

Custom Surveillance System

MangoChango - Tech Thursday

Mynor Xico - Feb 16th, 2023

Services to be used

- Amazon Kinesis Video Stream
- Amazon Rekognition
- S3
- Event Bridge
- Step Functions
 - AWS Lambda
 - Simple Notification Service (SNS)
- IAM

Types of surveillance cameras based on how video is transmitted

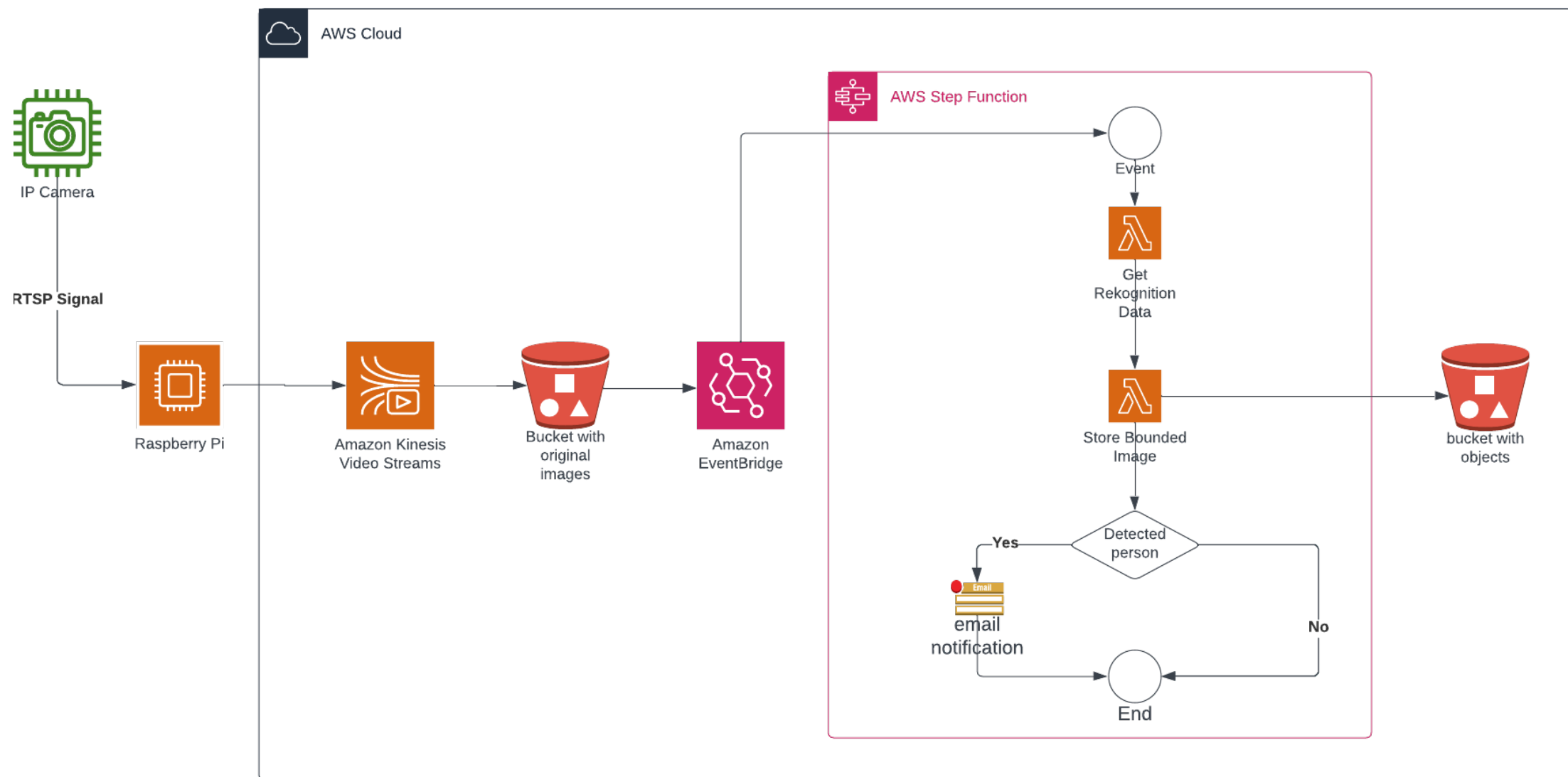
- Closed-circuit Television (CCTV)
- IP Cameras

Custom Surveillance System

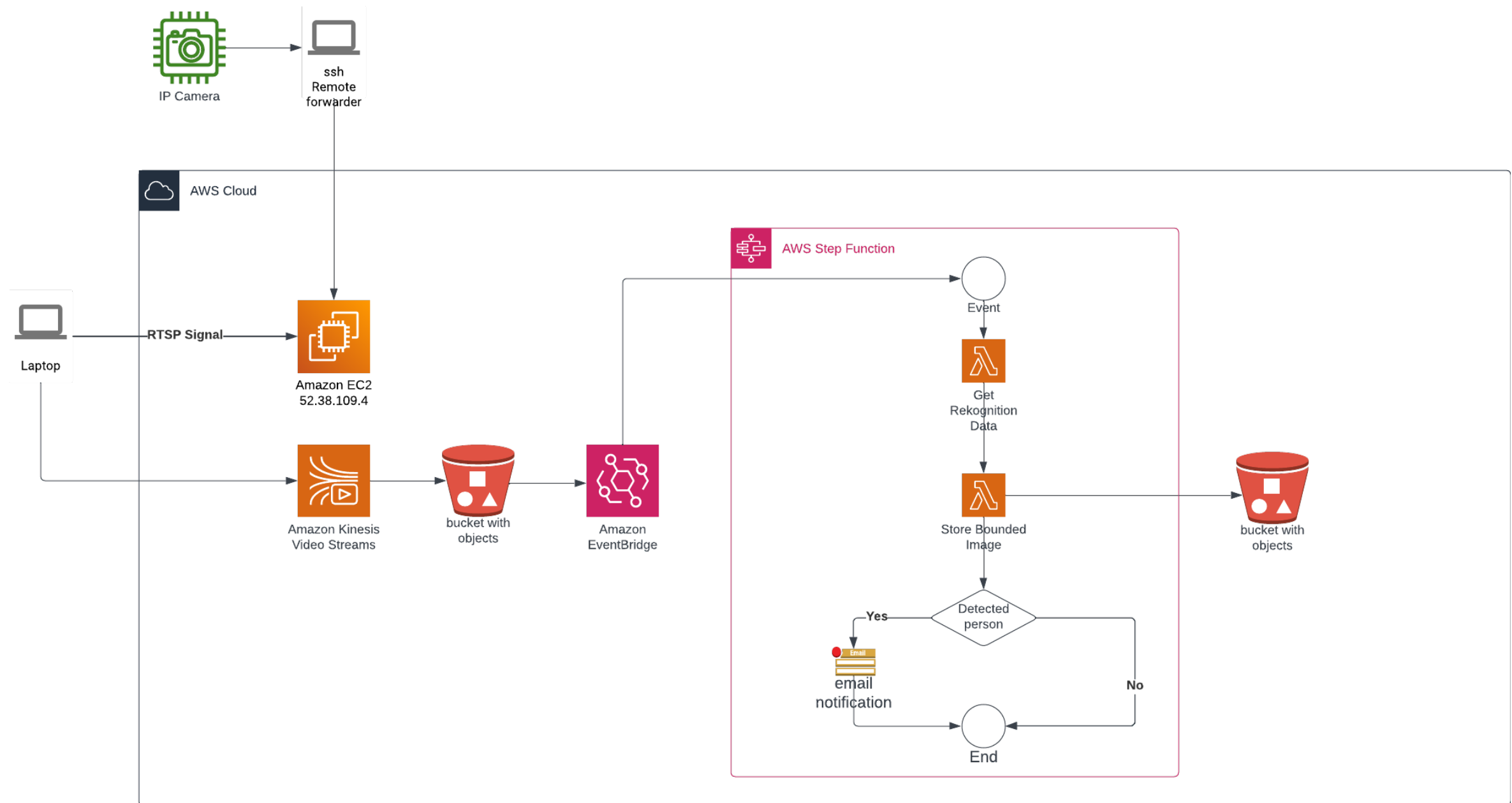
IP Cameras

- Video is transmitted over the network
- Transmission can be less secure
- Stability depends on network
- Do not require special or proprietary hardware
- Video is transmitted over Real Time Streaming Protocol (RTSP)

Infrastructure

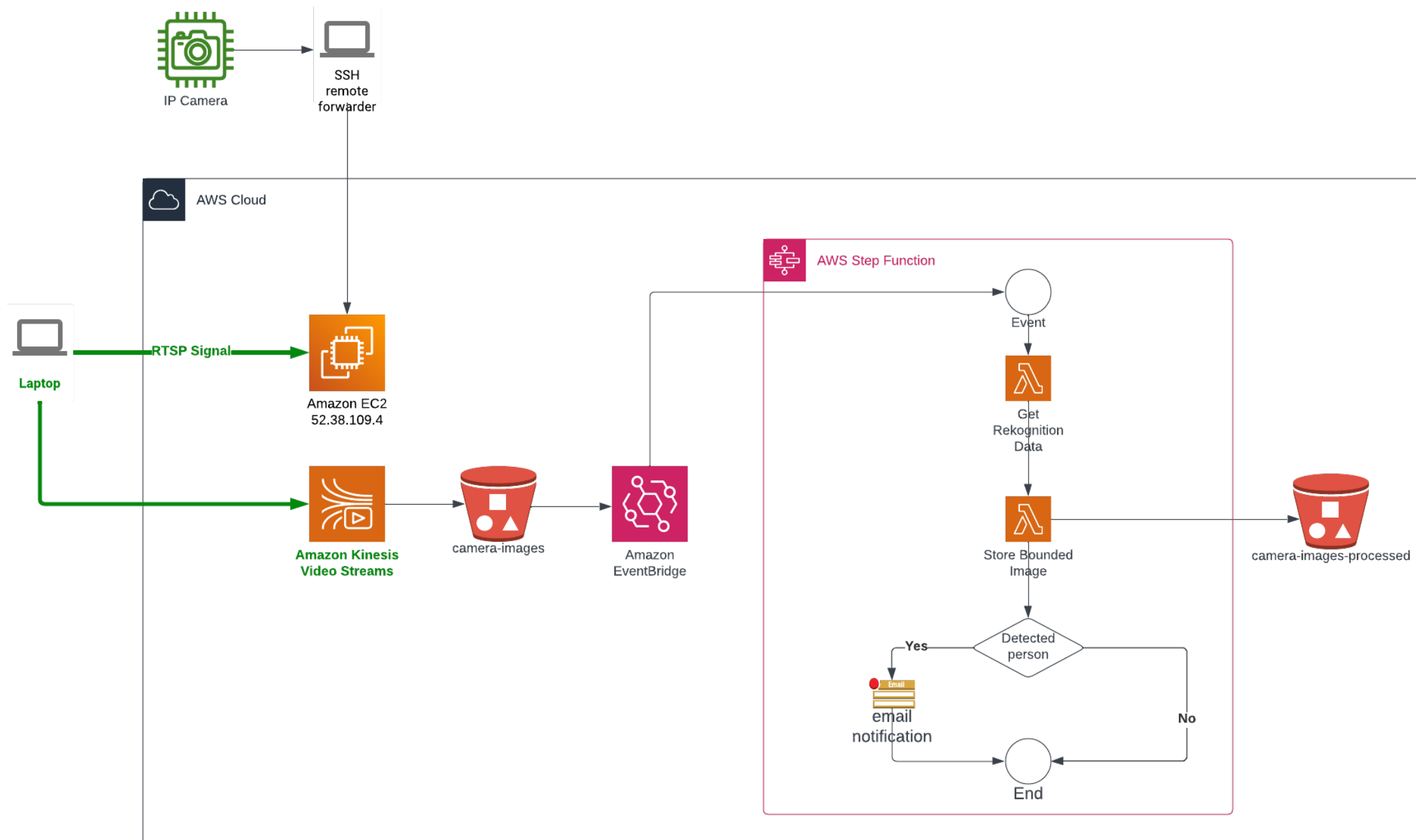


Infrastructure (for demo)



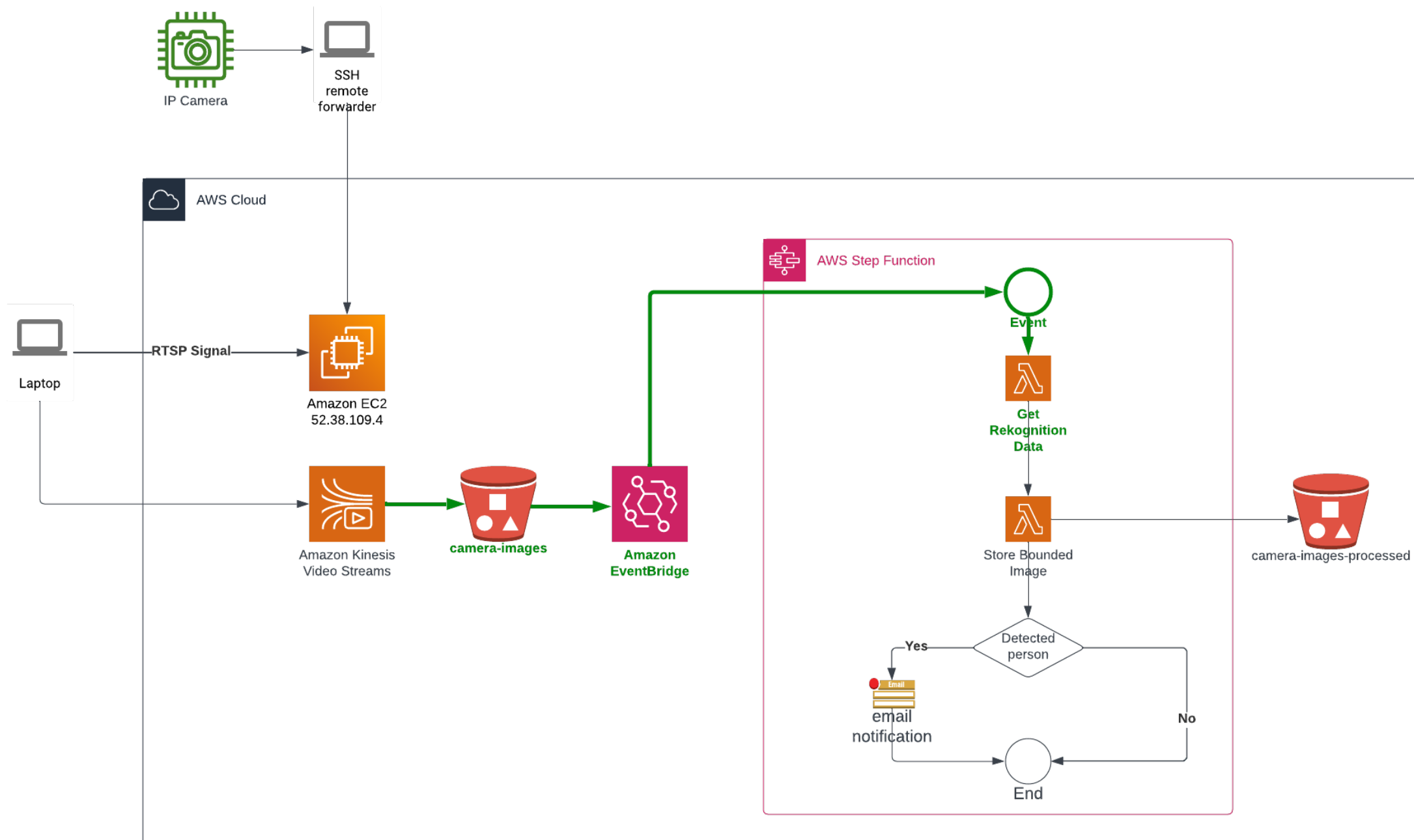
Infrastructure - Part #1

Streaming



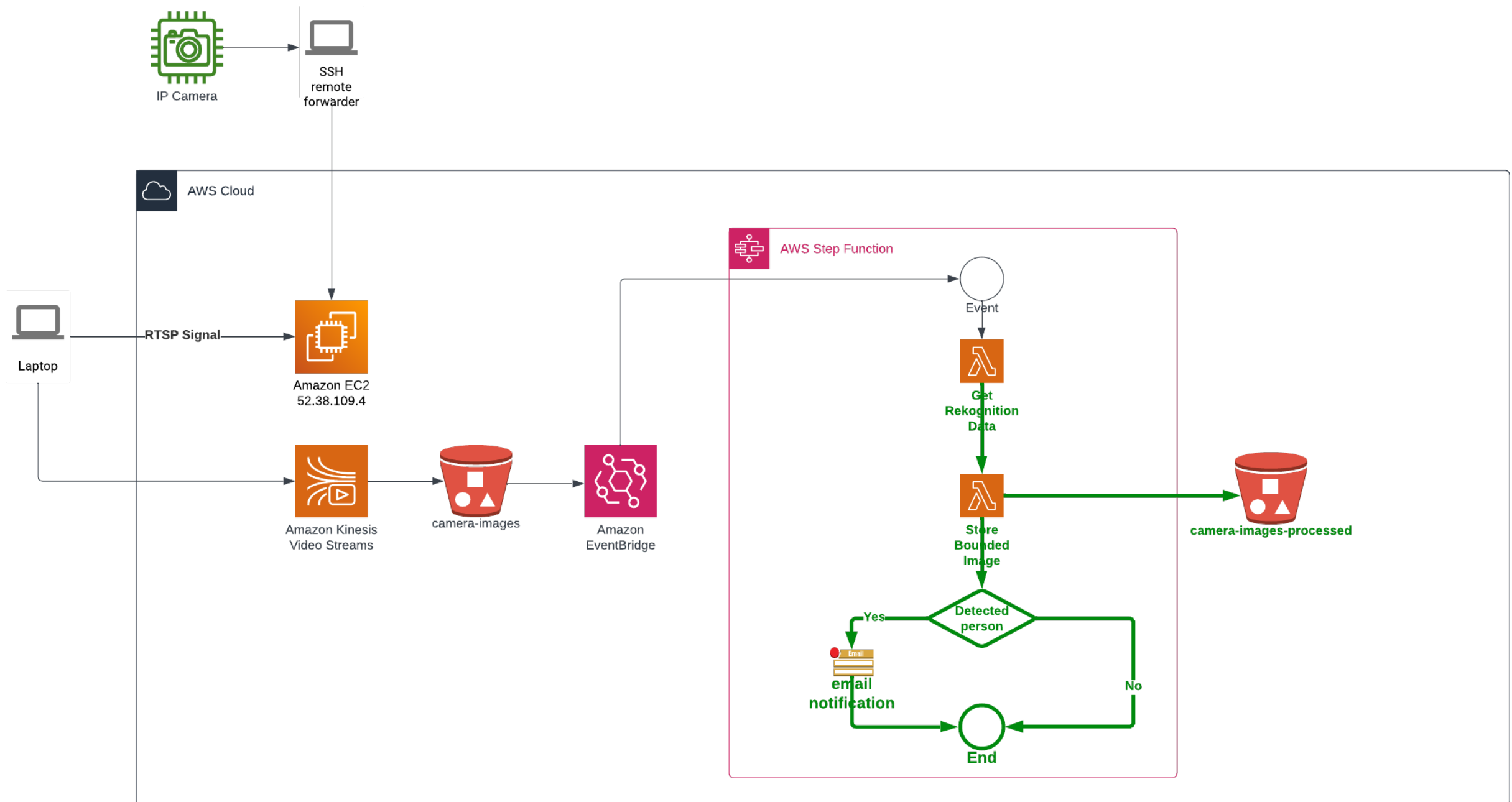
Infrastructure - Part #2

Image generation & triggering



Infrastructure - Part #3

Person recognition & alerting



Infrastructure - Part #1

Streaming

- Be able to receive RSTP signal
- Setup AWS credentials
- Ingest video stream to Amazon Kinesis Video Stream
- See live video stream in AWS Console

Kinesis Video Stream

Capture, process and store media streams for playback, analytics and machine learning

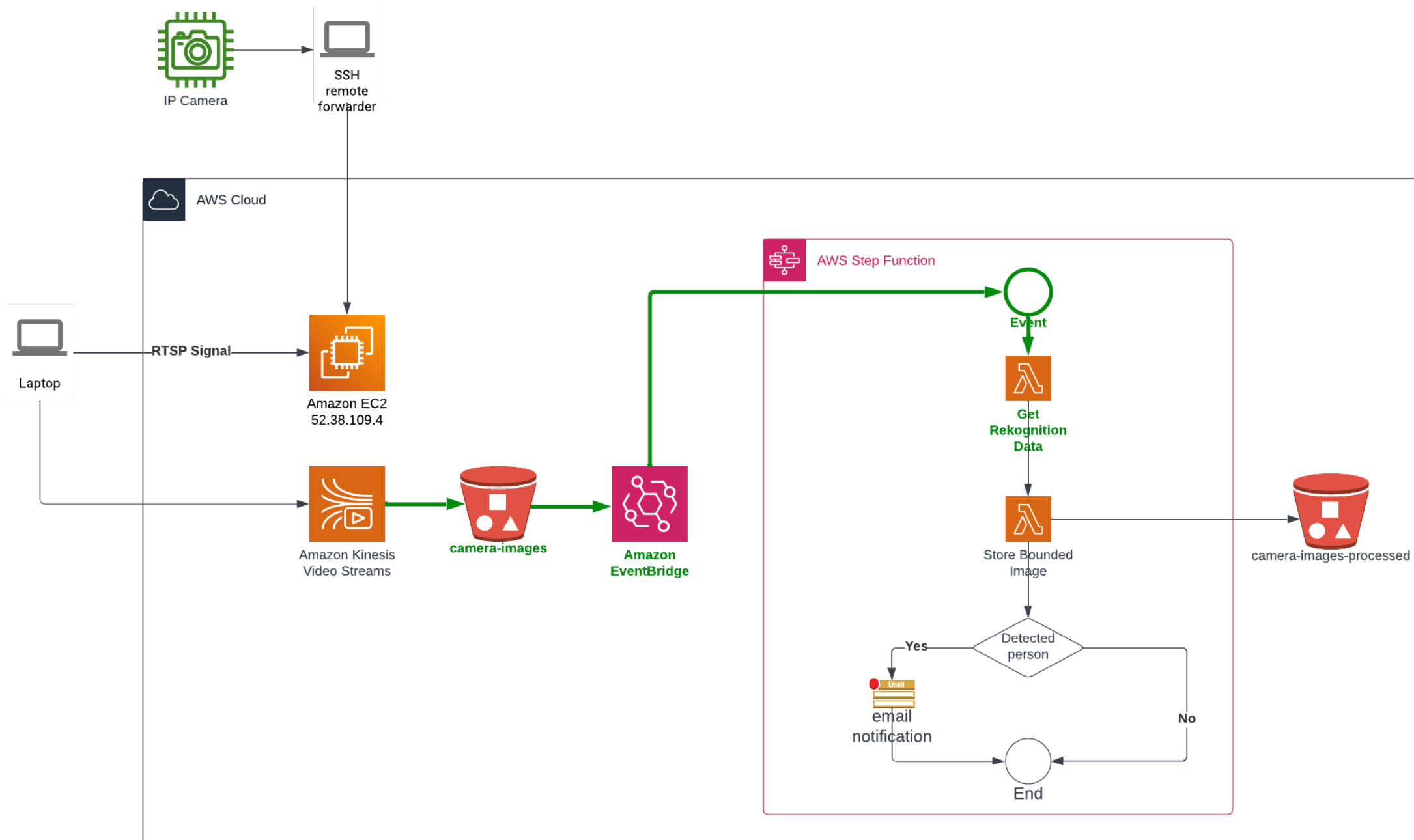
- Ingest streaming video data
- AWS elastically scales infrastructure
- Real-time computer vision

Use cases:

- Smart home
- Smart city
- Industrial automation

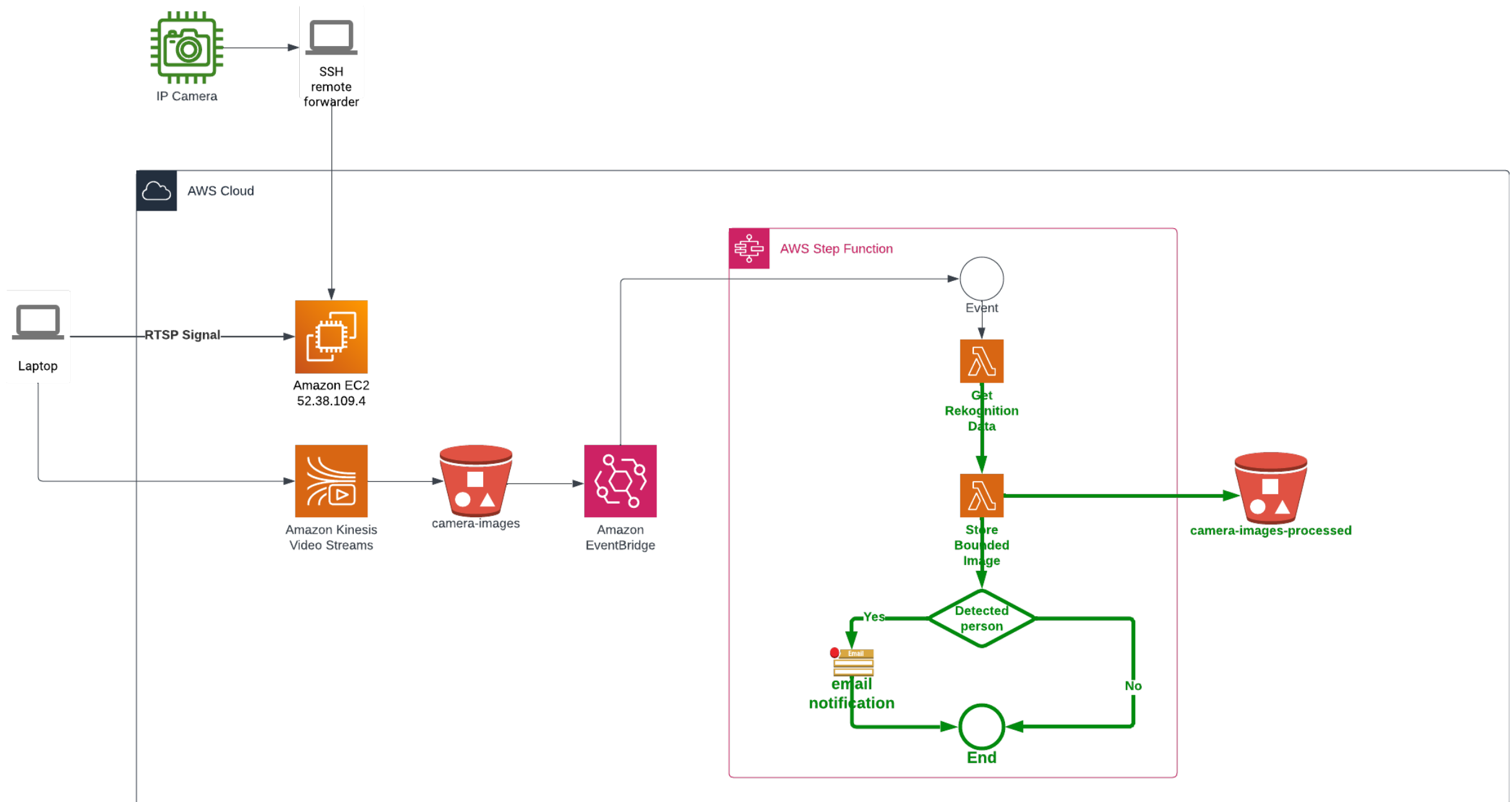
Infrastructure - Part #2

Image generation & triggering



Infrastructure - Part #3

Person recognition & alerting



Amazon Rekognition

Automate your image recognition and video analysis with machine learning

- Add pre-trained computer vision APIs to applications
- AWS scales up/down based on needs

Use Cases

- Content moderation
- Face detection
- Text detection
- Labeling

Amazon SNS

Fully managed Pub/Sub service for A2A and A2P messaging

- Send notifications application-to-application and application-to-person
- A2P lets us send messages to persons with SMS texts, push notifications and emails

Use cases:

- Pub/sub pattern
- SMS
- Mobile push

