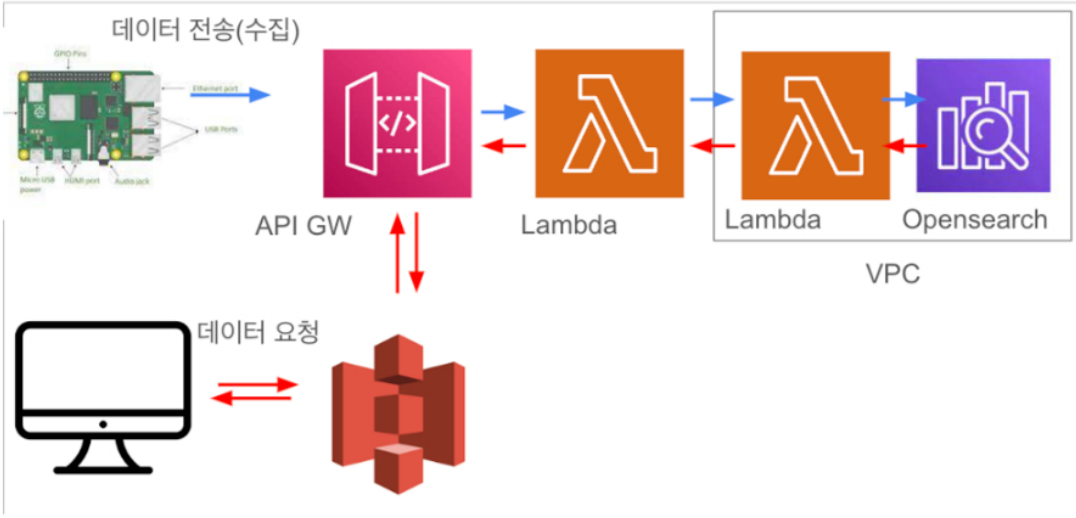
센서플랫폼VPC내용추가

보안강화를 위한 VPC설정 및 코드개선, 결과화면

기존 Opensearch는 vpc로 설정되어 있지않아 보안성이 떨어짐

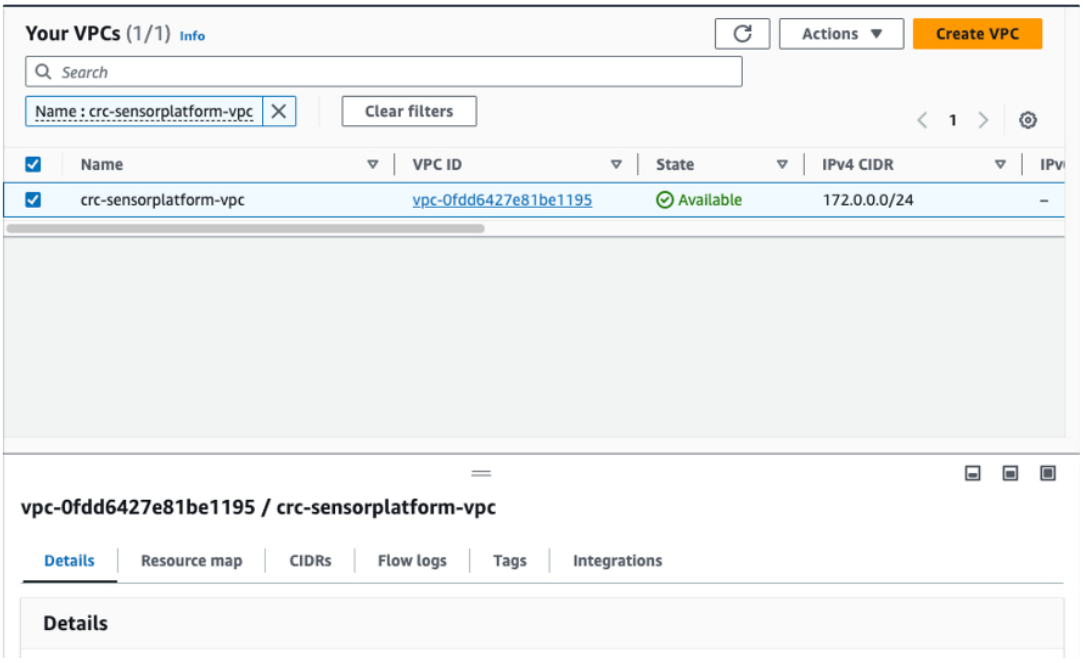
이를 해결하고자 vpc를 적용하기로하였으며, 그 과정과 결과를 다룬다.

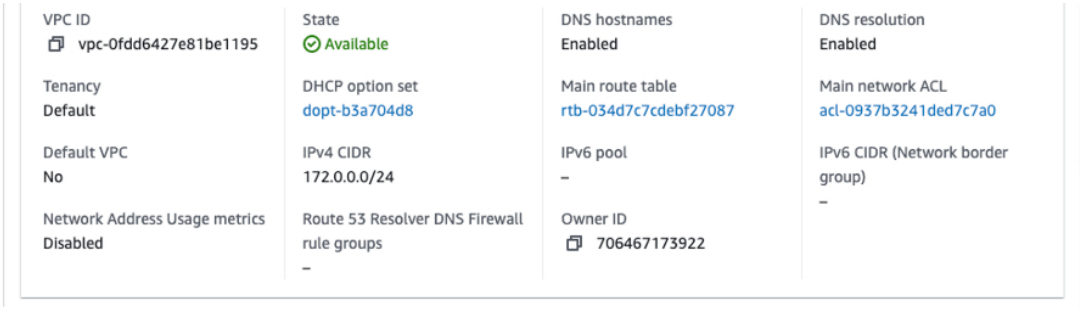
VPC를 통해서는 오직 API GW를 통해서만 람다, 오픈서치를 이용할 수 있도록 구성된다.

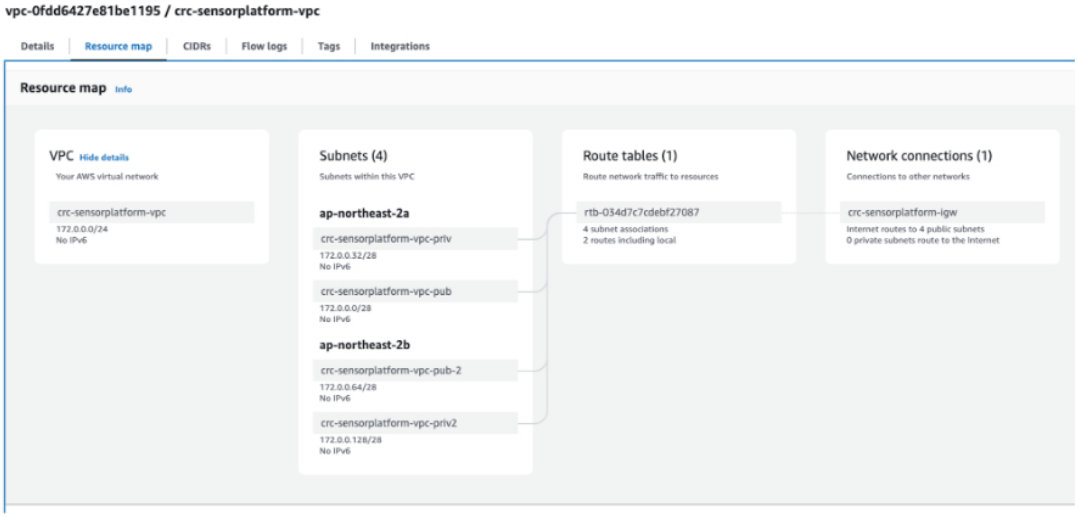


- VPC

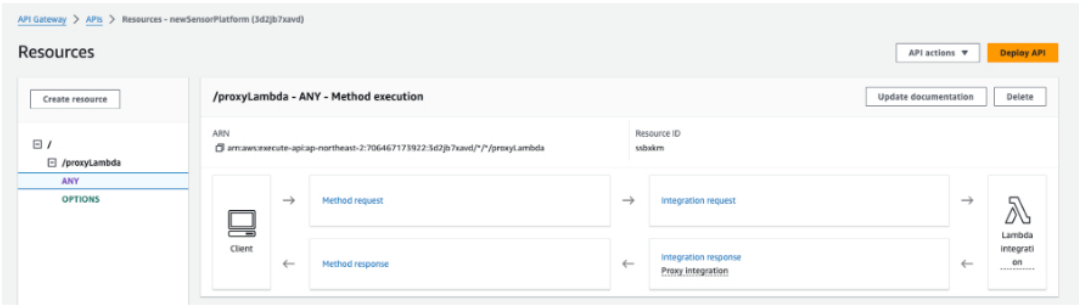
아래와 같이 구성하였다.







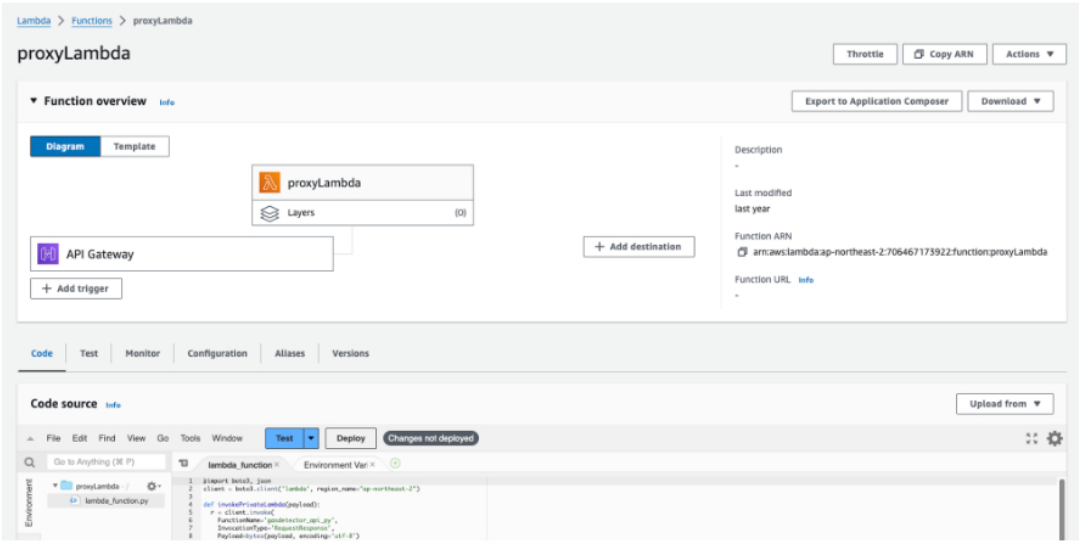
- API GW 구성화면이다.



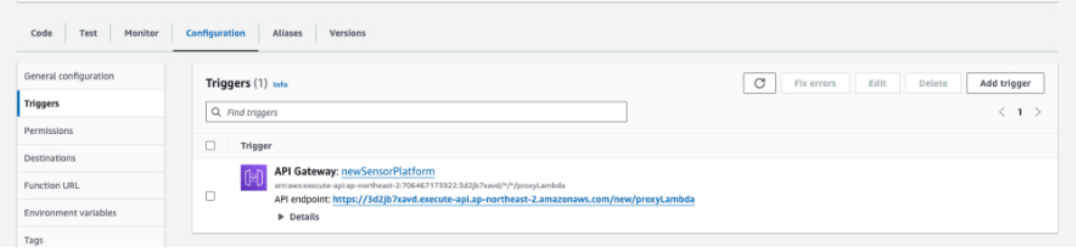
ANY를 통해서 POST와 GET의 요청을 통합실행하는 방법을 택했다.

다음은 해당 GW와 연결된 람다화면이다.

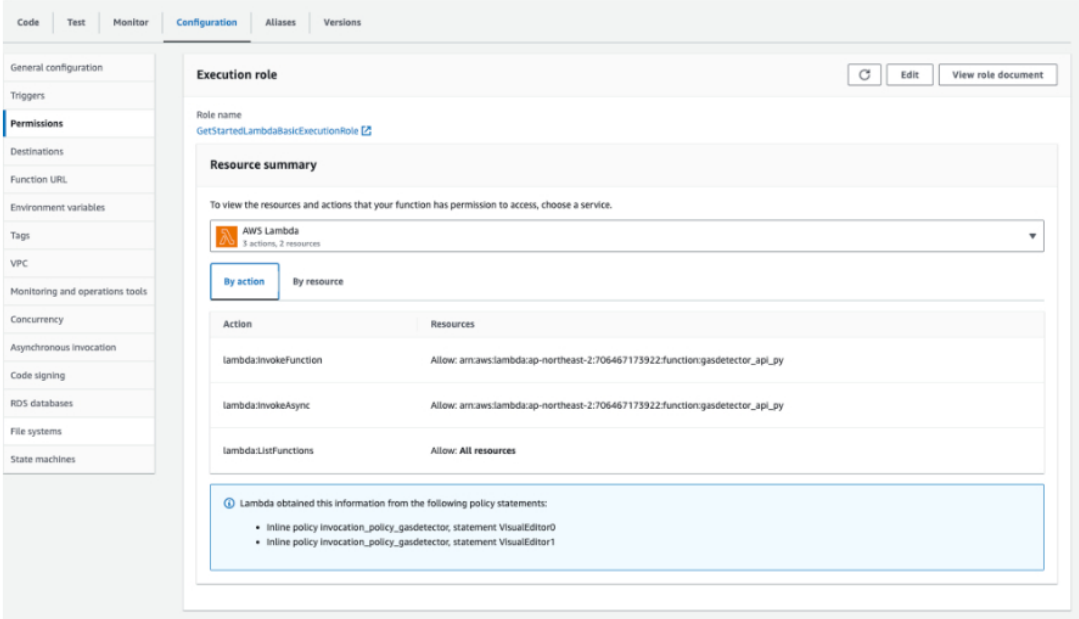
- Lamdba (외부)



다이어그램에서 보는 것과 같이 API GW와 연동되어있음을 확인할 수 있다.



configuration > Triggers 를 통해서도 확인할 수도 있다.



또한 이 람다함수는 오픈서치

람다함수의 코드이며
[https://github.com/kmucrc/sensorplatform/blob/main/2022/aws/lambda/proxy-lambda-function.py] 에서도 확인할 수 있다.

```
import boto3, json
client = boto3.client('lambda', region_name="ap-northeast-2")

def invokePrivateLambda(payload):
  r = client.invoke(
    FunctionName='gasdetector_api_py',
    InvocationType='RequestResponse',
    Payload=bytes(payload, encoding='utf-8')
  )
  return r['Payload'].read().decode('utf-8')

def lambda_handler(event, context):
    method = event['httpMethod']

    if method == 'POST':
        body = event['body']
        index = event['headers']['index']
        payload = json.dumps({'body': body, 'method': method, 'index': index})
        response = invokePrivateLambda(payload)

        return {
            'statusCode': 200,
            'headers': {
                'Access-Control-Allow-Headers': 'Content-Type',
```

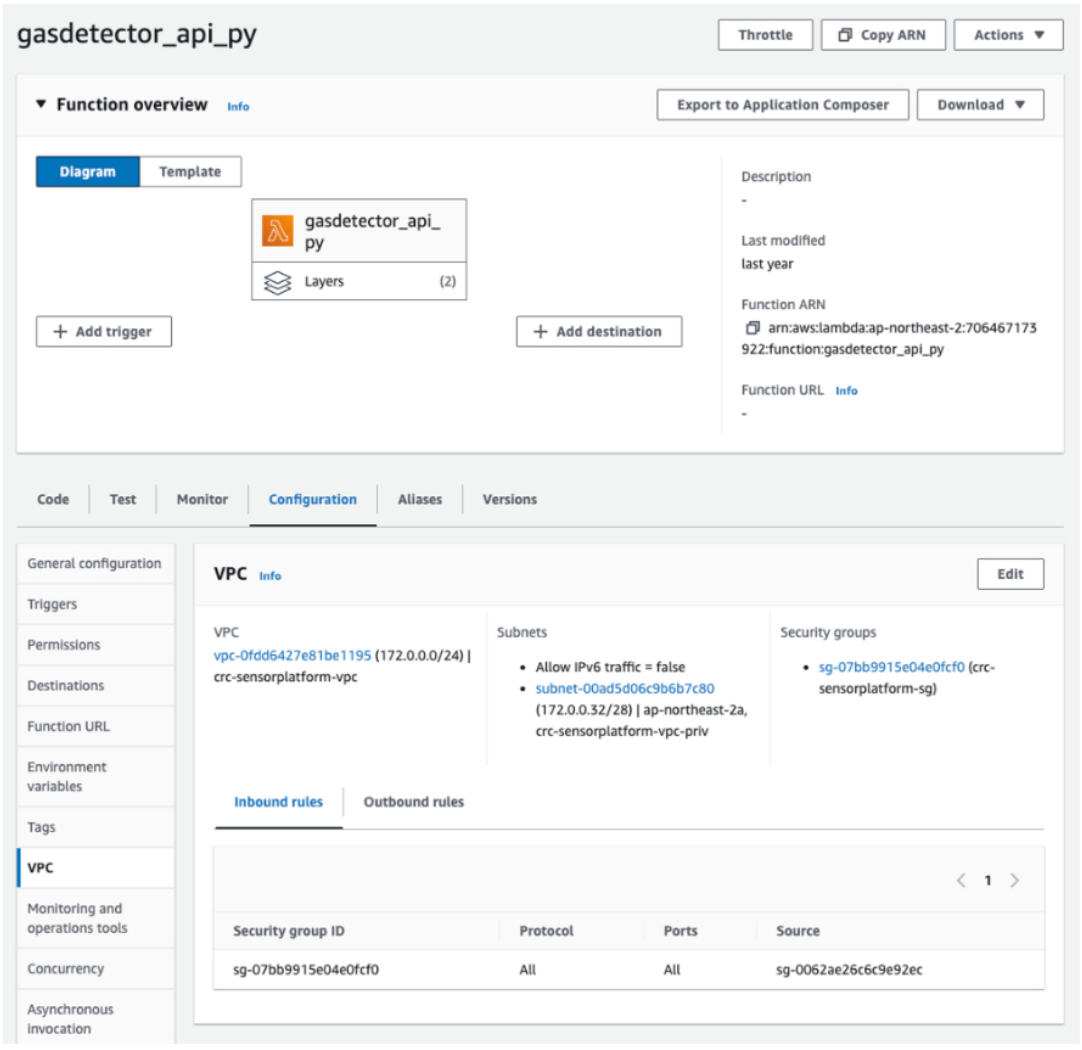
```
                'Access-Control-Allow-Origin': '*',
                'Access-Control-Allow-Methods': 'OPTIONS,POST,GET'
            },
            'body': response
        }

    elif method == 'GET':
        index = event["queryStringParameters"]['index']
        query = event["queryStringParameters"]['query']
        payload = json.dumps({'query':query, 'method': "GET", 'index': index })
        response = invokePrivateLambda(payload)

        return {
            'statusCode': 200,
            'headers': {
                'Access-Control-Allow-Headers': 'Content-Type',
                'Access-Control-Allow-Origin': '*',
                'Access-Control-Allow-Methods': 'OPTIONS,POST,GET'
            },
            'body': response
        }

    return {
        'statusCode': 400,
        'body': json.dumps('Invalid_Access')
    }
```

- Lambda(VPC, 내부)



오픈서치서비스와 연결되는 람다함수는 위와 같이 VPC설정을 한다.

코드는 아래와 같으며, 링크는
(https://github.com/kmucrc/sensorplatform/blob/main/2022/aws/lambda/gasdetector_api_py.py)
이다.

```
from pytz import timezone
import contants
from urllib import parse

client = boto3.client(
        'iot-data',
        region_name = 'ap-northeast-2',
        endpoint_url = 'https://a26pnpi3qj130t-ats.iot.ap-northeast-2.amazonaws.com

def publish_to_iot_core(data):
    now = datetime.datetime.now(timezone('Asia/Seoul'))
    nowDatetime = now.strftime('%Y-%m-%d %H:%M:%S')
    data['date'] = nowDatetime;

    return data;

def lambda_handler(event, context):
    print
    headers = {
        # 'authorization': 'Basic a211Y3JjZGV2X29zOiFLbXVjcmMyMDIy',
        'accept':'text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,
        'Content-Type': 'application/json'
    };
    auth = HTTPBasicAuth('오픈서치아이디','오픈서치비밀번호');

    if event['method'] == "GET":
        url = 'https://vpc-crc-sensorplatform-os-ncsx6wiaesyldgi3q462uvmaeq.ap-nort
        r = requests.get(url, headers=headers,auth=auth, data=event['query'])
        result = r.text

    if event['method'] == "POST":
        url = 'https://vpc-crc-sensorplatform-os-ncsx6wiaesyldgi3q462uvmaeq.ap-nort
        data = json.loads(event["body"]);
        publish_to_iot_core(data);
        result = requests.post(url = url, data = json.dumps(data), headers = header

    return {
        'statusCode': 200,
        'headers': {
            'Access-Control-Allow-Headers': 'Content-Type',
            'Access-Control-Allow-Origin': '*',
            'Access-Control-Allow-Methods': 'OPTIONS,POST,GET'
        },
        'body': result
    }
```

데이터요청 결과화면

Group Id | Data Type | Data Field

1 | oximetry | HbA1c(당화혈색소)

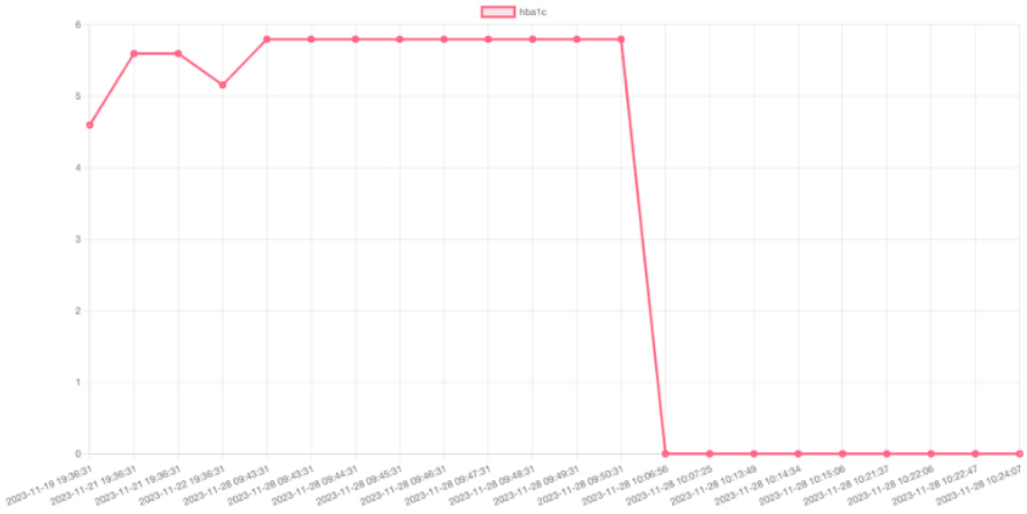
Created Time

Start Date: 2023-11-01 | Start Time: 03:01 AM

End Date: 2024-02-29 | End Time: 03:01 AM

Search

Graph



Table

날짜	hba1c
2023-11-28 10:24:07	0
2023-11-28 10:22:47	0
2023-11-28 10:22:06	0
2023-11-28 10:21:37	0