AWS re:Invent

IOT334-R

Go beyond IoT with AWS IoT services

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AWS re:Invent

aws

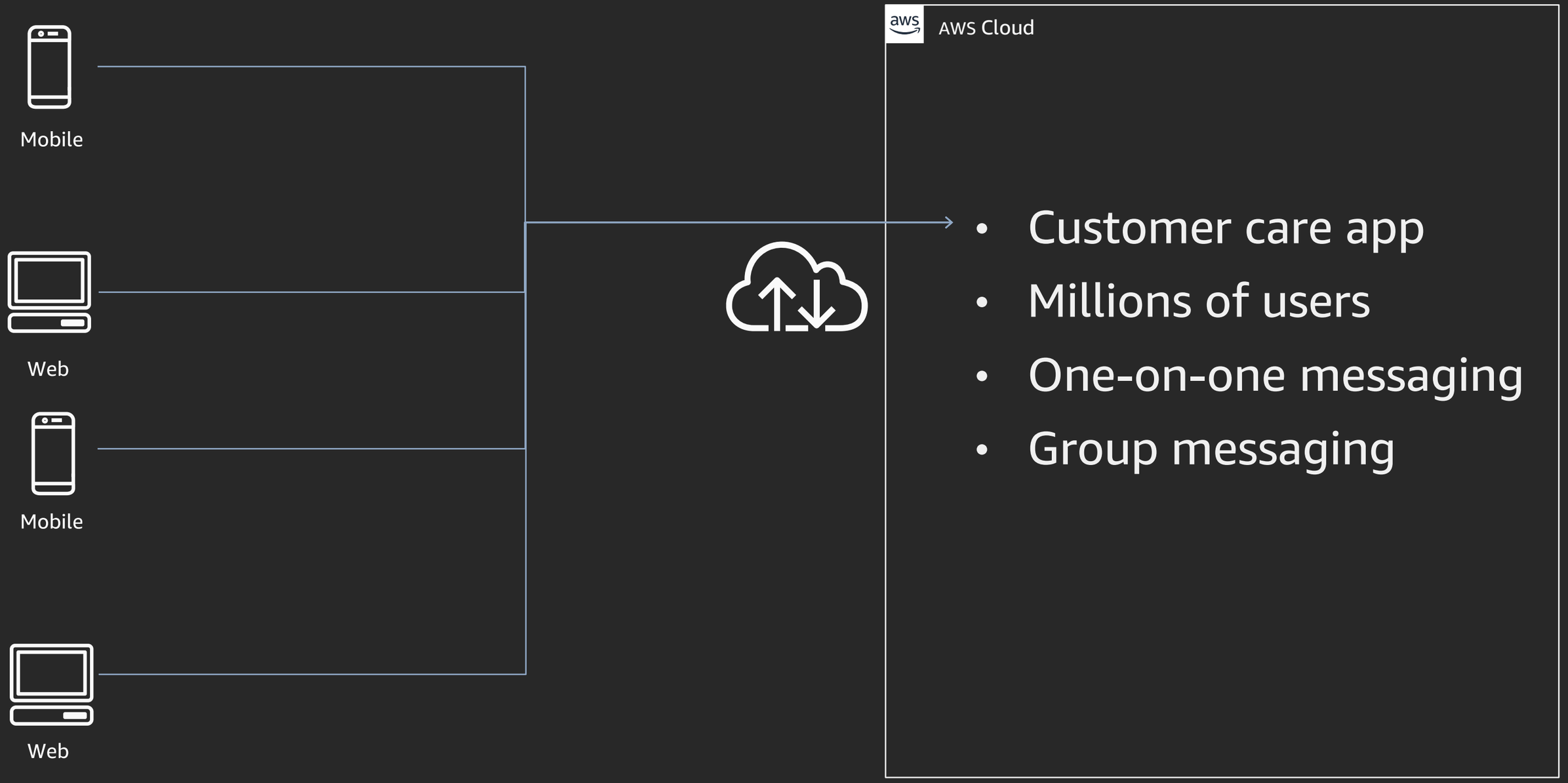
AWS IoT services

- Massively scalable
- Resource constraint
- Remote devices
- Edge compute

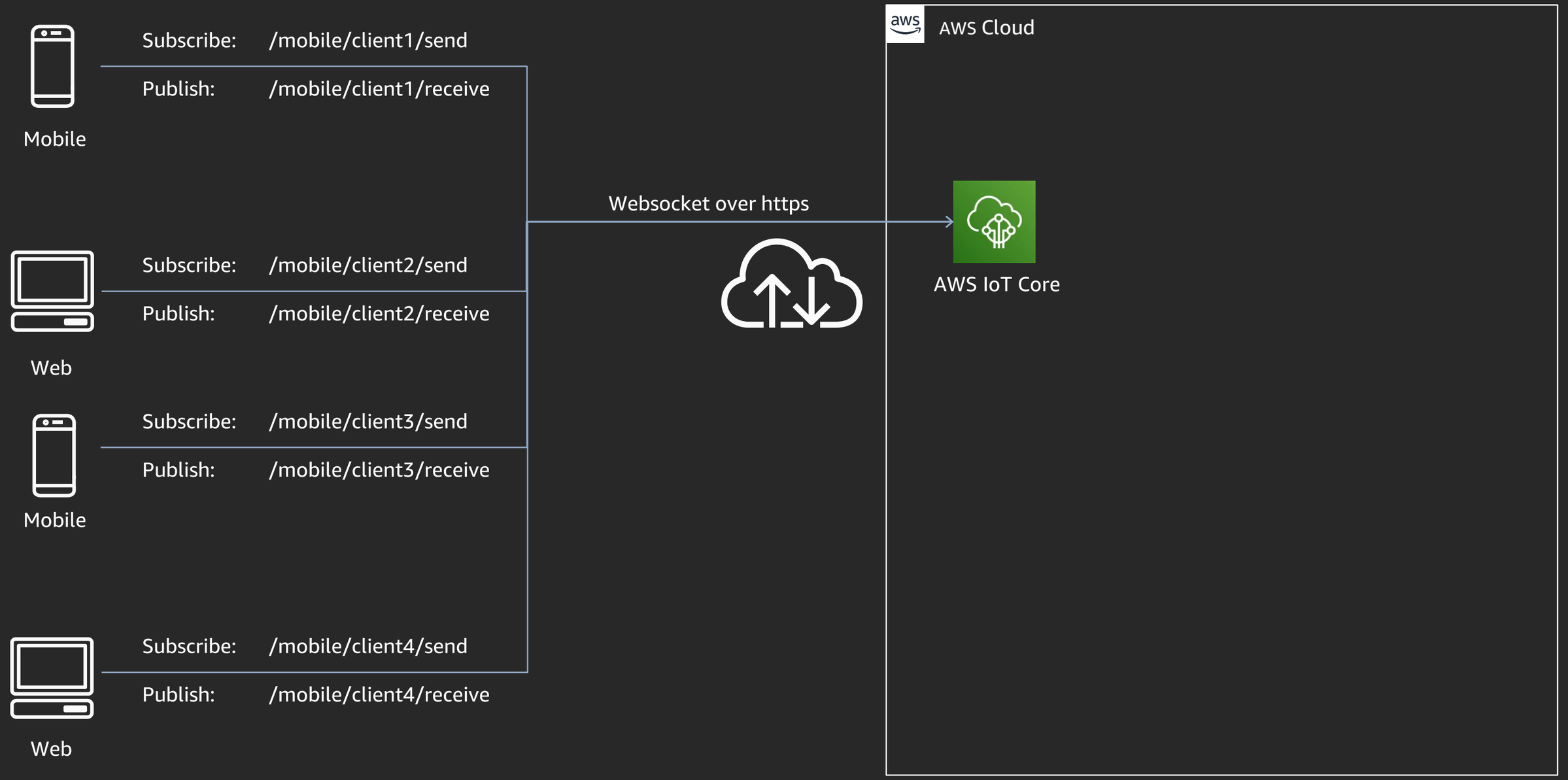
Some myths around IoT

- It is for device manufacturers
  - Supports third-party devices
- You need a specialized skill set
  - You can utilize your cloud development skills
- It only supports its unique protocols
  - You can bridge any management protocol
- Enterprises do not need it
  - More and more enterprises utilize it for remote management

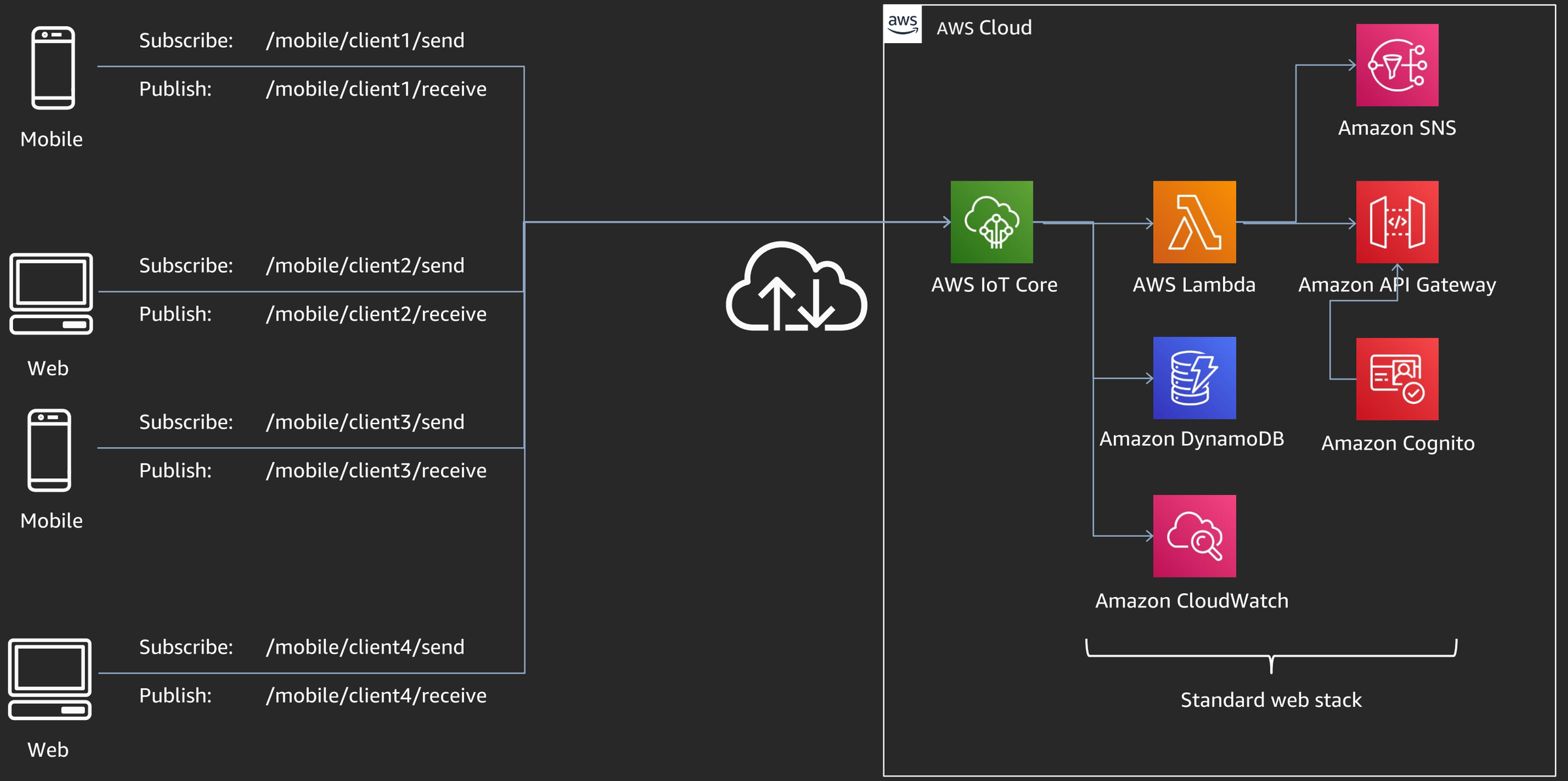
Customer care application



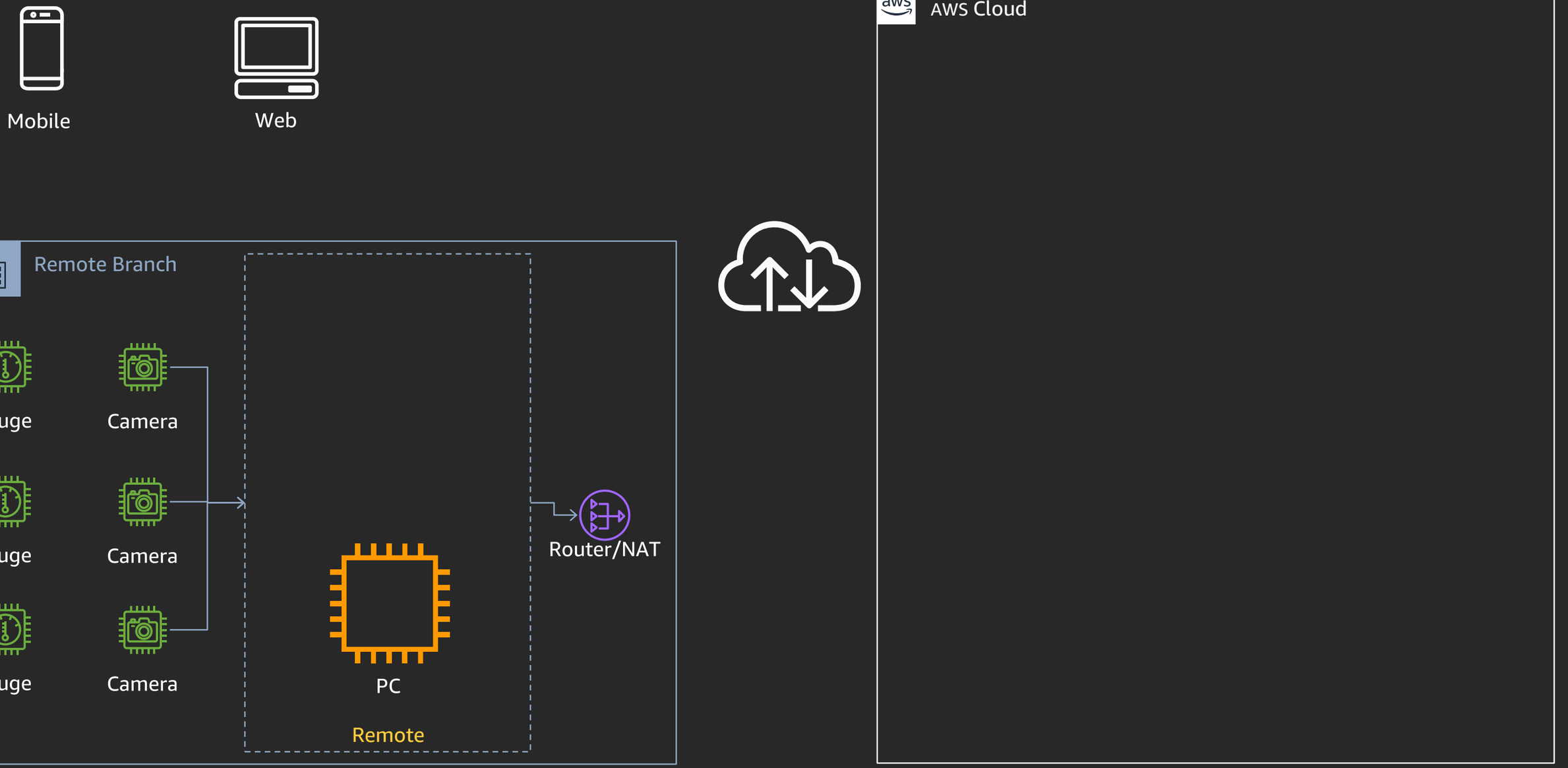
AWS IoT routes messages between clients



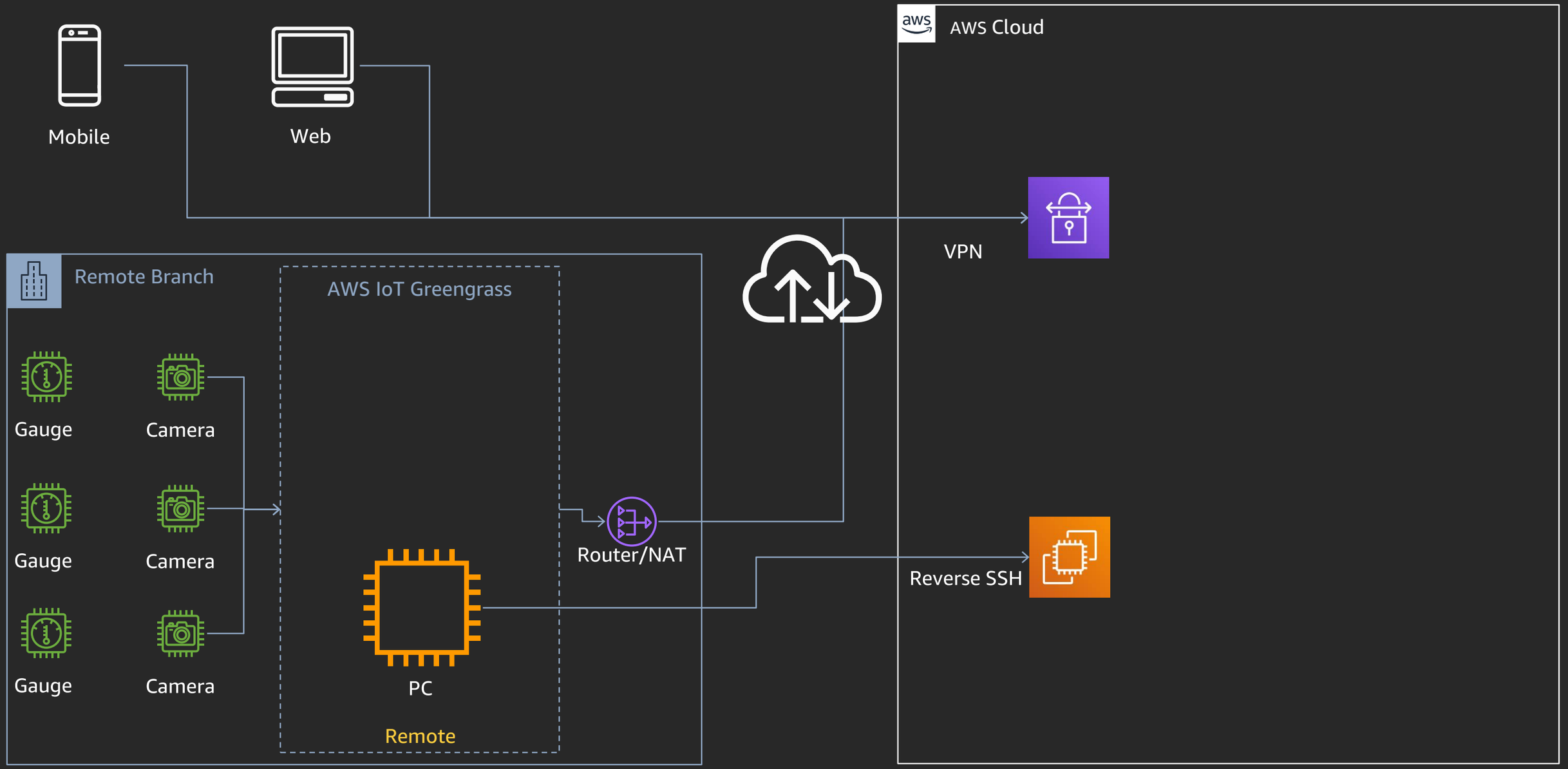
Easy to integrate with serverless model



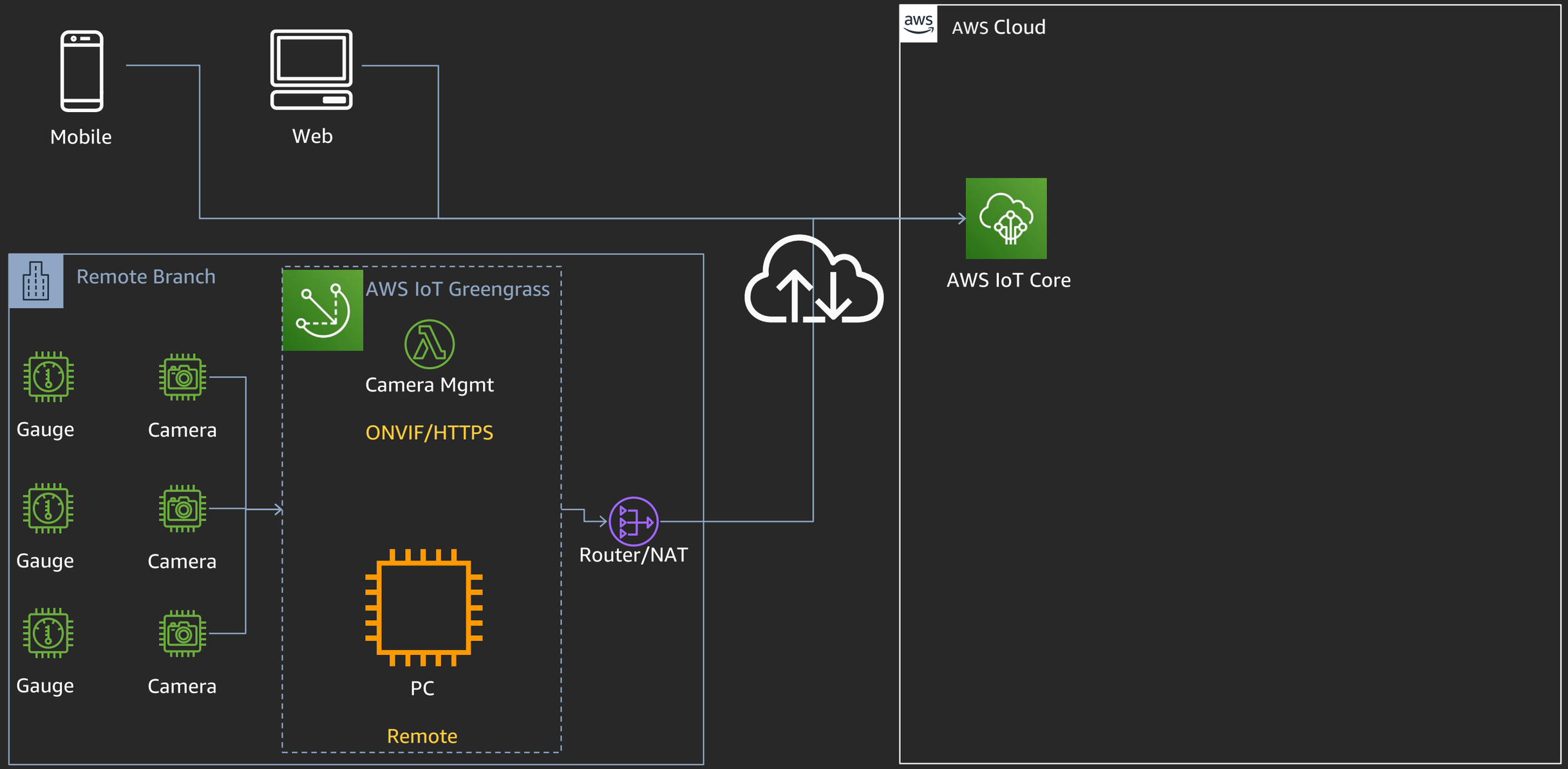
How to manage cameras across thousands of sites?



VPN and Reverse SSH are some obvious answers



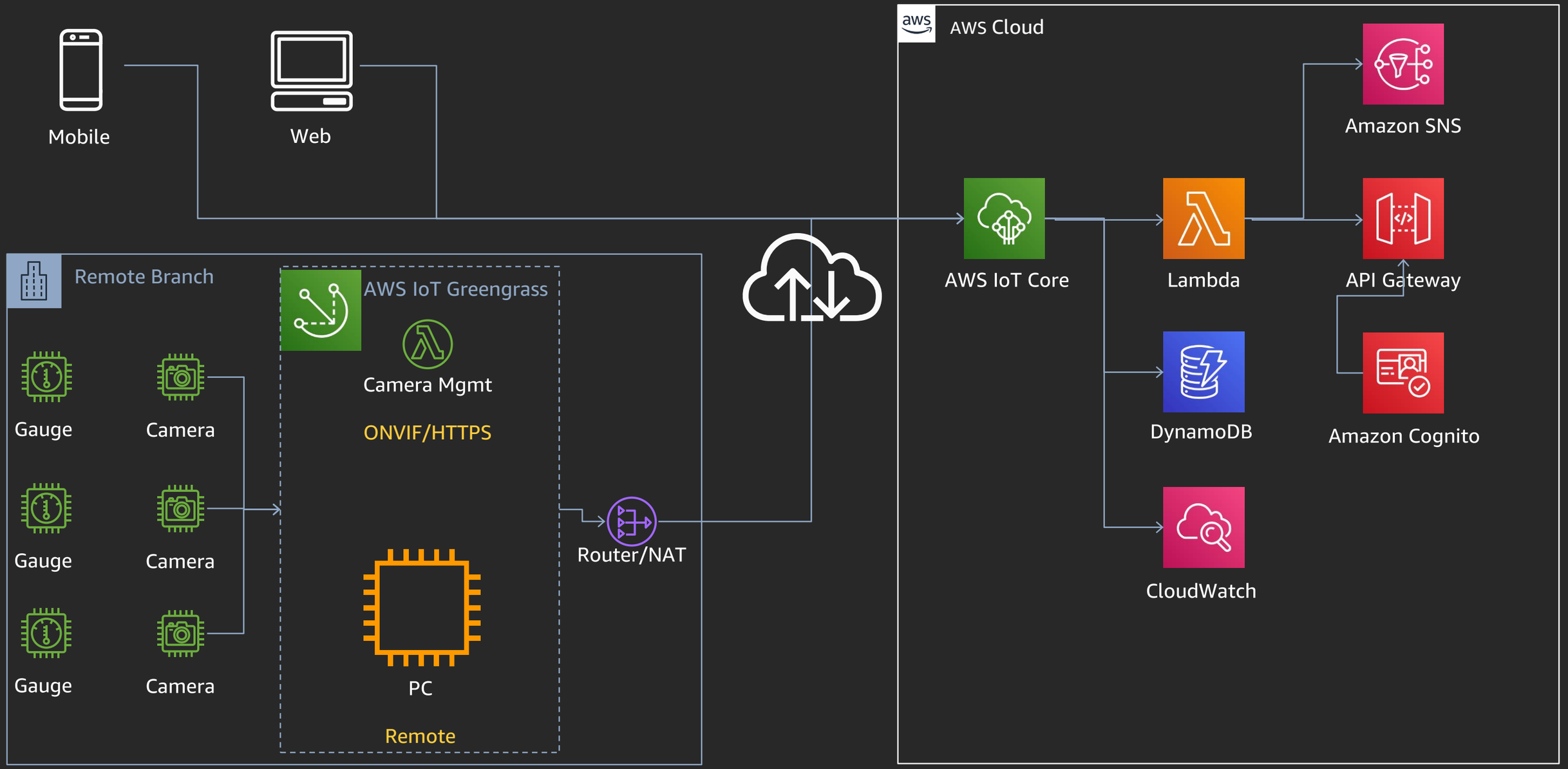
AWS IoT way


Mobile
Web
AWS Cloud
AWS IoT Core
Remote Branch
AWS IoT Greengrass
Camera Mgmt
ONVIF/HTTPS
Gauge
Camera
Gauge
Camera
Gauge
Camera
PC
Remote
Router/NAT

Lambda on AWS IoT Greengrass

```
import greengrasssdk

import Timer import time

client = greengrasssdk.client('iot-data')

def function_handler(event, context):

        return

def periodicPing():

        client.publish(topic='hello/world', payload='Hello world')

        Timer(5, periodicPing).start()

periodicPing()
```

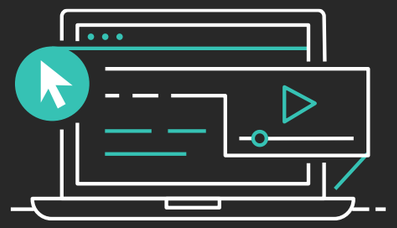
Expose your remote site as API



Learn IoT with AWS Training and Certification

Resources created by the experts at AWS to help you build IoT skills

Take the free digital curriculum, Internet of Things (IoT) Foundation Series, to build IoT skills and work through common scenarios



25+ additional free digital courses cover topics related to IoT, including:

- AWS IoT Core
- AWS IoT Greengrass
- AWS IoT Analytics
- AWS IoT Device Management
- AWS IoT Events

Visit the Learning Library at https://aws.training

aws training and certification

Thank you!

Parham Beheshti

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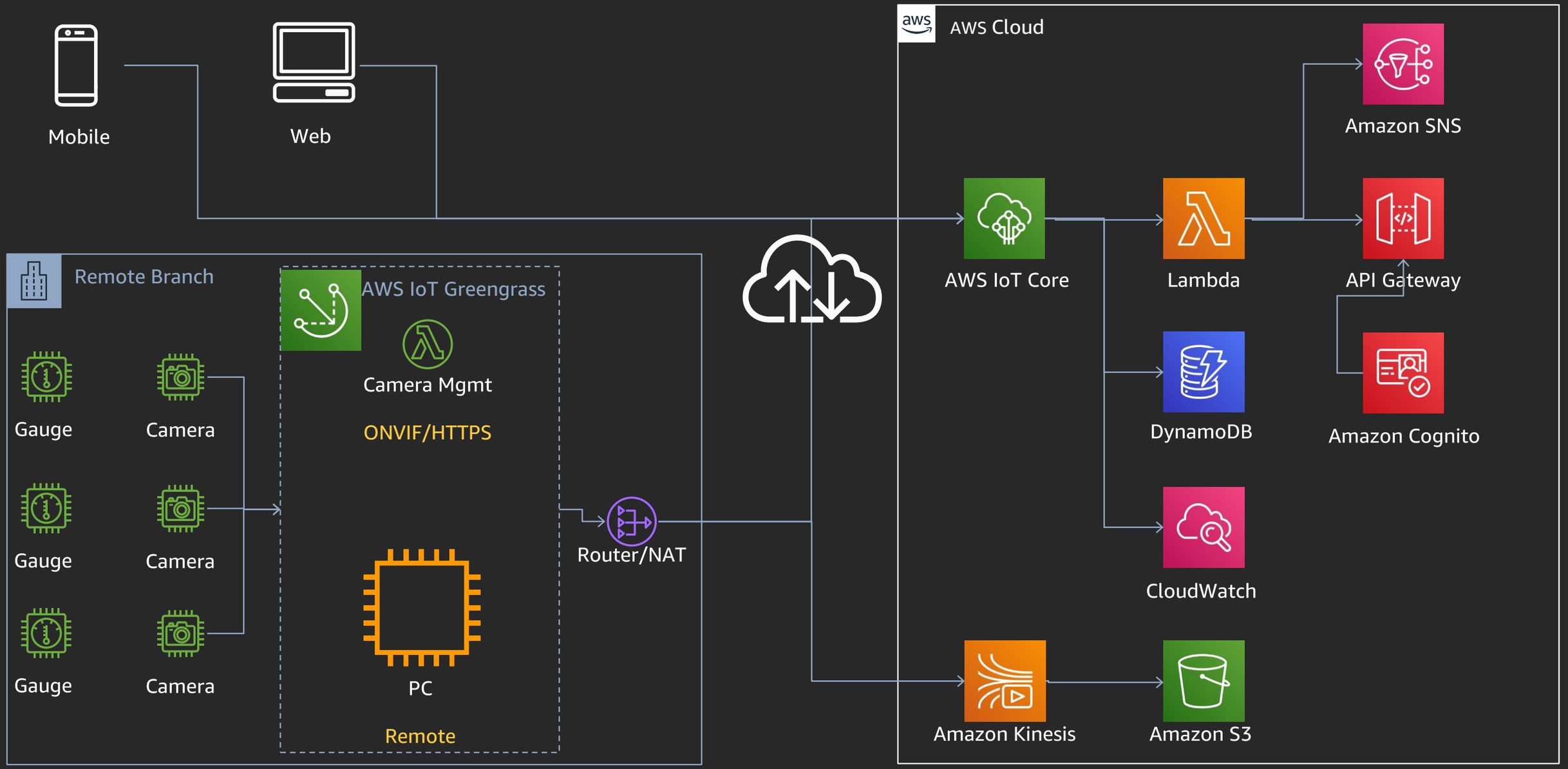
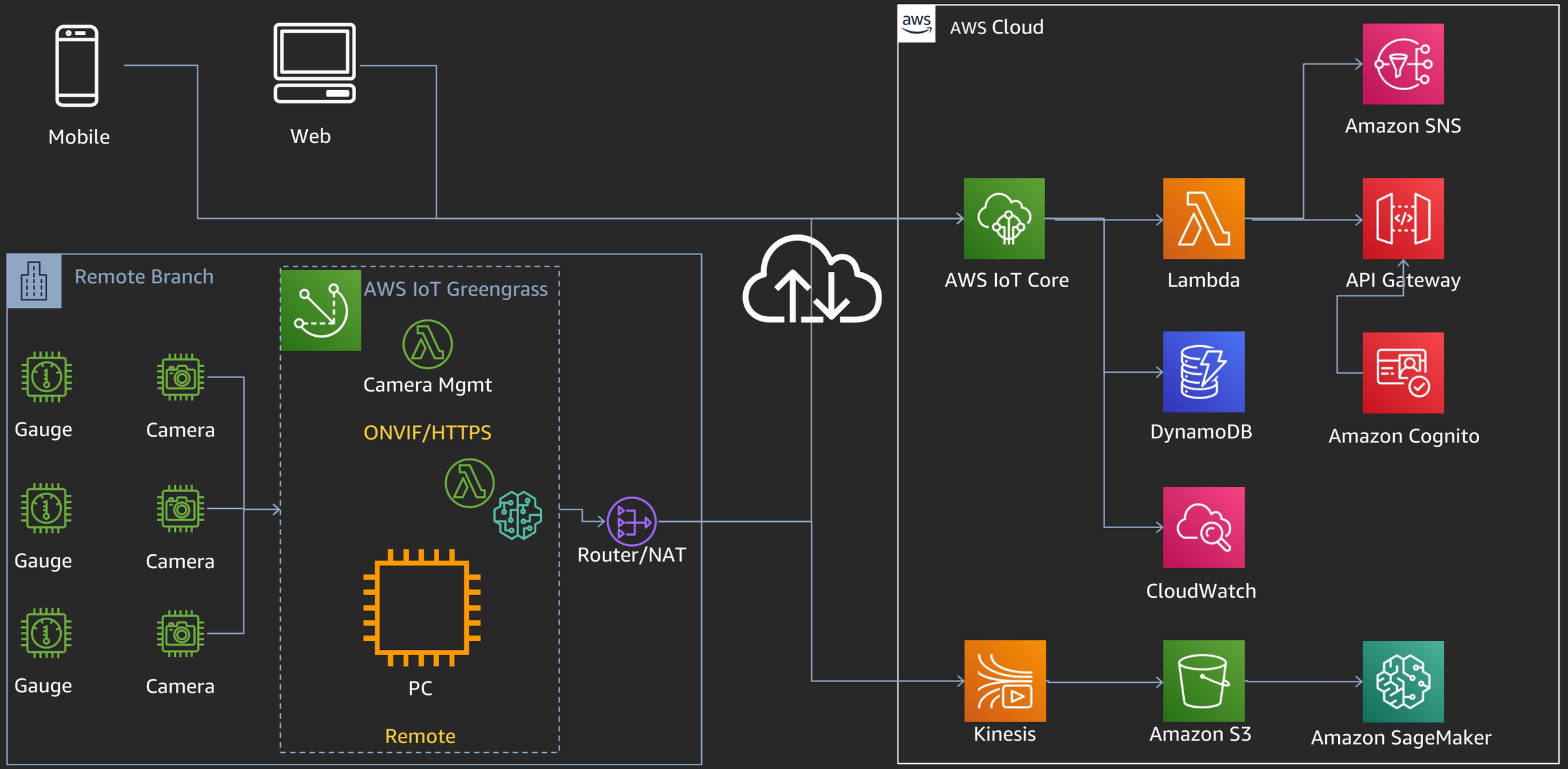
Please complete the session survey in the mobile app.

Backup slides

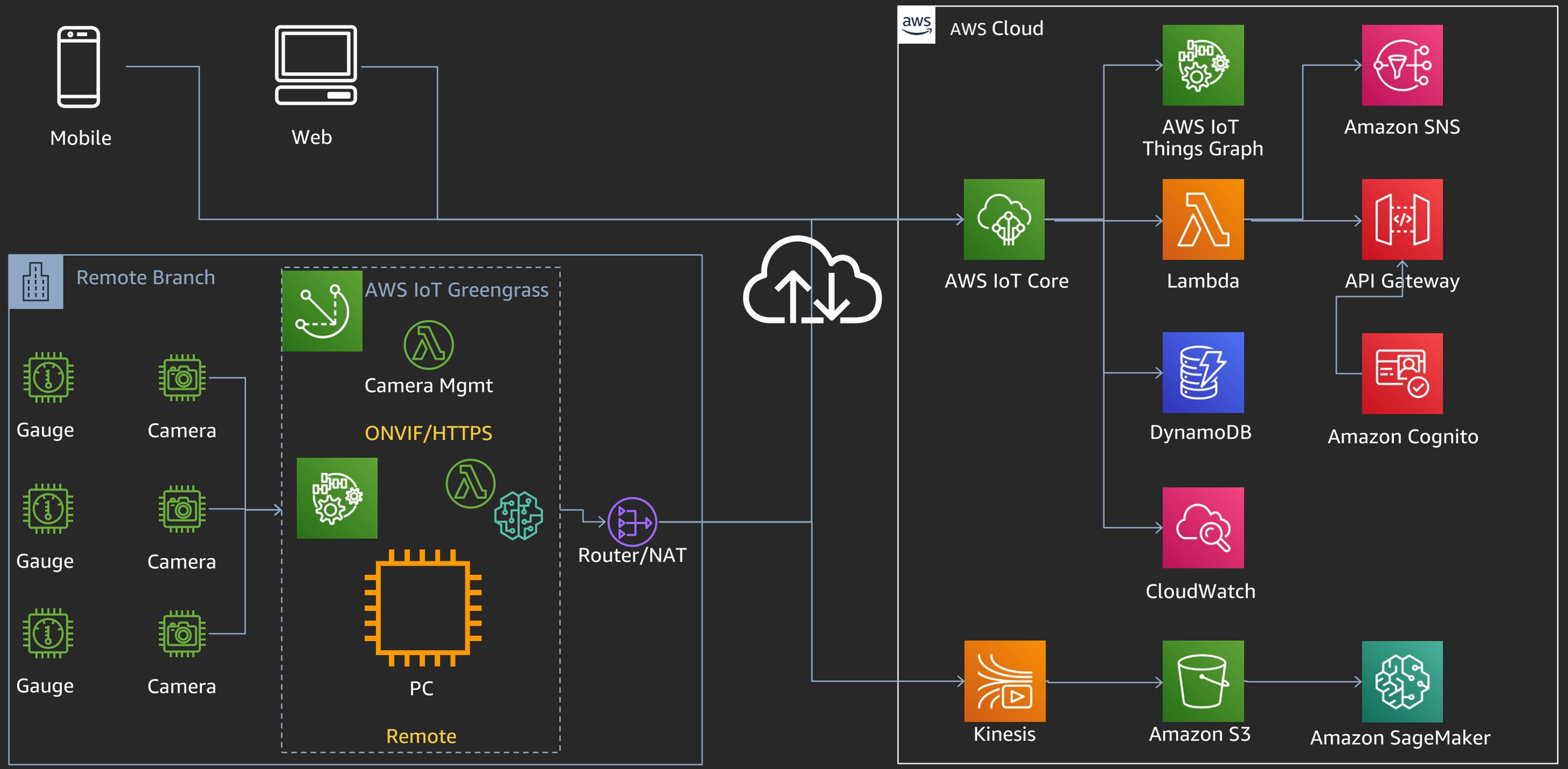
We can store those images on the cloud now



Let’s figure out what those images mean



Run your business logic on the edge



Why do you need AWS IoT?

- Remote management
  - Remote device management, update, log, and metrics collections
  - Printers, databases, routers, POS, and other black boxes
- On-premises application
  - Build and deploy applications using Python, Node.js, and Java on on-premises servers
  - Easily push updates
- Business process automation
  - Visual drag-and-drop application building and deployment
- Large scale
  - Support tens of thousands of remote locations
  - Remote sites, branches, offices, retail locations, restaurants

AWS IoT Greengrass—edge operating system

- Edge compute software
  - Layer on top of Linux
- Run AWS on edge
  - Lambda, AWS IoT Things Graph, IoT secure tunneling
  - Python, Node.js, Java
- Access AWS resources from edge
  - Security policy and access control
- ARM7 and x86 compatible
  - Runs on PC, Raspberry Pi, cameras, gateways, etc.

Lambda—code on edge

- Python, Node.js, Java
  - Write in the cloud, test, and deploy
- Long-running lambdas
  - No 15-minute limitation
- Access local resources
  - Serial port on /dev/?
- Lambda communications
  - MQTT for messaging between lambdas
- To container or not to container?
  - Run as container, outside container even as root if you want!

AWS IoT Things Graph—business process on edge

- Business processes on edge
  - Build in the cloud, deploy on the edge
- Integration with third-party devices and services
  - Out-of-the-box integration with third-party tools, build and expand easily
- Visual drag-and-drop design
  - Define business processes, test and deploy remotely

IoT secure tunneling—VPN on edge

- Flexible tunneling
  - Remote site-to-site or cloud-to-site TCP tunneling
- Works with any TCP management
  - Any device with TCP protocol such as http, SSH, telnet is supported
- Remote management of devices
  - Manage black box printers, routers, databases, and appliances from anywhere
- Complex security and access management
  - Only provide access to the right people, from the right location, at the right time