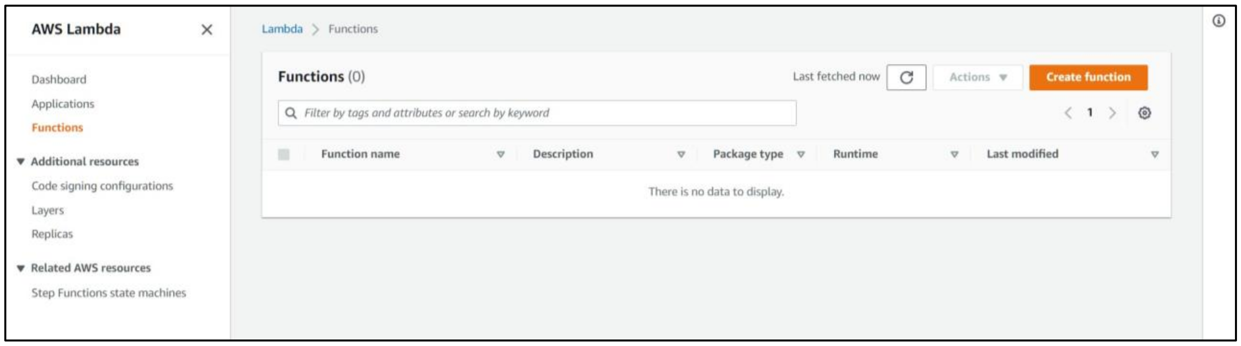
Assignment 02

Implementation:

Prerequisites: AWS Free Tier account

Step 1: Login to your AWS Account and the Lambda Function Console.

Step 2: Create an AWS Lambda function with runtime as Python 3.8.



AWS Lambda

Dashboard
Applications
Functions
Additional resources
Code signing configurations
Layers
Replicas
Related AWS resources
Step Functions state machines

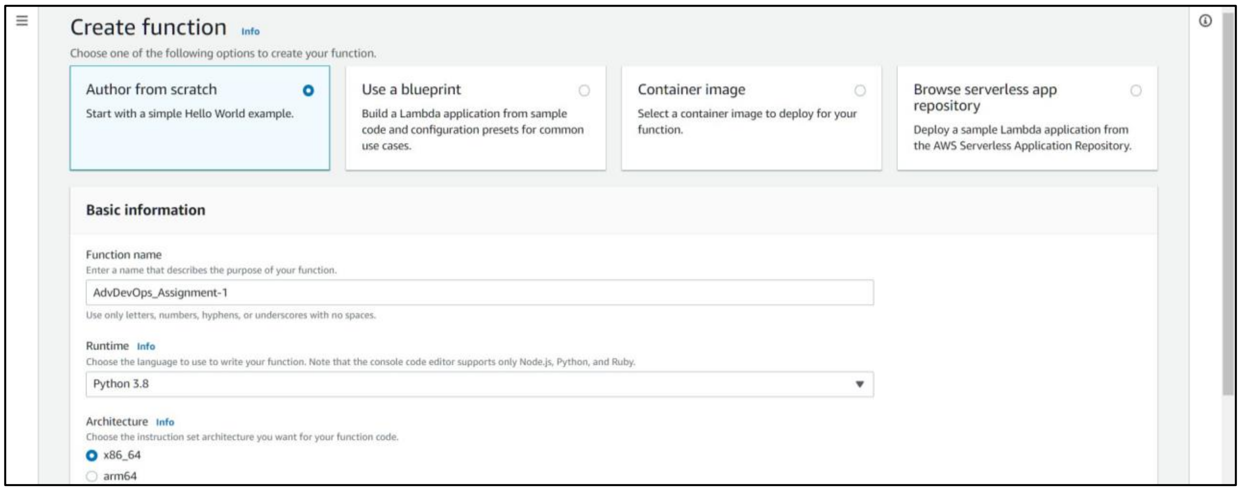
Lambda > Functions

Functions (0)   Last fetched now   Actions   Create function

Filter by tags and attributes or search by keyword

Function name	Description	Package type	Runtime	Last modified

There is no data to display.



Create function Info

Choose one of the following options to create your function.

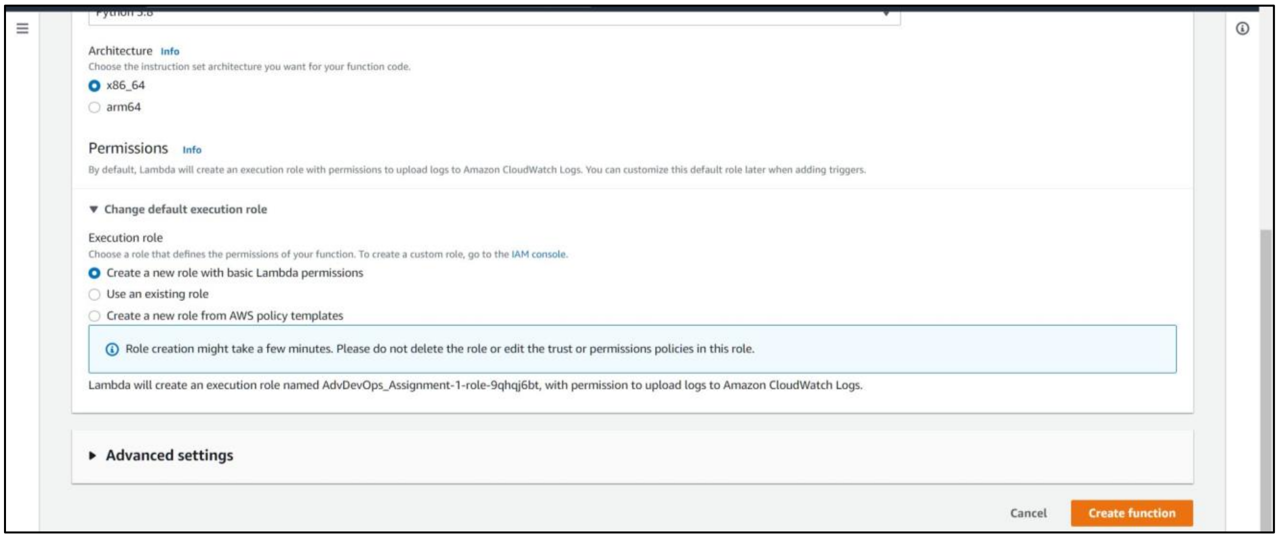
- Author from scratch — Start with a simple Hello World example. (selected)
- Use a blueprint — Build a Lambda application from sample code and configuration presets for common use cases.
- Container image — Select a container image to deploy for your function.
- Browse serverless app repository — Deploy a sample Lambda application from the AWS Serverless Application Repository.

Basic information

Function name
Enter a name that describes the purpose of your function.
AdvDevOps_Assignment-1
Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime Info
Choose the language to use to write your function. Note that the console code editor supports only Node.js, Python, and Ruby.
Python 3.8

Architecture Info
Choose the instruction set architecture you want for your function code.
[✓ x86_64]
arm64



Architecture Info

Choose the instruction set architecture you want for your function code.

[✓ x86_64]

arm64

Permissions Info

By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

▼ Change default execution role

Execution role

Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console.

[✓ Create a new role with basic Lambda permissions]

Use an existing role

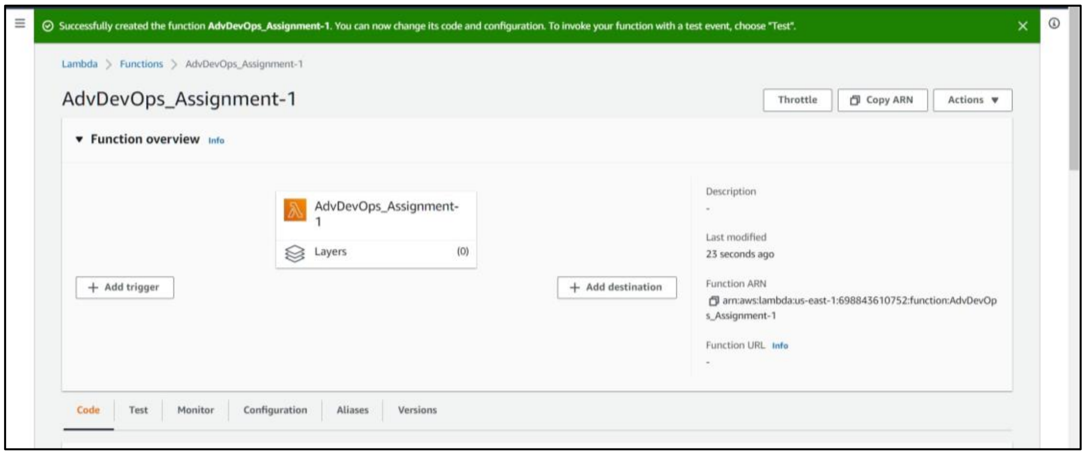
Create a new role from AWS policy templates

Role creation might take a few minutes. Please do not delete the role or edit the trust or permissions policies in this role.

Lambda will create an execution role named AdvDevOps_Assignment-1-role-9qhqj6bt, with permission to upload logs to Amazon CloudWatch Logs.

▸ Advanced settings

Then click on **“Create Function”**



Successfully created the function AdvDevOps_Assignment-1. You can now change its code and configuration. To invoke your function with a test event, choose "Test".

Lambda > Functions > AdvDevOps_Assignment-1

AdvDevOps_Assignment-1

▼ Function overview Info

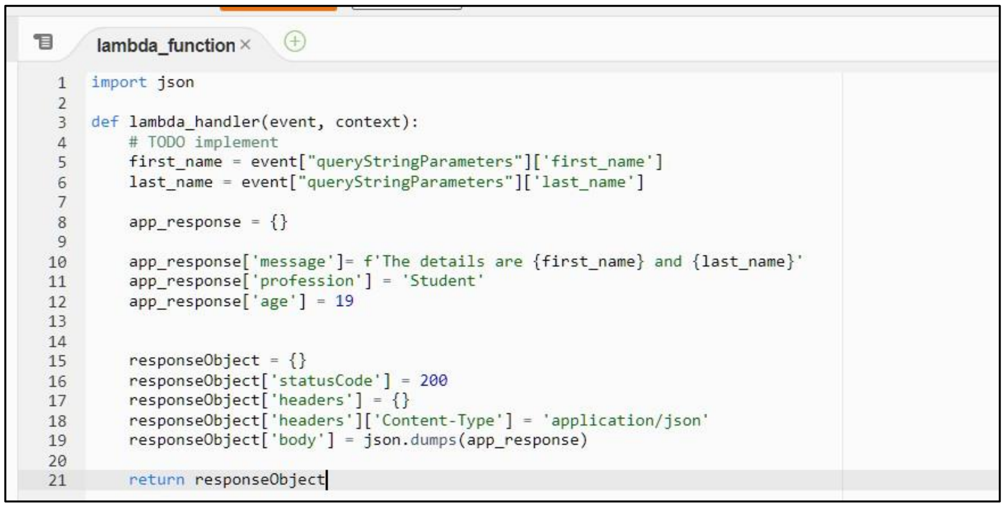
Description
-

Last modified
23 seconds ago

Function ARN
arn:aws:lambda:us-east-1:698843610752:function:AdvDevOps_Assignment-1

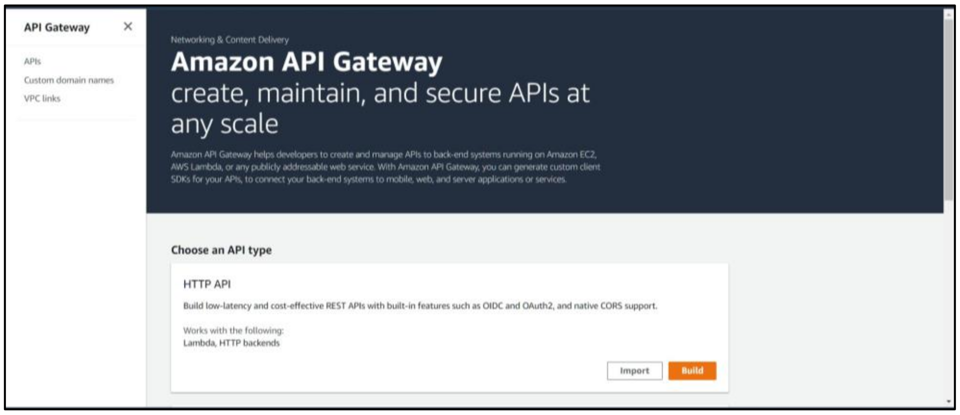
Function URL Info
-

Step 3: Write the code for the handler which will be invoked after input from the user and save it.



```
import json

def lambda_handler(event, context):
    # TODO implement
    first_name = event["queryStringParameters"]['first_name']
    last_name = event["queryStringParameters"]['last_name']

    app_response = {}

    app_response['message']= f'The details are {first_name} and {last_name}'
    app_response['profession'] = 'Student'
    app_response['age'] = 19


    responseObject = {}
    responseObject['statusCode'] = 200
    responseObject['headers'] = {}
    responseObject['headers']['Content-Type'] = 'application/json'
    responseObject['body'] = json.dumps(app_response)

    return responseObject
```

Step 4: Now leave the function as it is and the go to the Amazon API Gateway.



Networking & Content Delivery

Amazon API Gateway

create, maintain, and secure APIs at any scale

Amazon API Gateway helps developers to create and manage APIs to back-end systems running on Amazon EC2, AWS Lambda, or any publicly addressable web service. With Amazon API Gateway, you can generate custom client SDKs for your APIs, to connect your back-end systems to mobile, web, and server applications or services.

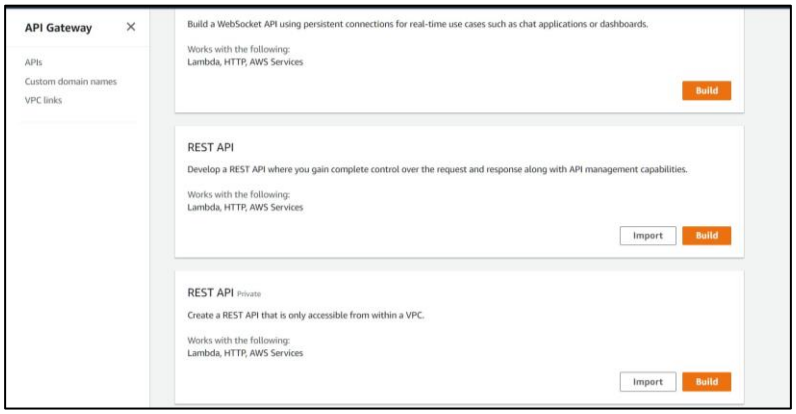
Choose an API type

HTTP API

Build low-latency and cost-effective REST APIs with built-in features such as OIDC and OAuth2, and native CORS support.

Works with the following:
Lambda, HTTP backends

Now we have to build REST API



Build a WebSocket API using persistent connections for real-time use cases such as chat applications or dashboards.

Works with the following:
Lambda, HTTP, AWS Services

REST API

Develop a REST API where you gain complete control over the request and response along with API management capabilities.

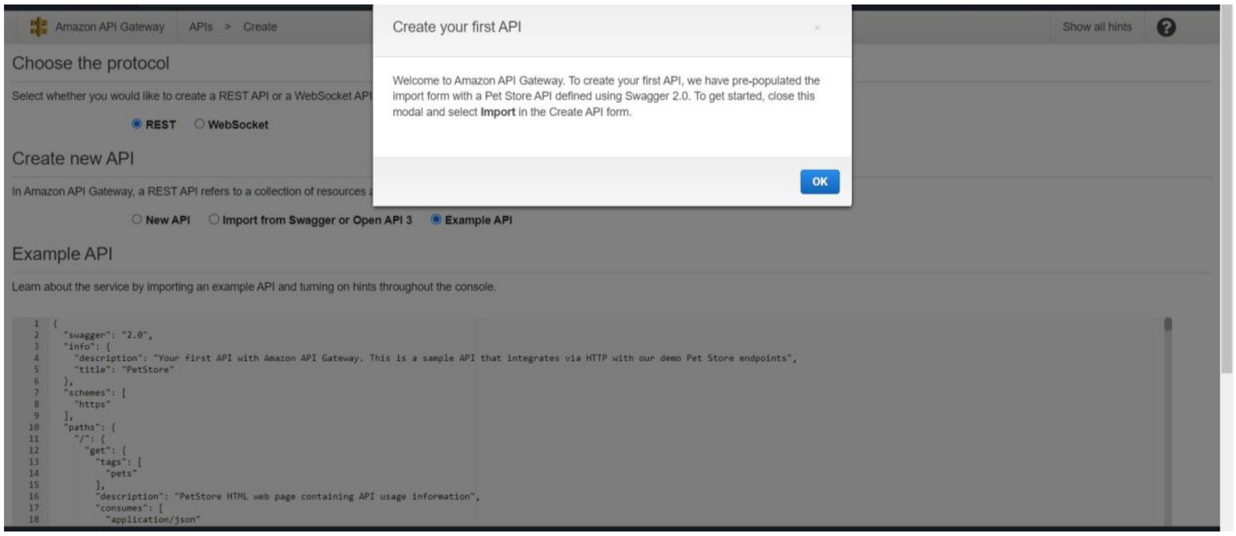
Works with the following:
Lambda, HTTP, AWS Services

REST API Private

Create a REST API that is only accessible from within a VPC.

Works with the following:
Lambda, HTTP, AWS Services

Click on **"Build".**



Choose the protocol

Select whether you would like to create a REST API or a WebSocket API

[✓ REST] WebSocket

Create new API

In Amazon API Gateway, a REST API refers to a collection of resources

New API   Import from Swagger or Open API 3   [✓ Example API]

Example API

Learn about the service by importing an example API and turning on hints throughout the console.

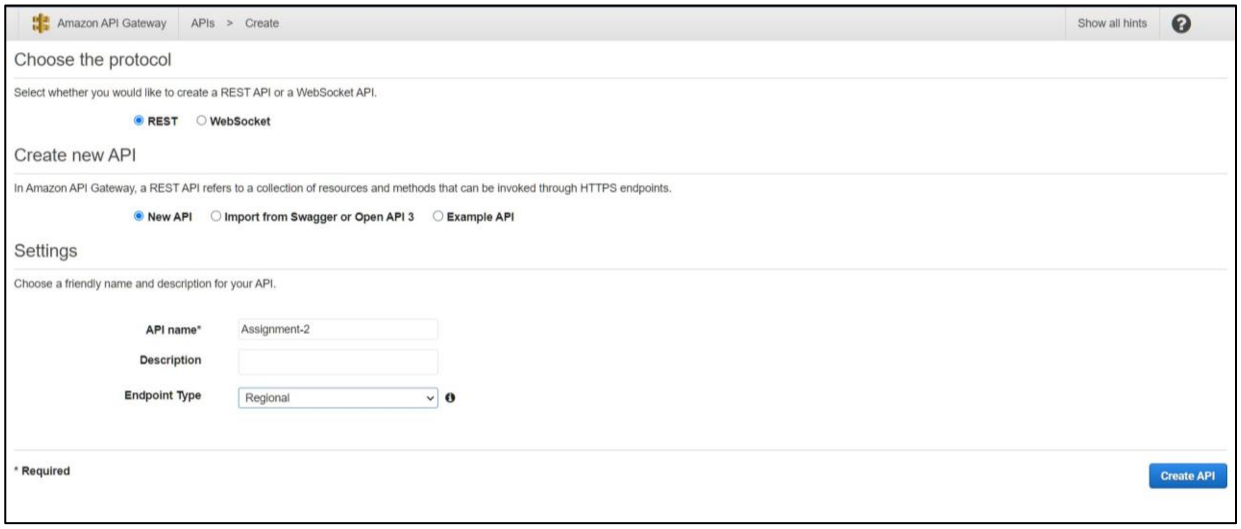
```
{
  "swagger": "2.0",
  "info": {
    "description": "Your first API with Amazon API Gateway. This is a sample API that integrates via HTTP with our demo Pet Store endpoints",
    "title": "PetStore"
  },
  "schemes": [
    "https"
  ],
  "paths": {
    "/": {
      "get": {
        "tags": [
          "pets"
        ],
        "description": "PetStore HTML web page containing API usage information",
        "consumes": [
          "application/json"
```

Create your first API

Welcome to Amazon API Gateway. To create your first API, we have pre-populated the import form with a Pet Store API defined using Swagger 2.0. To get started, close this modal and select **Import** in the Create API form.

Step 5: You see this type of page choose **"REST"** and **"New API".** Then click on "Create API".

After successful creation you will see this.



Amazon API Gateway · APIs > Create · Show all hints

Choose the protocol

Select whether you would like to create a REST API or a WebSocket API.

[✓ REST] WebSocket

Create new API

In Amazon API Gateway, a REST API refers to a collection of resources and methods that can be invoked through HTTPS endpoints.

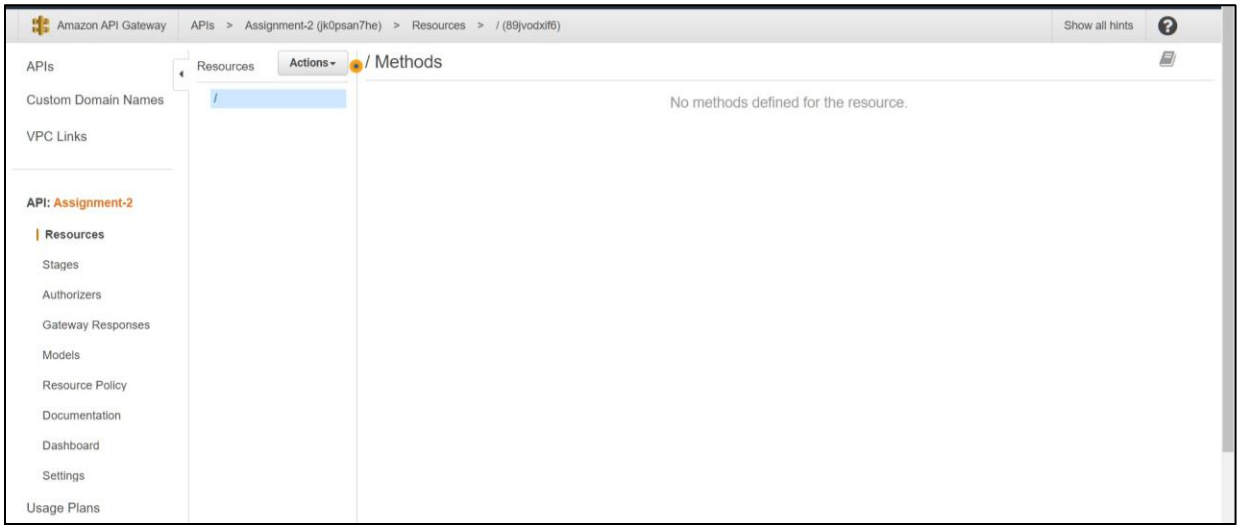
[✓ New API] Import from Swagger or Open API 3 Example API

Settings

Choose a friendly name and description for your API.

API name*	Assignment-2
Description	
Endpoint Type	Regional

* Required

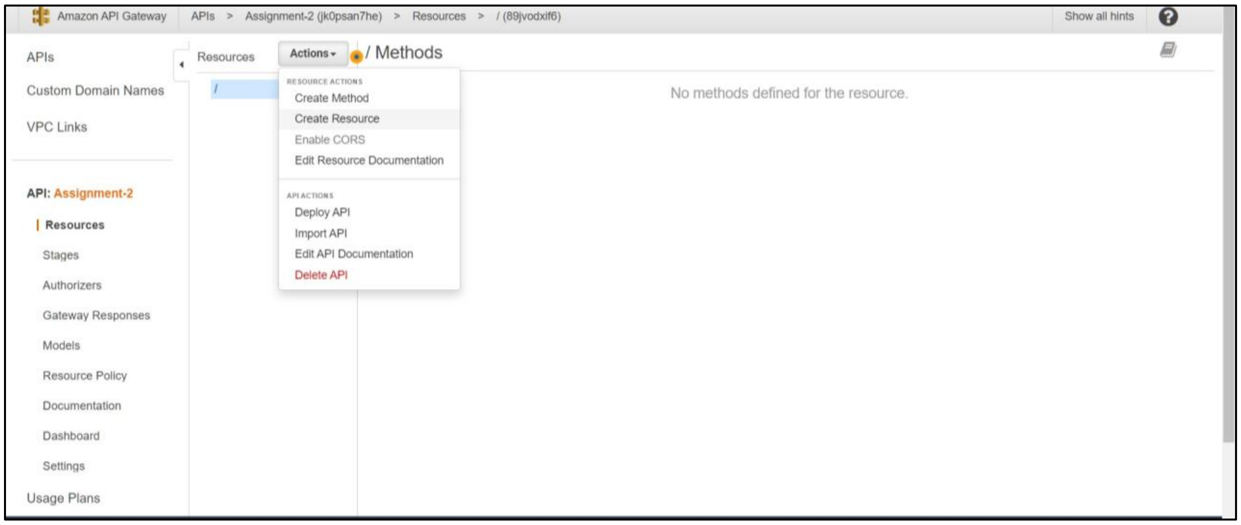


Amazon API Gateway · APIs > Assignment-2 (jk0psan7he) > Resources > / (89jvodxif6) · Show all hints

/ Methods

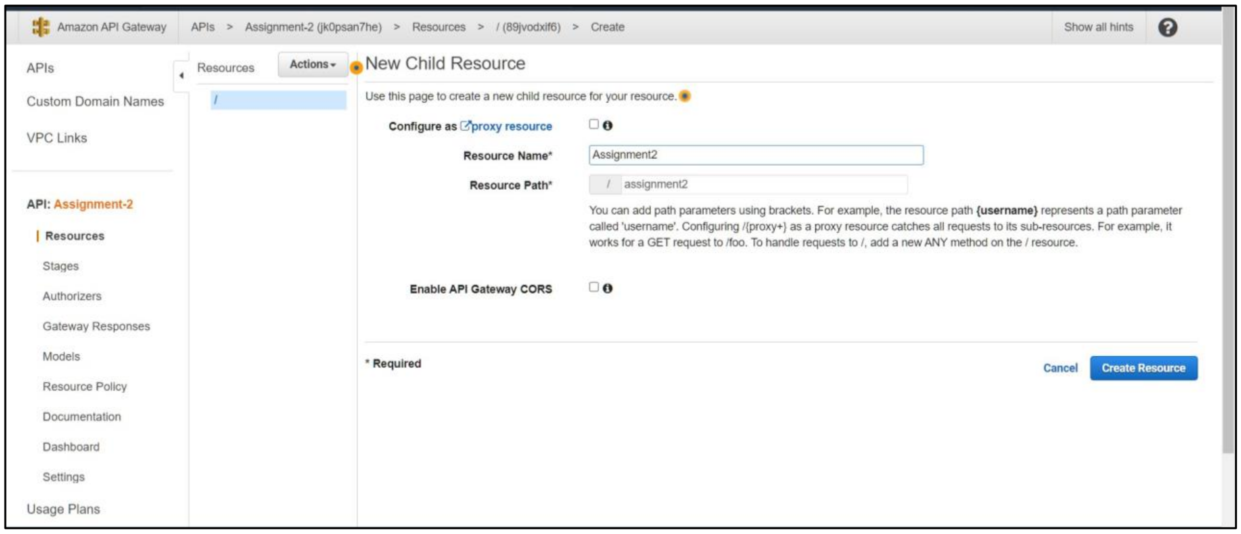
No methods defined for the resource.

Step 6: Now , under **“Actions”** choose **“Create Resource”.**



No methods defined for the resource.

Configure the Resource and the create it.



Use this page to create a new child resource for your resource.

Configure as proxy resource ☐

Resource Name* Assignment2

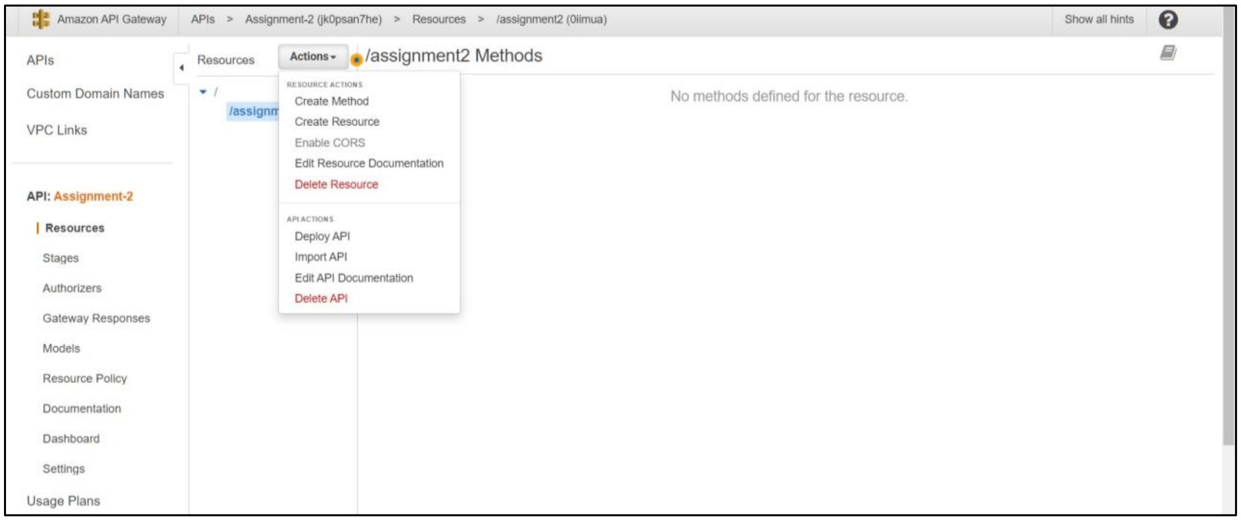
Resource Path* / assignment2

You can add path parameters using brackets. For example, the resource path **{username}** represents a path parameter called 'username'. Configuring /{proxy+} as a proxy resource catches all requests to its sub-resources. For example, it works for a GET request to /foo. To handle requests to /, add a new ANY method on the / resource.

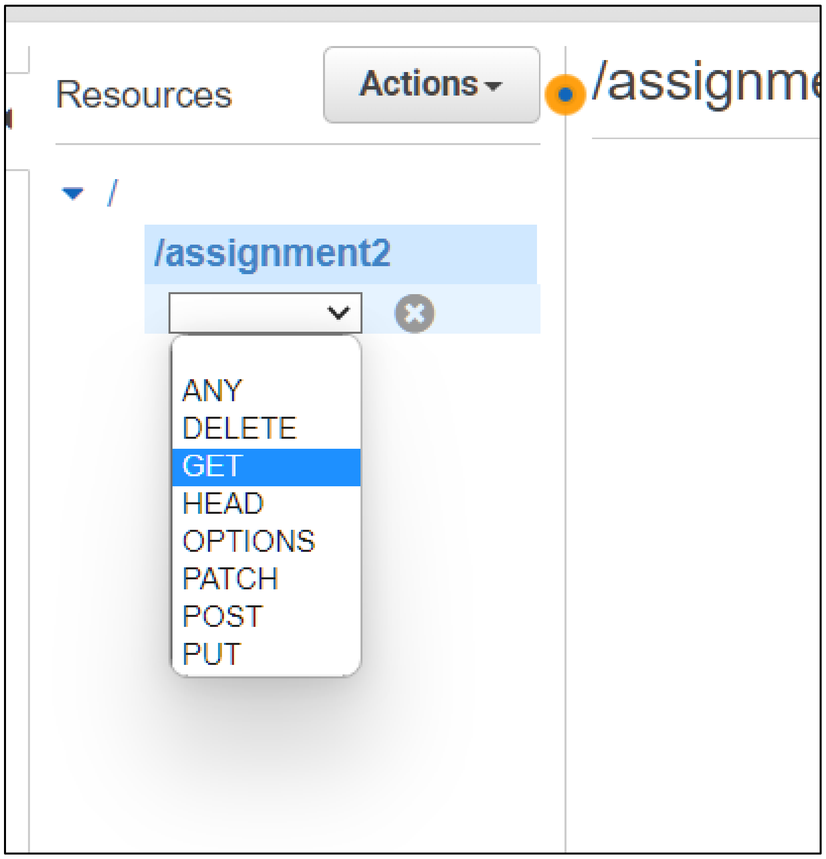
Enable API Gateway CORS ☐

* Required

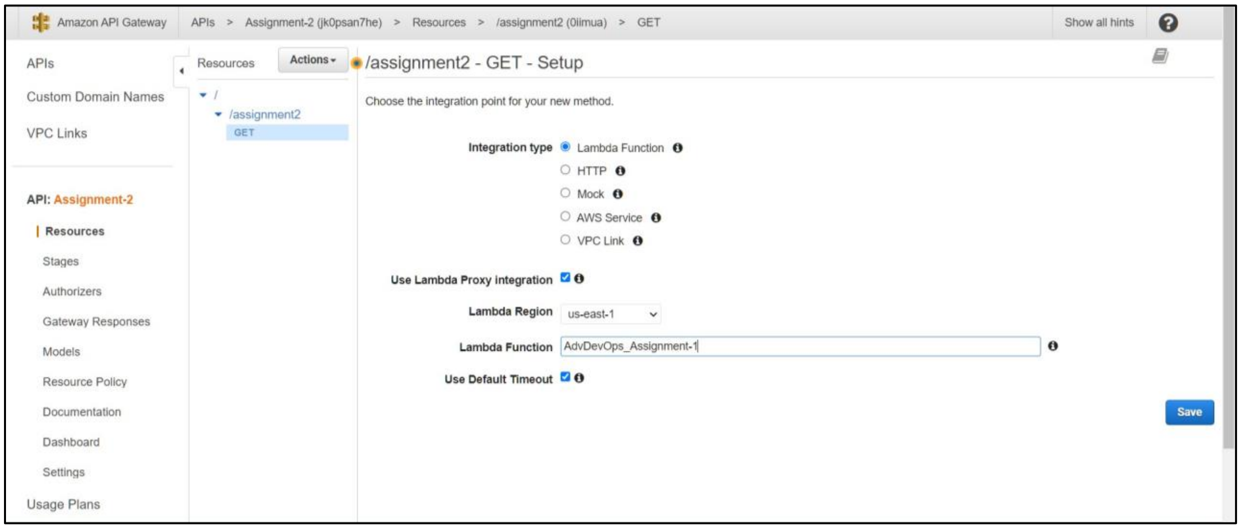
Step 7: Now , under Actions **“Create Method”.**



Select **“GET”.**



Do the necessary configuration and save it.



/assignment2 - GET - Setup

Choose the integration point for your new method.

Integration type: (● Lambda Function) HTTP, Mock, AWS Service, VPC Link

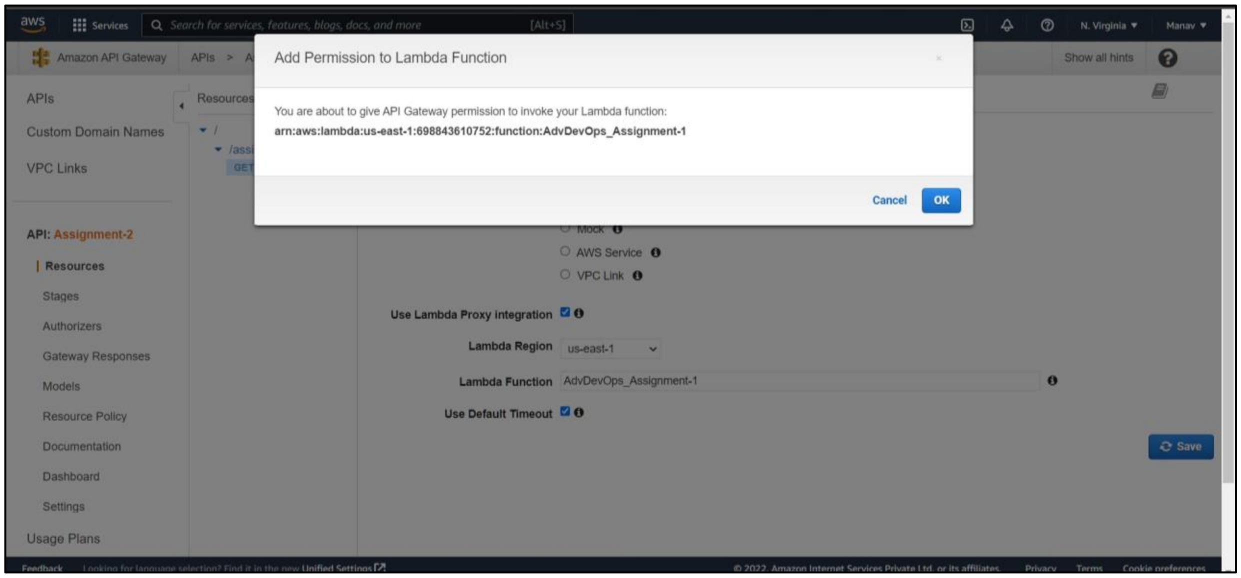
Use Lambda Proxy integration: ✓

Lambda Region: us-east-1

Lambda Function: AdvDevOps_Assignment-1

Use Default Timeout: ✓

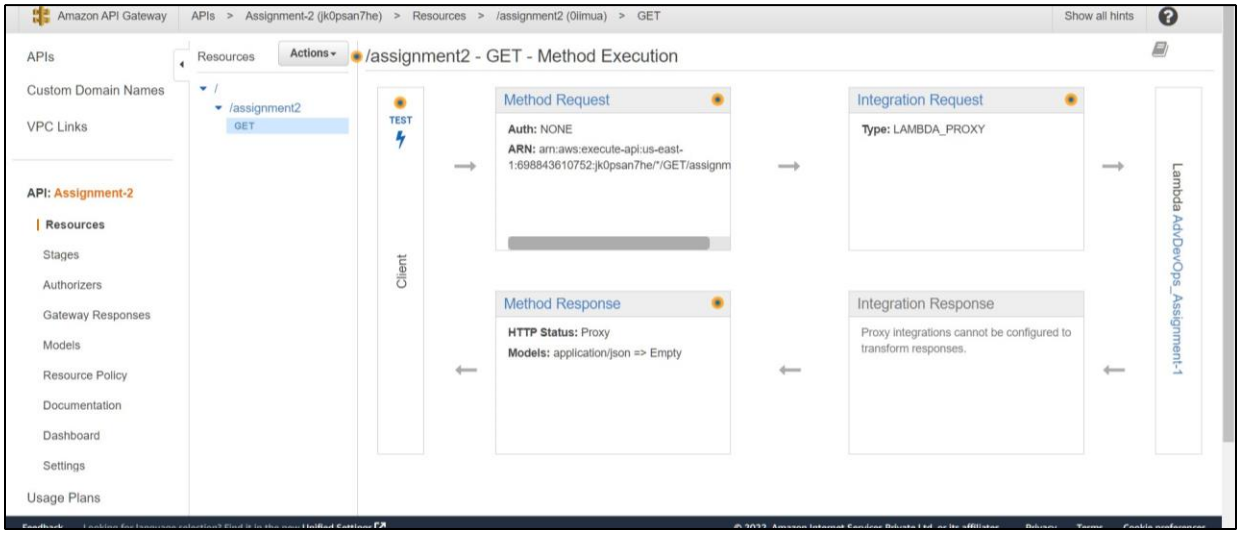
Step 8: Add the Permission of the method which we created previously.


aws
Services
Search for services, features, blogs, docs, and more
[Alt+S]
N. Virginia
Manav
Amazon API Gateway
Show all hints
Cancel
OK
Save
Feedback
Looking for language selection? Find it in the new Unified Settings
© 2022, Amazon Internet Services Private Ltd. or its affiliates.
Privacy
Terms
Cookie preferences

Add Permission to Lambda Function

You are about to give API Gateway permission to invoke your Lambda function:
arn:aws:lambda:us-east-1:698843610752:function:AdvDevOps_Assignment-1

Step 9: After all the steps you are able to see this interface.



Auth: NONE

ARN: arn:aws:execute-api:us-east-1:698843610752:jk0psan7he/*/GET/assignm

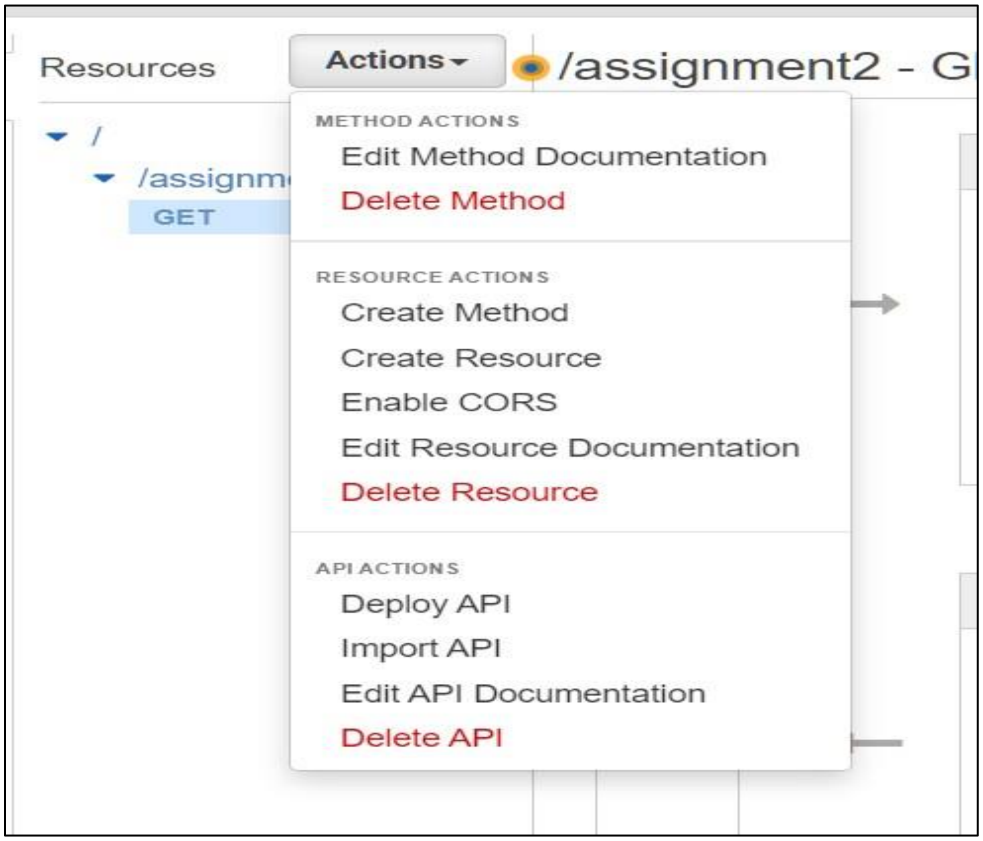
Type: LAMBDA_PROXY

HTTP Status: Proxy

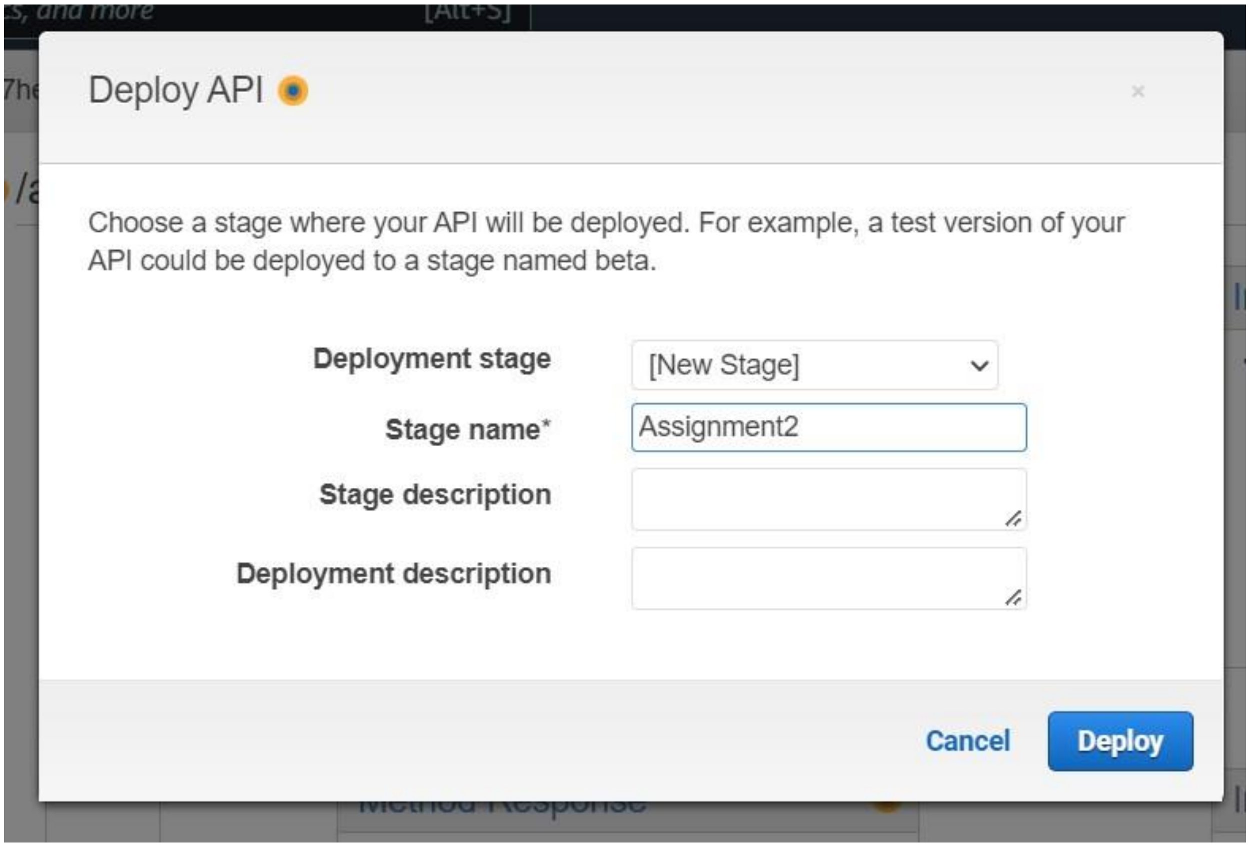
Models: application/json => Empty

Proxy integrations cannot be configured to transform responses.

Step 10: Under Actions choose **“Deploy API”.**



Step 11: Create a new stage and then deploy it.

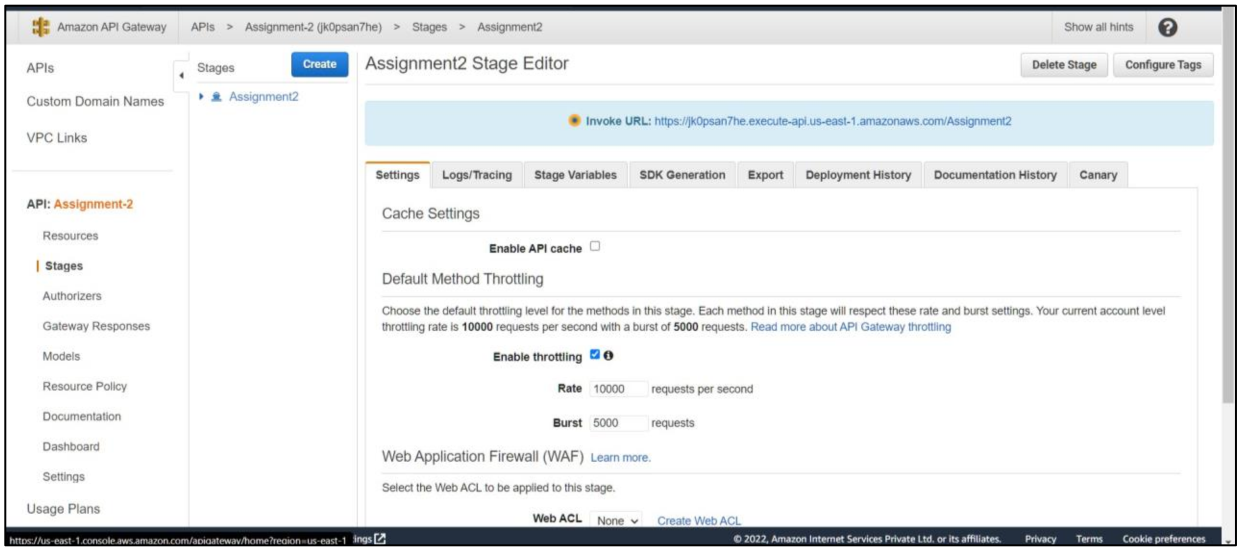


Deploy API

Choose a stage where your API will be deployed. For example, a test version of your API could be deployed to a stage named beta.

Deployment stage	[New Stage]
Stage name*	Assignment2
Stage description	
Deployment description	

After deployment a link will be shown on the home page of the API.



Assignment2 Stage Editor

Invoke URL: https://jk0psan7he.execute-api.us-east-1.amazonaws.com/Assignment2

Cache Settings

Enable API cache ☐

Default Method Throttling

Choose the default throttling level for the methods in this stage. Each method in this stage will respect these rate and burst settings. Your current account level throttling rate is **10000** requests per second with a burst of **5000** requests. Read more about API Gateway throttling

Enable throttling ☑

Rate 10000 requests per second

Burst 5000 requests

Web Application Firewall (WAF) Learn more.

Select the Web ACL to be applied to this stage.

Web ACL None Create Web ACL

https://us-east-1.console.aws.amazon.com/apigateway/home?region=us-east-1

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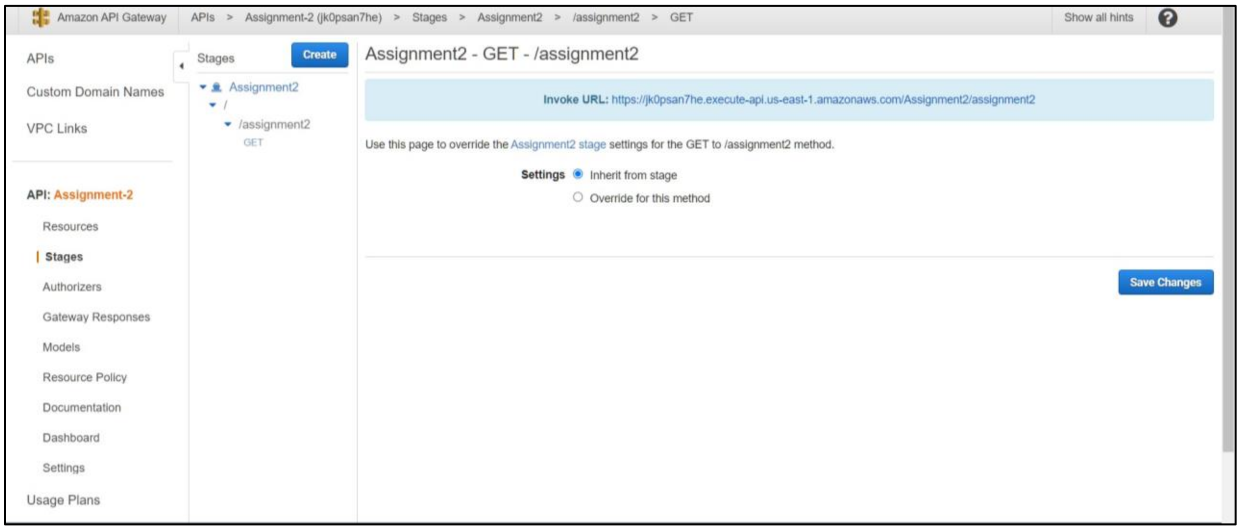
Step 12: Now the Get Method which created previously you see the link copy that and open in your browser , pass the arguments.



Assignment2 - GET - /assignment2

Invoke URL: https://jk0psan7he.execute-api.us-east-1.amazonaws.com/Assignment2/assignment2

Use this page to override the Assignment2 stage settings for the GET to /assignment2 method.

Settings [✓ Inherit from stage] Override for this method