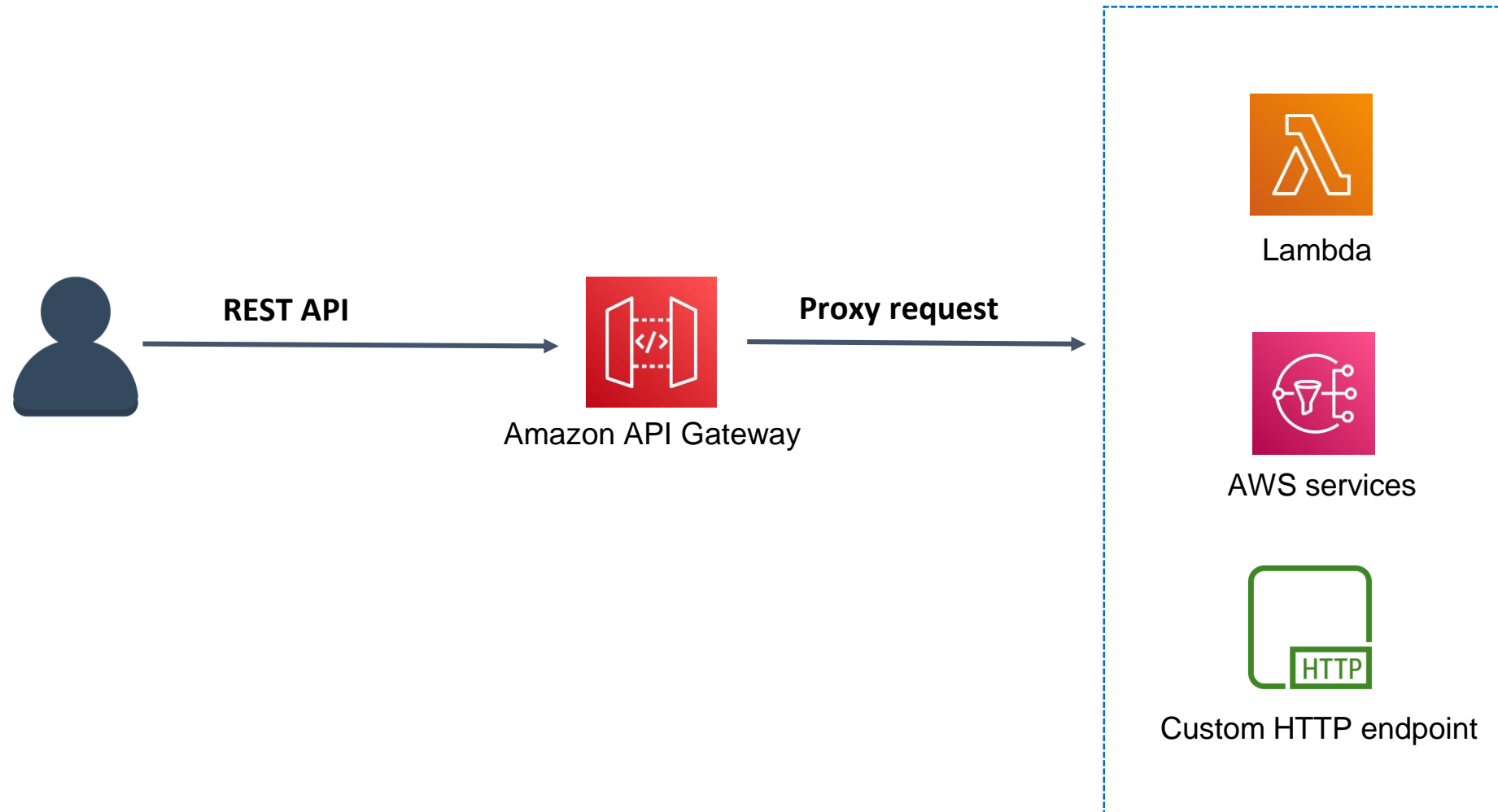# API Gateway

API Gateway

API Gateway features

- Fully serverless, no infra management

- Handle API versioning (v1, v2…)

- Handle difference stages (dev, stg, prod)

- Authentication and Authorization

- API Operations Monitoring (Error rates, latency…)

- Issue API key for 3rd party developers

- Cache API responses

- SDK generation

API Gateway – Endpoint Types

- **Edge-optimized**

  - For geographically distributed clients

  - Requests are routed to **CloudFront Edge location** and then route to API gateway core via AWS managed network

  - API gateway core still be in one region

- **Regional**

  - For clients in the same region

- **Private**

  - Only be accessed from your VPC using an interface VPC endpoint
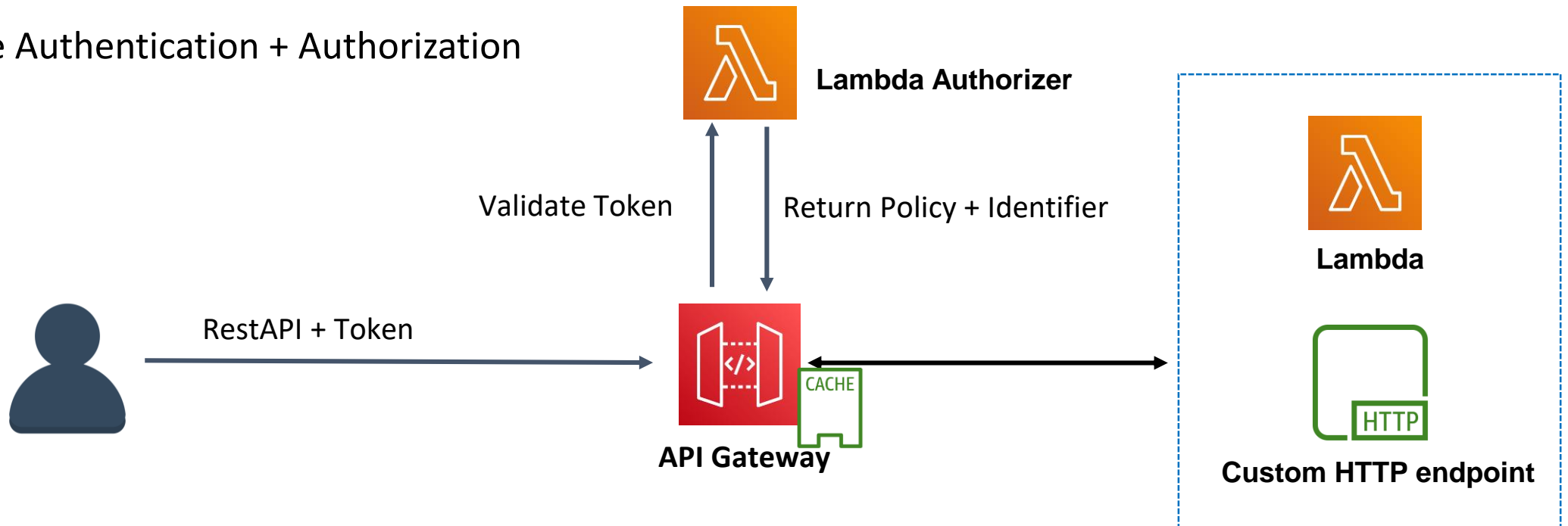
API Gateway Security

API Gateway security - IAM

- Using IAM permission to authenticate and authorize access to API gateway

- Uses for user, roles in same account with API gateway

- Handle Authentication + Authorization

IAM

IAM Policy check

RestAPI + Sig v4

API Gateway

Lambda

Custom HTTP endpoint
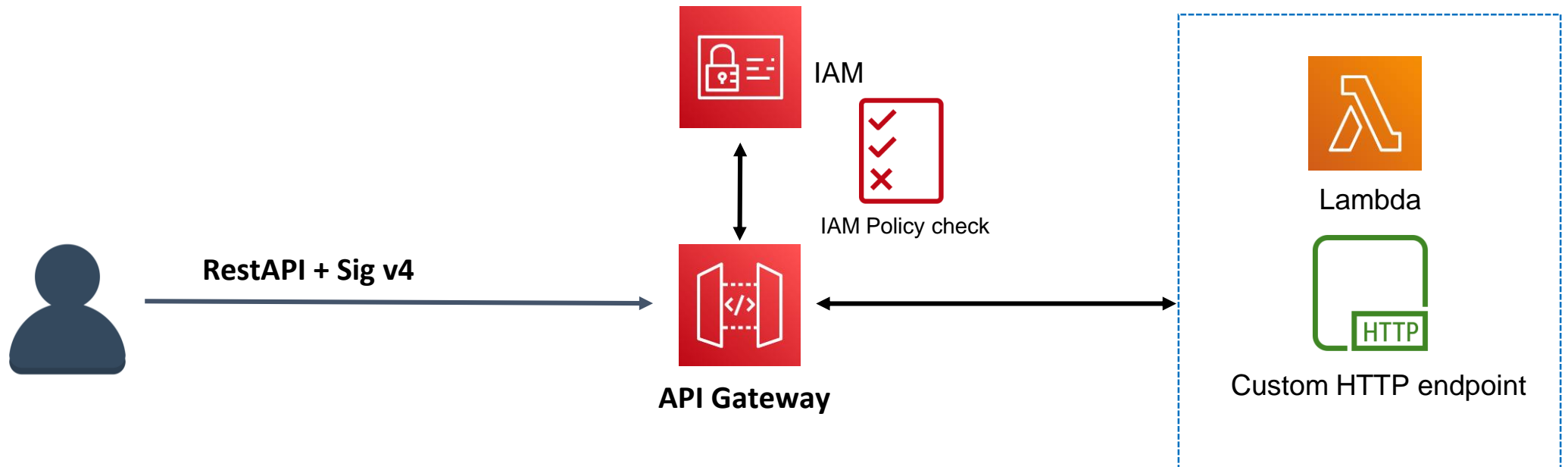
API Gateway security - Lambda Authorizers

- Uses for authenticating via **3rd Identity Provider** or **Database** as **identity store**

- Invoke Lambda function to authenticate the requests and return policy for this requests

- Handle Authentication + Authorization

Lambda Authorizer

Validate Token

Return Policy + Identifier

RestAPI + Token

API Gateway

CACHE

Lambda

HTTP

Custom HTTP endpoint

API Gateway security - Cognito User Pool

- Manage User Pool for authentication

- Need to implement authorization function in the backend

Authentication + Retrieve Token

Amazon Cognito

Validate Token

Lambda

RestAPI + Token

API Gateway

Custom HTTP endpoint