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FREE Live Webinar

How to add connectivity to your IoT solution without worrying about operations – with AWS and EMnify

Speakers

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Solutions Architect at
Amazon Web Services

Christian Henke
Head of Product
EMnify

aws EMnify

EMnify

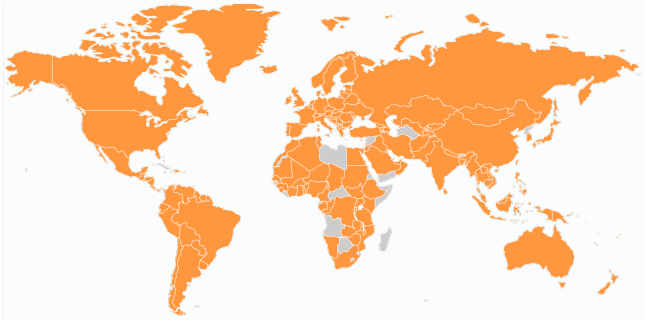
IoT Webinars

- GPS Tracking
- Battery Technology
- E-Scooters
- Cloud Technology
- Smart Modules
- Smart Sensors
- Industry
- IoT Security
- Smart Builings

Cellular IoT Connectivity

Anywhere In The World

(2G, 3G, 4G, LTE-M, NB-IoT, 5G)



aws partner network

Advanced
Technology Partner

IoT Competency

movistar · T · airtel · TIM · O2 · vodafone · 中国移动通信 CHINA MOBILE

VimpelCom · Claro · A1 Telekom Austria Group · telenor group · Telia · WIND · 3 · orange

180 countries

540 networks

IoT on AWS

without worrying about operations

Philipp Dreimann
Solutions Architect, AWS

AWS Global Infrastructure

24 geographical regions, 1 local region, 77 availability zones, 200+ POPs

Region & Number of Availability Zones (AZs)

GovCloud (US)
US-East (3), US-West (3)

US West
Oregon (4)
Northern California (3)

US East
N. Virginia (6), Ohio (3)

Canada
Central (3)

South America
São Paulo (3)

Africa
Cape Town (3)

Europe
Frankfurt (3), Paris (3),
Ireland (3), Stockholm (3),
London (3), Milan (3)

Middle East
Bahrain (3)

Asia Pacific
Singapore (3), Sydney (3),
Tokyo (4), Osaka-Local (1)*
Seoul (4), Mumbai (3),
Hong Kong (3)

China
Beijing (2), Ningxia (3)

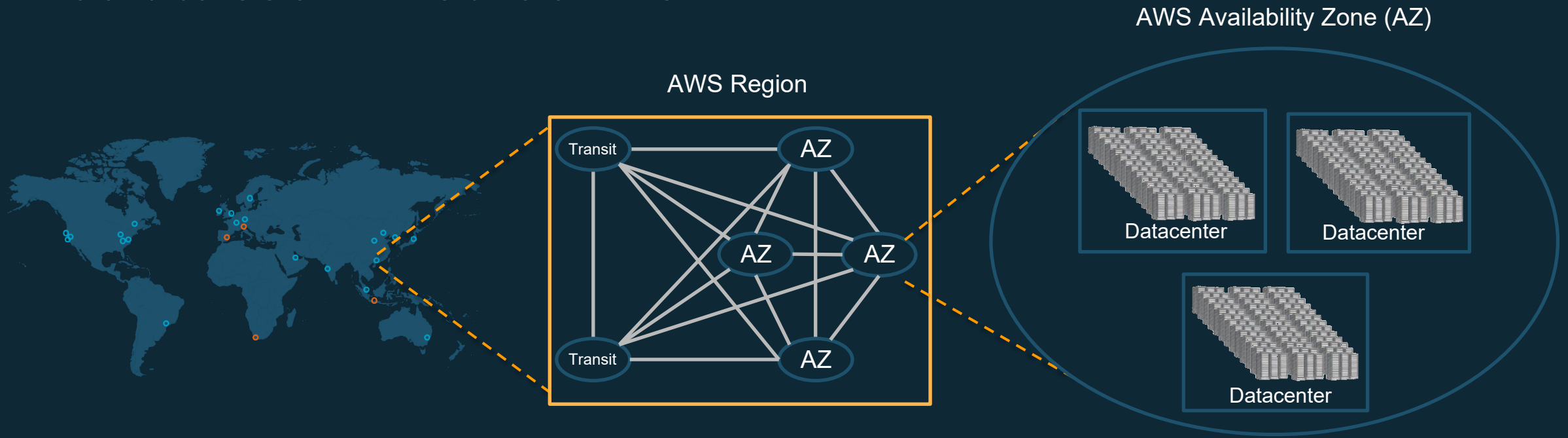
Announced Regions

Three Regions and 9 AZs in Indonesia, Japan, and Spain

* Available to select AWS customers who request access. Customers wishing to use the Asia Pacific (Osaka) Local Region shouldspeak with their sales representative.

AWS region design

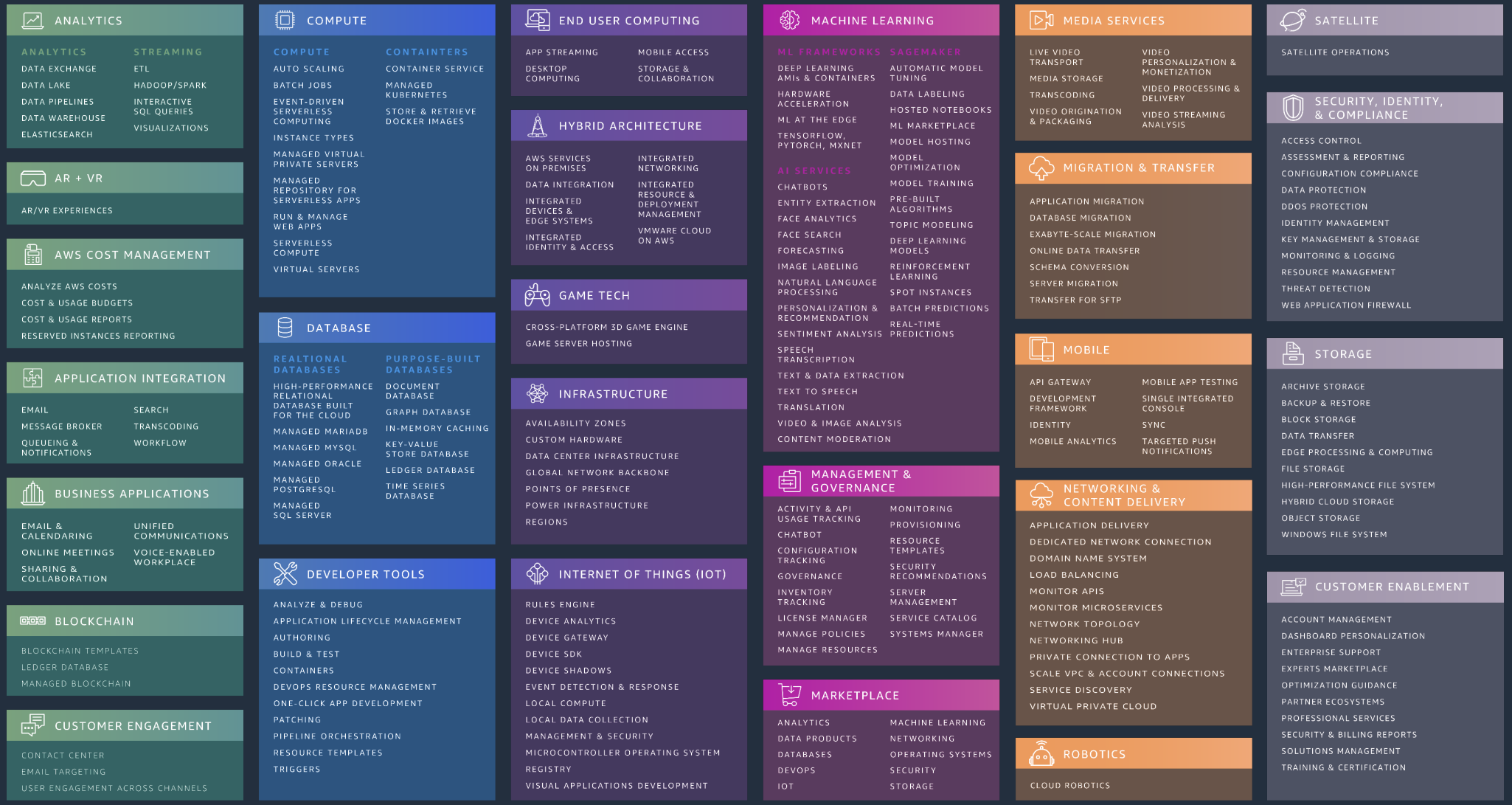
AWS Regions are comprised of multiple Availability Zones (AZs) for high availability , high scalability , and high fault tolerance . Applications and data are replicated in real time and consistent in the different AZs.



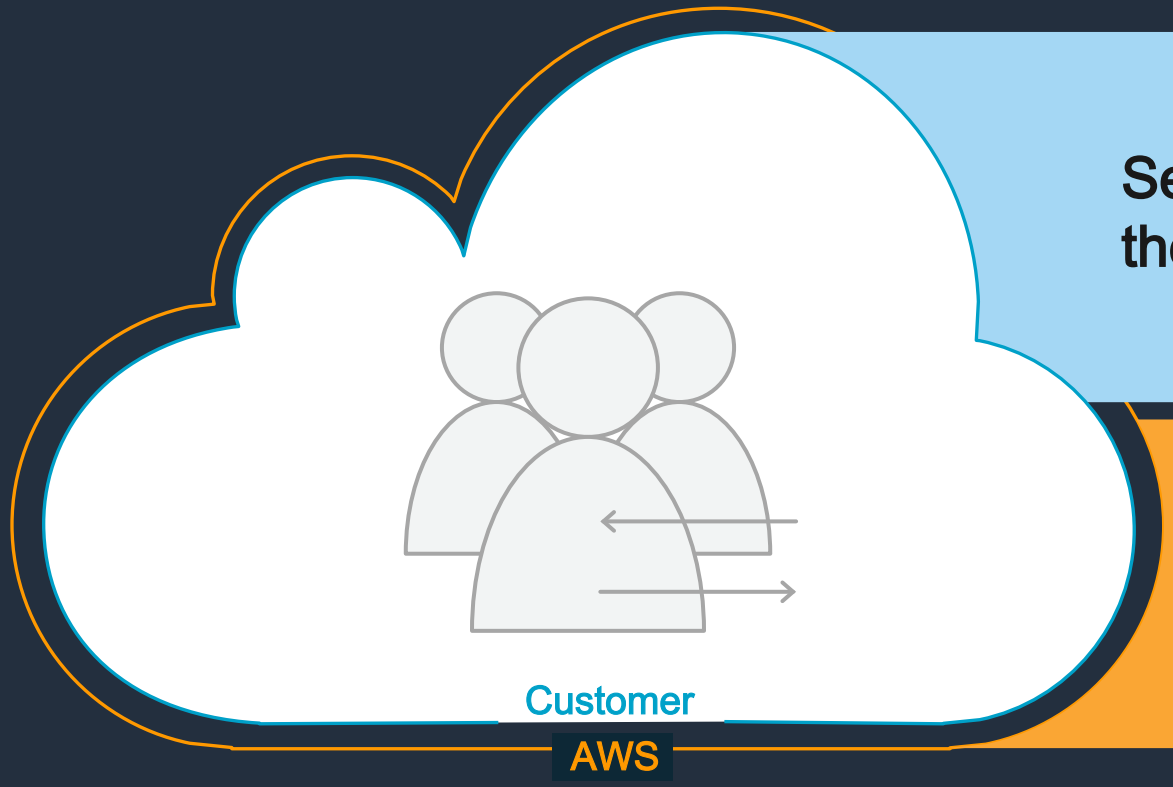
A Region is a physical location in the world where we have multiple **Availability Zones.**

Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

Breadth and Depth of Services



Shared responsibility model



Security IN the Cloud

Customer responsibility will be determined by the AWS Cloud services that a customer selects

Security OF the Cloud

AWS is responsible for protecting the infrastructure that runs all of the services offered in the AWS Cloud

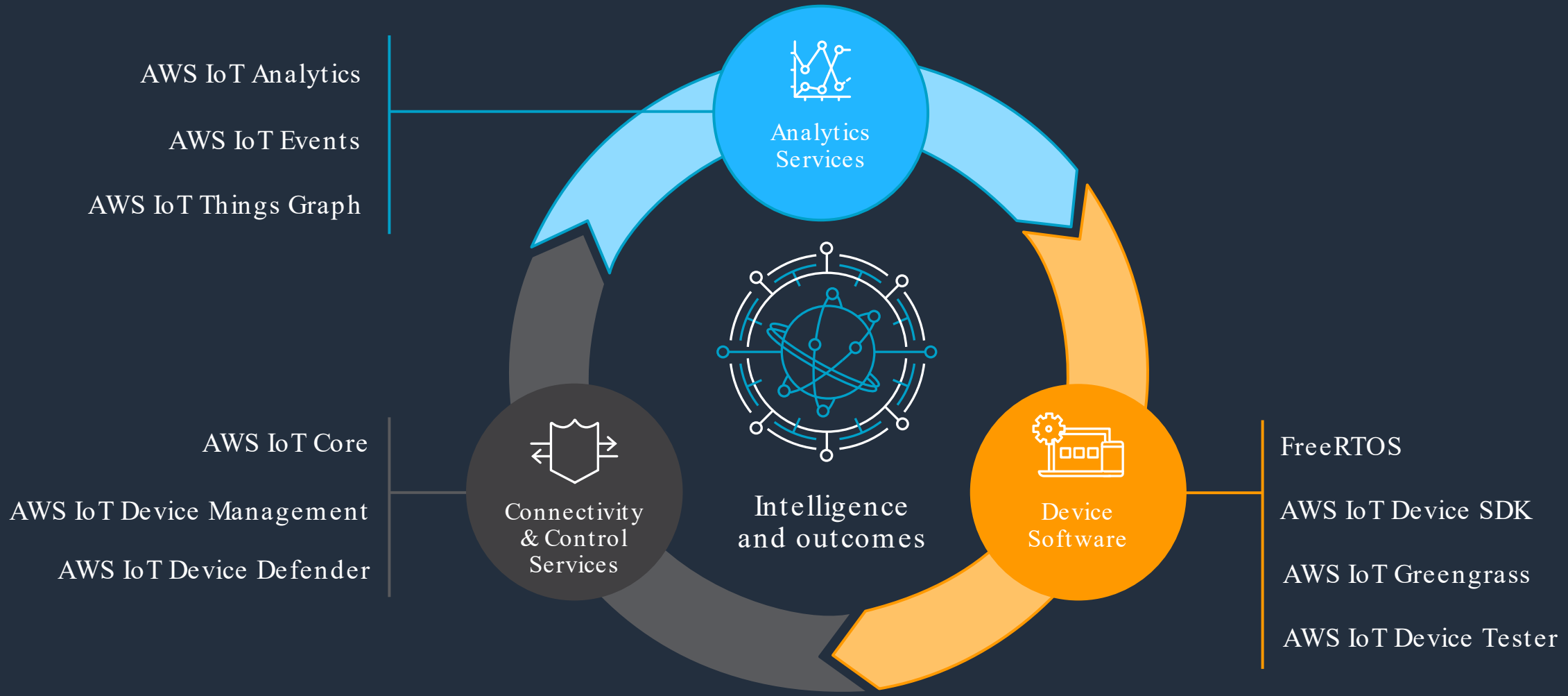
Inherit global security and compliance controls

aws

Now, really: IoT on AWS

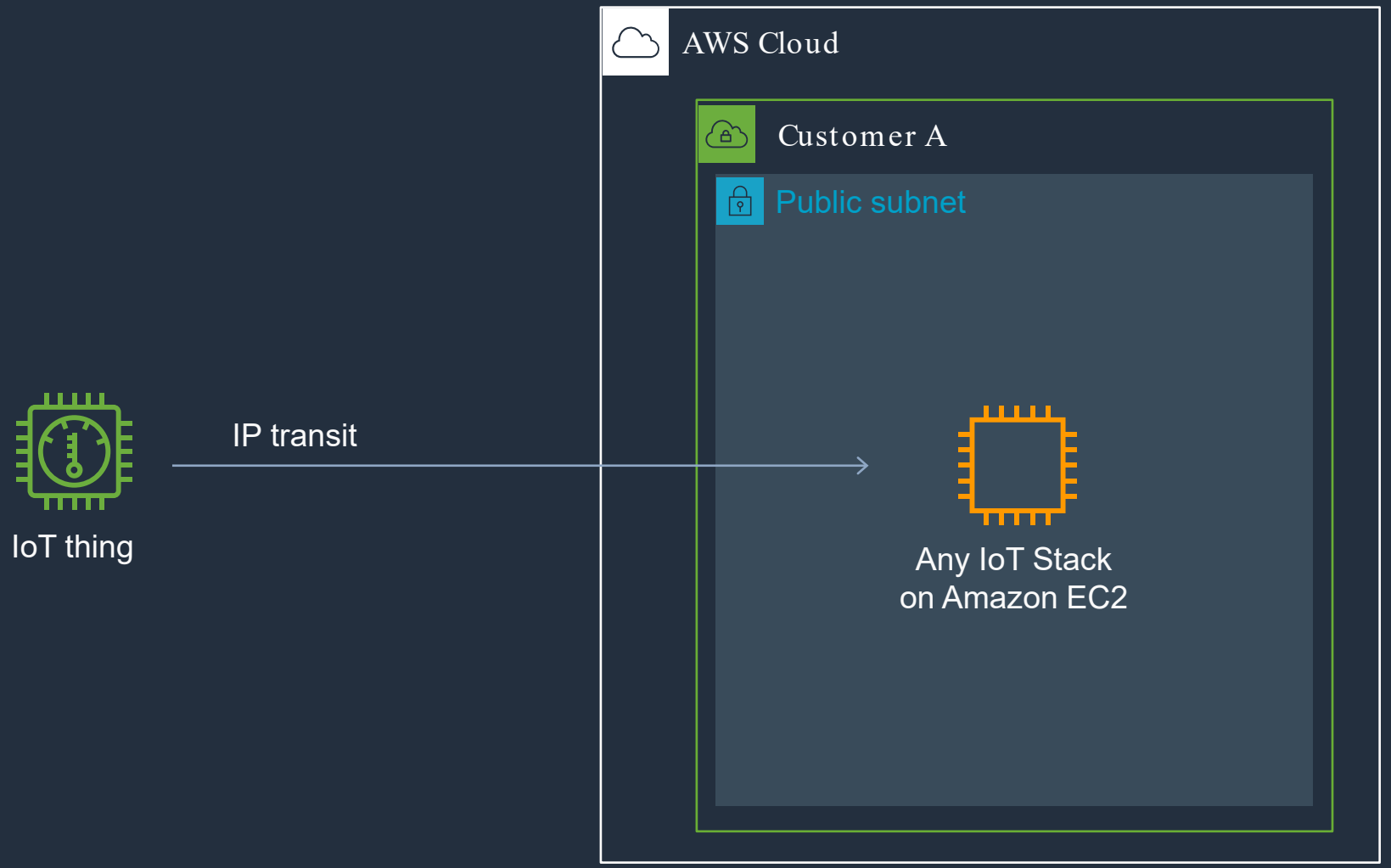
AWS IoT customers solve problems in all sectors

Device to business value

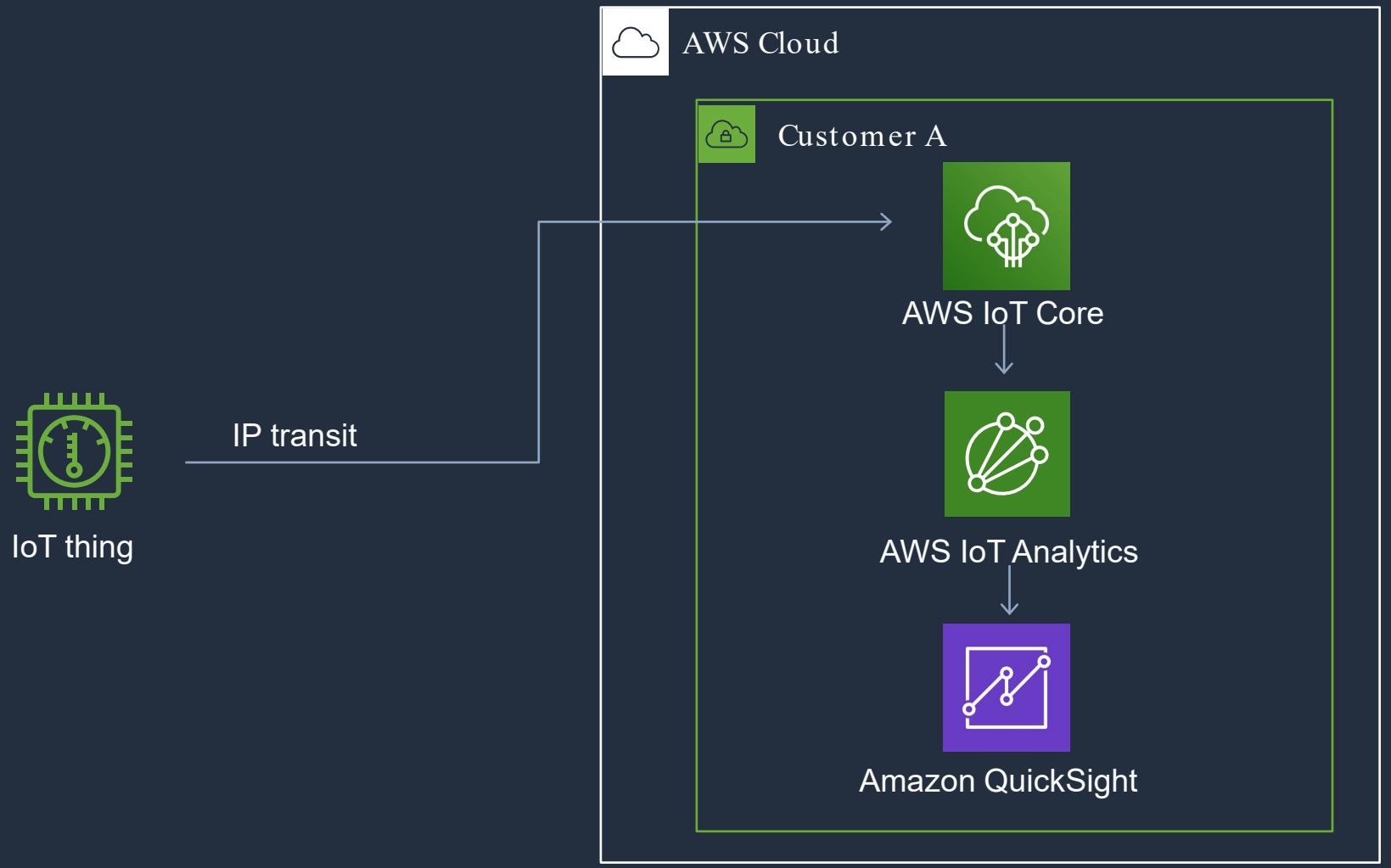


How to get started?

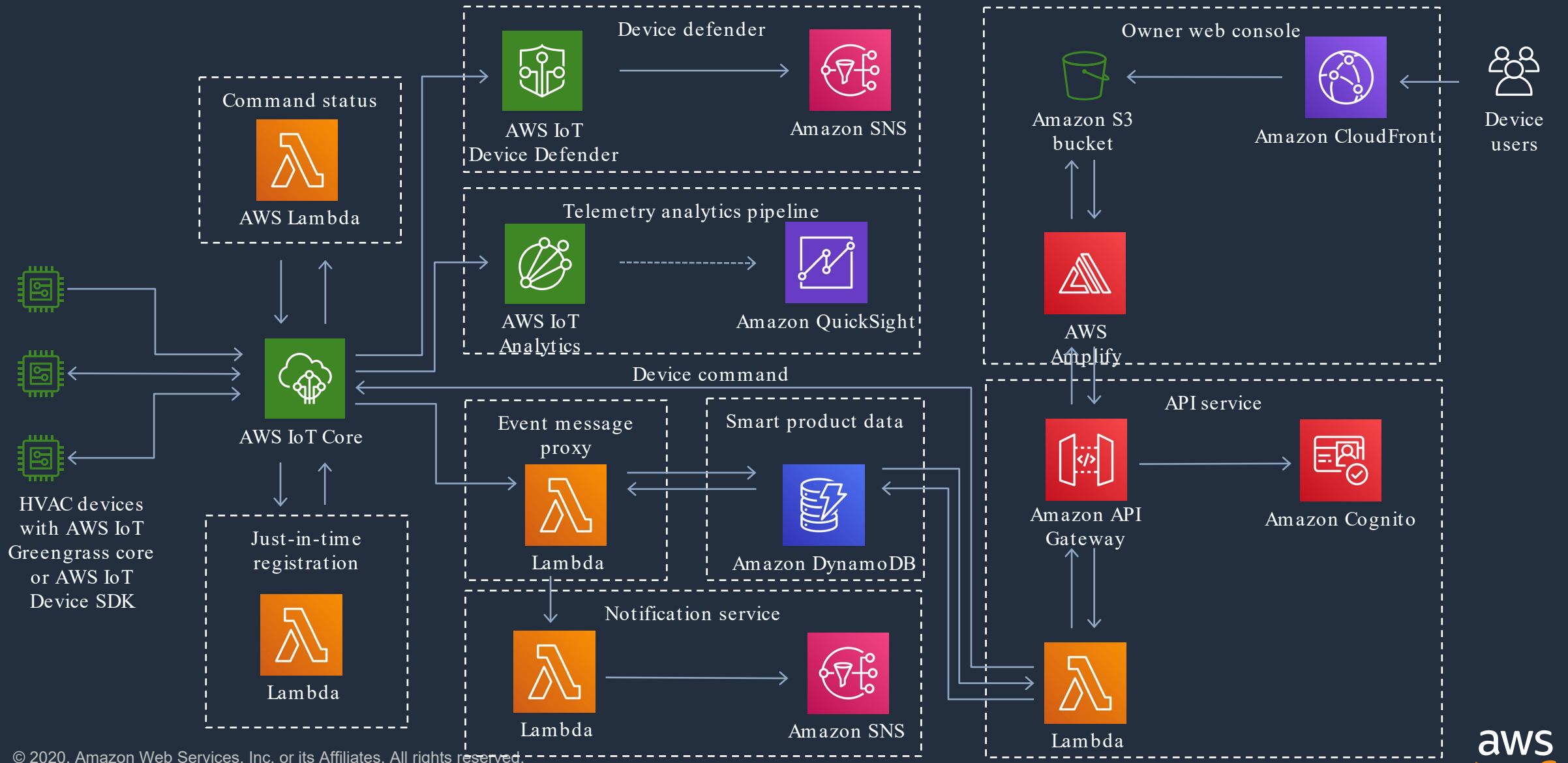
Any IoT Stack on AWS



Usage of AWS IoT Core



How to start? Smart product solution



AWS and Cellular Connectivity for IoT

Distributed IoT Architecture

- Why required in IoT B2B?
  - data loss / latency
  - keep the customer data locally where the device is
  - battery / power saving
  - service uptime / redundancy
- Why AWS?
  - one contract – one infrastructure
  - redundancy, availability
  - scalable infrastructure
  - PAYG model
  - Specialized IoT services
    - device management, shadow and secure authentication (AWS IoT Core)
    - DNS load-balancing service (AWS Route 53) between the different geographical locations

With AWS IoT or EC2

Distributed Cellular IoT with AWS IoT Core and EMnify

Traditional Operators

Home-routing of roaming SIM data prevents distributed architecture

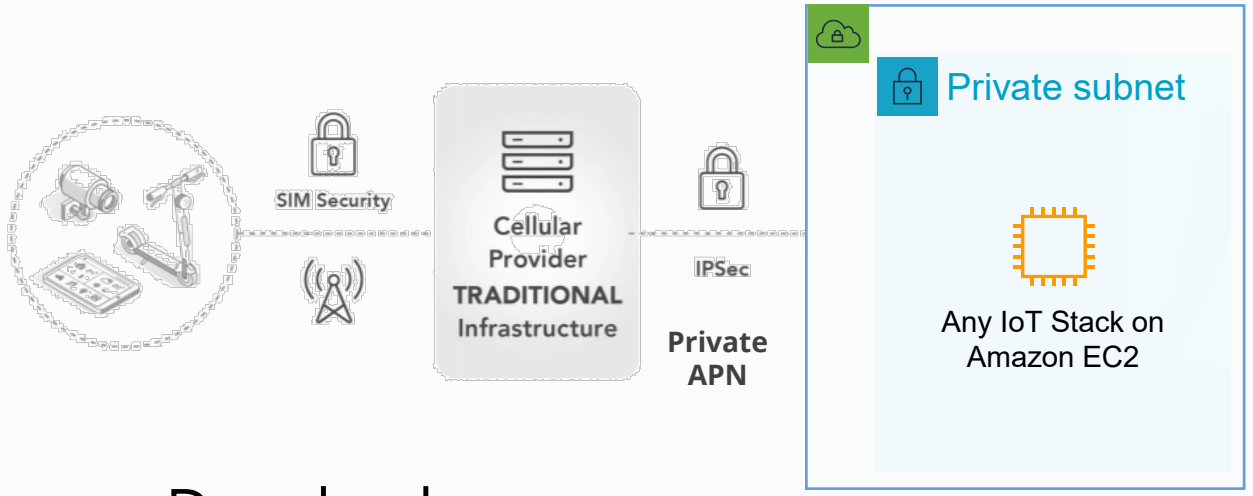
Works also with AWS EC2

EMnify Connectivity

EMnify mobile core network is deployed in major AWS regions – keeping data local

Secure Private Network for Cellular IoT

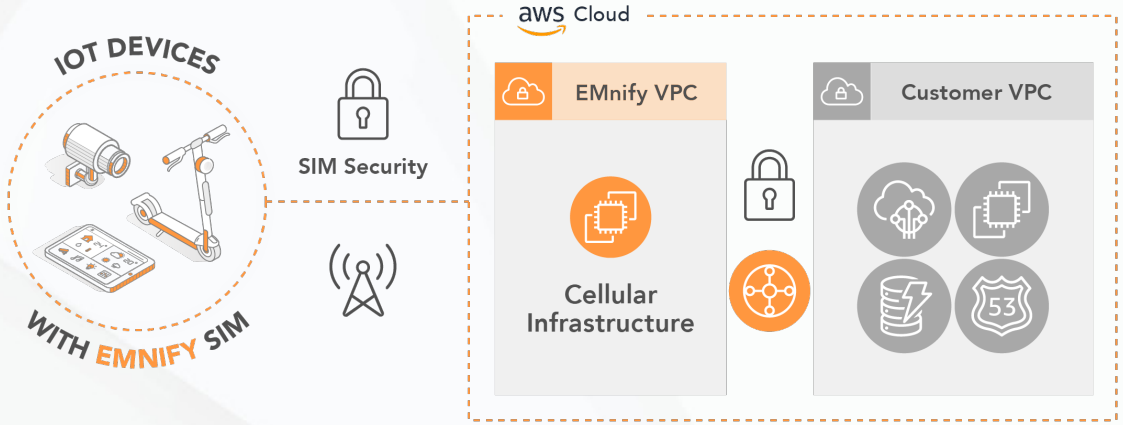
- Why required in IoT B2B?
  - remote access for support teams
  - additional security layer
  - circumvent carrier grade NAT
- Why AWS
  - high availability with managed service for VPN/IPsec or intra-cloud AWS TGW
  - support latest encryption standards
  - automated and standardized secure setup

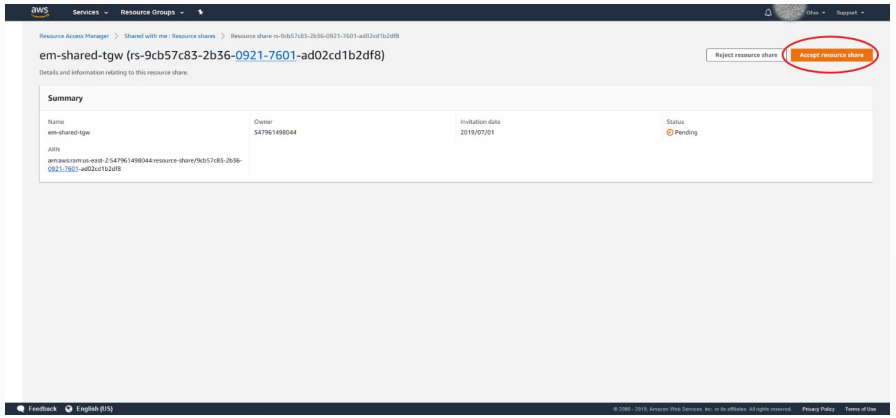


Drawbacks:

- Setup and recurring costs (private APN, static IP, IPsec, Radius)
- complex IP config to setup redundant tunnels over public internet
- Time to deliver: 2-6 weeks

Simplifying Private Networks with EMnify and AWS





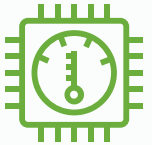
- EMnify secures data up to AWS
- Establishing private network with AWS Transit Gateway attachment (intra-cloud connect) via cross account role in minutes
- No need for private APN, IPsec

Operational Data, Alerts and Dashboards

- Why required in IoT B2B?
  - support teams' primary tools
  - solve issues before they appear
  - display relevant data from all data sources for root cause triage
- Why AWS?
  - streaming analytics and storage as a service
  - scales with needs without pre-provisioning
  - Integrates device and infrastructure data
  - Or use own developed application on top of datastore (e.g. DynamoDB)

AWS IoT Device Defender

Detect anomalies



Thing

Amazon SNS

Send alerts

EC2 with Cloudwatch

Amazon QuickSight

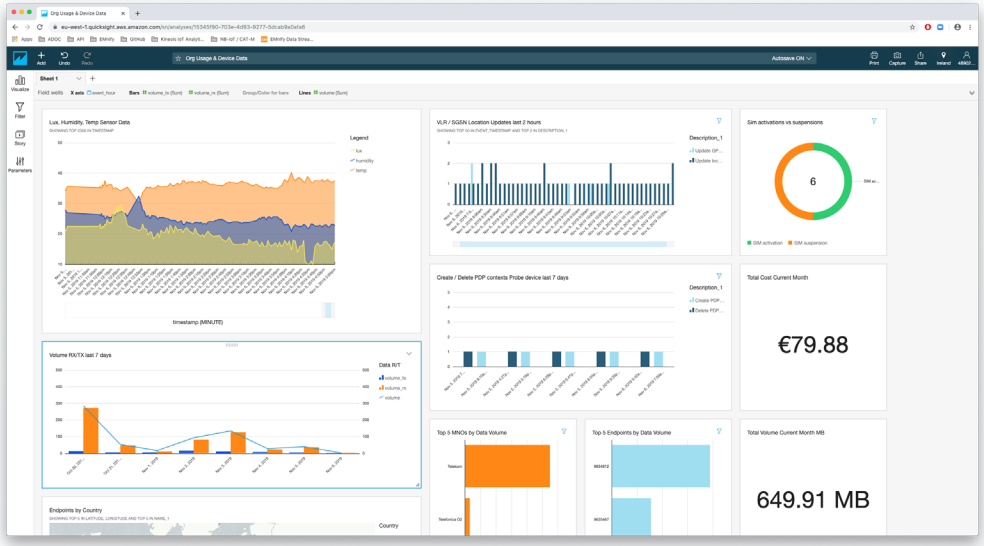
No-code dashboards

Integrating Connectivity Data with EMnify and AWS

EMnify DataStreamer

Real-time information about

- Usage and Cost Records
- Network Attach (success/failures)
- Device Status (online/offline)
- Data Limit reached
- Sim activation
- Location
- …



Example AWS Quicksight Dashboard with Device and connectivity data

Summary

Customer requirements

IoT solution that works everywhere	With efficient utilization of resources	Support teams that can see and solve customer issues
Reliable Distributed Infrastructure	Managed Services offloads development and operation	Services to operate, display, alert on the solution
Global Cellular Connectivity and multi-region mobile network	Automated Integration into AWS Cloud	Connectivity Metadata in AWS and remote device access

How to get started

- Getting Started with AWS https://amzn.to/3hZSkKj
- Learn about AWS IoT https: //aws.amazon.com/iot
- Smart Product Solution https://amzn.to/2G7aaxq

- EMnify Cellular IoT on AWS https://www.emnify.com/aws-service
- Start testing for free https://cdn.emnify.net/#/signup

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