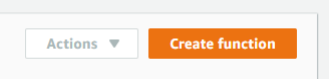
While there are a couple other options, it's almost impossible to talk about "Serverless" within AWS without "Lambda" coming into the conversation.

AWS Lambda provides an easy way to execute code without maintaining the underlying hardware. Where VMs abstract away much of the hardware, and Containers abstract away much of the operating system, Serverless Functions abstract away much of the container setup and orchestration. In a Lambda application you will specify the amount of memory, the permissions, the runtime (Python, Java, C#, etc), how the function should be invoked, and the Lambda orchestration takes care of making sure it all happens.

In this exercise we'll create a basic lambda function in Python, and just run it from within the Lambda UI.

Log into the AWS Console, open the "Lambda" service, and hit "Create Function"

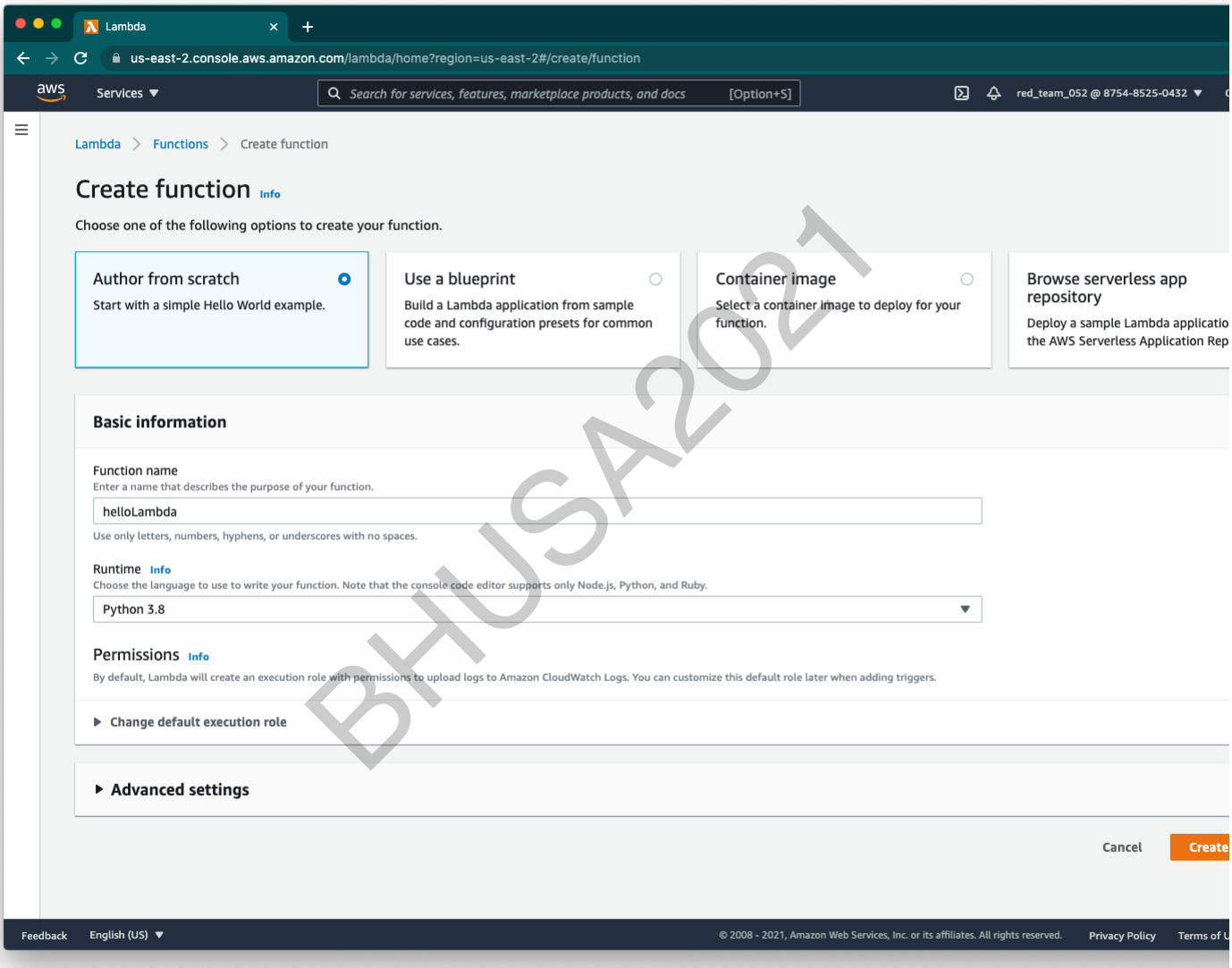


Leave the "Author from scratch" radio button checked

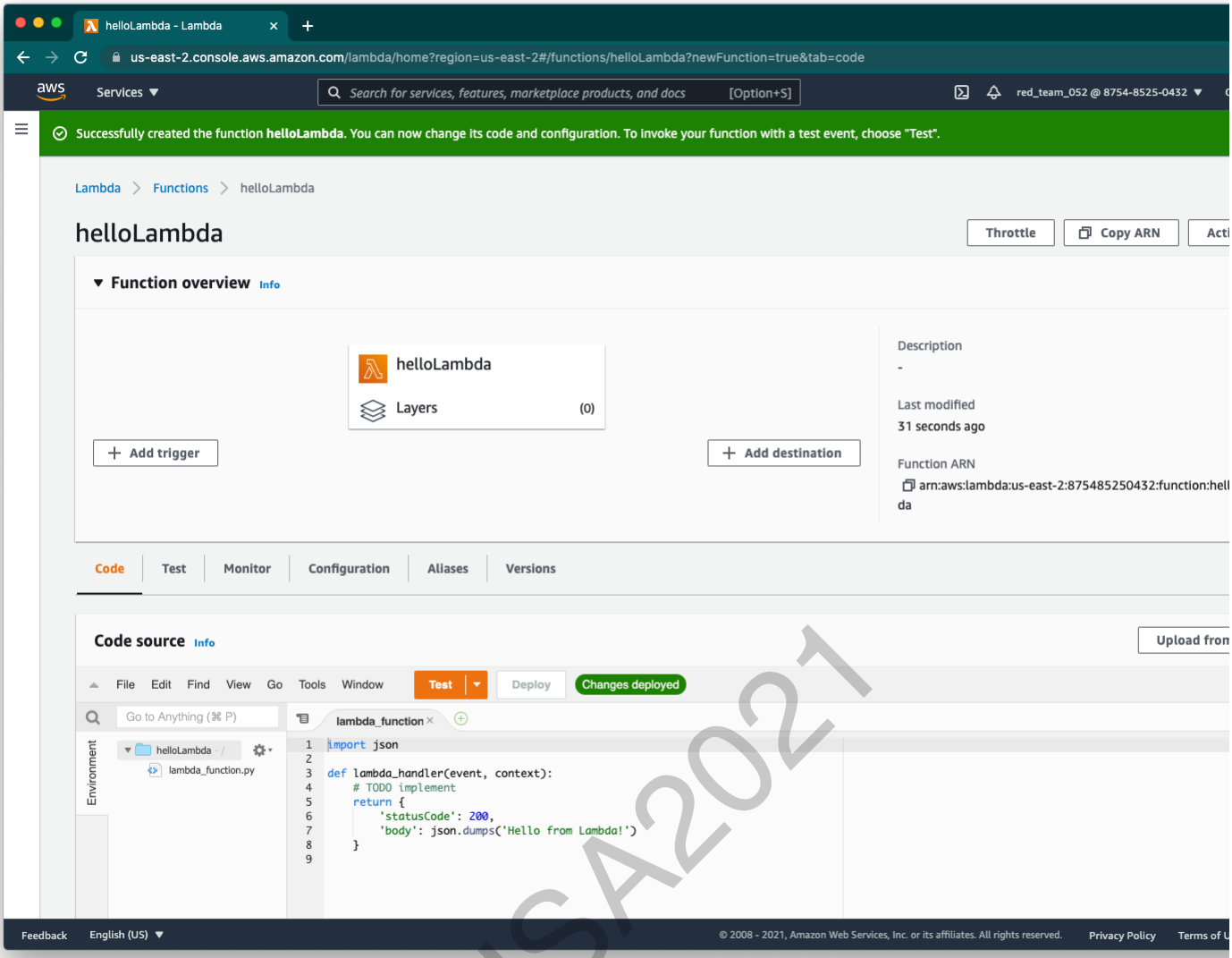
Give it the function name of "helloLambda"

Switch the runtime to "Python3.8"

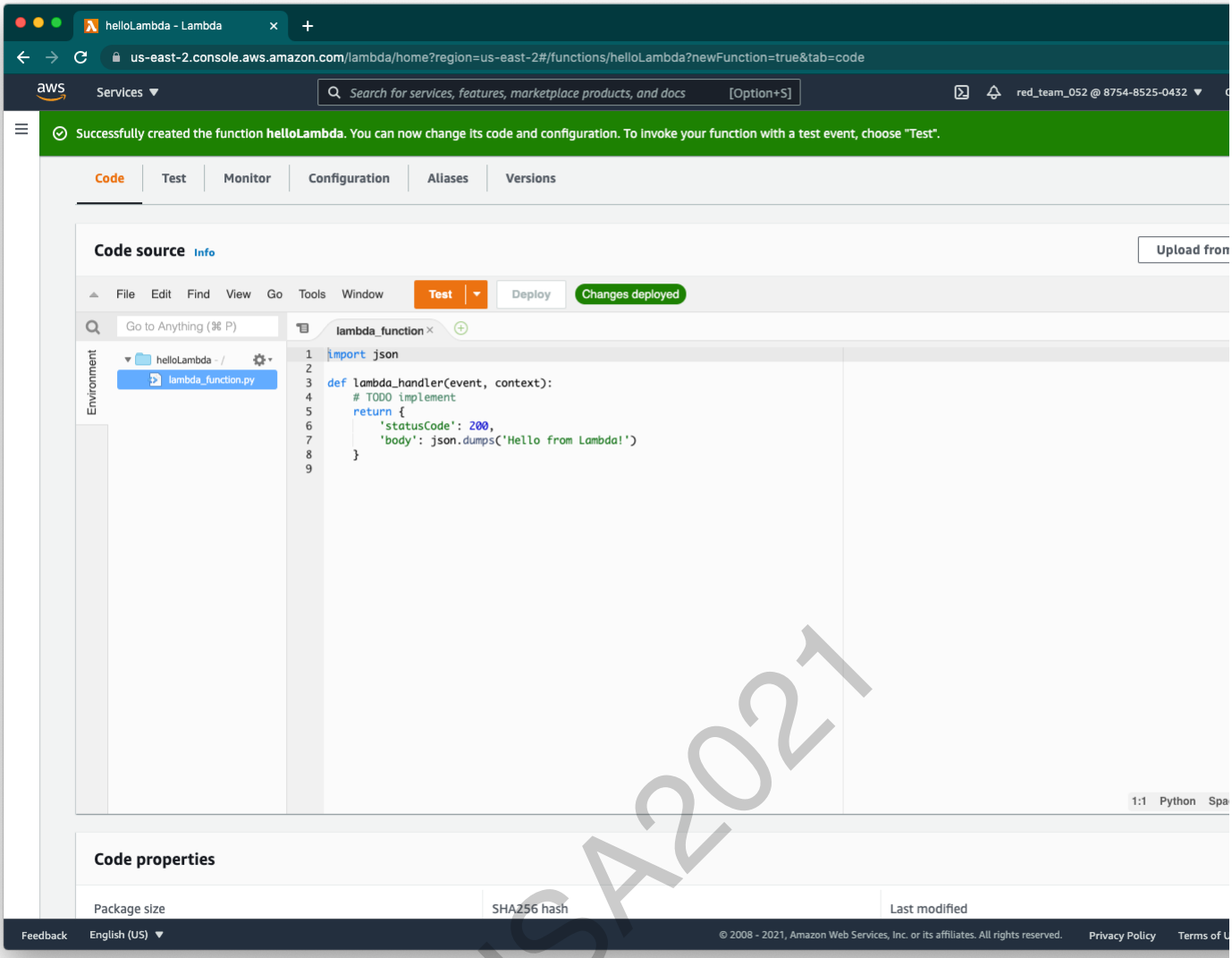
Click the "Create Function" button



You will be dropped into a function configuration interface similar to the following...

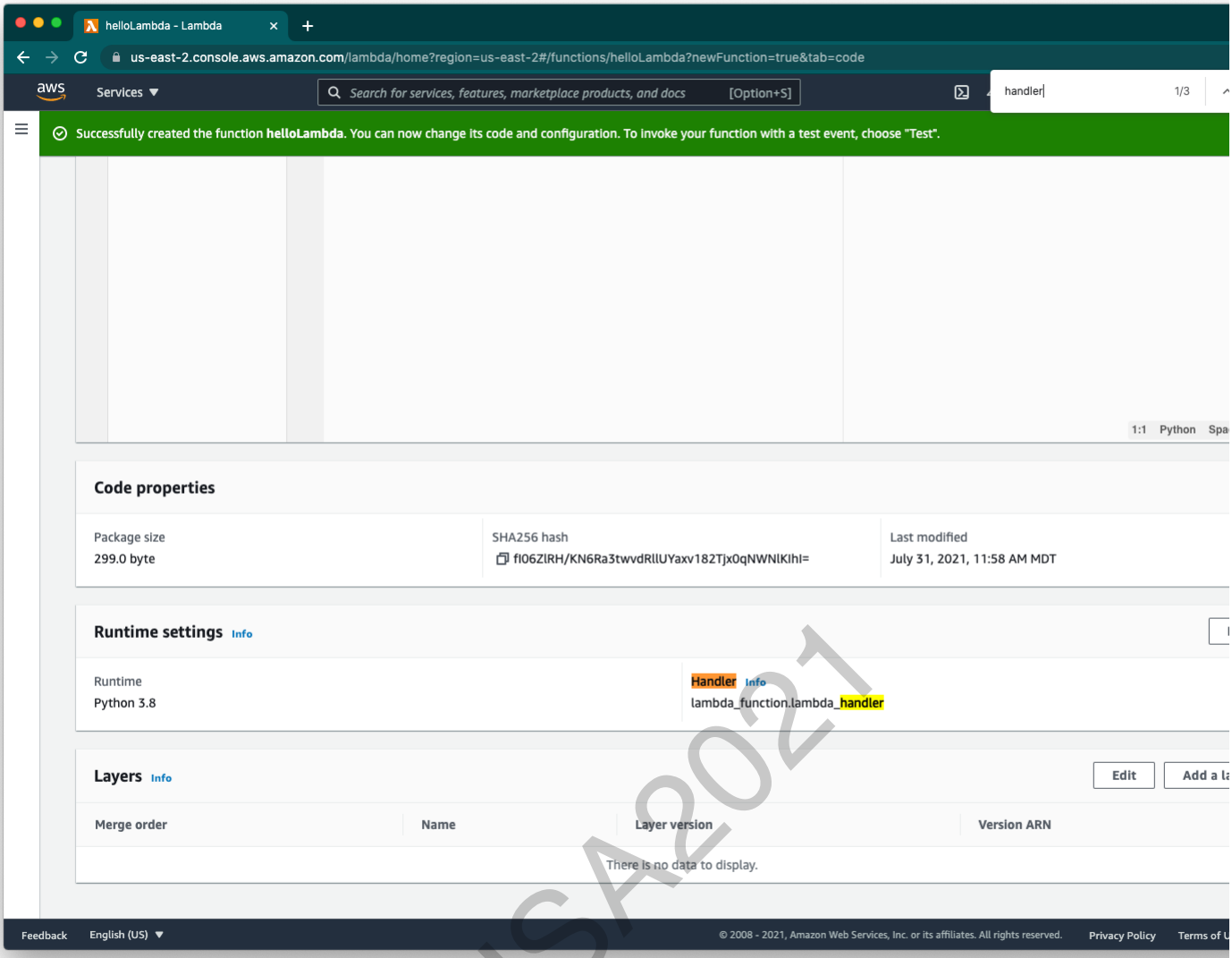


Double click on the "lambda_function.py" file to see a limited code editor with the skeleton of a lambda function...



Scroll down a bit more...

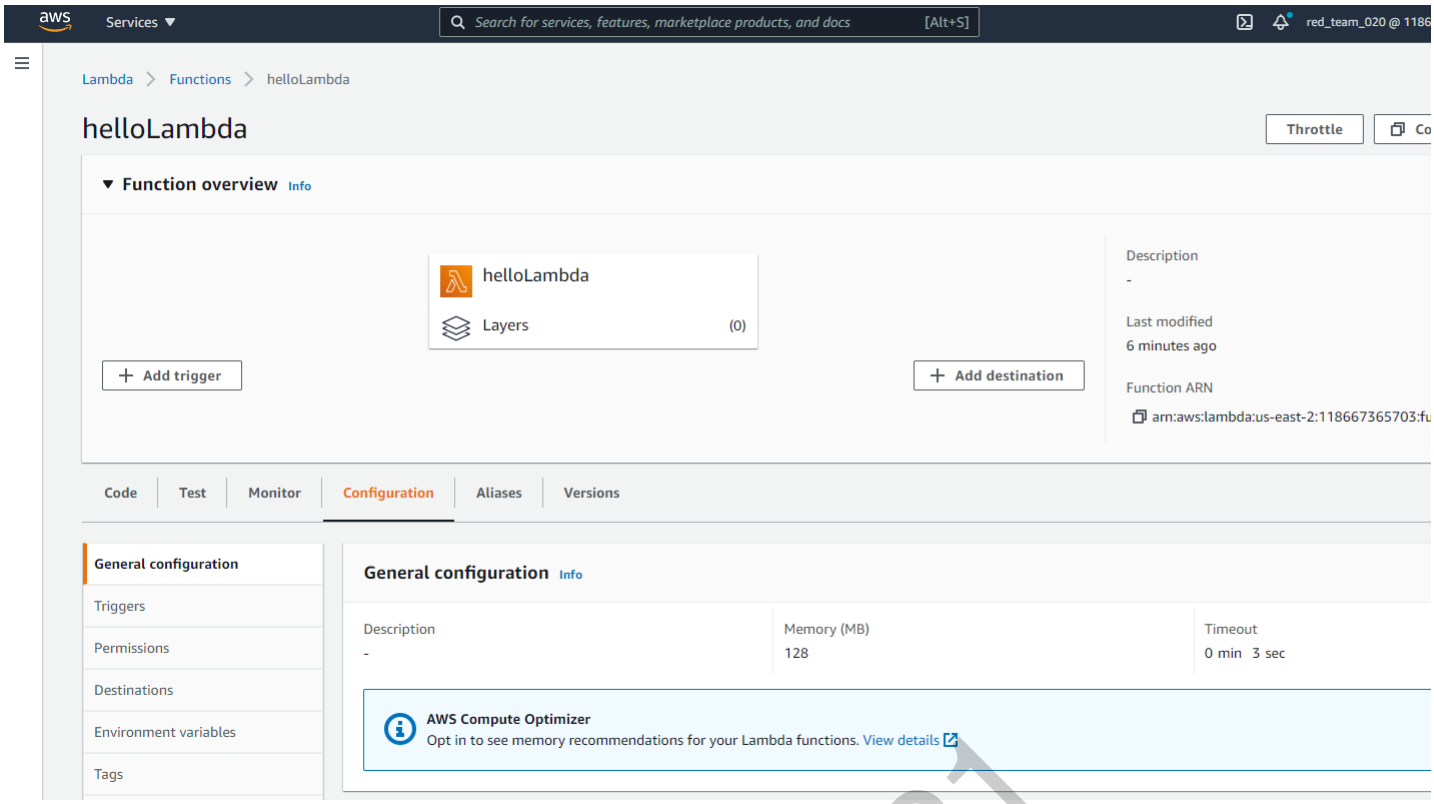
A setting to note is the "Handler", which instructs Lambda which python function within your script to execute on invocation...



Scroll back up to the top of the page...

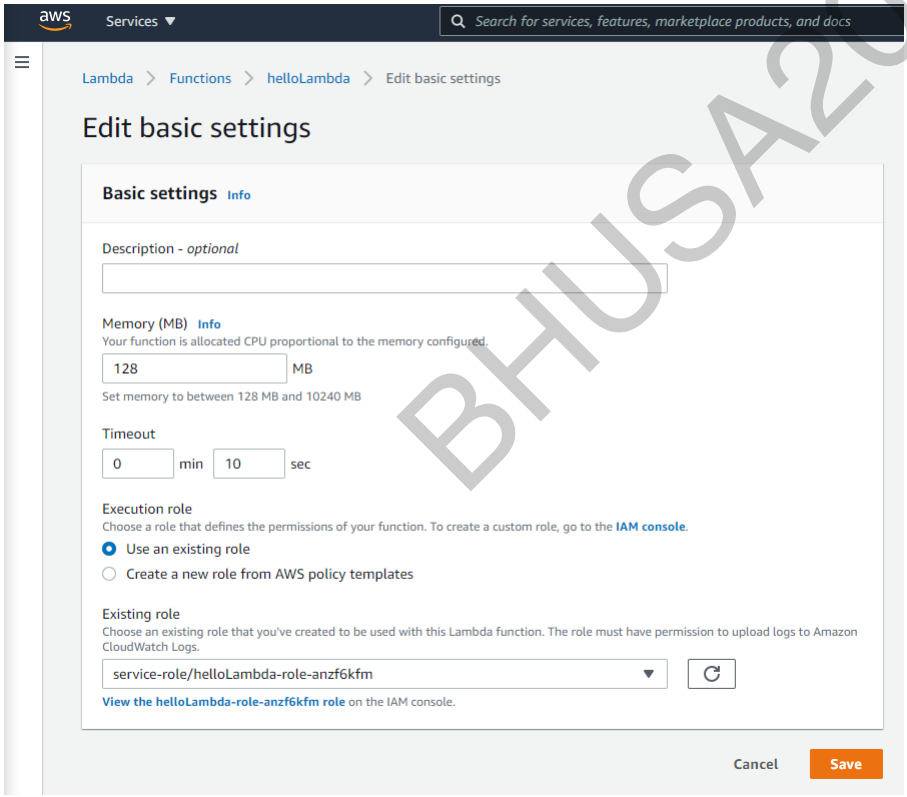
Click on the "Configuration" link...

Under the "General configuration" section, note the default settings of 128MB memory and a 3-second timeout.

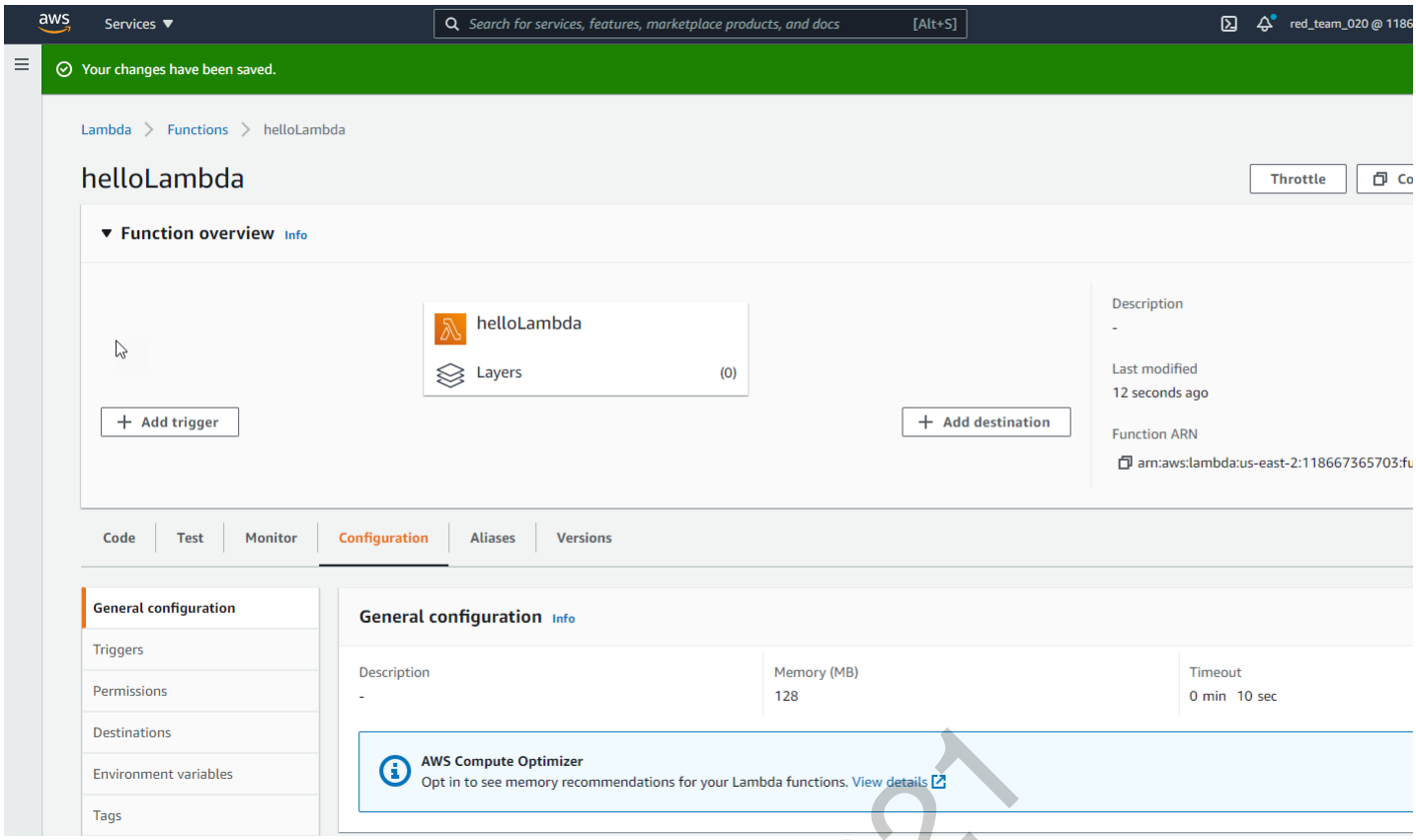


If you expect your function to take longer than 3 seconds to execute you can increase this.

Set the Timeout to 10 seconds by click the "Edit" button and then changing the "sec" field to 10...

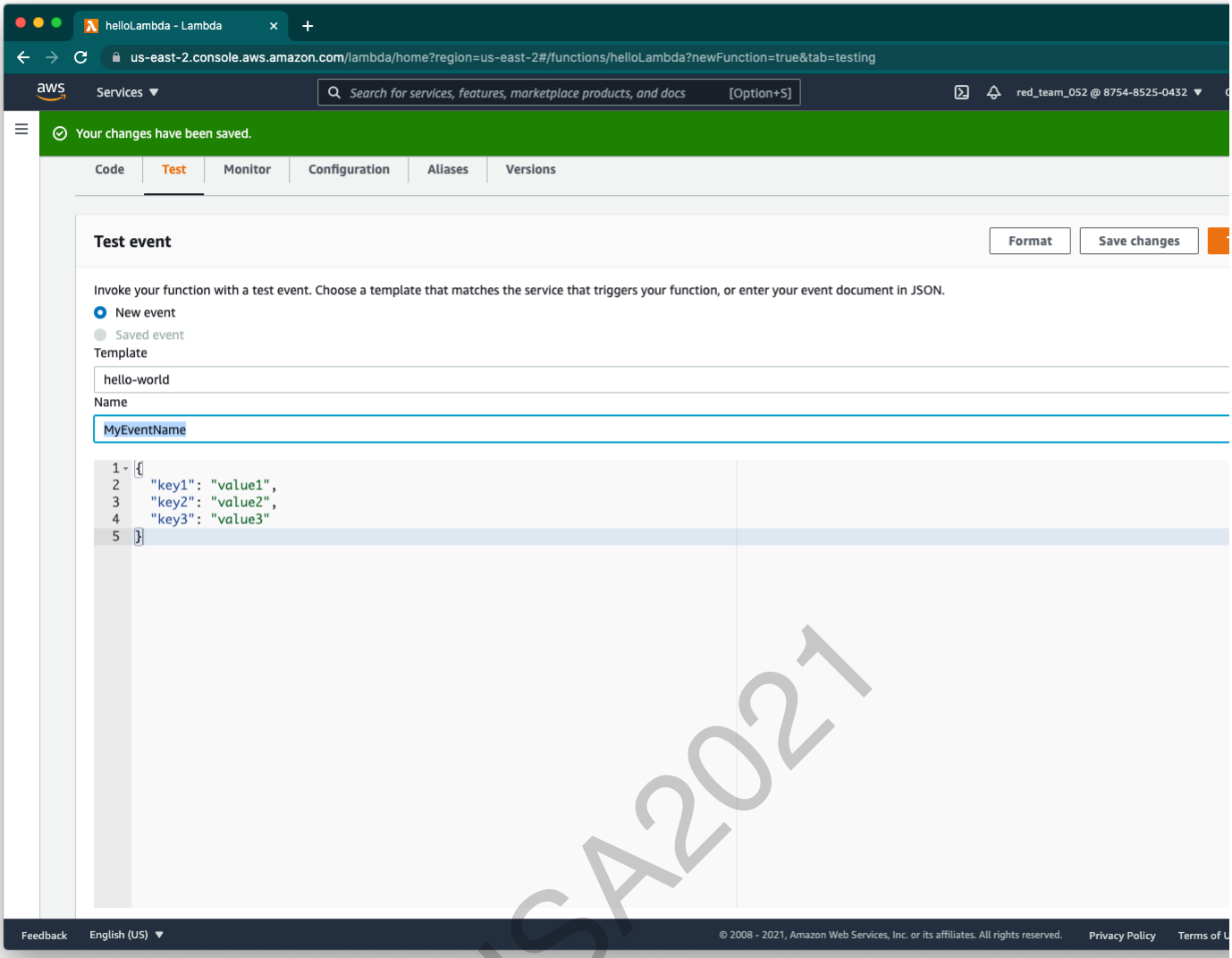


Now click the "Save" button and verify the new timeout setting...

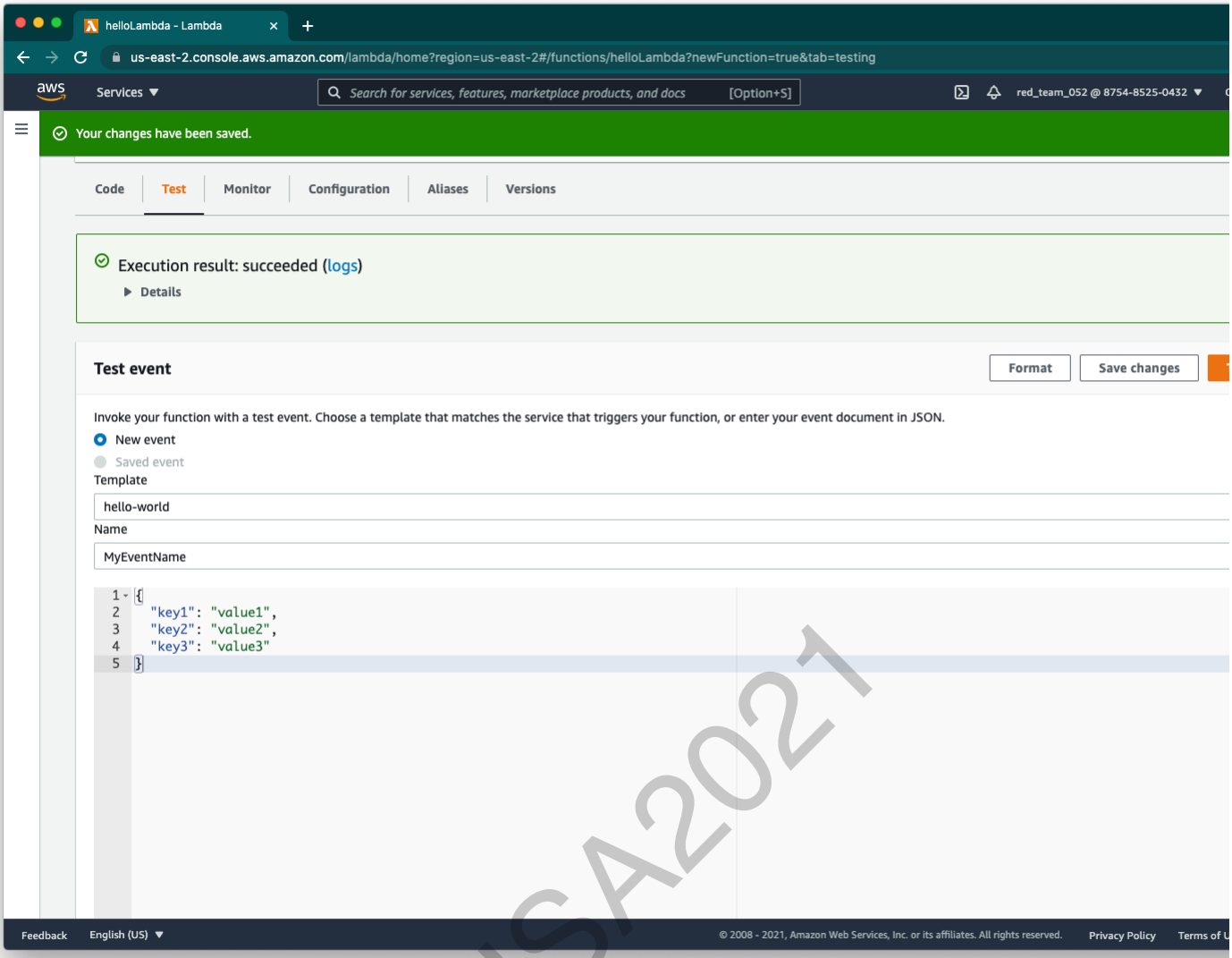


Next, create a test case by clicking the "Test" link...

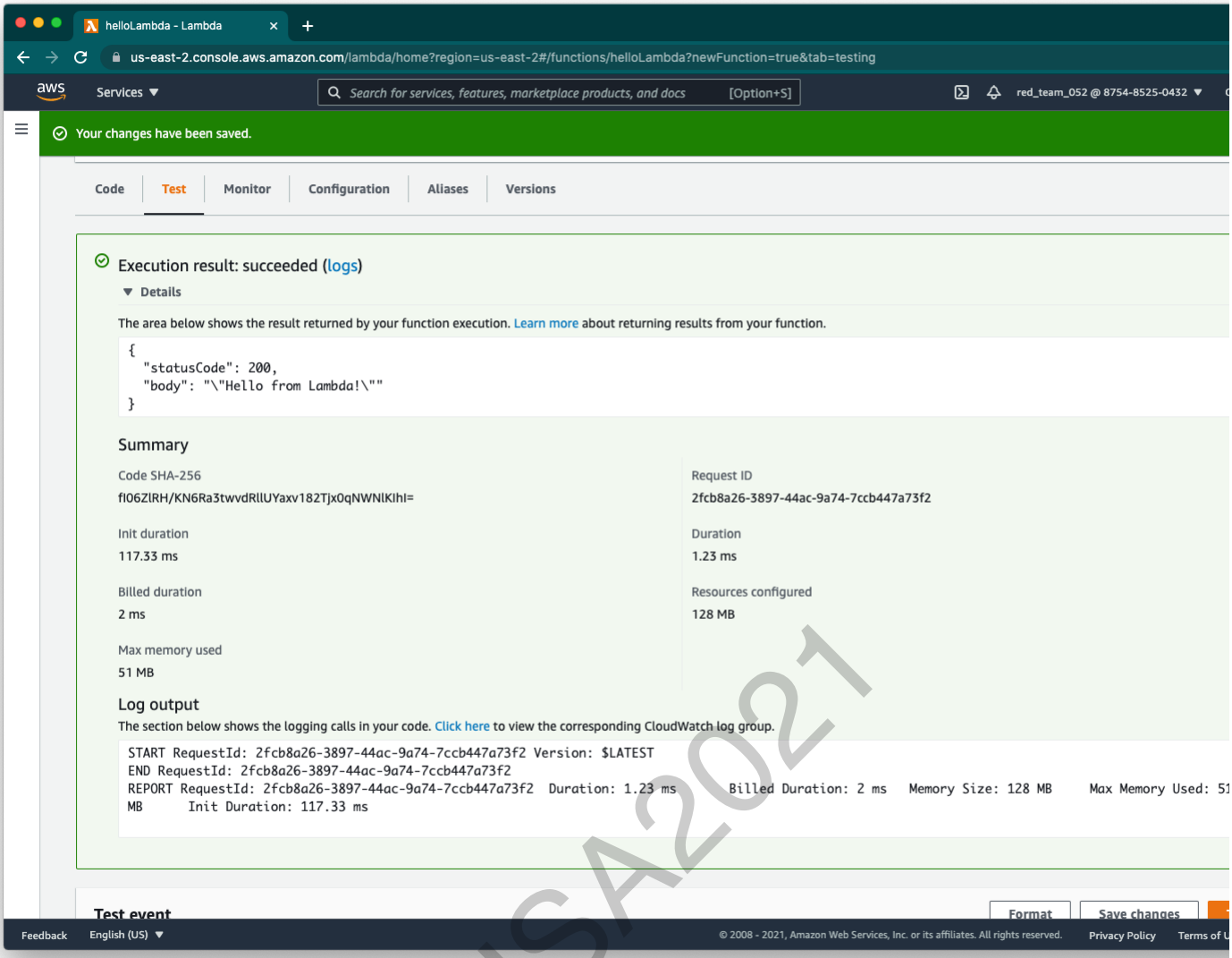
Set the "Name" field to "MyEventName"...



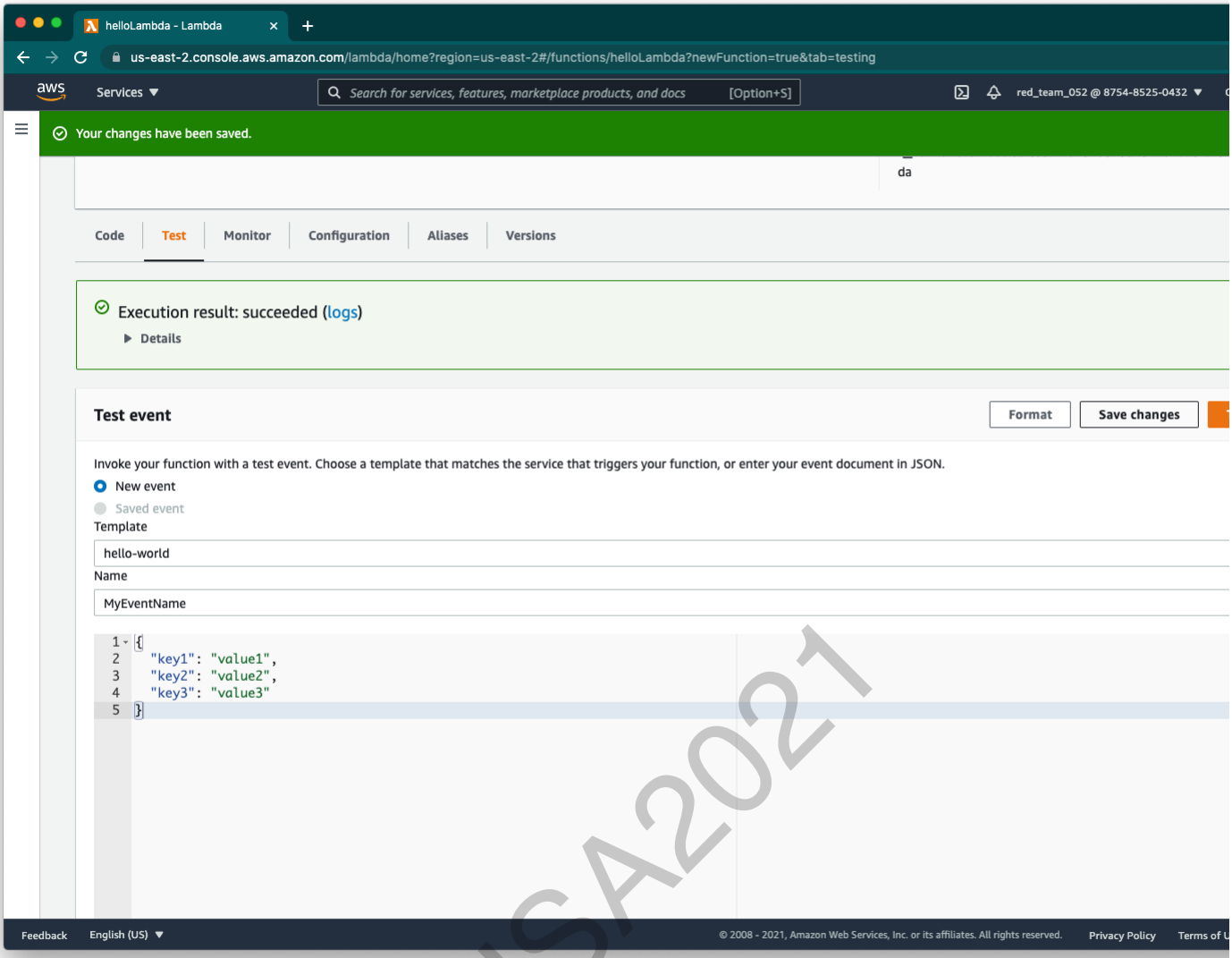
Click the "Test" button and then we should see output similar to this...



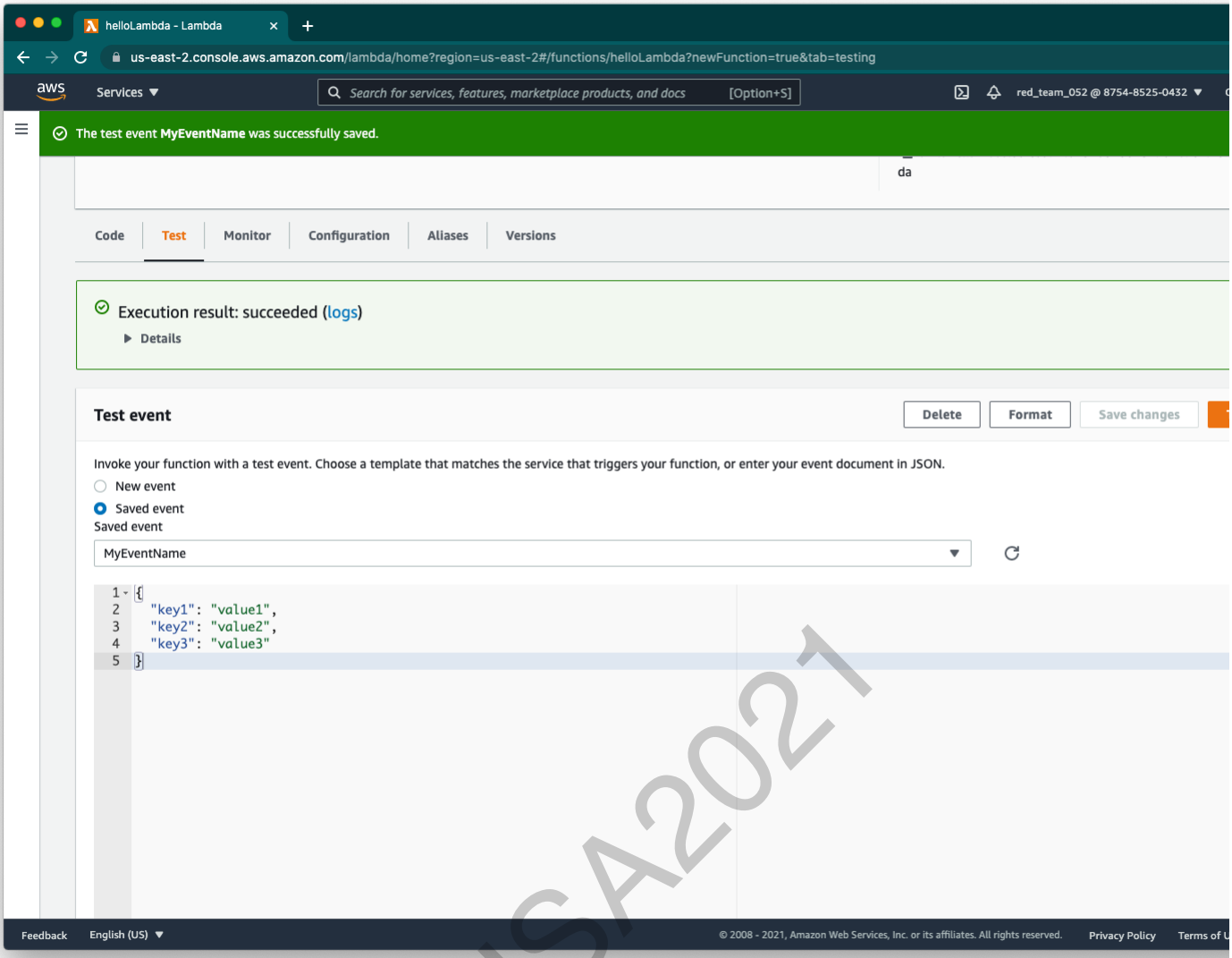
Click the "Details" link and we should see output similar to the following...



If the test case worked as expected, then click the "Save changes" button...



The screen should now change slightly to reflect the saved test...



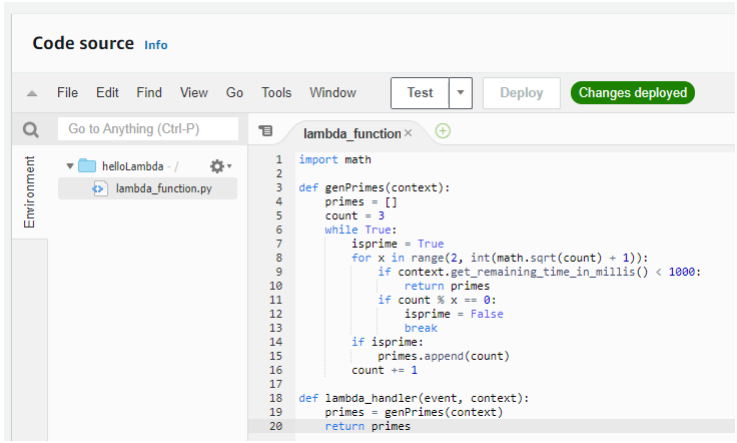
Click the "Code" link...

Double Click the "lambda_function.py" file...

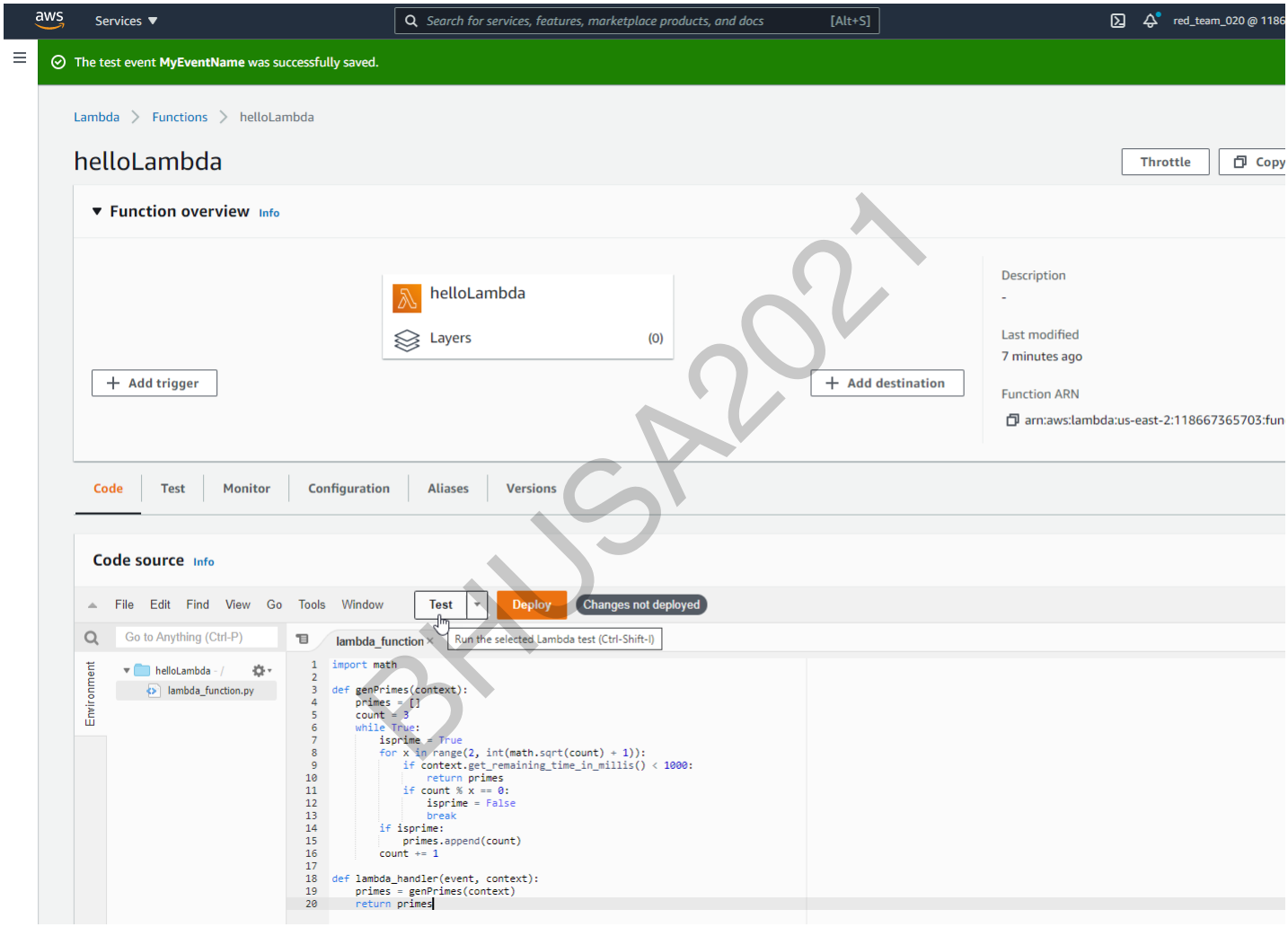
Paste the following script into the "Function code" editor for the "lambda_function.py" file, which calculates prime numbers:

```
import math

def genPrimes(context):
    primes = []
    count = 3
    while True:
        isprime = True
        for x in range(2, int(math.sqrt(count) + 1)):
            if context.get_remaining_time_in_millis() < 1000:
                return primes
            if count % x == 0:
                isprime = False
                break
        if isprime:
            primes.append(count)
        count += 1

def lambda_handler(event, context):
    primes = genPrimes(context)
    return primes
```

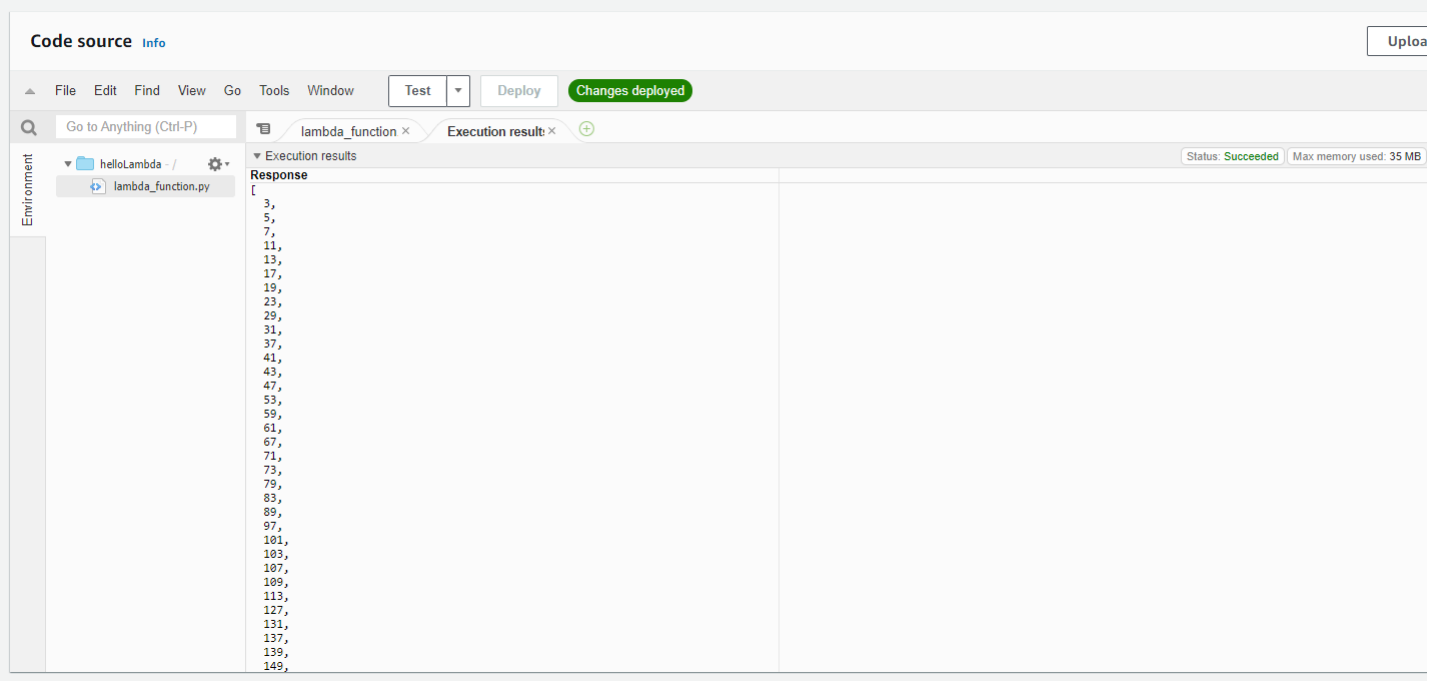
Click the "Deploy" button to save the changes...



Click the "Test" button...



After we reach the max execution time of 10 seconds, we should see the following output...



Memory and compute cores are linked, by increasing memory the function will be given additional compute.

You may try increasing the memory to see how many more primes the function is able to execute in the same amount of time.

This is a very simple example of how Lambda works. The power of Lambda comes in the scalability and number of ways functions can be invoked.

References

Check out the following references for more information:

- Run a Serverless "Hello, World!" - https://aws.amazon.com/getting-started/tutorials/run-serverless-code/
- Create a Simple Lambda Function - https://docs.aws.amazon.com/lambda/latest/dg/get-started-create-function.html
- Getting Started - AWS Lambda - https://docs.aws.amazon.com/lambda/latest/dg/getting-started.html