

서버리스를 여행하는 히치하이커를 위한 안
내서

with SAM



구경열

실습 준비물

노트북
AWS 계정
AWS에서 구매한 도메인



<https://yeoli.notion.site/8d653fe9dd514d3b84e5a625da519ce7>

AWS Lambda ? Serverless ?

[AWS News Blog](#)

AWS Lambda – Run Code in the Cloud

by [Jeff Barr](#) | on 13 NOV 2014 | in [Amazon DynamoDB](#), [Amazon Kinesis](#), [AWS Lambda](#) | [Permalink](#) |  Share

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개발자들이 말하는 AWS 기반 ‘서버 없는 아키텍처’

by [Channy Yun](#) | on 18 4월 2016 | in [Amazon API Gateway](#), [AWS Lambda](#), [Serverless](#) | [Permalink](#) |  Share

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Firecracker - 서비스 컴퓨팅을 위한 오픈 소스 경량 가상화 기술 공개

by [AWS Korea](#) | on 03 12월 2018 | in [Amazon EC2](#), [AWS re:Invent](#), [Launch](#), [News](#), [Open Source](#) | [Permalink](#) |  Share

AWS Lambda 장점

저렴한 가격
신속한 배포
뛰어난 확장성

요금 계산

1,000,000 요청 x 1,000 밀리초 x 0.001 밀리초-초 변환 인수 = 1,000,000.00 총 컴퓨팅 시간(초)

0.125 GB x 1,000,000.00 초 = 125,000.00 총 컴퓨팅 크기(GB/s)

125,000.00 초당 GB - 400000 프리 티어 기가비트-초 = -275,000.00 초당 GB

Max (-275000.00 초당 GB, 0) = 0.00 총 청구 대상 GB-초

Tiered price for: 0.00 초당 GB

총 티어 비용 = 0.00 USD(월별 컴퓨팅 요금)

1,000,000 요청 - 1000000 프리 티어 요청 = 0 월별 청구 가능 요청 수

Max (0 월별 청구 가능 요청 수, 0) = 0.00 총 월별 청구 가능 요청 수

0.50 GB - 0.5 GB(추가 요금 없음) = 0.00 함수당 청구 가능한 임시 스토리지 GB

Lambda 비용 - 프리 티어 포함 (월별): 0.00 USD

그래서 어떻게 쓰는건가요 ?



아....잘 앙돼

아래 조건을 만족하는 간단한 프로젝트를 만들어봅시다.

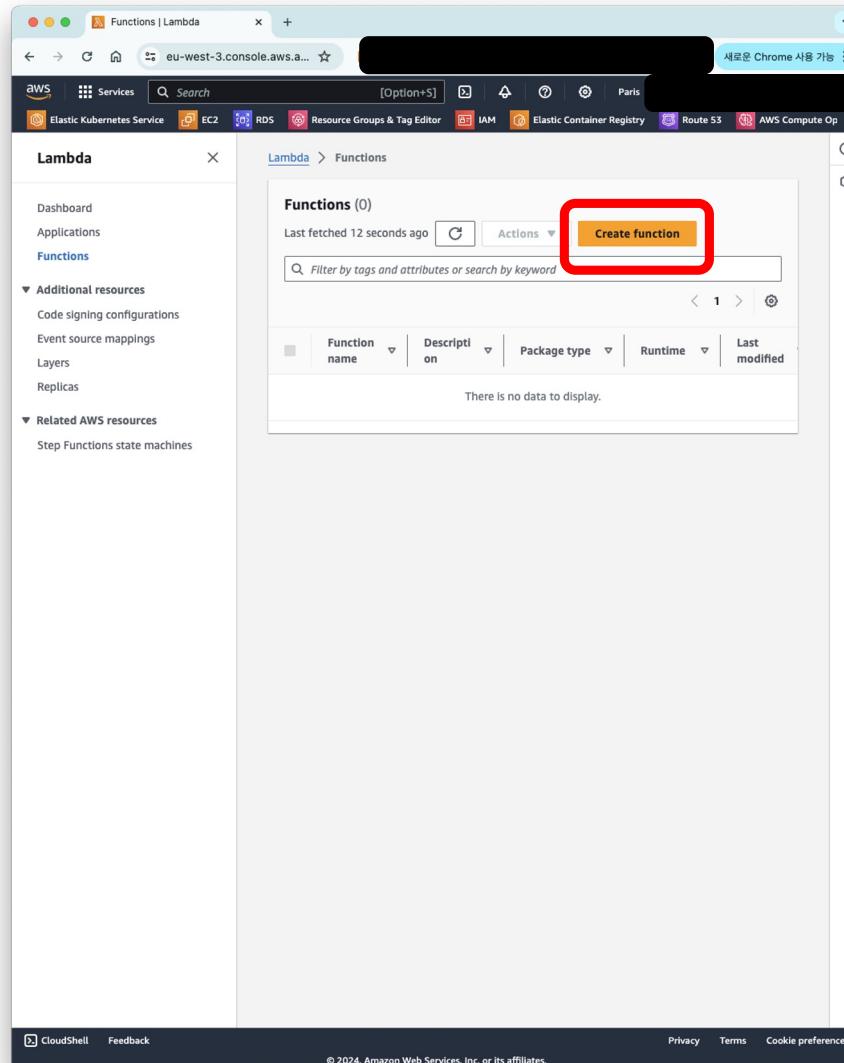
- Lambda로 작성된 백엔드 함수
- 인터넷에 공개된 API Gateway

AWS 콘솔

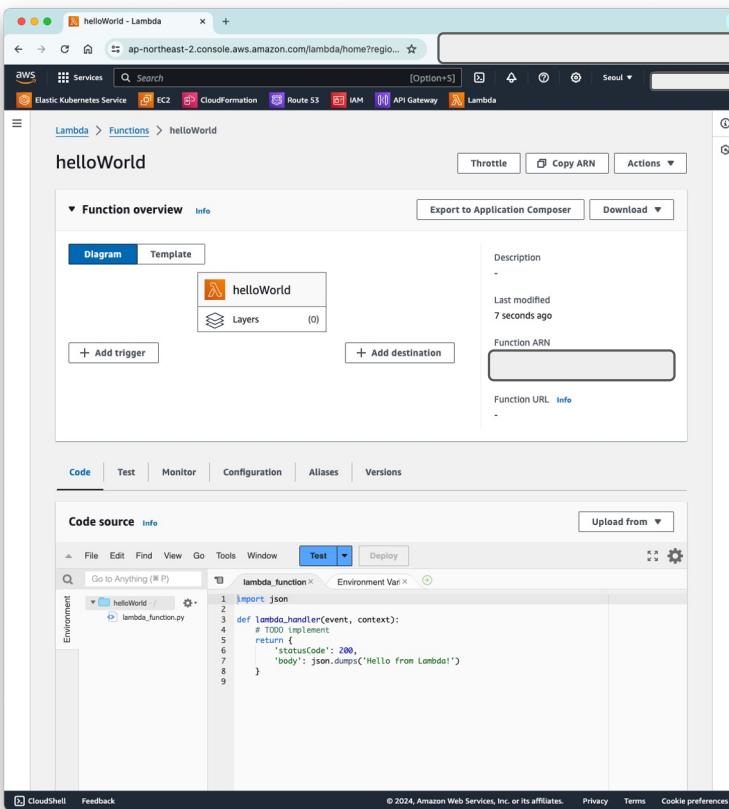
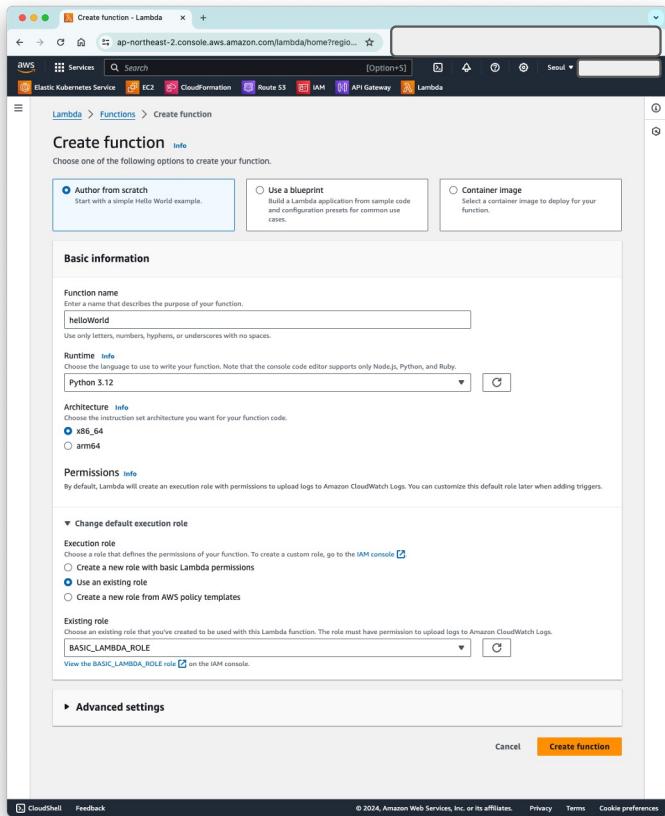
The screenshot shows the AWS Lambda service page. In the top navigation bar, the 'Services' tab is selected. A search bar contains the query 'lambda'. Below the search bar, there's a sidebar with the 'Lambda' logo and several navigation links: Dashboard, Applications, Functions, Additional resources (Code signing configuration, Event source mapping, Layers, Replicas), and Related AWS resources (Step Functions state machine). The main content area displays search results for 'lambda'. A heading 'Search results for 'lambda'' is followed by a 'Services' section. On the right, a link 'See all 7 results ▶' is visible. The results list includes:

- Lambda** ☆
Run code without thinking about servers
- CodeBuild** ☆
Build and Test Code
- AWS Signer** ☆
Ensuring trust and integrity of your code
- Amazon Inspector** ☆
Continual vulnerability management at scale

AWS 콘솔



AWS 콘솔



AWS 콘솔

The screenshot shows the AWS search interface with the query 'api gateway'. The results are categorized into Services, Features, and Resources.

- Services:**
 - API Gateway** (selected): Build, Deploy and Manage APIs
 - Storage Gateway: Hybrid Storage Integration
 - CloudTrail: Track User Activity and API Usage
 - Amazon Location Service: Securely and easily add location data to applications.
- Features:**
 - WebSocket API: API Gateway feature
 - APIs: API Gateway feature
 - VPC links: API Gateway feature
 - REST API: API Gateway feature
- Resources:**
 - Introducing resource search: Able to show cross-region resources for your account in search results. Takes less than 5 minutes to set up.
- Documentation:** See all 219,750 results

The screenshot shows the 'Create REST API' wizard in the AWS API Gateway console.

Create REST API

API details

New API: Create a new REST API.

Clone existing API: Create a copy of an API in this AWS account.

Import API: Import an API from an OpenAPI definition.

Example API: Learn about API Gateway with an example API.

API name: example-apı

Description - optional: (empty)

API endpoint type: Regional APIs are deployed in the current AWS Region. Edge-optimized APIs route requests to the nearest CloudFront Point of Presence. Private APIs are only accessible from VPCs.

Regional

Cancel **Create API**

AWS 콘솔

The image consists of two side-by-side screenshots of the AWS API Gateway console.

Left Screenshot: API Gateway - Resources

This screenshot shows the 'Resources' section of the API Gateway console. A success message 'Successfully created method GET in helloWorld!' is displayed. The interface includes a flow diagram for a GET request from a client to a Lambda integration. Below the diagram, the 'Method request' tab is selected, showing settings like 'Authorization: NONE', 'Request validator: None', and 'Request paths: ()'. Other tabs include 'Integration request', 'Integration response', 'Method response', and 'Test'.

Right Screenshot: API Gateway - Stages

This screenshot shows the 'Stages' section. It displays a deployment for the 'prod' stage of the 'myRestApi' API. A success message 'Successfully created deployment for myRestApi. This deployment is active for prod.' is shown. The 'Method overrides' section indicates that the 'helloWorld' method inherits its settings from the 'prod' stage. An 'Invoke URL' is provided: <https://4c5n9k8970.execute-api.ap-northeast-2.amazonaws.com/prod/helloWorld>.

그리고 ...

- DNS 설정
- API 배포
- 다른 서비스와 연동

그밖에...

어때요 정말 쉽죠 ?





가지 버전 하이라이트!

해결 방안



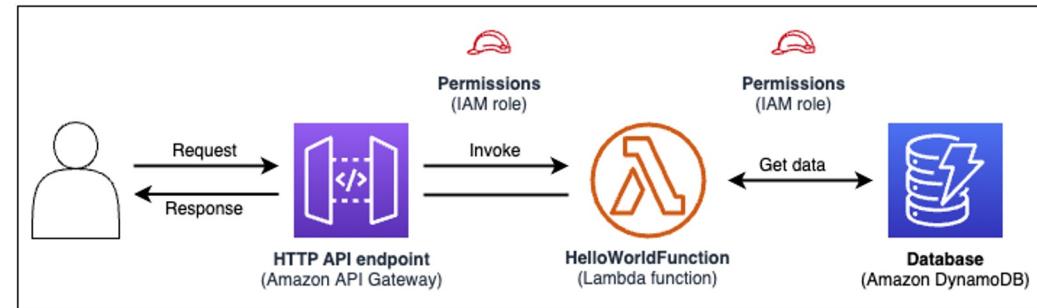
AWS SAM



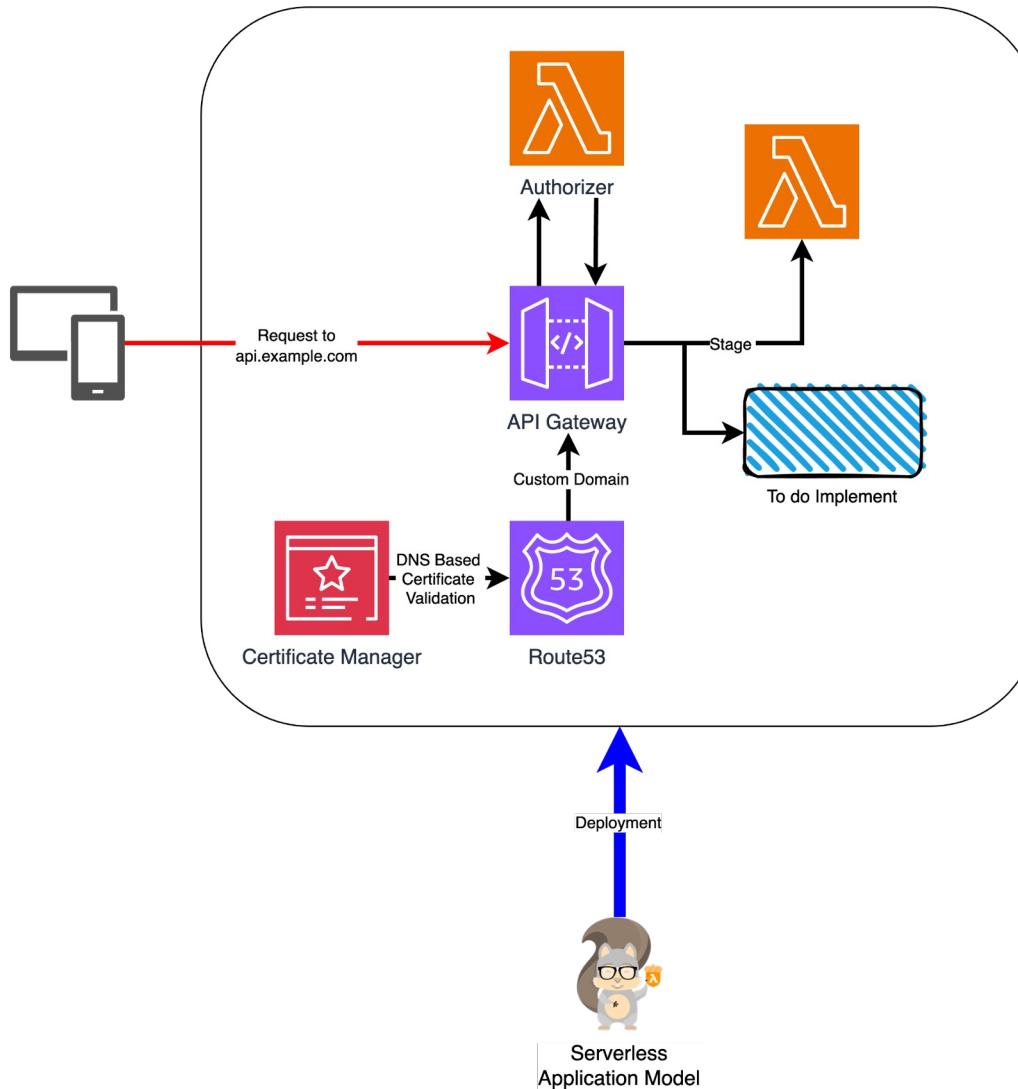
Serverless Application Model

AWS SAM이란?

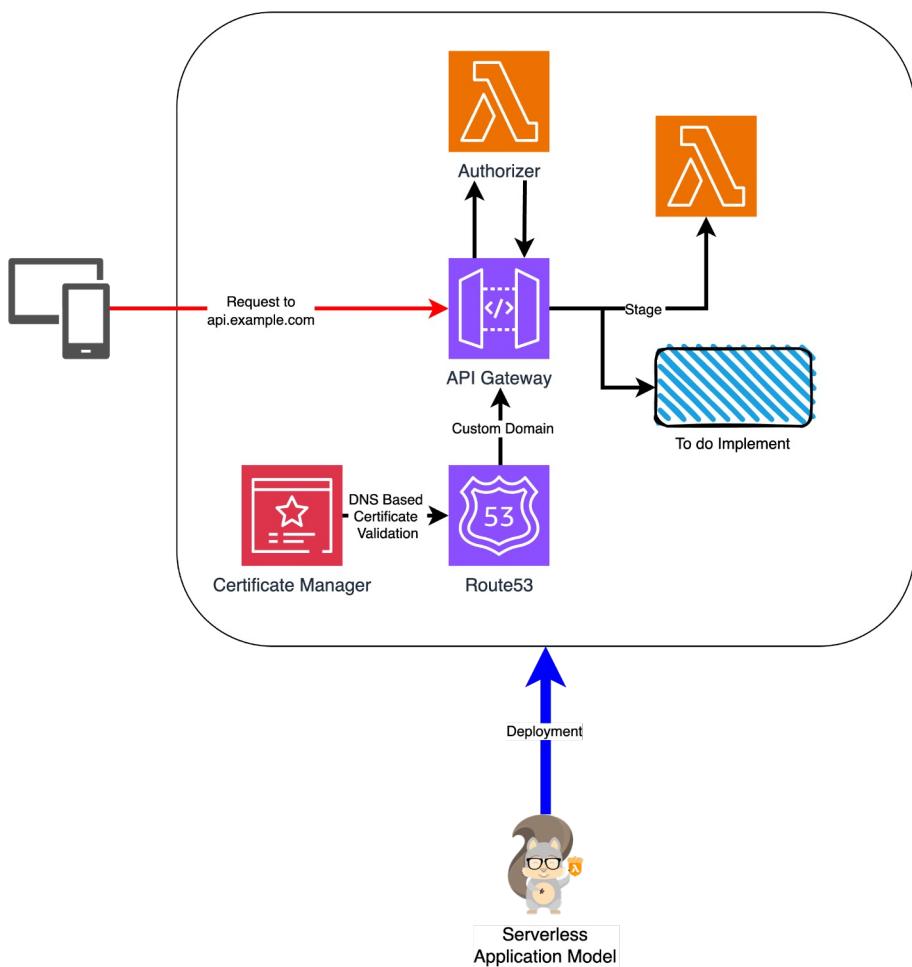
```
AWSTemplateFormatVersion: 2010-09-09
Transform: AWS::Serverless-2016-10-31
Resources:
  getAllItemsFunction:
    Type: AWS::Serverless::Function
    Properties:
      Handler: src/get-all-items.getAllItemsHandler
      Runtime: nodejs12.x
    Events:
      Api:
        Type: HttpApi
        Properties:
          Path: /
          Method: GET
    Connectors:
      MyConn:
        Properties:
          Destination:
            Id: SampleTable
        Permissions:
          - Read
    SampleTable:
      Type: AWS::Serverless::SimpleTable
```



오늘의 목표



데모



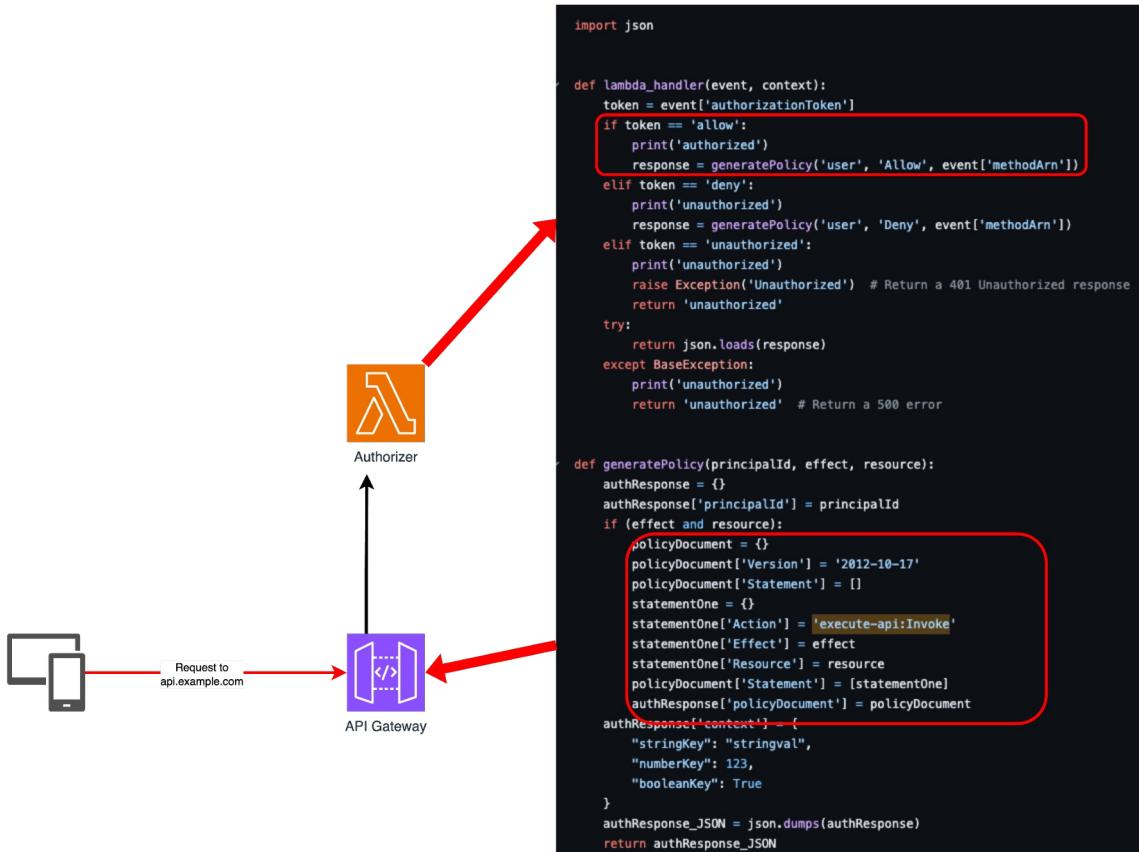
template 링
크

그 다음에는 무엇을 고민해봐야 할까요 ?



Q&A

부록. Authorizer 작동 원리



부록. context에 포함된 내용

Context methods

- `get_remaining_time_in_millis` – Returns the number of milliseconds left before the execution times out.

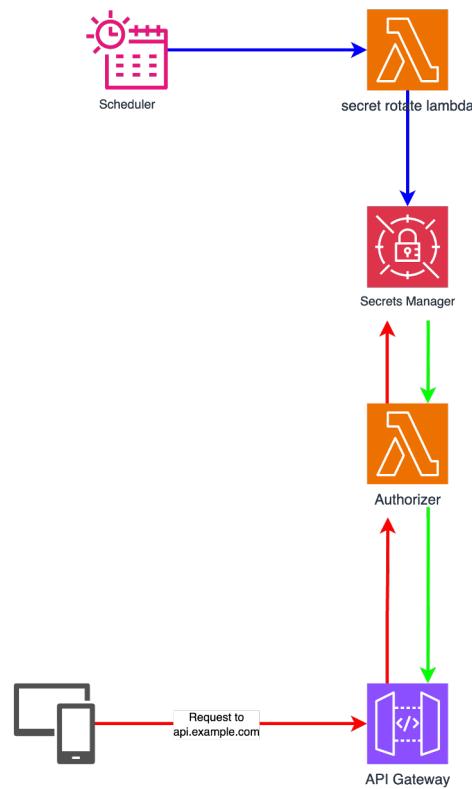
Context properties

- `function_name` – The name of the Lambda function.
- `function_version` – The [version](#) of the function.
- `invoked_function_arn` – The Amazon Resource Name (ARN) that's used to invoke the function. Indicates if the invoker specified a version number or alias.
- `memory_limit_in_mb` – The amount of memory that's allocated for the function.
- `aws_request_id` – The identifier of the invocation request.
- `log_group_name` – The log group for the function.
- `log_stream_name` – The log stream for the function instance.
- `identity` – (mobile apps) Information about the Amazon Cognito identity that authorized the request.
 - `cognito_identity_id` – The authenticated Amazon Cognito identity.
 - `cognito_identity_pool_id` – The Amazon Cognito identity pool that authorized the invocation.
- `client_context` – (mobile apps) Client context that's provided to Lambda by the client application.
 - `client.installation_id`
 - `client.app_title`
 - `client.app_version_name`
 - `client.app_version_code`
 - `client.app_package_name`
 - `custom` – A dict of custom values set by the mobile client application.
 - `env` – A dict of environment information provided by the AWS SDK.

The following example shows a handler function that logs context information.

<https://docs.aws.amazon.com/lambda/latest/dg/python-context.html>

부록. secrets manager를 활용한 authorizer 교체



https://docs.aws.amazon.com/es_es/secretsmanager/latest/userguide/reference_available-rotation-templates.html#OTHER_rotation_templates