Lab: **AWS API Gateway Lab** Author: **Curt Chambers** Version: **2.0**

**Using the API Gateway to front-end other AWS Servies**

The API Gateway allows you to implement a web api to other AWS services running your application and database.

**Where to do this lab:**

Use your AWS Academy lab environment.

**BEFORE** you proceed IF you need a good tutorial on just what an API (Application Programming Interface) is and how it works start with this video (and head’s up there are a LOT of decent videos on YouTube about how an API functions): <https://www.youtube.com/watch?v=_7rT-ixivWU>

A fun API in action 😊 <https://swapi.dev/>

**Step #1 – Amazon’s Getting Started Walk-Through of the API Gateway**

To implement an API in front of your application you’ll need to host it somewhere – EC2 Instance, Container, etc. One alternative is the Amazon/AWS API Gateway – it’s a service based approach to accepting requests to your API and passing them to the appropriate back-end service(s).

Run through the walk-through here: <https://docs.aws.amazon.com/apigateway/latest/developerguide/getting-started.html>

**Note** – you’ll have to modify the role under the permissions area and choose the pre-created role “LabRole” for your function to use.

**SCREENSHOT #1** – Your API Gateway’s Invoke URL:

Graphical user interface, text, application, email

Description automatically generated

**SCREENSHOT #2** – Webpage returned when invoking the Lambda function from your API Gateway URL:

Graphical user interface, text

Description automatically generated

**Perform the Optional Clean-Up Steps in step #4 of the walk-through with the exception of that last clean-up item about removing the role – leave the LabRole alone.**

**Step #2 – Amazon’s Tutorial on Using API Gateway with Lambda & DynamoDB for CRUD database operations (Create Read Update Delete)**

This tutorial is located here:

<https://docs.aws.amazon.com/apigateway/latest/developerguide/http-api-dynamo-db.html>

Again – when creating the Lambda function under permissions choose to use the existing LabRole – do not create a new role for the function (this is only due to the limitations in our permissions in the lab system).

**Testing Your API** – Note that when you get down to testing your API you need to replace the generic URL in the testing curl commands with your specific API Gateway’s invoke URL. Build the 4 commands in notepad ready to go and then run in the order shown:

Graphical user interface, text, application, email

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1 – When you run the create/update HTTP “PUT” command the item data shown in the curl command is populated into the DynamoDB table.

2 – When you run the “GET” to Get all items you should retrieve the sample item.

**SCREENSHOT #2** – Make up your own item to enter and use the “PUT” example shown in the walk-through to load it. Run the “GET” all items to see the contents of the database.

<https://tuo88zyngb.execute-api.us-east-1.amazonaws.com/lab/items>

Graphical user interface, application

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<PASTE SCREENSHOT OF GET COMMAND RESULTS HERE>

**FOLLOW THE CLEAN-UP INSTRUCTIONS IN THE WALK-THROUGH EXCEPT THE ONE ABOUT THE LAMBDA EXECUTION ROLE.**