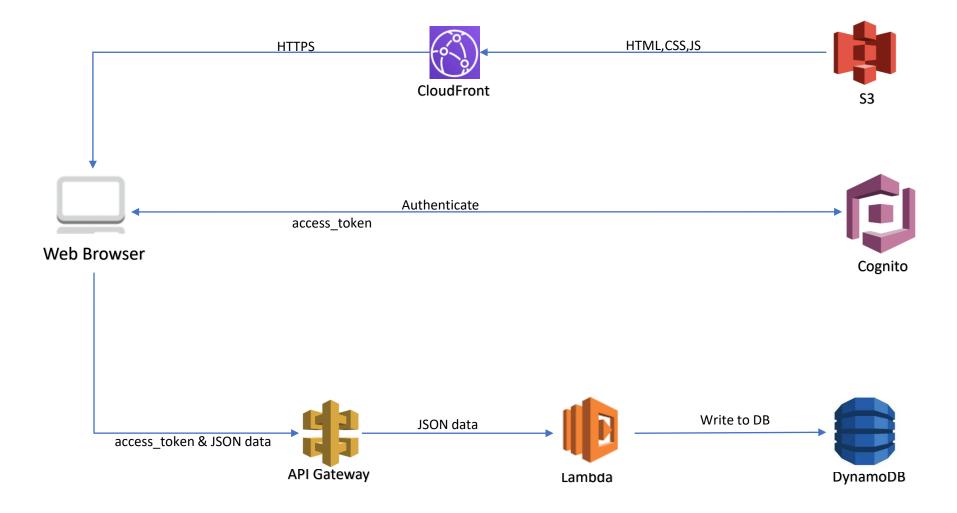
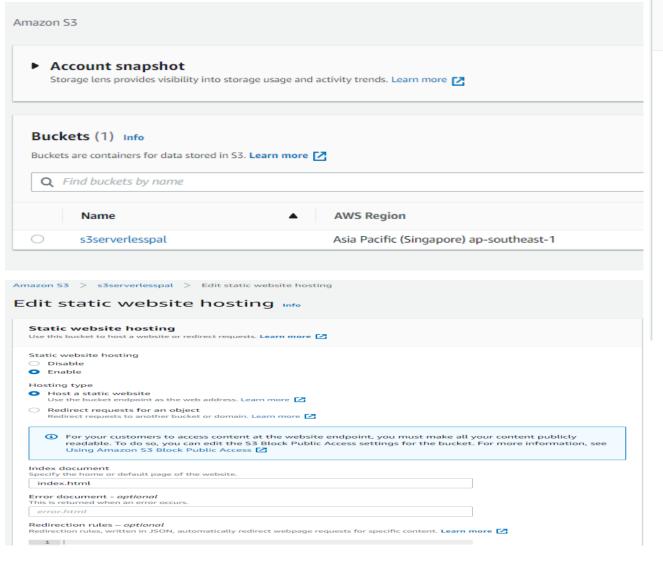
Use the serverless technology to build up a feedback website for a book publishing company.

Basic Architecture



Deploying website in S3 Bucket

Create a S3 bucket and enable the static webhosting and upload the files html,css,js files which are required

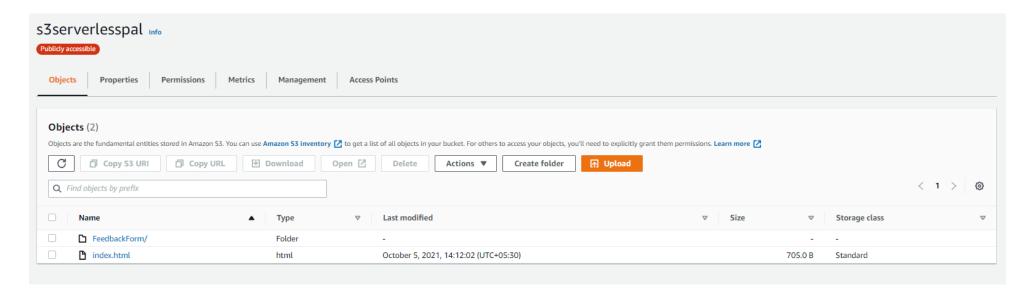


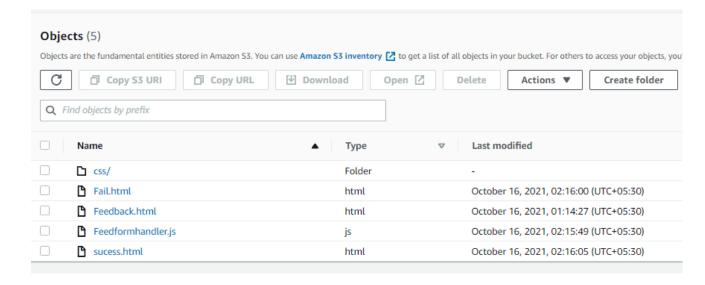
Bucket policy

The bucket policy, written in JSON, provides access to the objects stored in the bucket. Bucket policies don't apply to ol

- S3 bucket to be linked with Cloud front to Implement https.
- To make web accessible only through cloud front set the bucket policy as mentioned above

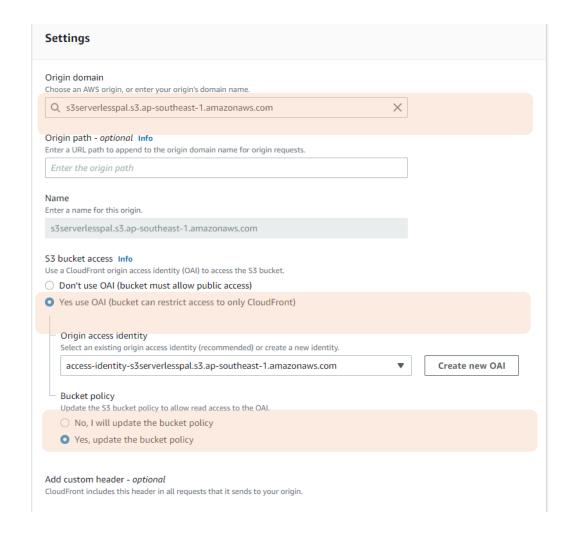
Deploying website in S3 Bucket

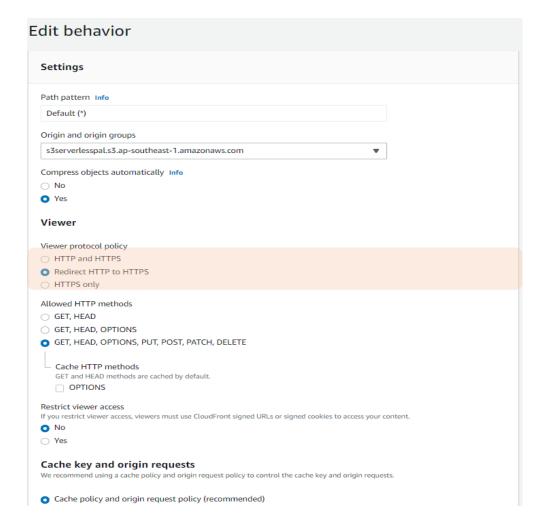




- > Feeback.html feedback form.
- ➤ Feedformhandler.js get data from the form and access token from Cognito and sends to api gateway

Deploying up CloudFront for https





Note: ensure below mentioned points are selected

- Yes use OAI (bucket can restrict access to only CloudFront)
- Redirect HTTP to HTTPS

Did not use CNAME used default ssl certificate of CloudFront is used.

Testing the website

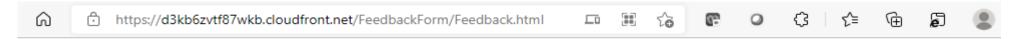
Without https and direct access to s3



403 Forbidden

- Code: AccessDenied
- · Message: Access Denied
- RequestId: S3R7VKN5C4A5DWXY
- HostId: A7AfVGRWEkaUV6EbfWvqtXjYG0jGvbE4L9OHqFOGHdJ3EqNH+BLpqOxNzAS6TILFvI7VuPT7oJI=

With https & through cloud Front



Architecting a website using the Serverless Technology

FEEDBACK FORM

Dear Customer,

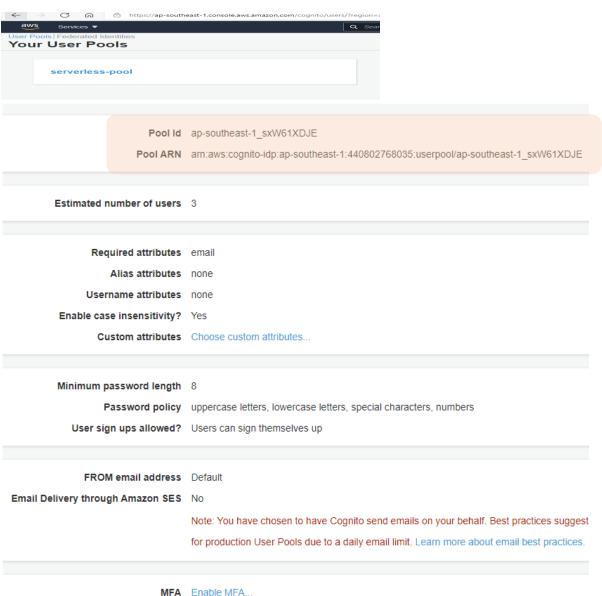
Thank you for buying our Newbook - ServerlessServer from our Stores. We would like to know how we performed. Please spare some moments to give us your valuable feedback as it will help us in improving our service.

Creating Cognito User Pool

Which app clients will have access to this user pool?

The app clients that you add below will be given a unique ID and an optional secret key to access this user pool.

access-webFeedback	
App client id	
emcb41pdfhcne7pacncrjrf2t	
App client secret	
3tgsgmbvglih0svv25gf3mj5o8f2kuas9dm5gucpin21omg0gfq	
Refresh token expiration	
30 days and 0 minutes	
Must be between 60 minutes and 3650 days	
Access token expiration	
0 days and 60 minutes	
Must be between 5 minutes and 1 day. Cannot be greater than refresh token expiration	
ID token expiration	
0 days and 60 minutes	
Must be between 5 minutes and 1 day. Cannot be greater than refresh token expiration	
Auth Flows Configuration	
Enable username password auth for admin APIs for authentication (ALLOW_ADMIN_USER_PASSWORD_AUTH) Learn more.	
Enable lambda trigger based custom authentication (ALLOW_CUSTOM_AUTH) Learn more.	
☐ Enable username password based authentication (ALLOW_USER_PASSWORD_AUTH) Learn more.	
Enable SRP (secure remote password) protocol based authentication (ALLOW_USER_SRP_AUTH) Learn more.	
Enable refresh token based authentication (ALLOW_REFRESH_TOKEN_AUTH) Learn more.	
Security configuration	
Prevent User Existence Errors Learn more.	
○ Legacy	
Enabled (Recommended)	
Advanced token settings	
☐ Enable token revocation	
Enabling this feature adds new claims to access and id tokens, thereby increasing their size. Learn more.	
Set attribute read and write permissions	
det attribute read and write perini 201/113	



Verifications Email

Advanced security Enable advanced security...

Creating Cognito User Pool

What domain would you like to use?

Type a domain prefix to use for the sign-up and sign-in pages that are hosted by Amazon Cognito. The prefix must be unique across the selected AWS Region. Domain names can only contain lower-case letters, numbers, and hyphens. Learn more about domain prefixes.

Amazon Cognito domain

Prefixed domain names can only contain lower-case letters, numbers, and hyphens. Learn more about domain prefixes.

Domain prefix

https:// paltest001

.auth.ap-southeast-1.amazoncognito.com

Delete domain

Your own domain

This domain name needs to have an associated certificate in AWS Certificate Manager (ACM). You also need the ability to add an alias record to the domain's hosted zone after it's associated with this user pool. Learn more about using your own domain.

Use your domain

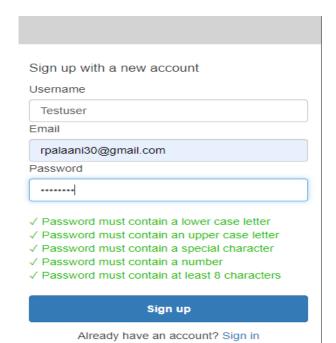
Go to summary Customize UI

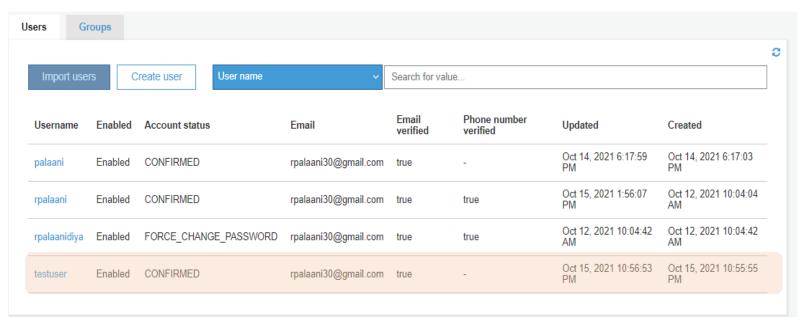
Creating Cognito User Pool

App client access-webFeedback ID emcb41pdfhcne7pacncrjrf2t
Enabled Identity Providers Select all
✓ Cognito User Pool
Sign in and sign out URLs
Enter your callback URLs below that you will include in your sign in and sign out requests. Each field can contain multiple URLs by entering a comma after each URL.
Callback URL(s)
https://d3kb6zvtf87wkb.cloudfront.net/FeedbackForm/Feedback.html
Sign out URL(s)
https://www.example.com/signout
OAuth 2.0
Select the OAuth flows and scopes enabled for this app. Learn more about flows and scopes.
Allowed OAuth Flows
☐ Authorization code grant ☐ Implicit grant ☐ Client credentials
Allowed OAuth Scopes
✓ phone ✓ email ✓ openid ✓ aws.cognito.signin.user.admin ✓ profile
Hosted UI
The hosted UI provides an OAuth 2.0 authorization server with built-in webpages that can be used to sign up and sign in users using the domain you created. Learn more about the hosted UI
Launch Hosted UI

- ➤ In callball URL specifiy the page after login to be should , in our case it is feedback.html
- select implicit grant, to get the access_token in the url. Which will be passed to api gateway
- ➤ In the project we will using Hosted UI which is provided by aws.

Testing Cognito





https://d3kb6zvtf87wkb.cloudfront.net/FeedbackForm/Feedba

We have sent a code by email to r***@g***.com. Enter it below to confirm your account.

Verification Code -----

Confirm Account

Didn't receive a code? Resend it

Architecting a website using the Serverless Technology

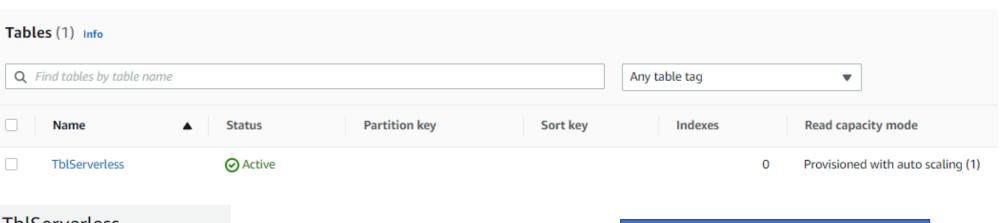
FEEDBACK FORM

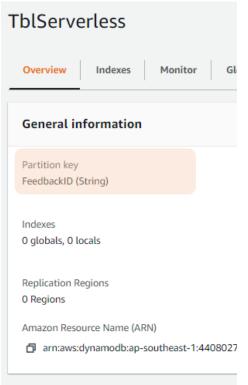
Dear Customer,

Thank you for buying our Newbook - ServerlessServer from our Stores.We would like to know how we performed. Please spare some moments to give us your valuable feedback as it will help us in improving

Response type = token. – access_token

Create DynamoDB Table





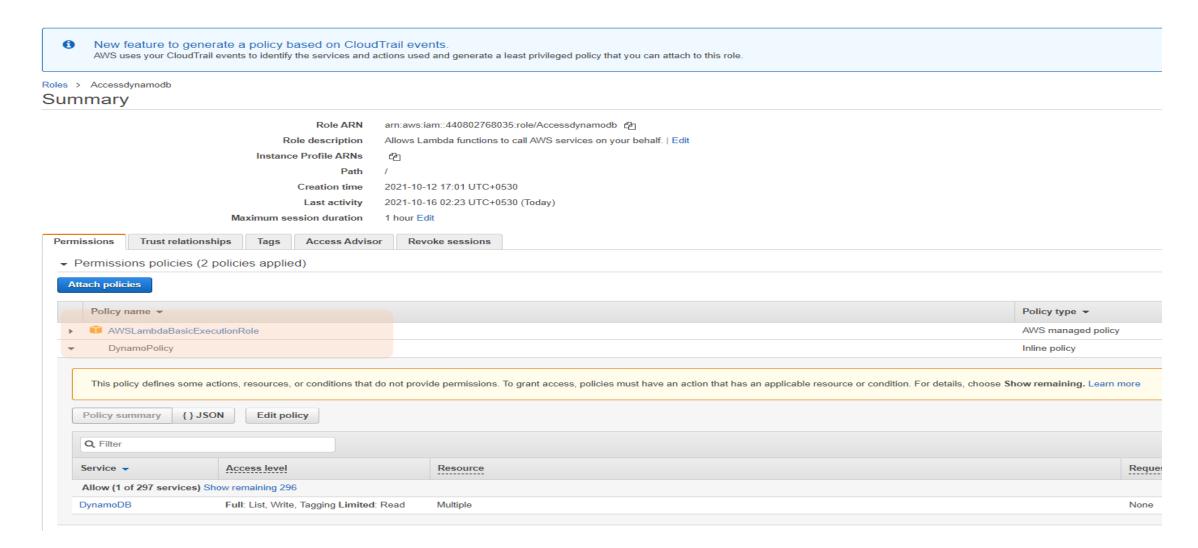




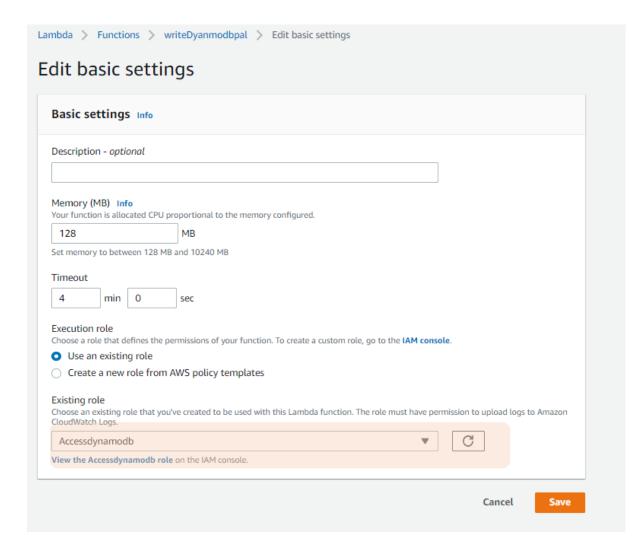
Create Lambda function

Lambda function to access DynamoDB

IAM Role for Lambda function

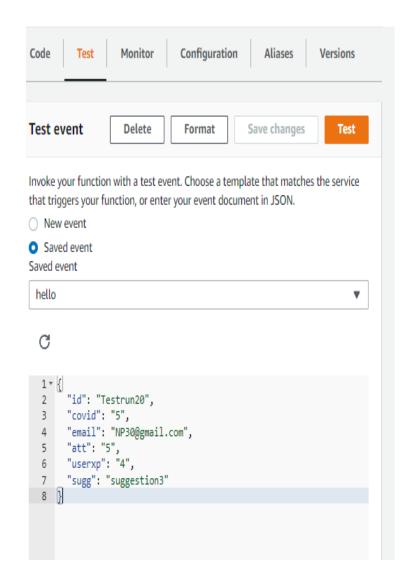


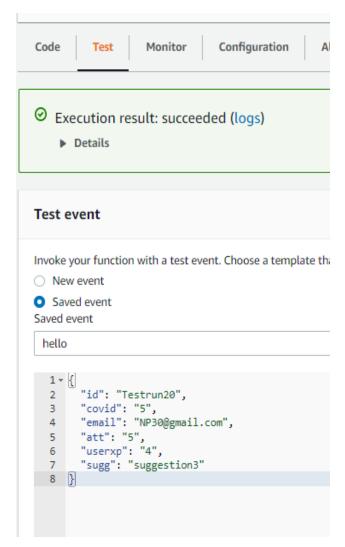
Create Lambda function



```
File Edit Find View Go Tools Window
                                                                          Changes deployed
                                                   Test ▼
 Go to Anything (Ctrl-P)
                                                  × (+)
                             В
                                   index.is
                               1 'use strict';
 ▼ writeDyanmodbpal 🐞 •
                               3 console.log('Loading function');
     index.js
                                  var AWS = require('aws-sdk');
                                   var mydocumentClient = new AWS.DynamoDB.DocumentClient({region:'ap-southeast-1'});
                                  exports.handler = (event, context, callback) => {
                                      console.log('check' + JSON.stringify(event, null, ' '));
                              11
                                      var params ={
                               12
                                            Item : {
                                              "FeedbackID" :event.id,
                              13
                                              "CovidManagment" :event.covid,
                                              "emailId" :event.email,
                              15
                                              "StaffAttitude":event.att,
                               16
                                               "UserExp":event.userxp,
                              17
                                              "Suggestion":event.sugg
                               18
                               19
                               20
                                          TableName : process.env.TABLE_NAME
                              21
                               22
                                       console.log('final',params);
                               23
                                        mydocumentClient.put(params,function(err,data){
                               25
                                           if (err) {
                                              console.log('Error putting item into dynamodb failed: '+err);
                               26
                                              context.done('error');
                               27
                               28
                                          else {
                               29
                                              console.log('great success: '+JSON.stringify(data, null, ' '));
                               30
                                              context.done(null, 'Done');
                              31
                              32
                                       });
                              33
                               34
                               35
                              36 };
```

Test Lambda function

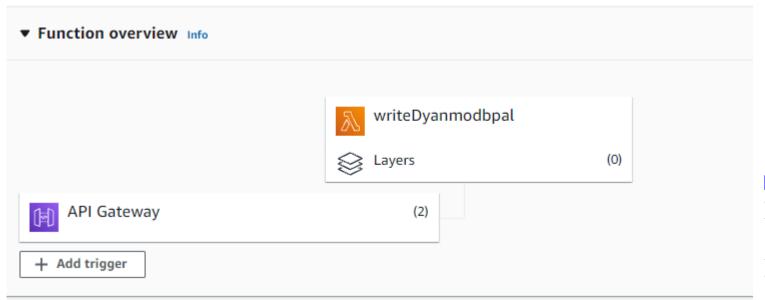




▶ Filters Reset Items returned (2) **Q** Find items ∇ StaffAtti...
 ∇ Testrun20 NP30@gm... 5 suggestion3 pal@gmail.... pal@gmail.... 1 test

Create New REST API



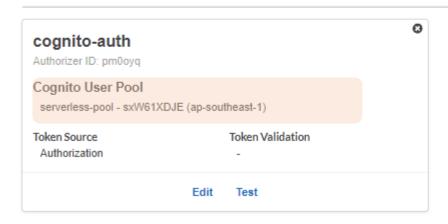


- Created API from trigger option in lambda.
- > Deployment I have kept default

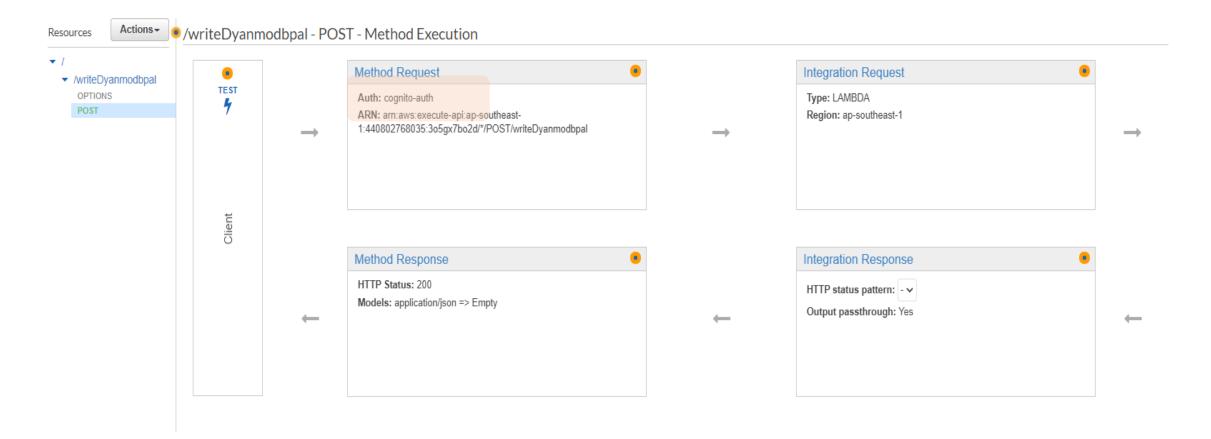
Authorizers

Authorizers enable you to control access to your APIs using Amazon Cognito User Pools or a Lambda function.



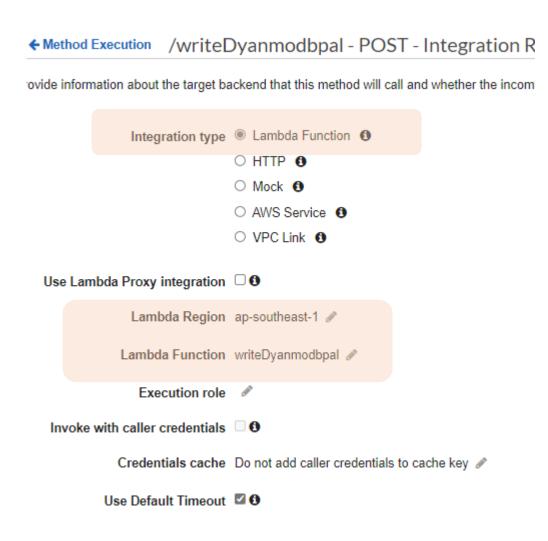


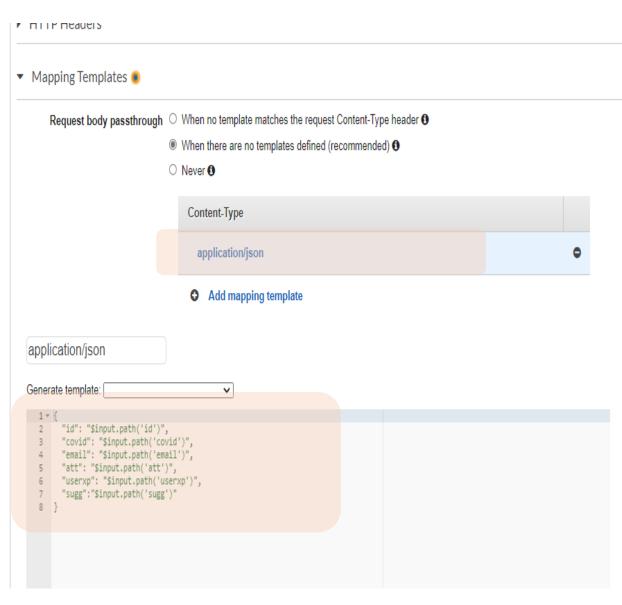
- ➤ Link to Cognito user pool.
- ➤ Token source give a name & Token validation will keep empty

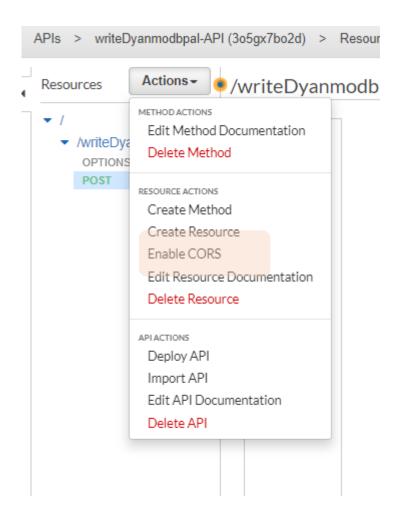


- Post method to resource
- ➤ Method Request configure Auth to Cognito

Configure Integration Request

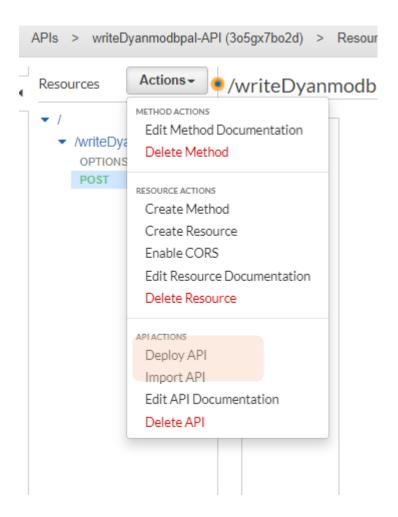






Note:

> Ensure to enable CORS



Test API

Method Execution /writeDyanmodbpal - POST - Method Test

Make a test call to your method. When you make a test call, API Gateway skips authorization and directly invokes your method

Path

No path parameters exist for this resource. You can define path parameters by using the syntax {myPathParam} in a resource path.

Query Strings

{writeDyanmodbpal}

param1=value1¶m2=value2

Headers

{writeDyanmodbpal}

Use a colon (:) to separate header name and value, and new lines to declare multiple headers. eg. Accept:application/json.

Stage Variables

No distage variables exist for this method.

Request Body

```
1 * {
2     "id": "TestrunAPI",
3     "covid": "5",
4     "email": "NP30@gmail.com",
5     "att": "5",
6     "userxp": "4",
7     "sugg": "suggestion3"
8 }
```

Request: /writeDyanmodbpal

Status: 200

Latency: 1403 ms

Response Body

"Done"

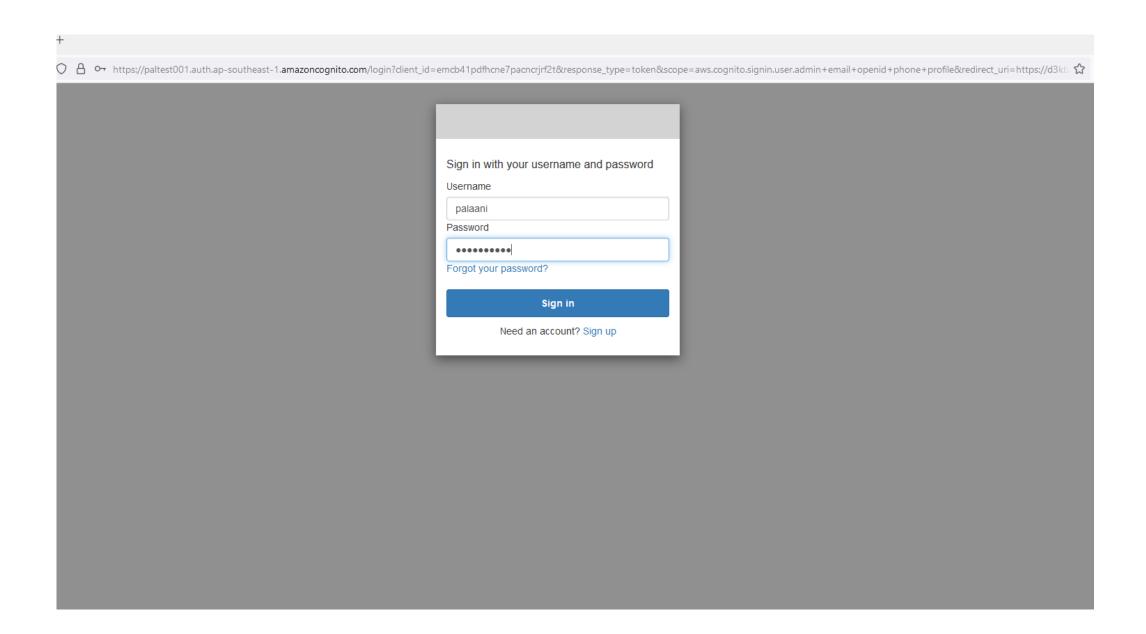
Response Headers

{"Access-Control-Allow-Origin":"*","X-Amzn-Trace-Id":"Root=1-616a17db-c179f970ea6aa296f9569b09;Sampled= -Type":"application/json"}

Logs

```
Execution log for request a445d8de-5842-45e2-9308-9c4f195f8413
Sat Oct 16 00:07:55 UTC 2021 : Starting execution for request: a445d8de-5842-45e2-9308-9c4f195f8413
Sat Oct 16 00:07:55 UTC 2021 : HTTP Method: POST, Resource Path: /writeDyanmodbpal
Sat Oct 16 00:07:55 UTC 2021 : Method request path: {}
Sat Oct 16 00:07:55 UTC 2021 : Method request query string: {}
Sat Oct 16 00:07:55 UTC 2021 : Method request headers: {}
Sat Oct 16 00:07:55 UTC 2021 : Method request body before transformations: {
 "id": "TestrunAPI",
  "covid": "5",
  "email": "NP30@gmail.com",
  "att": "5",
  "userxp": "4",
  "sugg": "suggestion3"
Sat Oct 16 00:07:55 UTC 2021 : Endpoint request URI: https://lambda.ap-southeast-1.amazonaws.com/2015-0
ons/arn:aws:lambda:ap-southeast-1:440802768035:function:writeDyanmodbpal/invocations
Sat Oct 16 00:07:55 UTC 2021 : Endpoint request headers: {X-Amz-Date=20211016T000755Z, x-amzn-apigatewa
5gx7bo2d, Accept=application/json, User-Agent=AmazonAPIGateway_3o5gx7bo2d, Host=lambda.ap-southeast-1.a
m, X-Amz-Content-Sha256=034093641f9cc9c79fcb9bfe551438594c22890a6b1e08042c2724a248d9adc8, X-Amzn-Trace-
```





https://d3kb6zvtf87wkb.doudfront.net/FeedbackForm/Feedbackhtml#id_token=eyJraWQiOiJcl.0c2Y2pKb1JzZWE5Zzd5b1JBbTRzUFFyV3Fud1ZGeDRBQjRCNnZjWXlCND0iLClhbGciOiJSUzl1NiJ9.eyJhd

Architecting a website using the Serverless Technology

FEEDBACK FORM

Dear Customer, Thank you for buying our Newbook - ServerlessServer from our Stores.We would like to know how we performed. Please spare some moments to give us your valuable feedback as it will help us in improving our service.
Please rate your service experience for the following parameters
Please enter your email id
1. Your overall experience with us ?
1v
2. Friendliness and courtesy shown to you while buying the book
1
3. How well the store managed according to the covid norms
1v
4. Any Other suggestions:
Submit

```
aws > JS Feedformhandler.js > 😭 ready() callback > 😭 click() callback > 🕪 data
     $(document).ready(function()
         // Handle form submission.
         $("#submit").click(function(e)
           //Get the access token from the url.
           var access_token = new URLSearchParams(window.location.hash).get('access_token');
10
           //to create uniqueID
           var d = new Date();
11
12
           var n = d.getTime();
13
14
           //Getting the data from the form
15
           var email = $("#email").val(),
               userxp = $("#userxp").val(),
16
17
               att = $("#att").val(),
18
               covid = $("#covid").val(),
19
               sugg = $("#sugg").val(),
20
               feedid = email + n;
21
22
            //forming json data
23
           var data = JSON.stringify({
24
                  'id':feedid,
25
                  'covid':covid,
                  'email':email,
26
27
                  'att':att,
28
                  'userxp':userxp,
29
                  'sugg':sugg
30
             });
31
32
             //accessing API gateway to wirte DynamoDB
33
             $.ajax({
34
               type: 'POST',
35
               url: 'https://3o5gx7bo2d.execute-api.ap-southeast-1.amazonaws.com/default/writeDyanmodbpal',
               contentType: 'application/json',
36
37
               headers: {"Authorization": access_token},
38
               data: data,
39
40
                success: function(res) {
41
                 location.replace("https://d3kb6zvtf87wkb.cloudfront.net/FeedbackForm/sucess.html")
42
               },
               error: function(jqxhr, status, exception) {
43
44
                 ocation.replace("https://d3kb6zvtf87wkb.cloudfront.net/FeedbackForm/Fail.html")
45
46
             });
47
         });
     });
```

 $ps://d3kb6zvtf87wkb.cloudfront.net/Feedback.Form/Feedback.html\#id_token=eyJraWQiOiJcL0c2Y2pKb1JzZWE5Zzd5b1JBbTRzUFFyV3Fud1ZGeDR8QjRCNnZjWXlCND0iLCJhbGciOiJSUz11NiJ9.eyJhdF9oYXNc1D0iLCJhbGciOiJSUz1NiJ9.eyJhdF9$

Architecting a website using the Serverless Technology

FEEDBACK FORM

