aws
SUMMIT
STOCKHOLM | MAY 11, 2022

IO-01

Securely onboard and monitor device fleets at scale using AWS IoT

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Easee AS

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Agenda

- Device provisioning overview
- Challenges we hear from customers
- Fleet provisioning options
- Monitor the fleet
- Demo
- Customer spotlight – Easee

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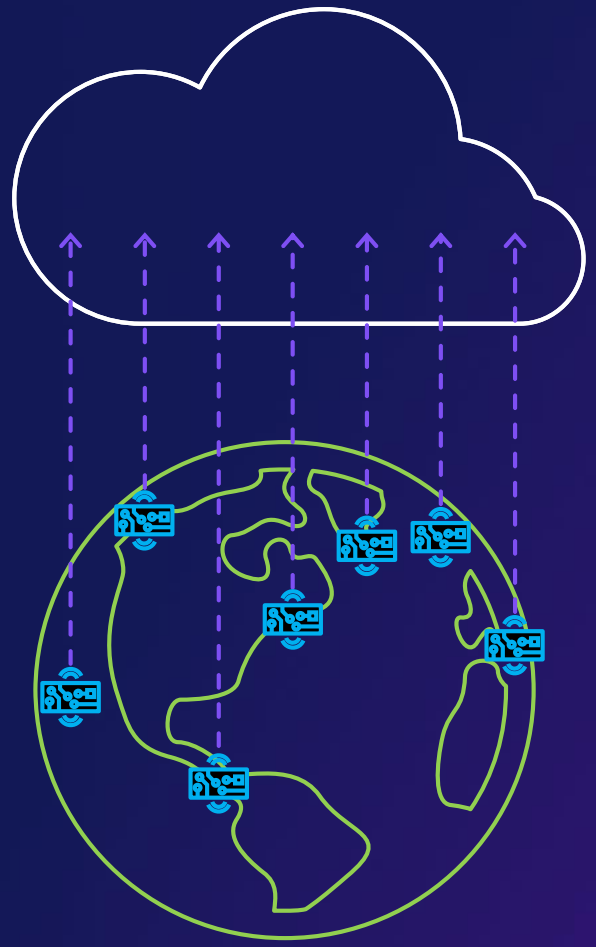
AWS IoT Device Management

How can I manage my growing fleet of connected devices at scale?



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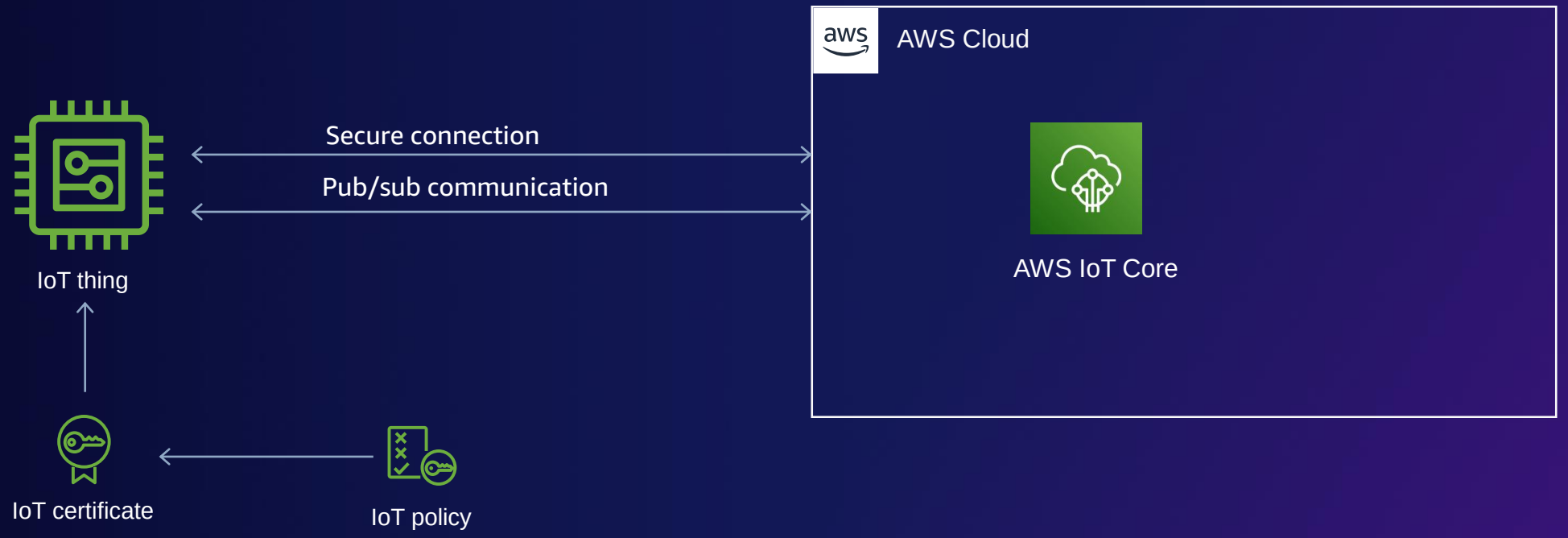
Device provisioning



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Challenges we hear from customers

- How do I **migrate** brownfield devices to AWS IoT core ?
- How do I provision devices with **unique credentials** ?
- No **Flexibility** to provision before or after device manufacture
- It is **time consuming** process to provision fleet of devices
- How do I **scale** moving from prototype/pilot to production-setup?

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Device provisioning options

- Single thing provisioning
- Just In Time Provisioning (JITP)
- Just in Time Registration (JITR)
- Fleet provisioning
  - By trusted user
  - By claim

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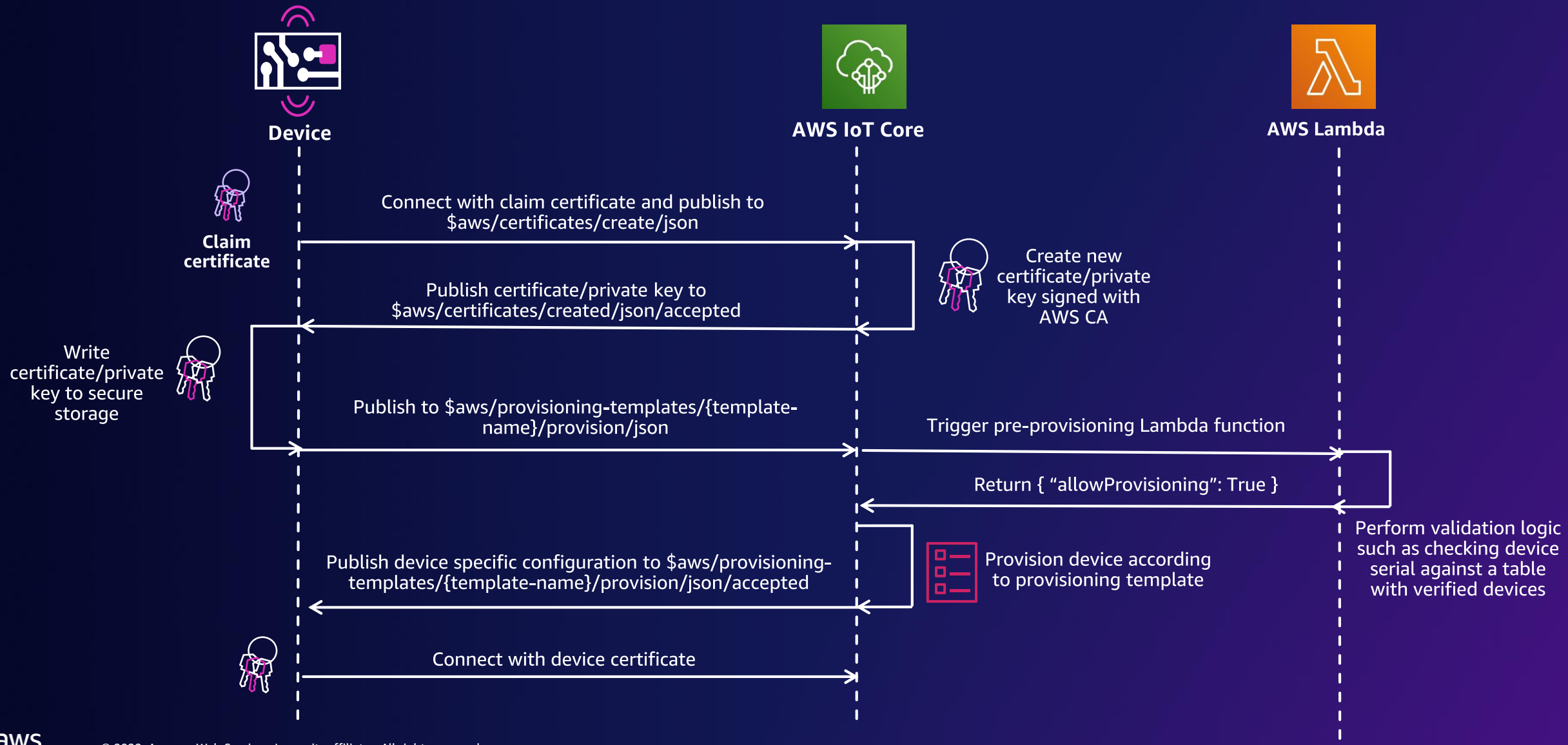
Fleet provisioning by claim



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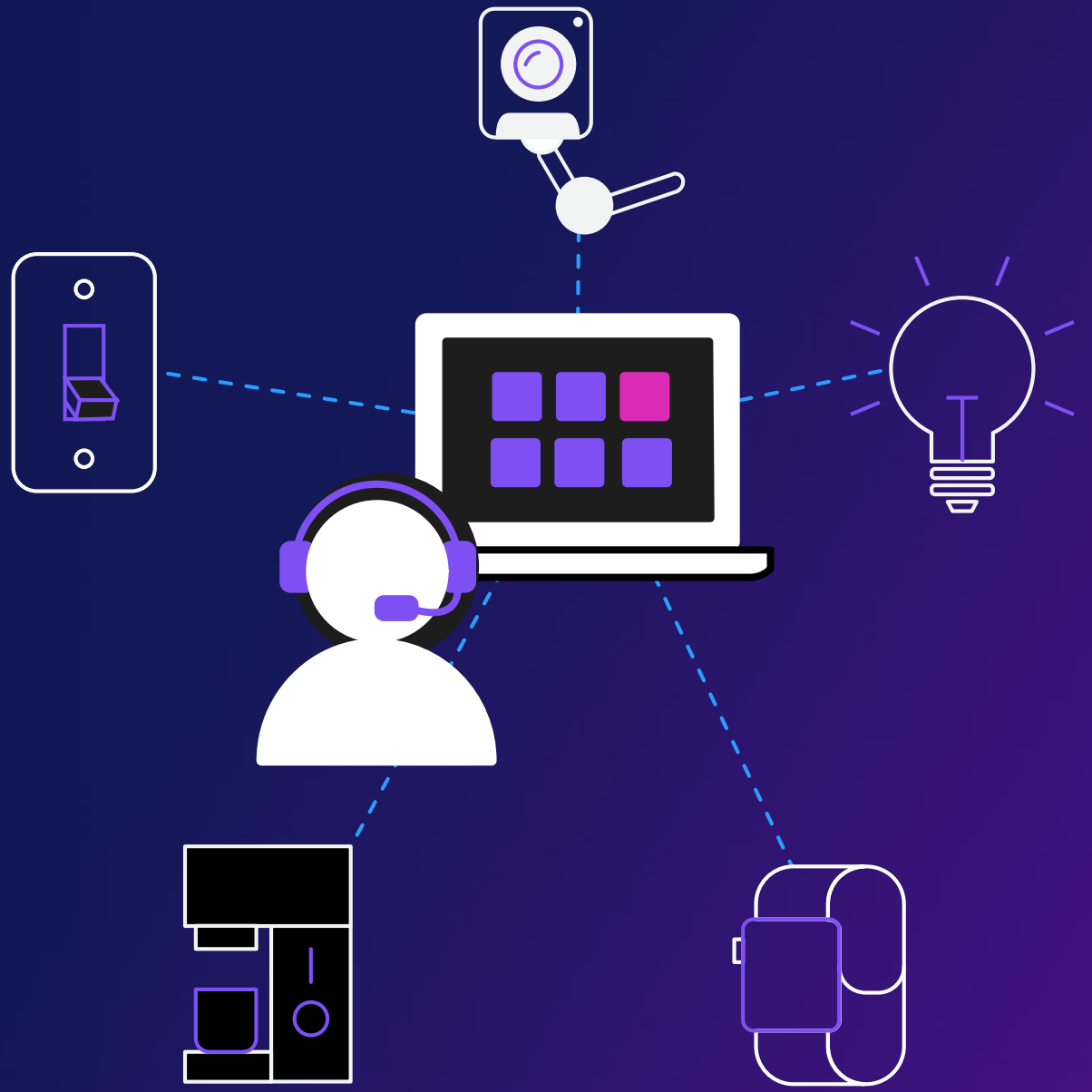
How can I quickly monitor and troubleshoot my IoT fleets remotely?



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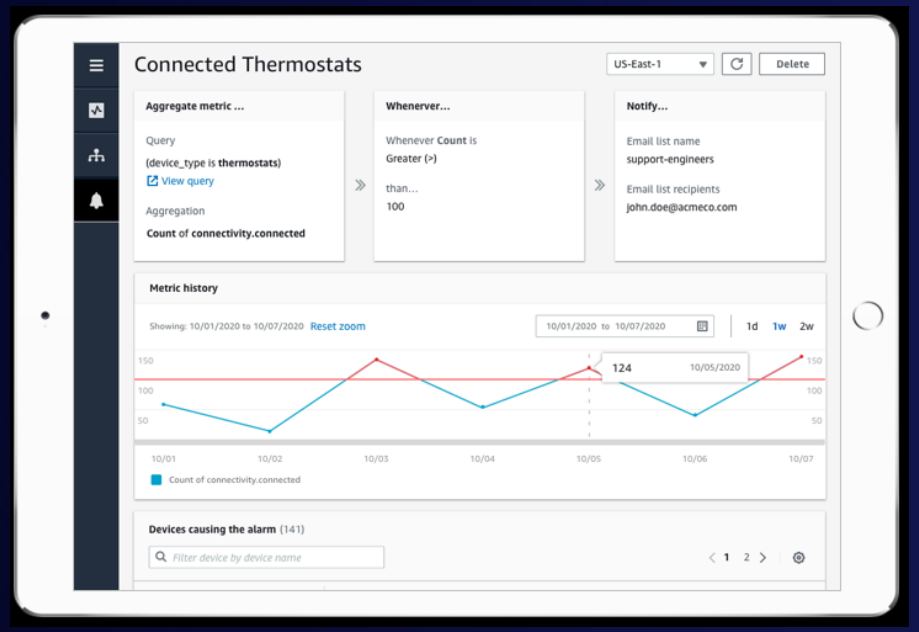
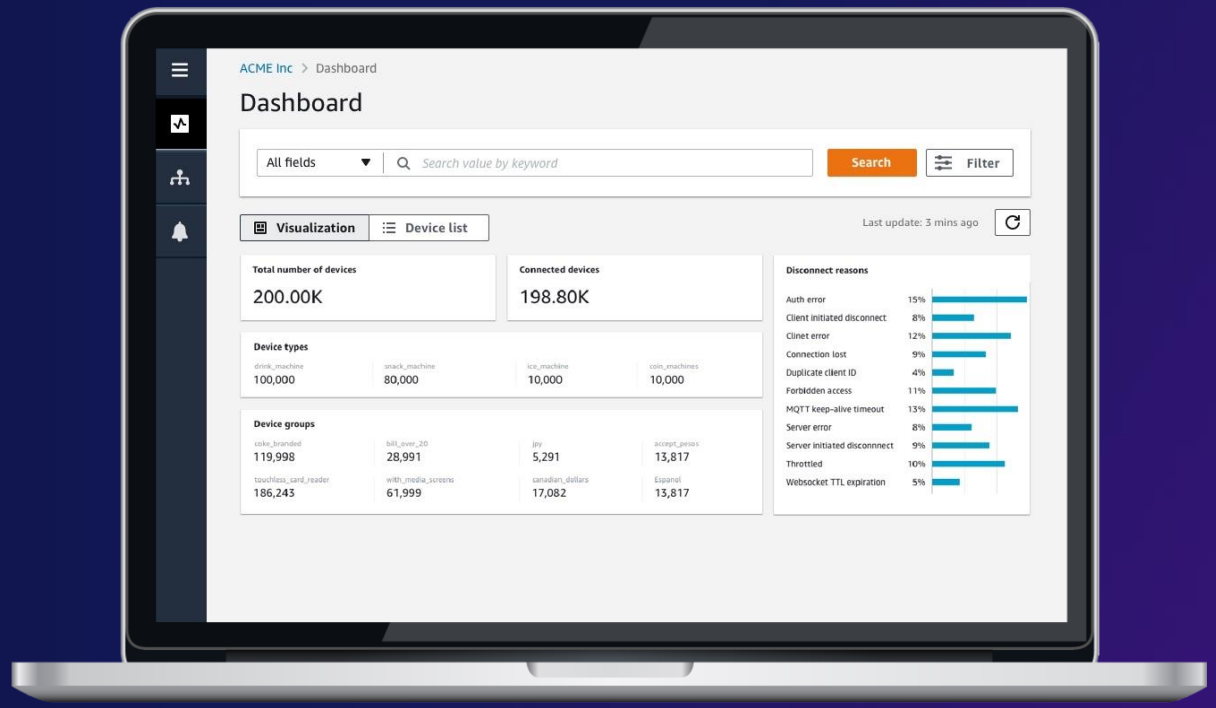
Fleet Hub for AWS IoT device management

- Gather insights
- Receive notifications
- Investigate and triage issues





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Fleet index and search

- Find devices within the fleet based on any combination of device attributes
  Example: "Find all devices manufactured after 2020 with firmware version 1.2 that are currently connected"
- Easy to use – one-click activation via console

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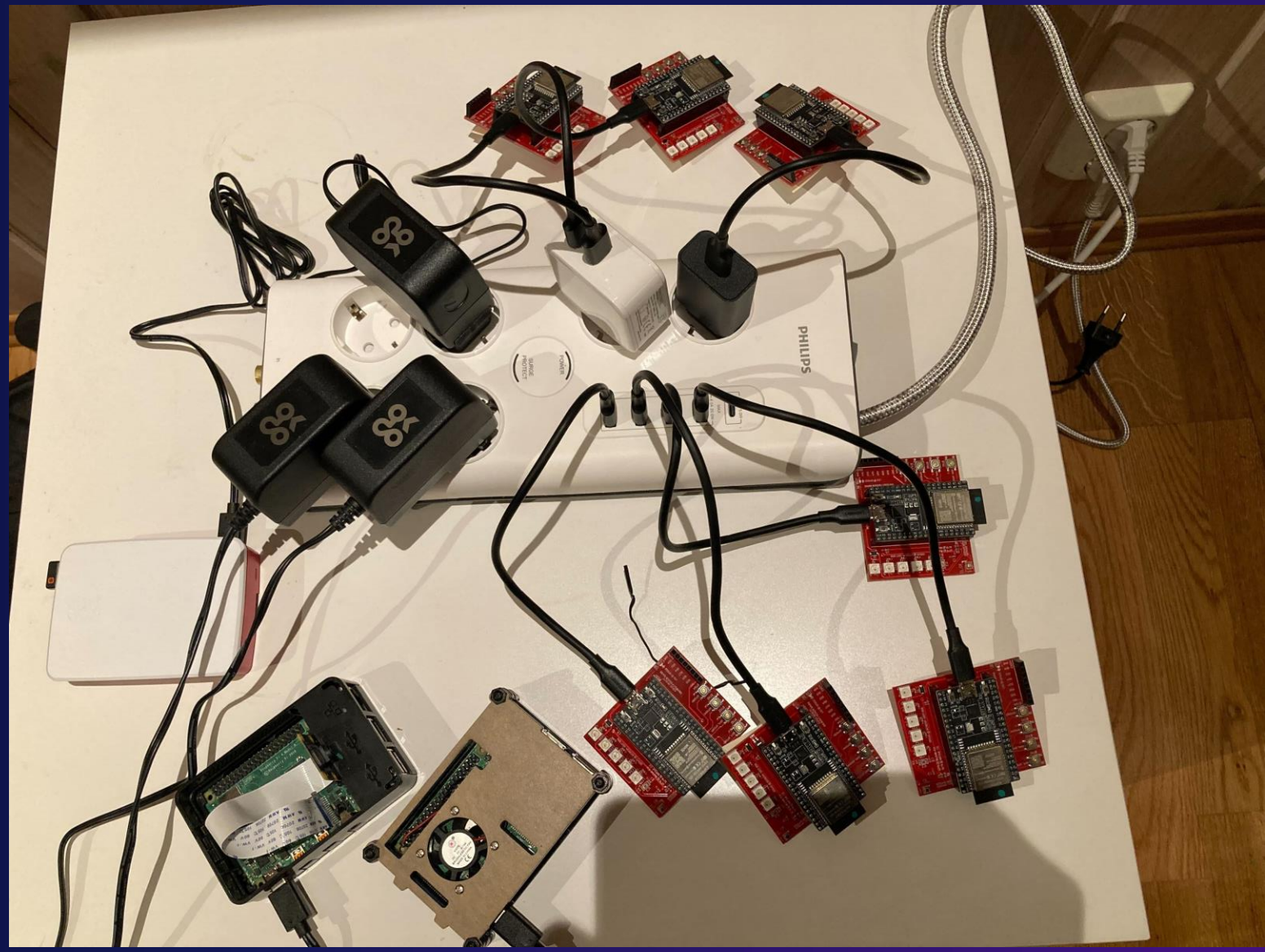
Demo



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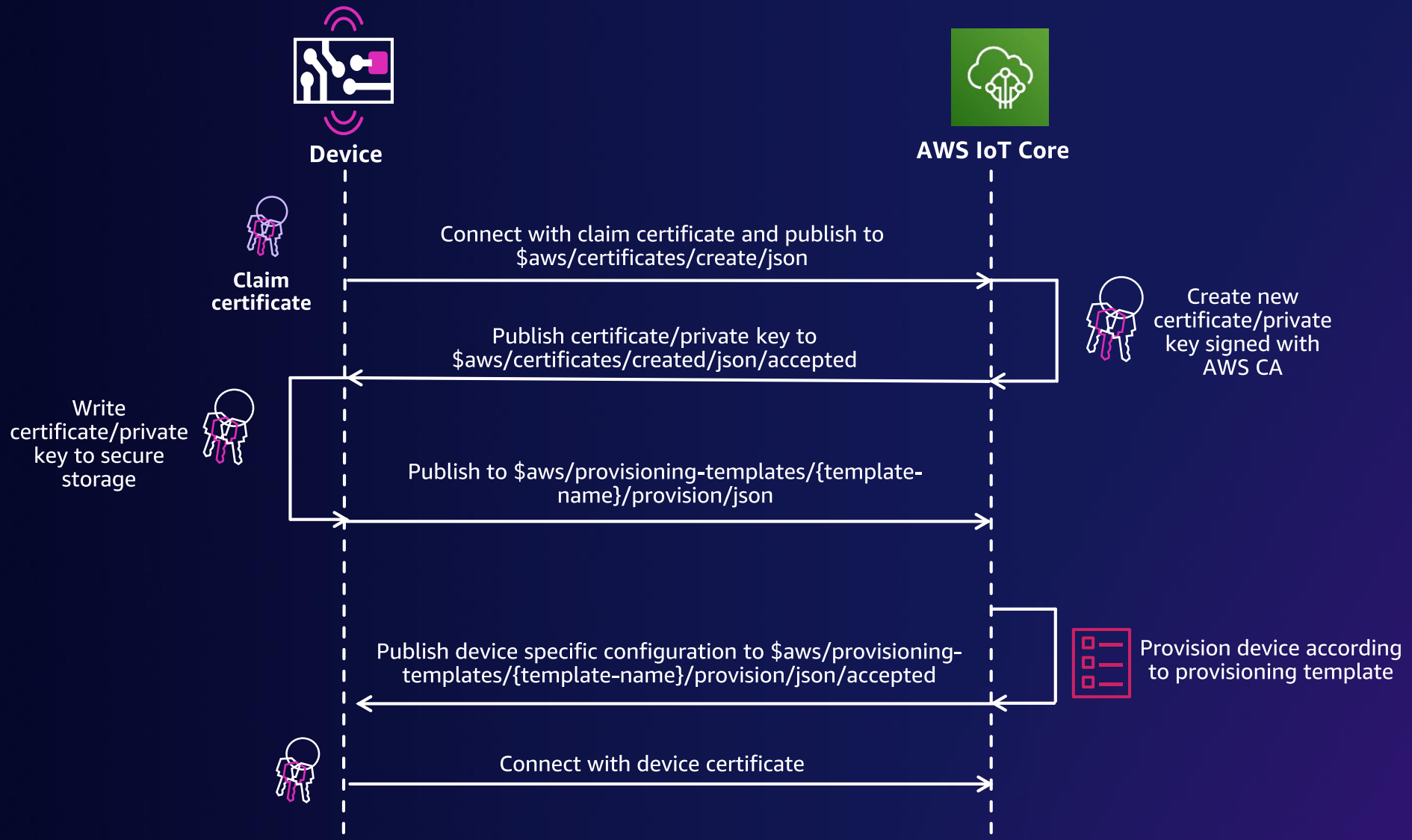
Fleet provisioning by claim



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Customer Spotlight - Easee

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This is Easee

Our vision:

- Shape the future of electricity and the future of business culture.

How:

- Create user friendly products that accelerates the transition to a sustainable future.
- By putting people first.

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Our products

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Easee in numbers

500k+ chargers produced

400% yearly device growth

2.2 GW/h daily

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easee®

Easee in numbers

300k chargers online

300M messages per day

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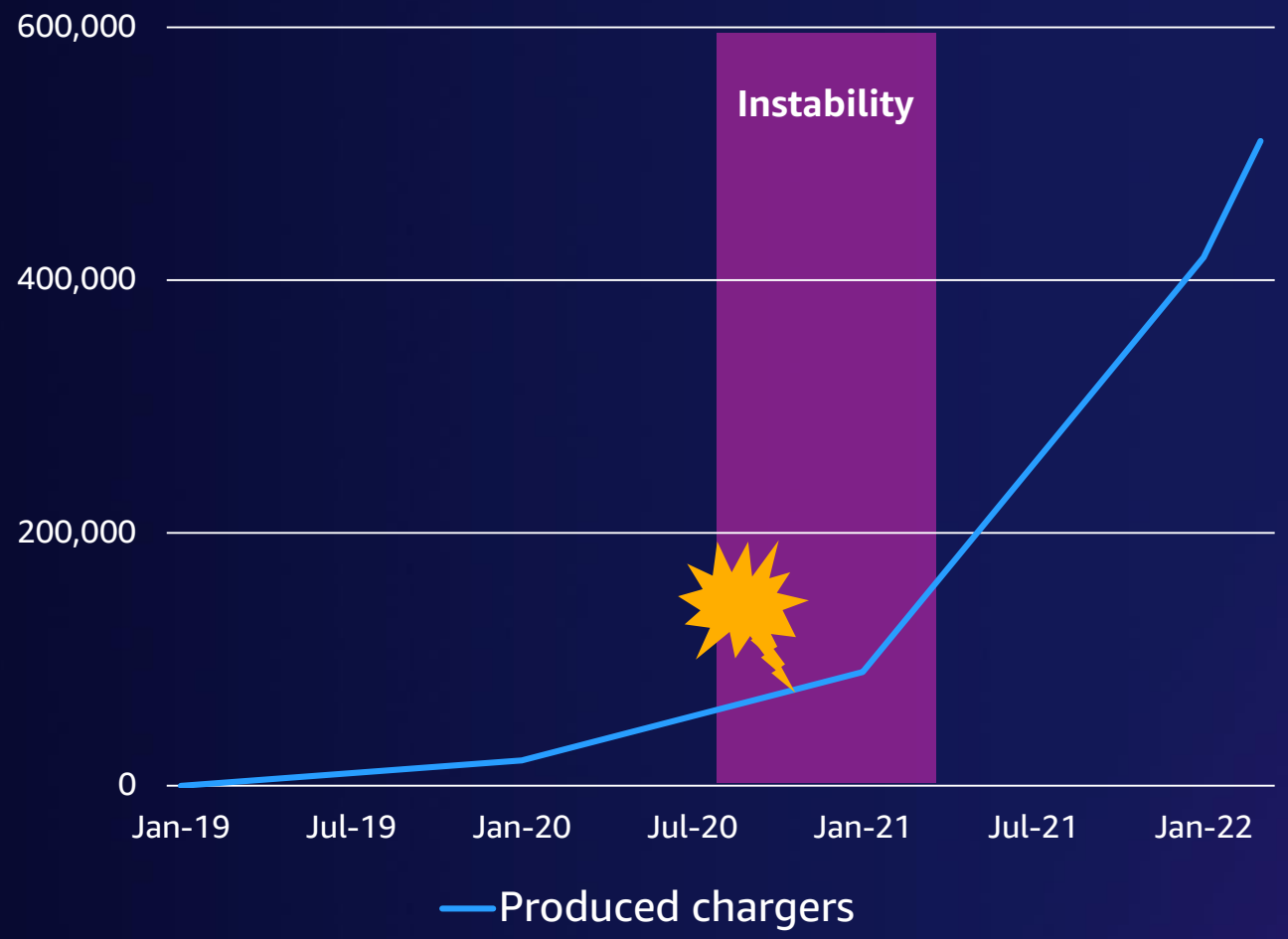
Easee cloud history



400%
yearly growth

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Challenges

- Early stage focus on product-market fit
- Extreme growth
- Bottlenecks start appearing
- Scaling IoT connectivity is hard

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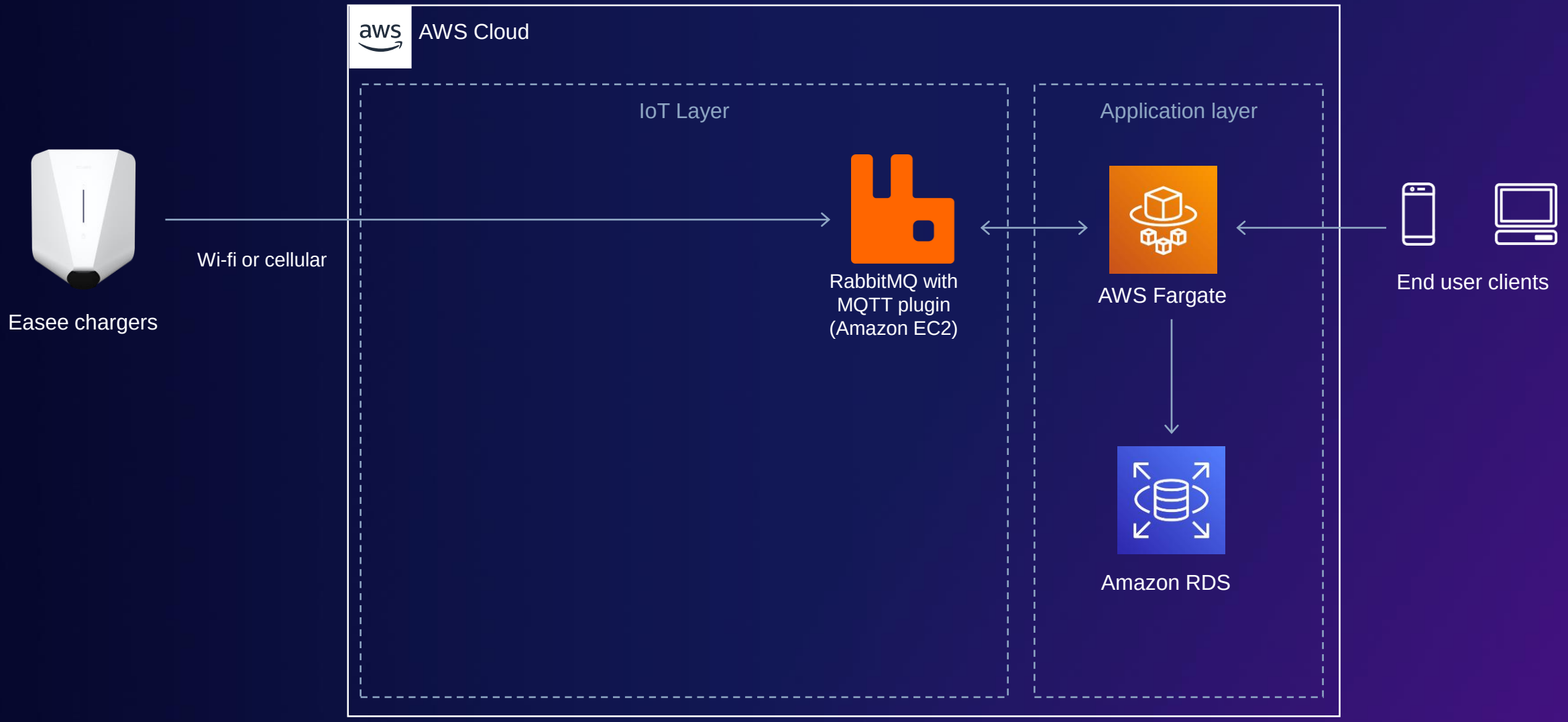
Previous architecture



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Getting up and running again

Easee chargers

Wi-fi or cellular

AWS Cloud

IoT Layer

Application layer

RabbitMQ with MQTT plugin (sharded)

CloudAMQP

AWS Fargate

Amazon RDS

End user clients

Device changes:

- Improved backoff logic
- Reduced message frequency

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How we handled the downtime

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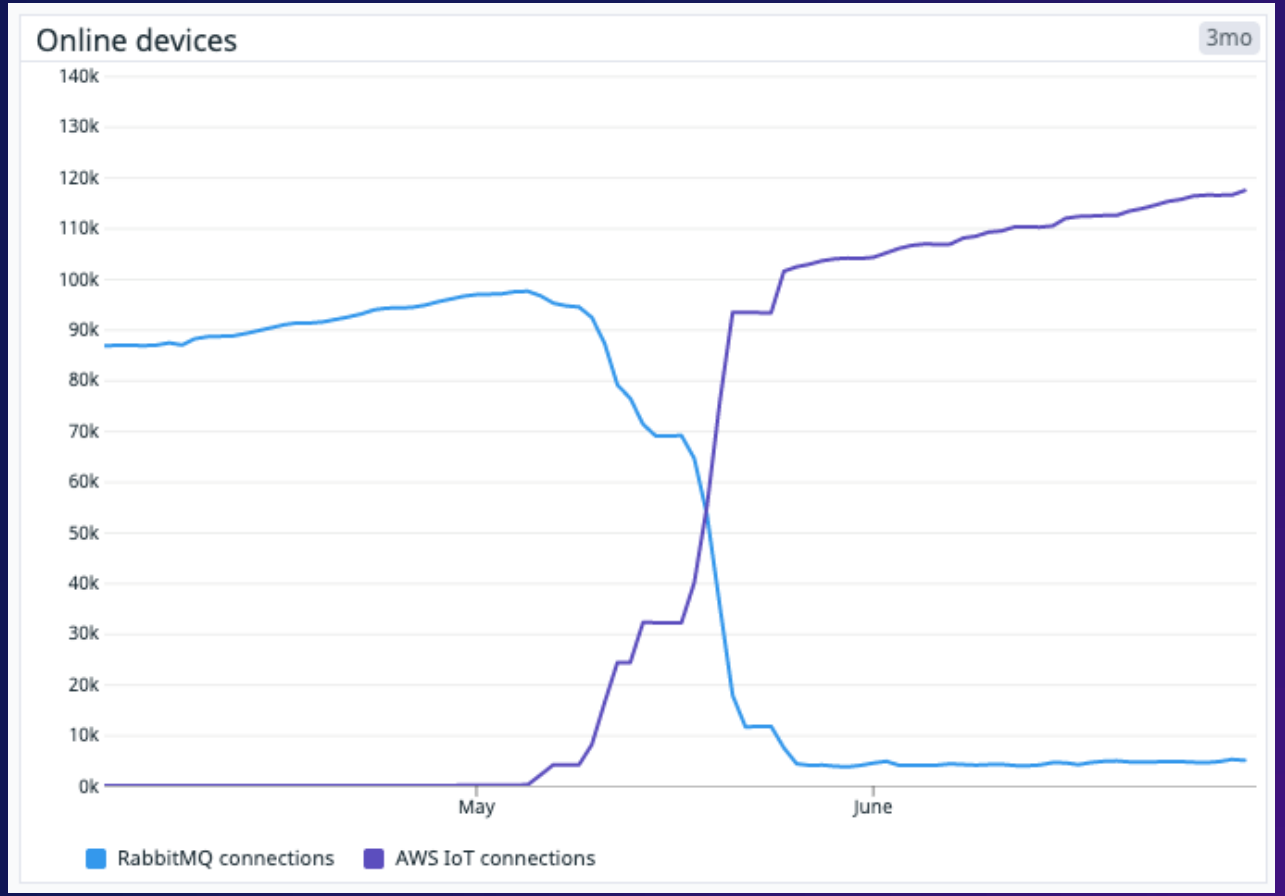
Planning for the way ahead

- The risk of not taking risk
- Design a scalable architecture
- IoT platform/Cloud platform selection
- Implementation
- Migration to AWS IoT Core



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Strangler pattern

- Set up a façade in front of the legacy system.
- Gradually replace the legacy system.

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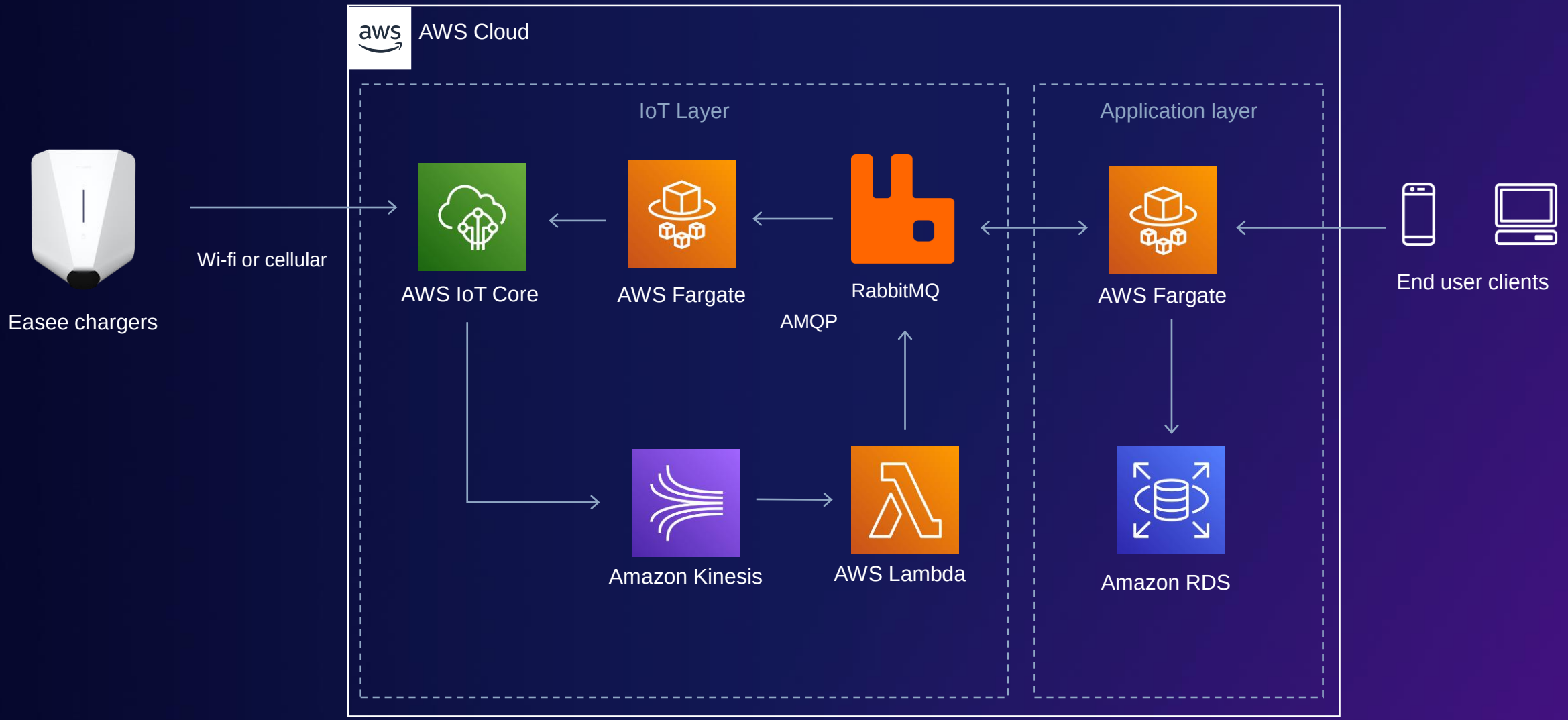
Transitional architecture



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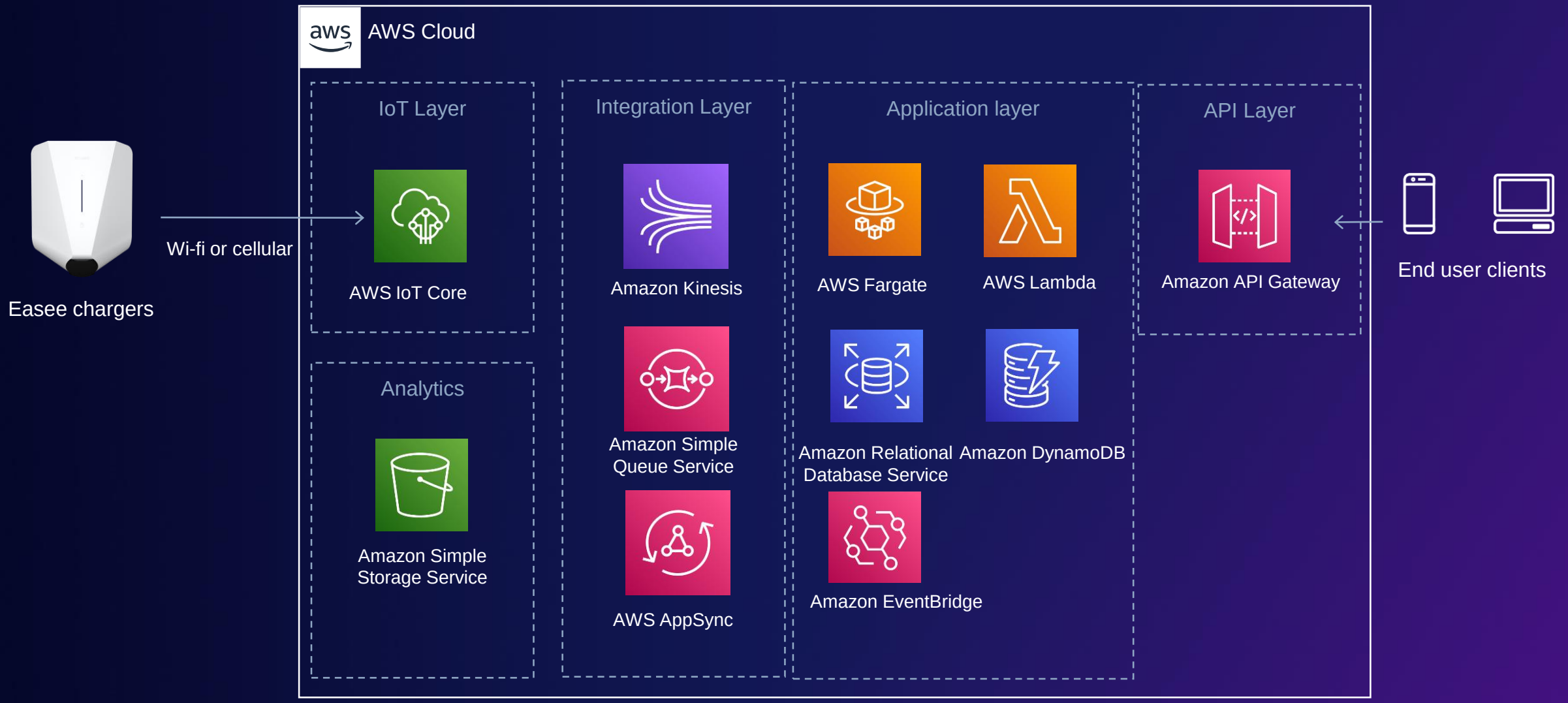
Where we are heading



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The result

- 400% growth continued, no connectivity issues
- No need to operate and scale complex IoT infrastructure
- Simplified migration to microservices

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Summing up

- ✓ Provision a device
- ✓ Challenges
- ✓ Device provisioning options in AWS IoT
- ✓ Demo on Fleet provisioning by claim
- ✓ Easee success journey

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“Having ideas is not the same thing as being creative. Creation is execution, not inspiration.”

Kevin Ashton

British technology pioneer, coined the term “internet of things”

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Thank you!

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