile Applications that Interact with Devices reliably at any time

Easily build applications on web and mobile that interact with devices, even when they are offline, with AWS SDK and Device Shadow.

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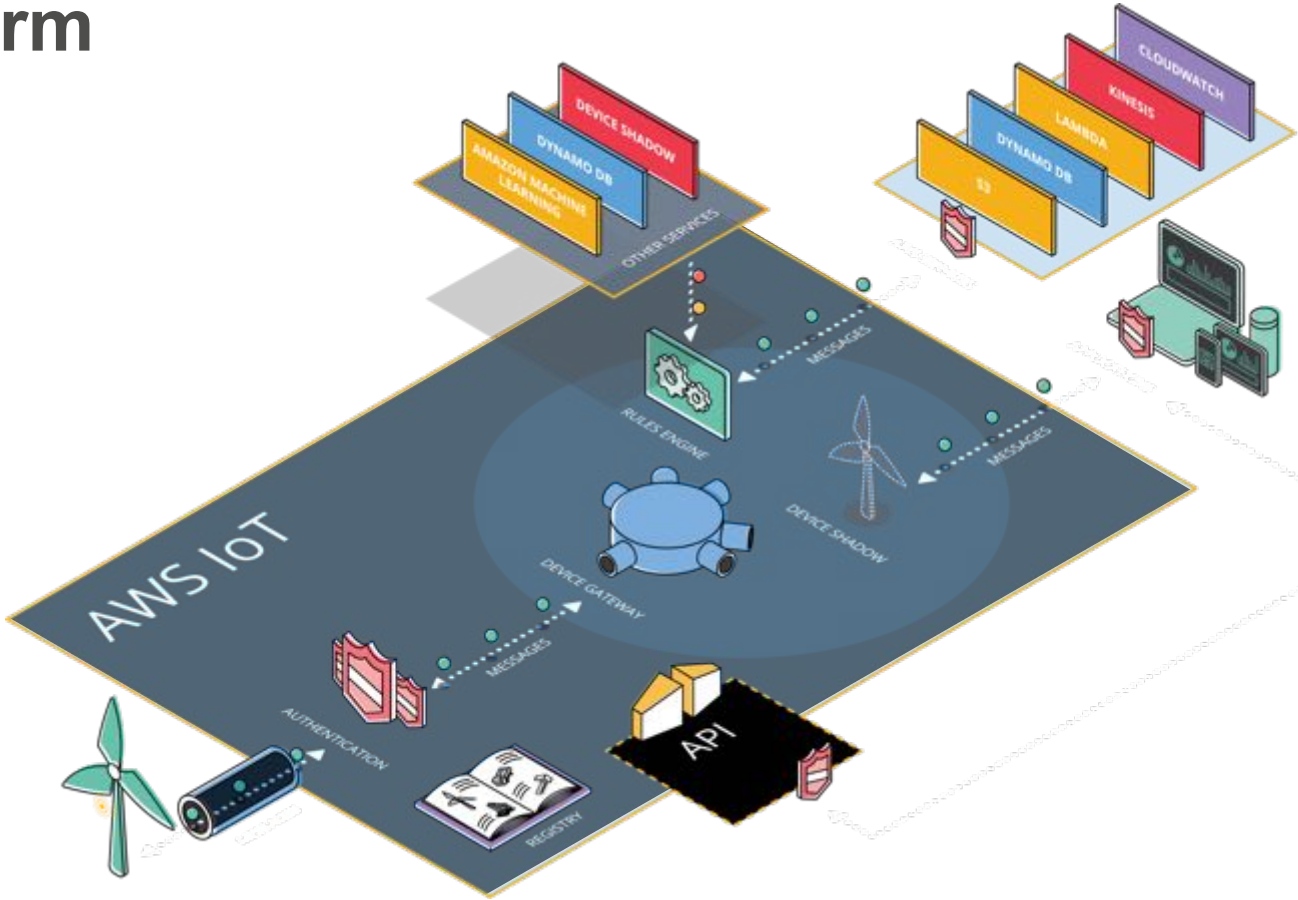
AWS IoT Platform

Managed service
- No installation
- Automatic scaling
- No pre-provisioning
- Redundant across AZ
- Pay as you go

All in one service
- Message Broker
- Rules Engine
- Shadow
- Registry

All for $5/M Msg*



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* Varies by Region

Publish / Subscribe

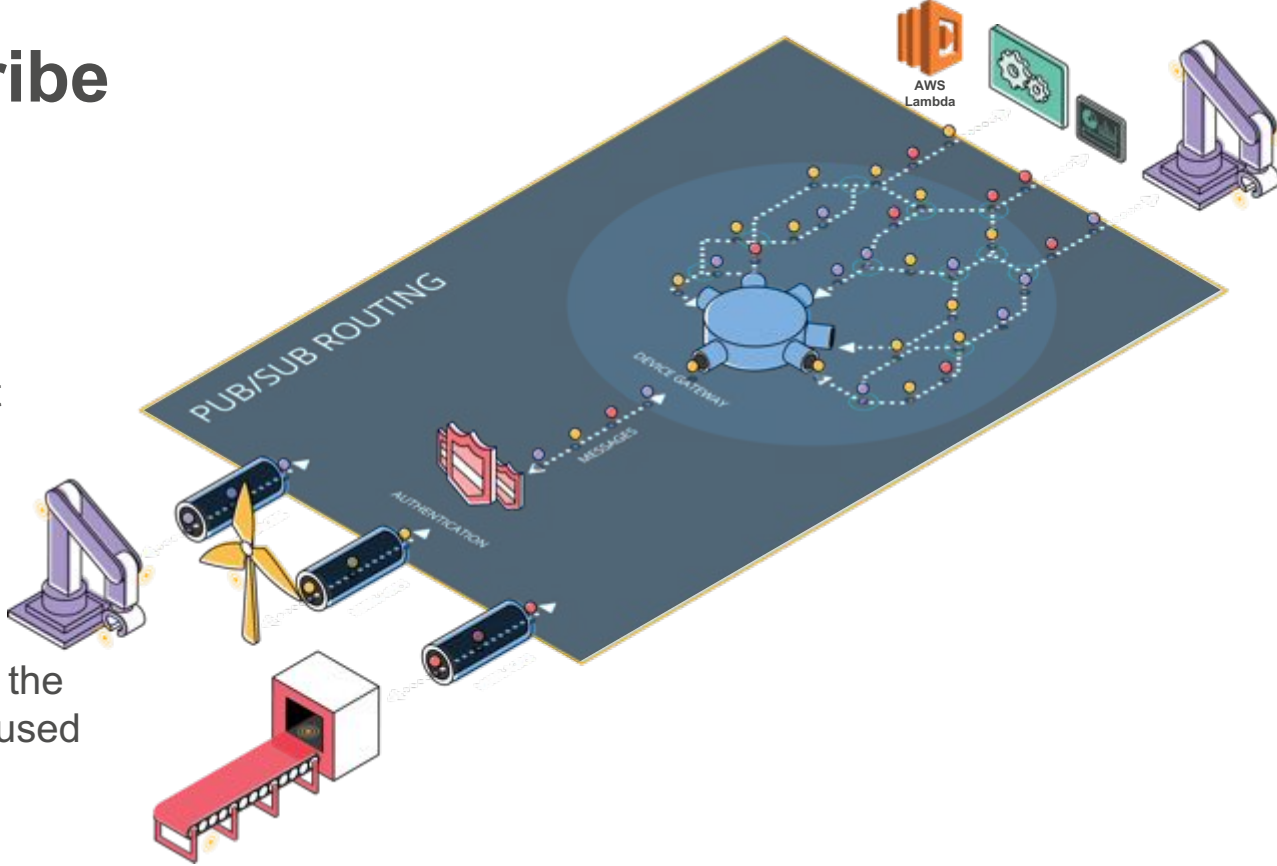
Standard Protocol Support
MQTT, HTTPS, WebSockets

Machine Friendly
Low power, low bandwidth, fast

Long Lived Connections
Receive signals from the cloud

Bidirectional
Communication FROM and TO the devices no matter the protocol used

Device SDK
Open Source – Apache 2.0
Embedded-C, Javascript, Python, Java, Arduino Yún, iOS, Android



Security, Security, Security

Most trusted authentication

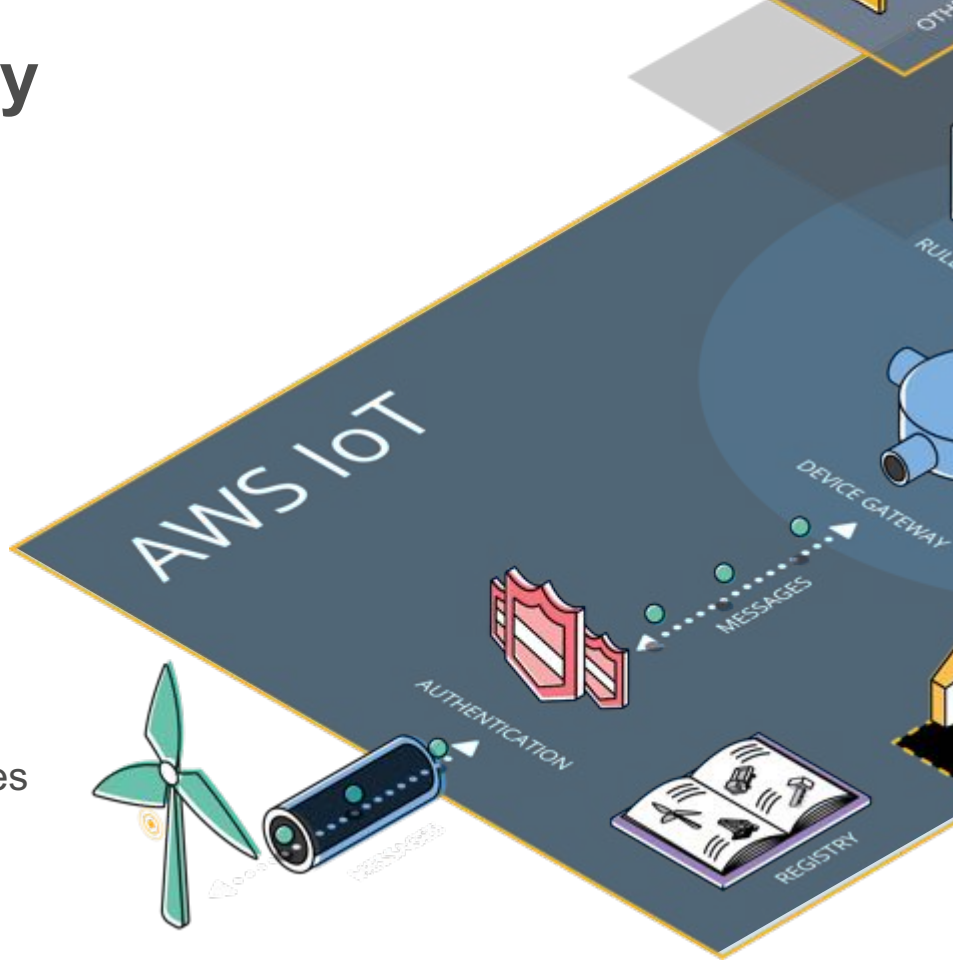
X509 Certificates
Mutual Authentication

Easy onboarding and provisioning

Certificate management
Unlimited amount of Certificates
(Sign your CSR or BYOC)

Policy and Role based access control

Granular access to the message broker for devices and IAM identities
Granular access to backend services via Roles



Rules Engine - Finding the Signals

Easy SQL-Like Syntax

SELECT **DATA** FROM **TOPIC** WHERE **FILTER**

Bring Context

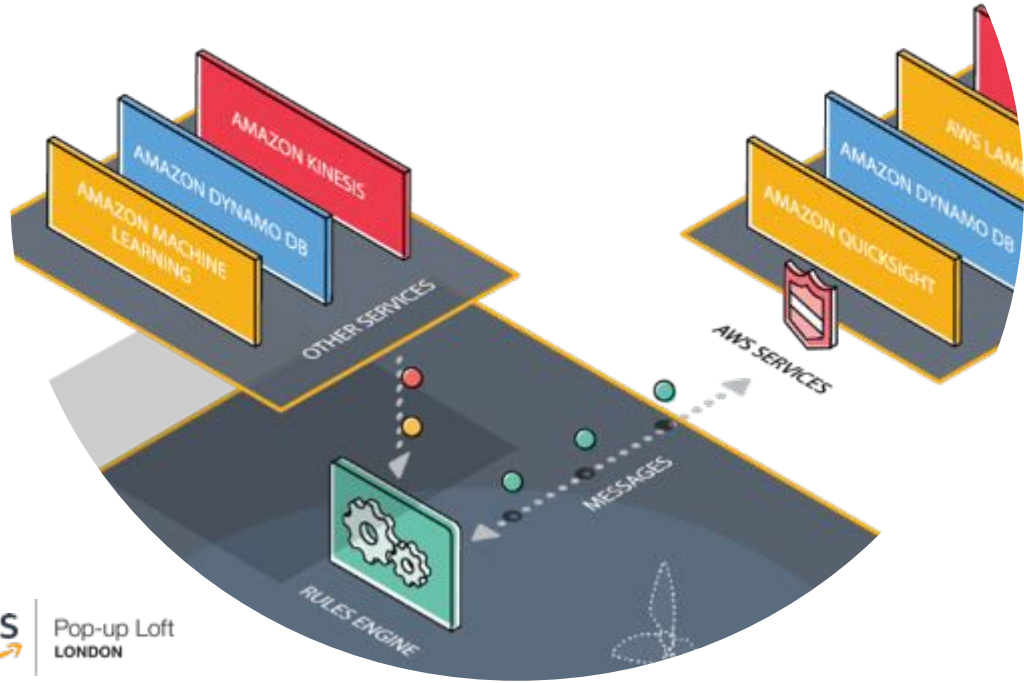
From Amazon Machine Learning, IoT Shadows, DDB

Transforms & Enrich

Math library, JSON parsing and cleansing functions

Route

To multiple AWS Services

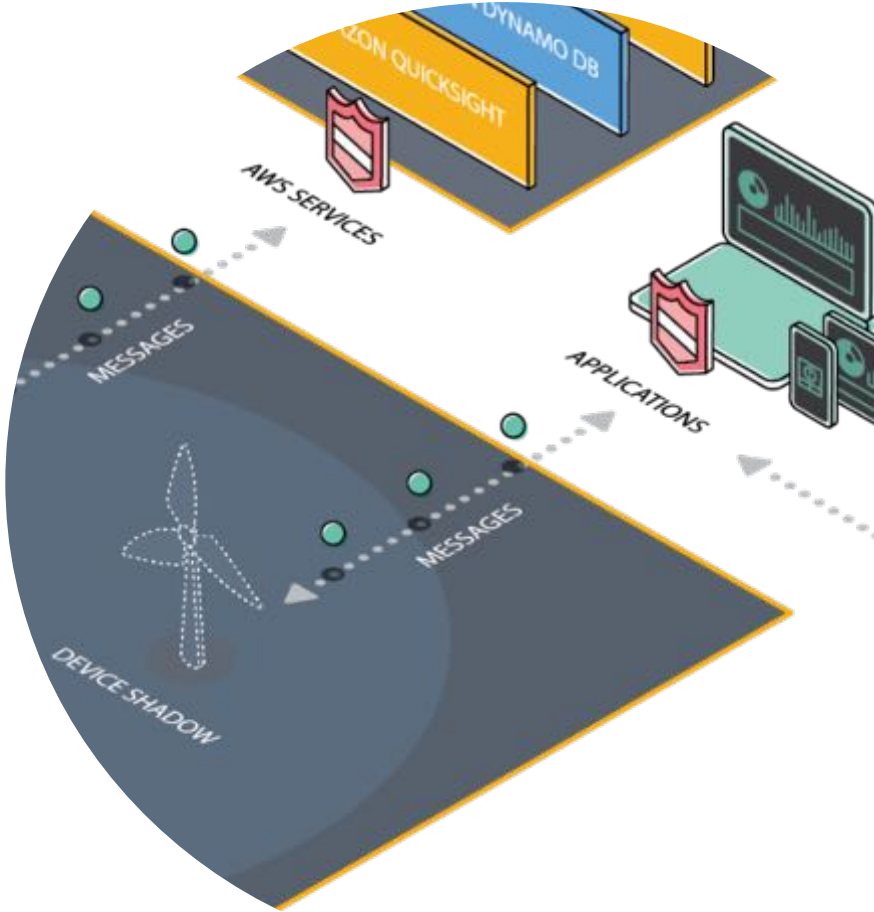


AWS IoT Shadow

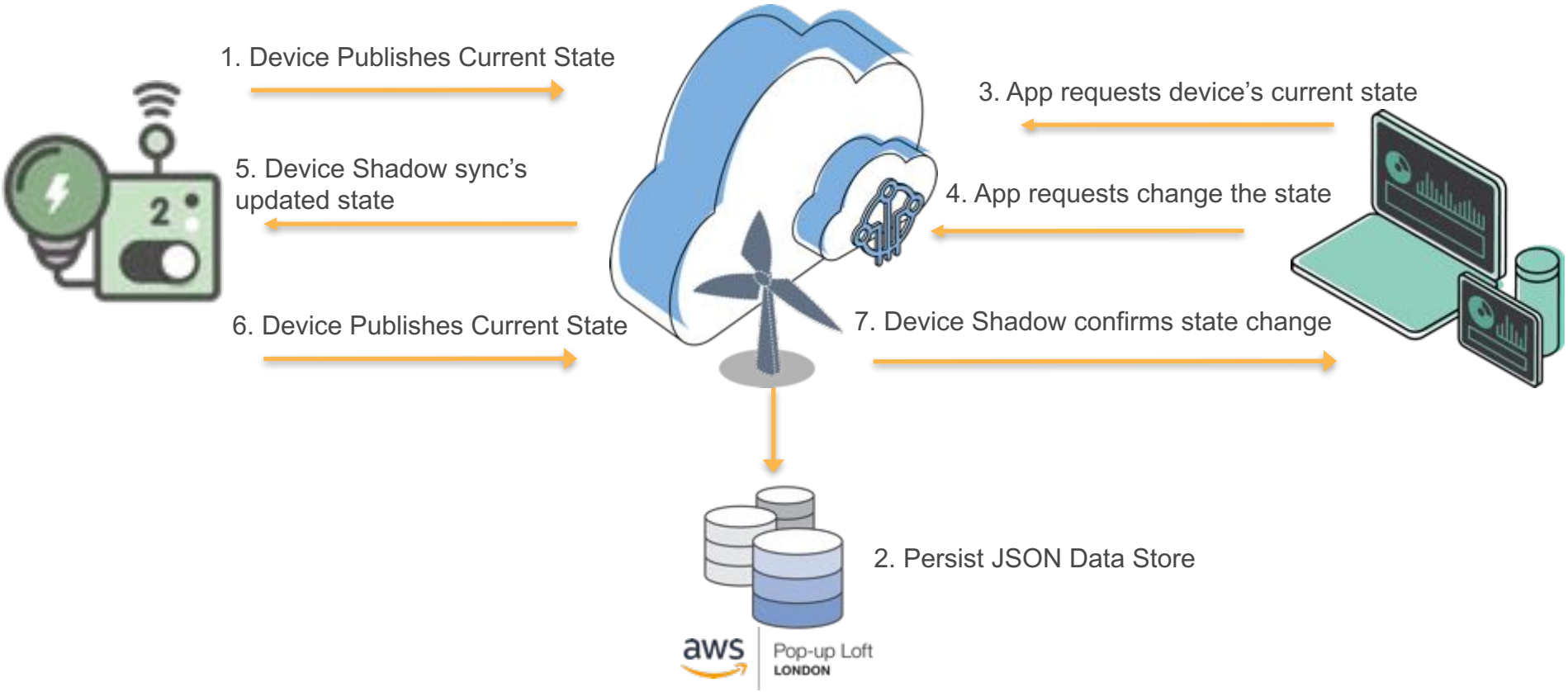
Virtual representation of the device in the Cloud
Always accessible
Holds “states” up to 1 year

More efficient programming
Familiar REST APIs for read/write
Hide complexity of device connectivity (developers do not need to know what protocol the device uses)

Mindful of device constraints
Holds the commands until device is ready
Can be queried anytime
Very fast (~120ms round trip)



AWS IoT Device Shadow Flow



bit.ly/AWSIoTLights

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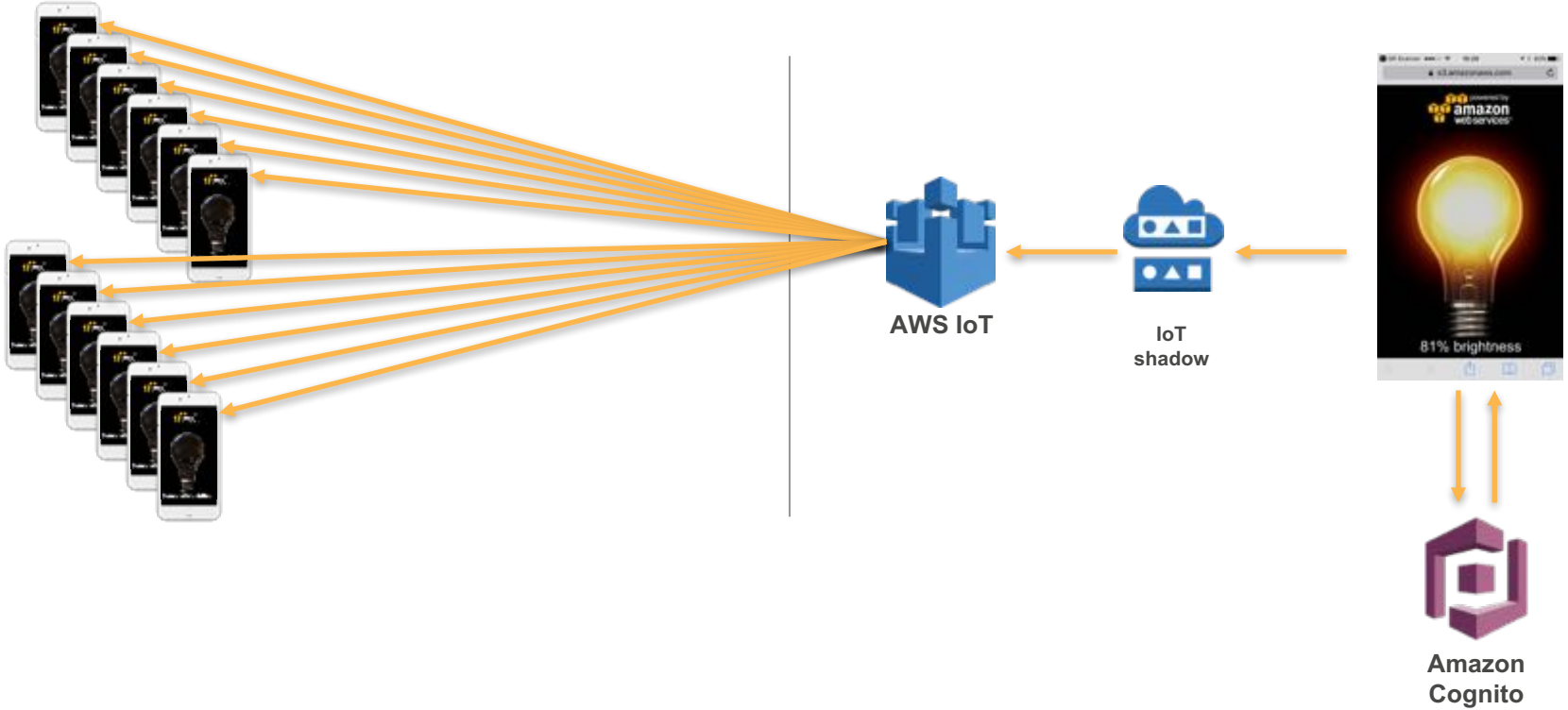
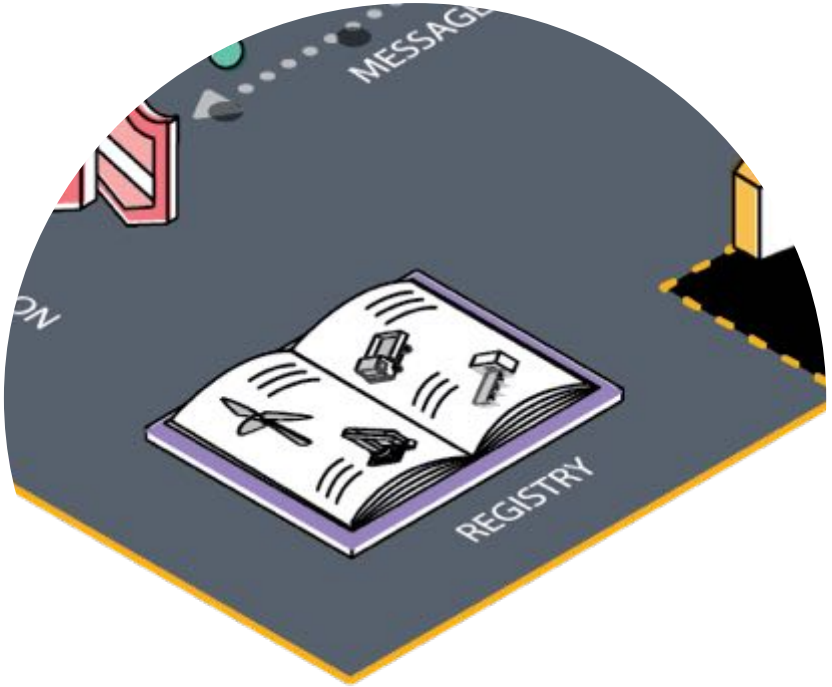
Light bulb moment



AWS IoT Registry

Device Metadata store
Unlimited registry entries for devices
Mostly used for Metadata

Enforce Schema
Can define Thing Types with set schema
Define up to 50 attributes per Thing



Simple Pay as you go and Predictable Pricing

AWS IoT

- Pay as you go. No minimum fees
- **$5 per million** messages published to, or delivered in US East (N. Virginia, Ohio), US West (Oregon), Ireland, Germany, UK. $6/M in Korea, Australia. $8/M in Asia Pacific (Tokyo, and Singapore)

Free Tier

250,000 Messages Per Month Free for first 12 Months

Enterprise Discounts Available

For large volumes our Enterprise Sales team is engaged

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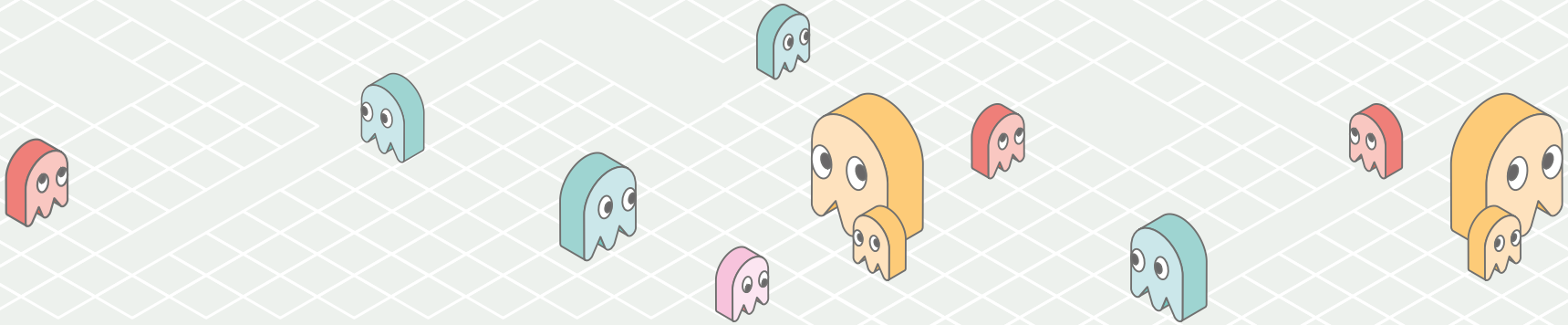
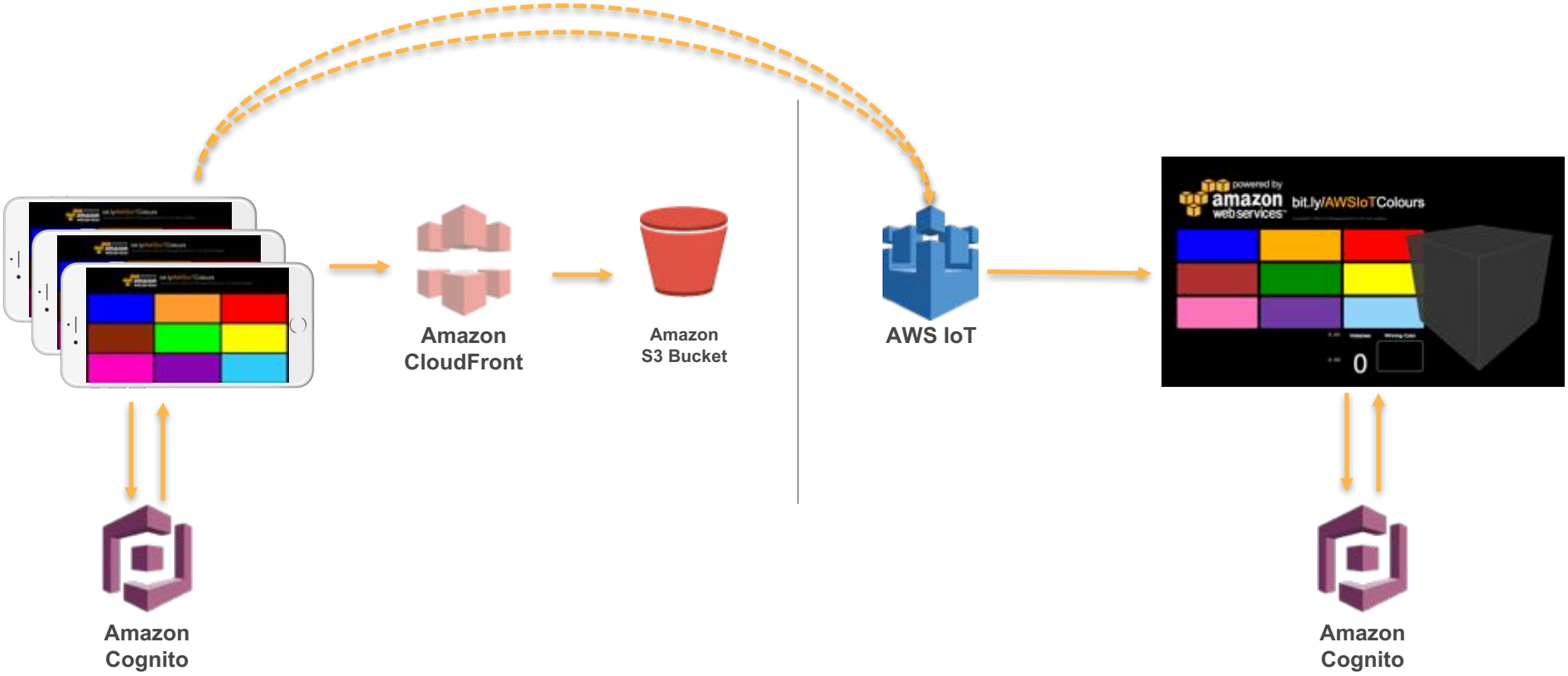
Demo Time!



bit.ly/AWSIoTColours

Colour cube voting



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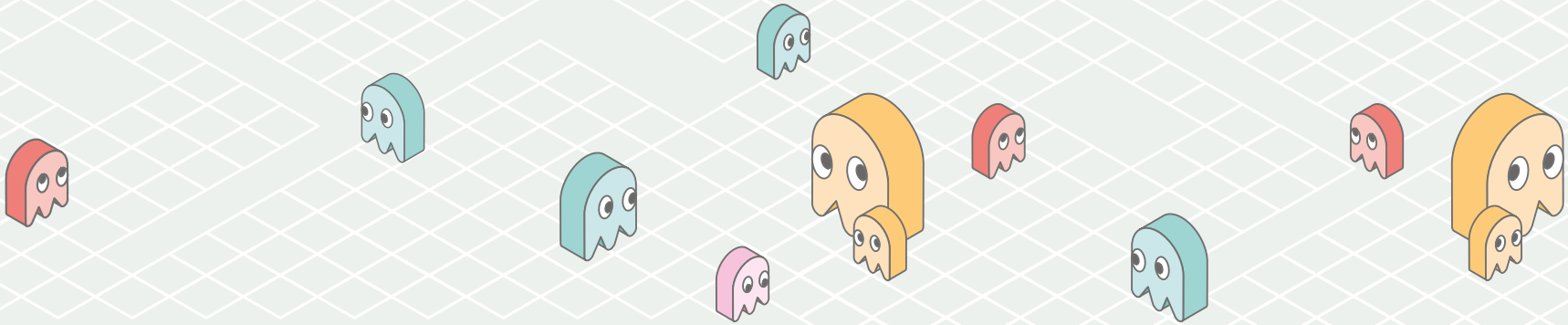
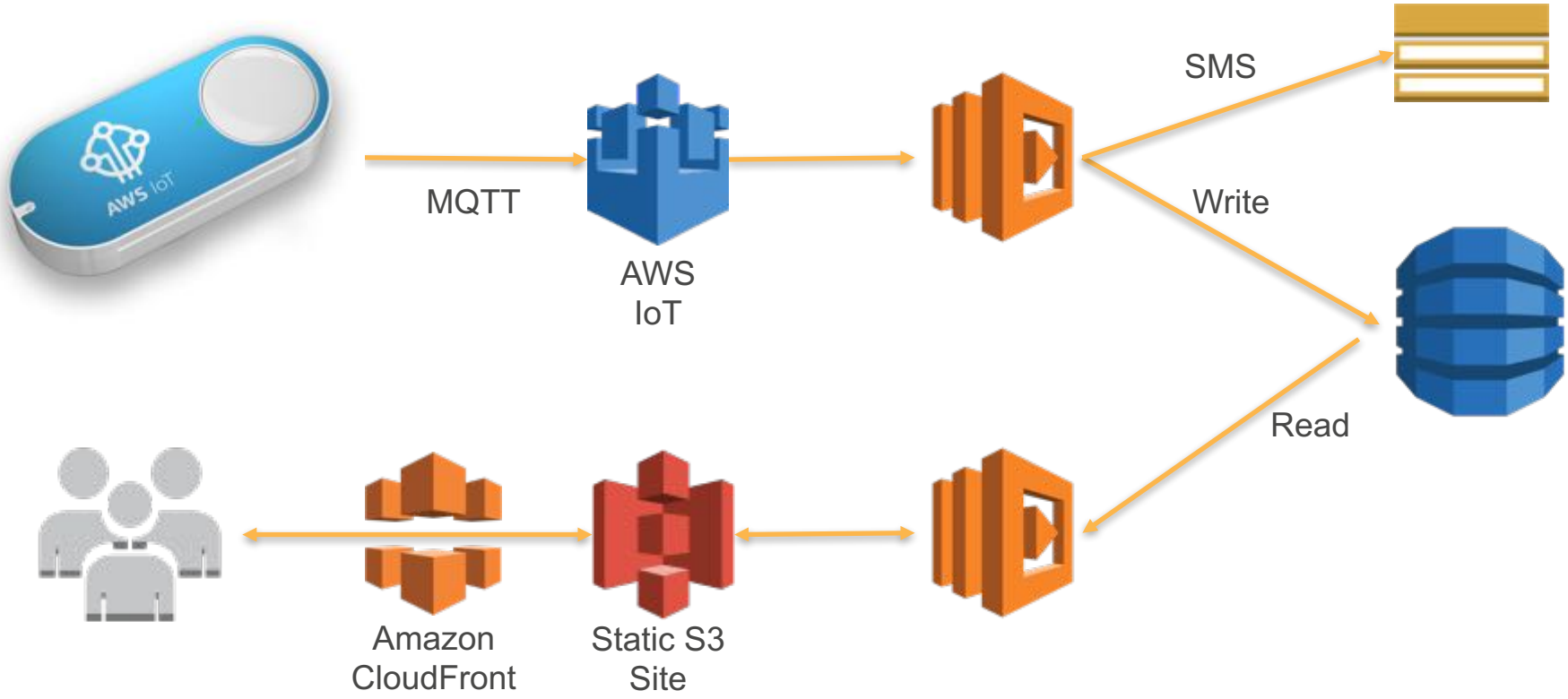
Let’s Build



IoT – Simple Demo



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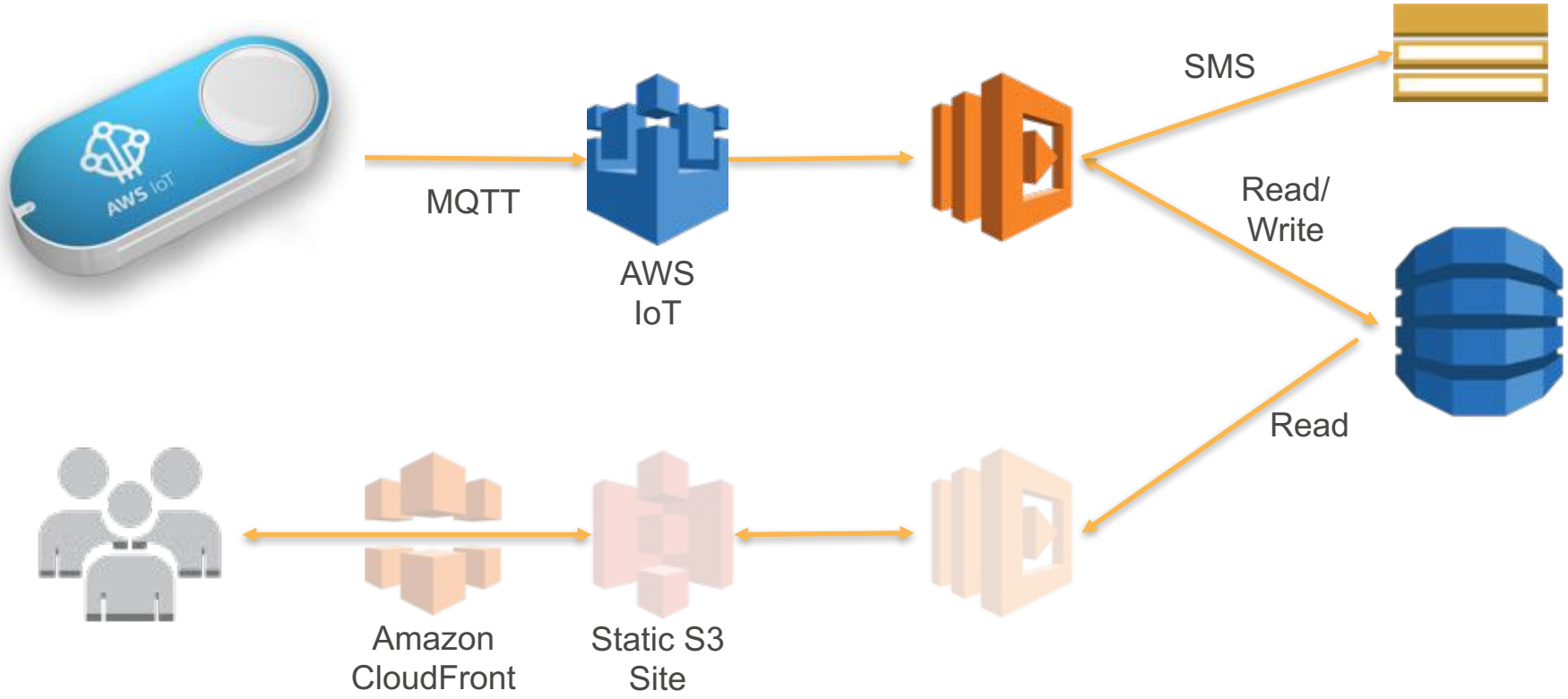

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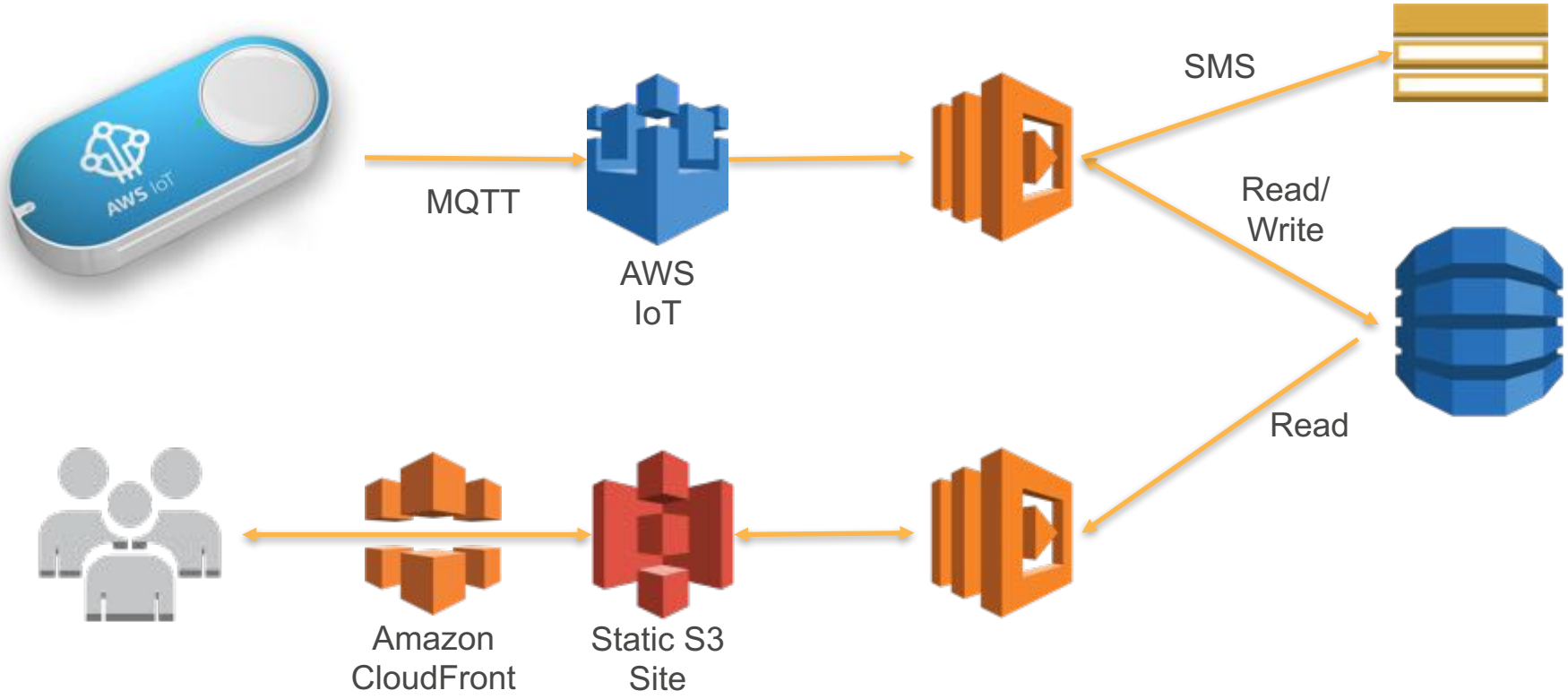
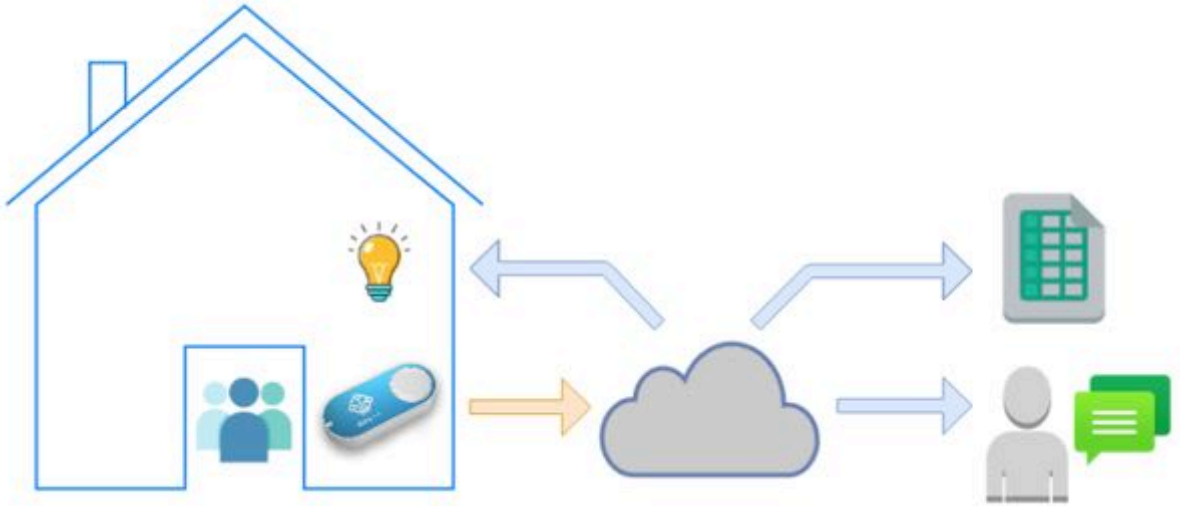


AWS Startups Blog

One-Click Check-In/Check-Out and more for Airbnb guests using an AWS IoT Button

by Rei Biermann | on 29 JUN 2017 | in Guides & Best Practices | Permalink | Share

Post by Karan Desai, Solution Architect, AWS



http://bit.ly/OneClickIoT

Next steps

1. Go to console.aws.amazon.com/iot – Play with it!
2. Stay up to date with AWS IoT aws.amazon.com/iot-platform/
3. Start your first IoT project - aws.amazon.com/iot-platform/getting-started
4. Try some IoT examples - github.com/awslabs/aws-iot-examples
5. Get an AWS IoT Button

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Thank You

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