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The problem with this architecture,

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* Lambda function and then gets the response from this JSON object within S3.

But when you use the Lambda authorizer, this is not the flow that we are going to follow.

So let's discuss what is the flow going to look like when you use Lambda authorizer for authentication

and authorization?

* Step 1: So first the client makes a request to this third party IDP and provides its login credentials.

And then this third party, IDP, whatever you have within your organization, is going to validate that request.

* Step 2 : And if the credentials are valid, it's going to send back an access token to this client.

So once this client has the access token, it's going to make an API request and then pass this access token as a part of the header.

* So this is what the authorization token would look like. So you have the key authorization token and then you have some value.

So once this API gateway receives the access token from the client along with the API request, it will send this access token to the lambda authorizer.

* So this lambda authorizer is nothing but a lambda function for which you have to custom code.

Now the lambda authorizer will validate the access token it has received from API Gateway with this third party identity provider.

* Once it has validated the token with the third party identity provider, it's going to generate an IAM policy and send it back to API Gateway.
* So the API gateway will then evaluate this IAM policy and based on the effect which is either allow or deny it will provide access to the back end service or it will send a deny response to the client.

So this is broadly how the AWS lambda authorizer works.

Class 2:

Without S3

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Section-1:

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Section-2:

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Lambda:

1. Two Lambda functions
2. demo\_lambda\_auth\_backend 🡪 Application one
3. Lambda function authorizer 🡪

Demo Lambda Auth :

Code:

import json

def lambda\_handler(event, context):

    # TODO implement

    return {

        'statusCode': 200,

        'body': json.dumps('Hello from AWS Lambda Authorizer!')

    }

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test

deploy

REST API:

Build🡪 REST🡪 New API🡪 demo\_lambdaauthorizer 🡪 Regional 🡪 Create API

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Resources🡪 Students

Method: GET

Integration : Lambda Function

Region: same as lambda function

Attach Lambda Function

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Test

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* Deploy to DEV stage 🡪 Deploy API
* Test API GW + Lambda combination

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3. Create Lambda Function for authorizers.

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demo\_lambda\_authorizer\_function

Python

“

import json

def lambda\_handler(event, context):

    # TODO implement

    return {

        'statusCode': 200,

        'body': json.dumps('Hello from demo\_lambda\_authorizer\_function!')

    }

“

\*\*\*\*\*\*\*\*\* Above one created lambda only for backend teest

API🡪 Authorizers

Demo\_lambdaauthorizer

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Create Authorizer

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Test

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Lambda Function: demo\_lambdaauthorizer function

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Sample code:

“”””

def lambda\_handler(event, context):

#1.Log the event

print("The event data is below")

print(event)

authorization = 'Deny'

#2. Validate the token

if event['authorizationToken']=='123456':

authorization = 'Allow'

else:

authorization='Deny'

#3 . Generate the IAM Policy

authorizationpolicy = {"principalId": "rahulpolicy","policyDocument": {"Version": "2012-10-17","Statement": [{"Action": "execute-api:Invoke","Effect": authorization,"Resource": ["arn:aws:execute-api:us-east-1:196715057542:7lq3y19ycl/dev/GET/students"]}]}}

return authorizationpolicy

“””””””””””””

Step 1:

“””

def lambda\_handler(event, context):

#1.Log the event

   print("The event data is below")

   print(event)

“”””

Test

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Step 2:

def lambda\_handler(event, context):

#1.Log the event

   print("The event data is below")

   print(event)

   authorization = 'Deny'

#2. Validate the token

   if event['authorizationToken']=='123456':

       authorization = 'Allow'

   else:

       authorization='Deny'

Send back IAM policy

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#3 . Generate the IAM Policy

authorizationpolicy = {"principalId": "rahulpolicy","policyDocument": {"Version": "2012-10-17","Statement": [{"Action": "execute-api:Invoke","Effect": authorization,"Resource": ["arn:aws:execute-api:us-east-1:196715057542:7lq3y19ycl/dev/GET/students"]}]}}

return authorizationpolicy

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<https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-lambda-authorizer-output.html>

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“arn:aws:execute-api:us-east-1:905418111046:otn5e9wxa5/Dev/GET/students”

Full CODDE

https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-lambda-authorizer-output.html

def lambda\_handler(event, context):

#1.Log the event

   print("The event data is below")

   print(event)

   authorization = 'Deny'

#2. Validate the token

   if event['authorizationToken']=='123456':

       authorization = 'Allow'

   else:

       authorization='Deny'

#3 . Generate the IAM Policy

   authorizationpolicy = {"principalId": "narenpolicy","policyDocument": {"Version": "2012-10-17","Statement": [{"Action": "execute-api:Invoke","Effect": authorization,"Resource": ["arn:aws:execute-api:us-east-1:905418111046:otn5e9wxa5/Dev/GET/students"]}]}}

   return authorizationpolicy

DEPLOY and Test

Status: Succeeded

Test Event Name: sampletest

Response:

{

  "principalId": "narenpolicy",

  "policyDocument": {

    "Version": "2012-10-17",

    "Statement": [

      {

        "Action": "execute-api:Invoke",

        "Effect": "Allow",

        "Resource": [

          "arn:aws:execute-api:us-east-1:905418111046:otn5e9wxa5/Dev/GET/students"

        ]

      }

    ]

  }

}

Function Logs:

START RequestId: e3173ba7-6e94-4618-85f3-603dcc565283 Version: $LATEST

The event data is below

{'authorization': '123456'}

END RequestId: e3173ba7-6e94-4618-85f3-603dcc565283

REPORT RequestId: e3173ba7-6e94-4618-85f3-603dcc565283  Duration: 2.31 ms   Billed Duration: 3 ms   Memory Size: 128 MB Max Memory Used: 34 MB  Init Duration: 90.21 ms

Request ID: e3173ba7-6e94-4618-85f3-603dcc565283

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Test Event :

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Goes to Denial

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Case 3:

Token name change

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Back to authorization only

API Gateway:

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COgnito:

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* So you have a client here and it wants to access some backend resource through the lambda function.
* So what you will do is it will make a request to this Cognito user pool where he is already registered.
* Once the cognito user pool authenticates the user, it is going to send back an token to this client.
* Then this client is going to make an API request to this API gateway along with this token that it has

received from the Cognito User API.

🡪Gateway already has an inbuilt integration with cognito, so it will send the token to cognito.

And once cognito receives this token it's going to validate the token and then send a response back

to the API gateway.

* Based on this response, API Gateway will determine whether it has access to this backend service or

otherwise it will send a deny request to this client. So now let's go ahead and implement this.

This is much simpler than the Lambda authorizer.

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API authorizer:

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