Adv. DevOps

Experiment No. 12

* Aim - To create a Lambda function which will log "An image has been added" once you add an object to specific object in S3.

* Theory -

- What are features of Lambda function?

The following key features help you develop lambda applications that are scalable, secure & easily extensible -

1. Concurrency and scaling controls.
Using concurrency setting to ensure that your production applications are highly available & highly responsive. Lambda means the infrastructure that runs code and scales automatically in response to incoming requests.

2. Function URL's -
Lambda offers builtin HTTP(S) endpoint support through function URL's. With function URL's you can assign a dedicated HTTP endpoint to your lambda function. When your function URL is configured you can use it to invoke your function through a web browser, curl, postman or any HTTP client. You can also add a function URL to an existing function.

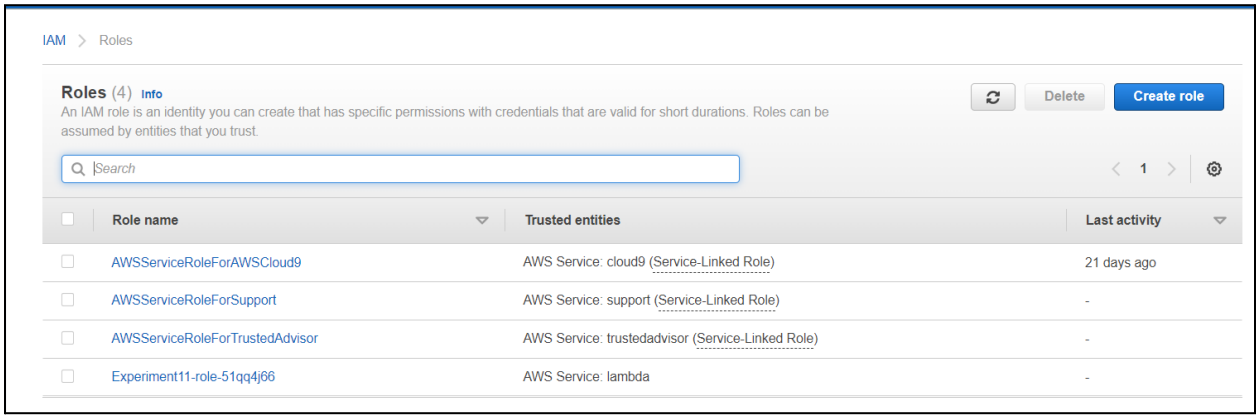
3. Event source mappings -
Event source mappings maintain a local queu

of unprocessed items and handle retries if the function returns an error. or you can configure an event source mapping to customize batching behaviour & error handling or to send a record of items that fail to a destination.

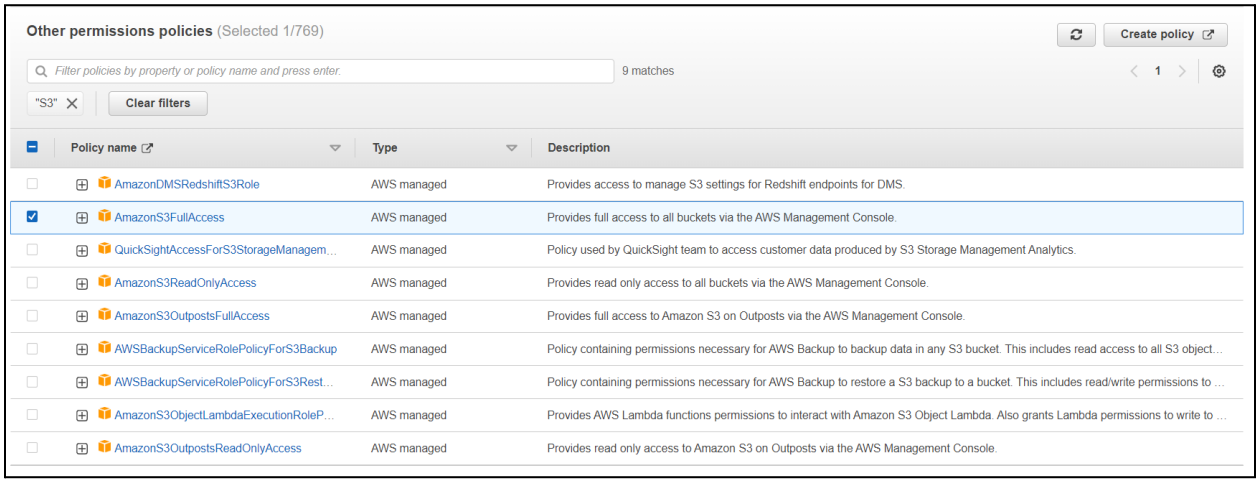
4. Testing and deployment tools:- Lambda supports deploying code as it or as container images. you can rich tools ecosystem for authorising, building and deploying your lambda functions using AWS.

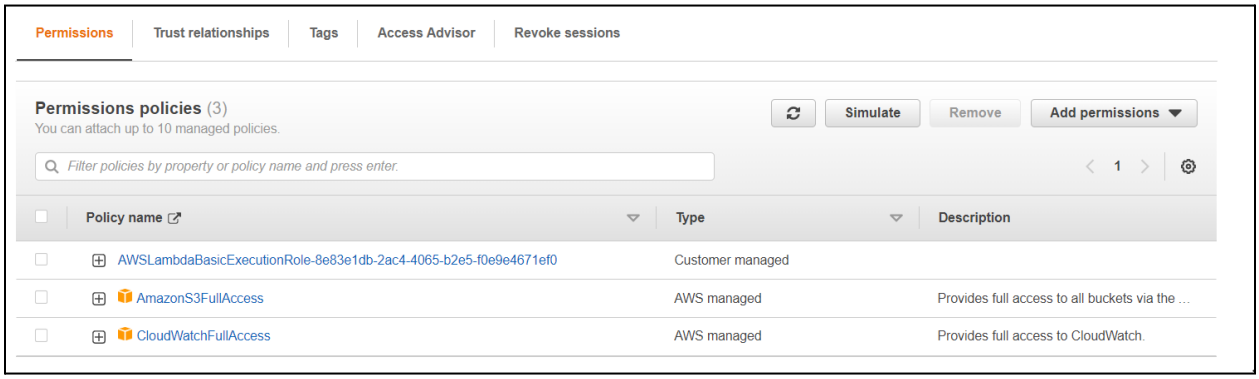
Implementation:

Step 1: Open up the IAM Console and under Roles, choose the Role we previously created for the Python Lambda Function (You can find your role name configuration of your Lambda function).

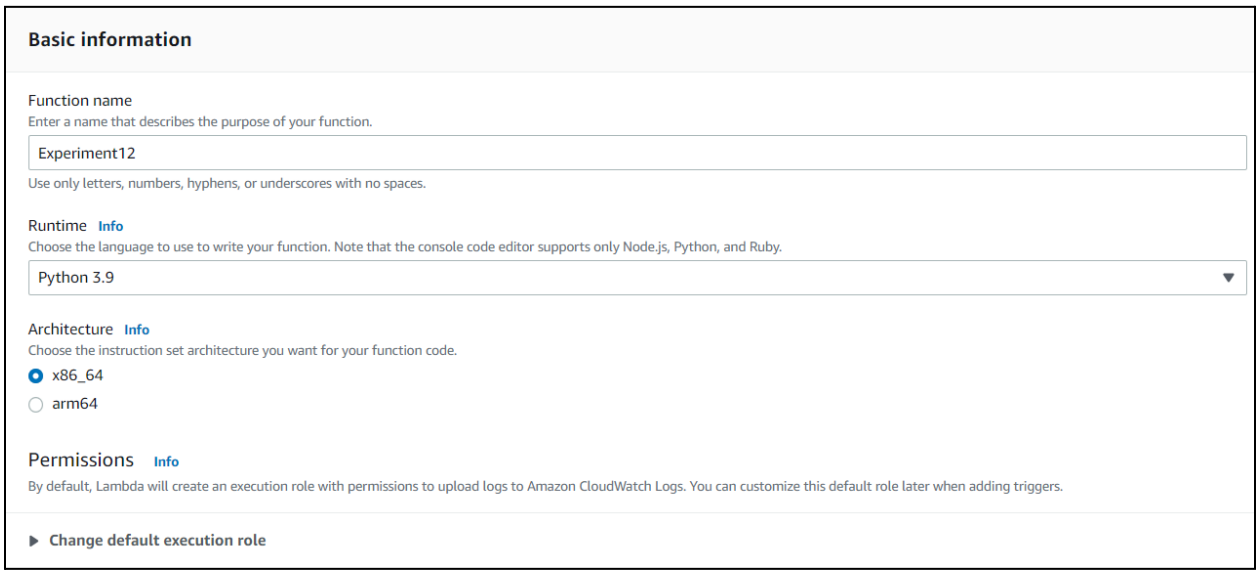


Step 2: Under Attach Policies, add S3-ReadOnly and CloudWatchFull permissions to this role

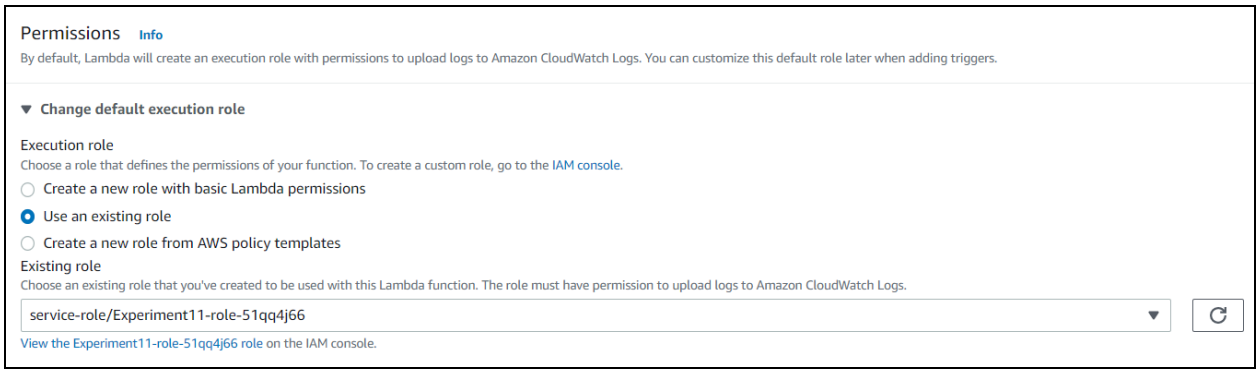




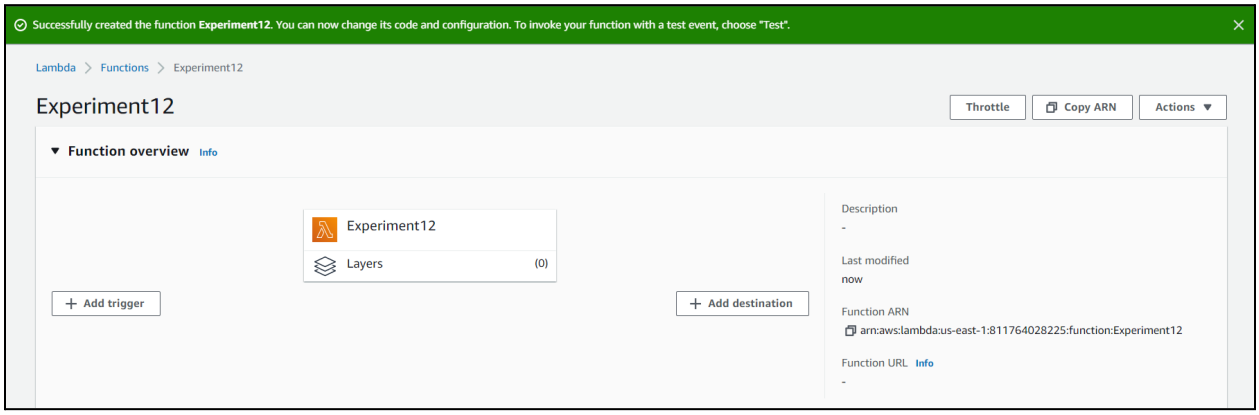
Step 3: Open up AWS Lambda and create a new Python function



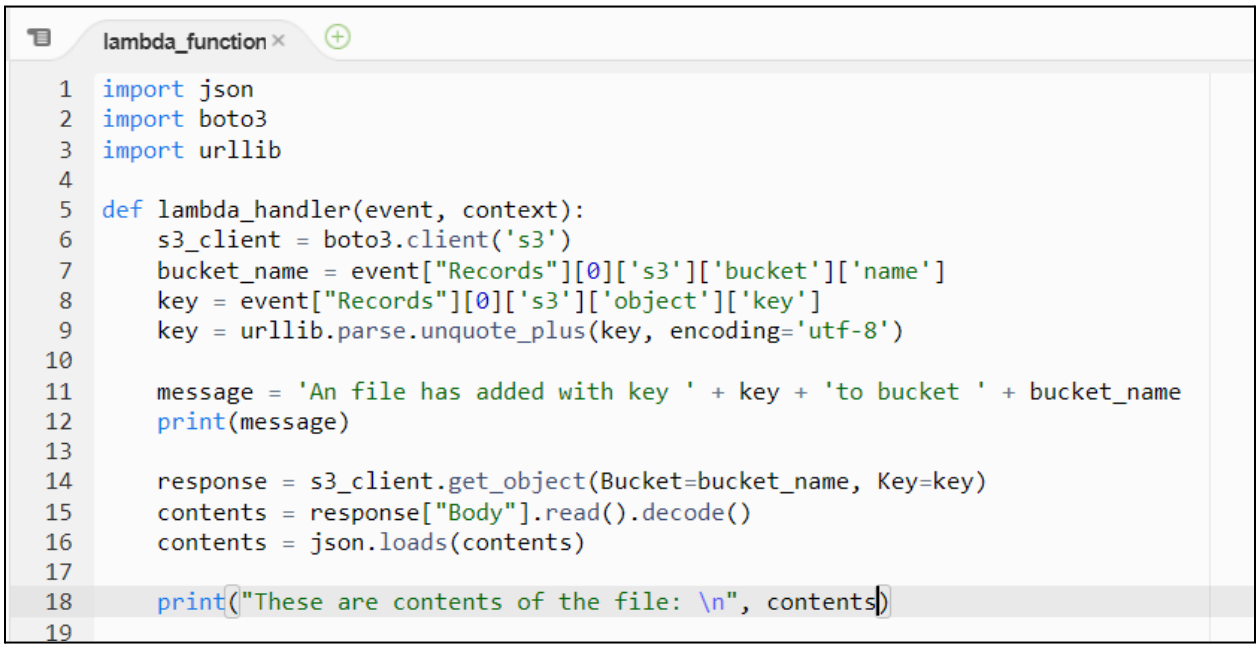
Under Execution Role, choose the existing role, then select the one which was previously created and to which we just added permissions.



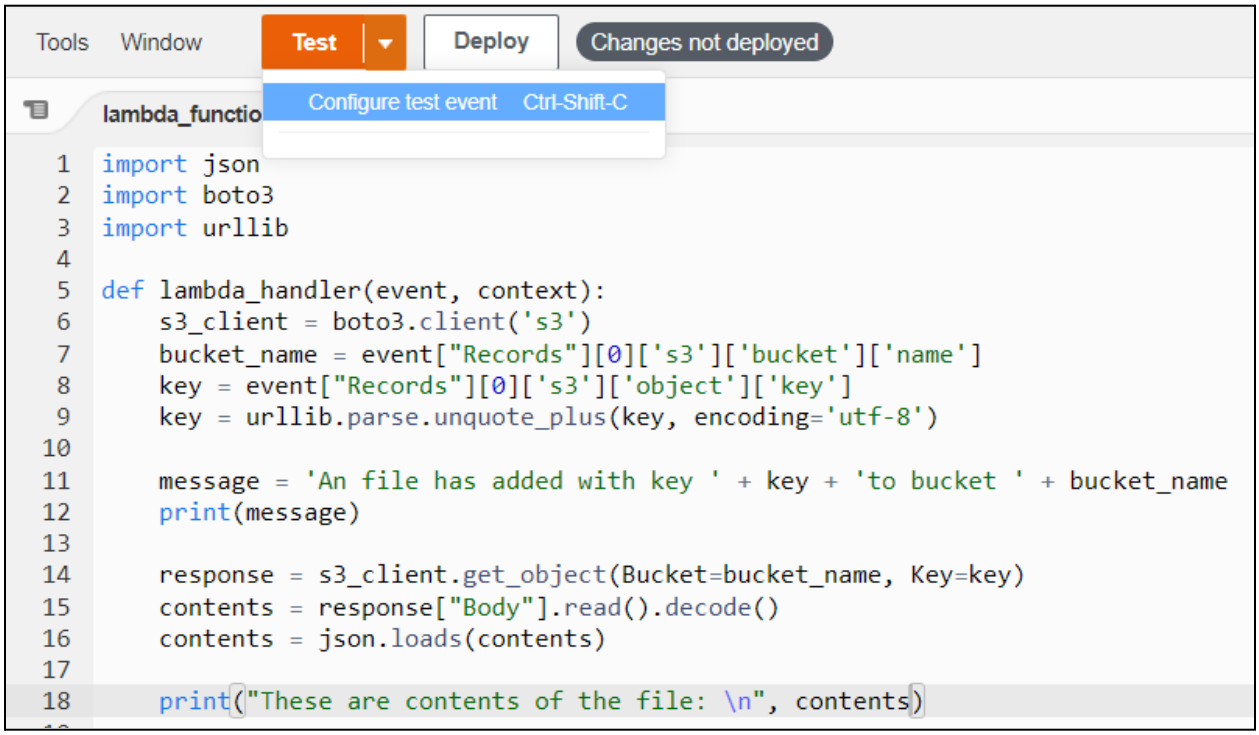
Step 4: The function is up and running.

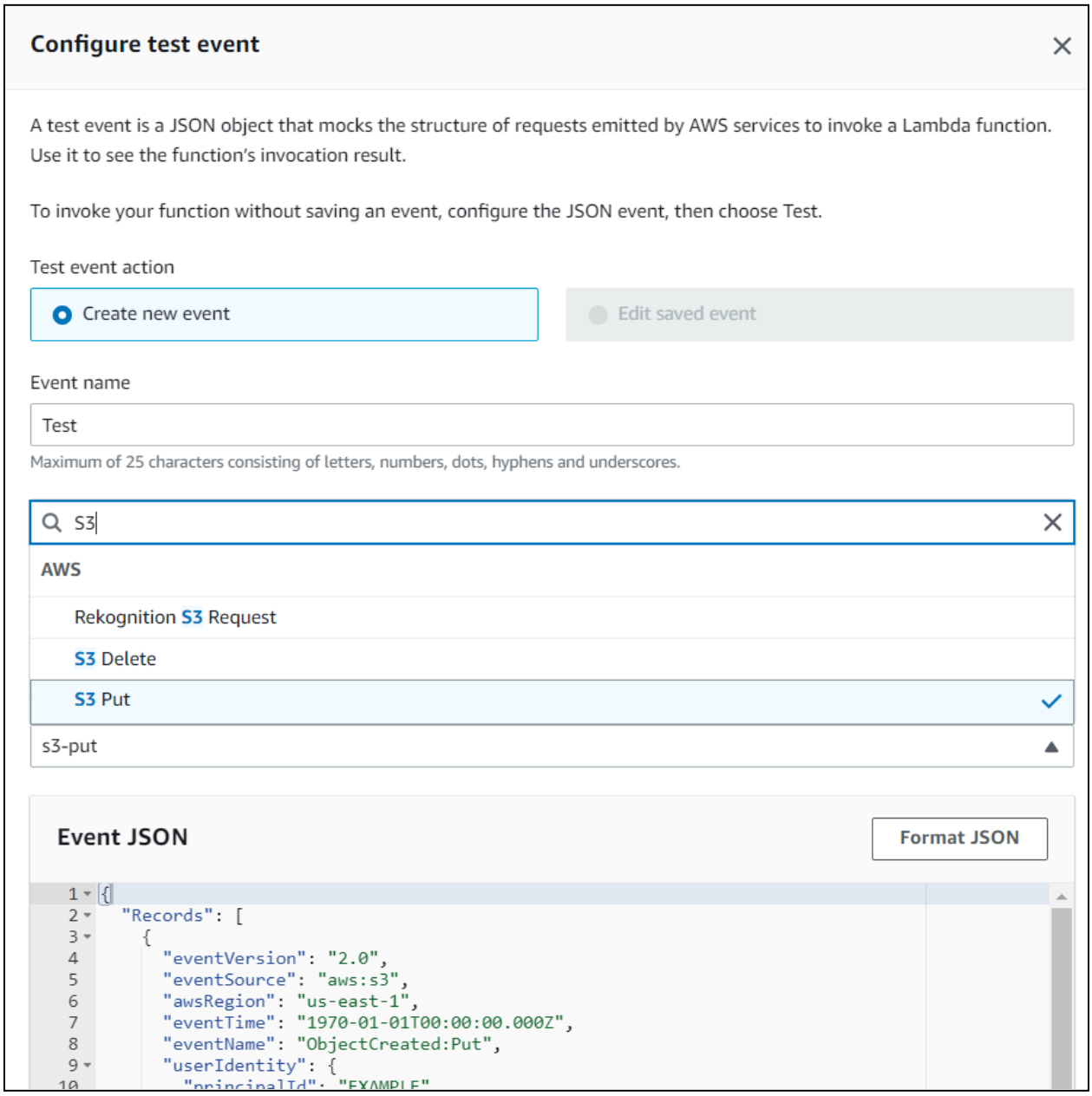


Step 5: Make the following changes to the function and click on the deploy button. This code basically logs a message and logs the contents of a JSON file which is uploaded to an S3 Bucket and then deploy the code.

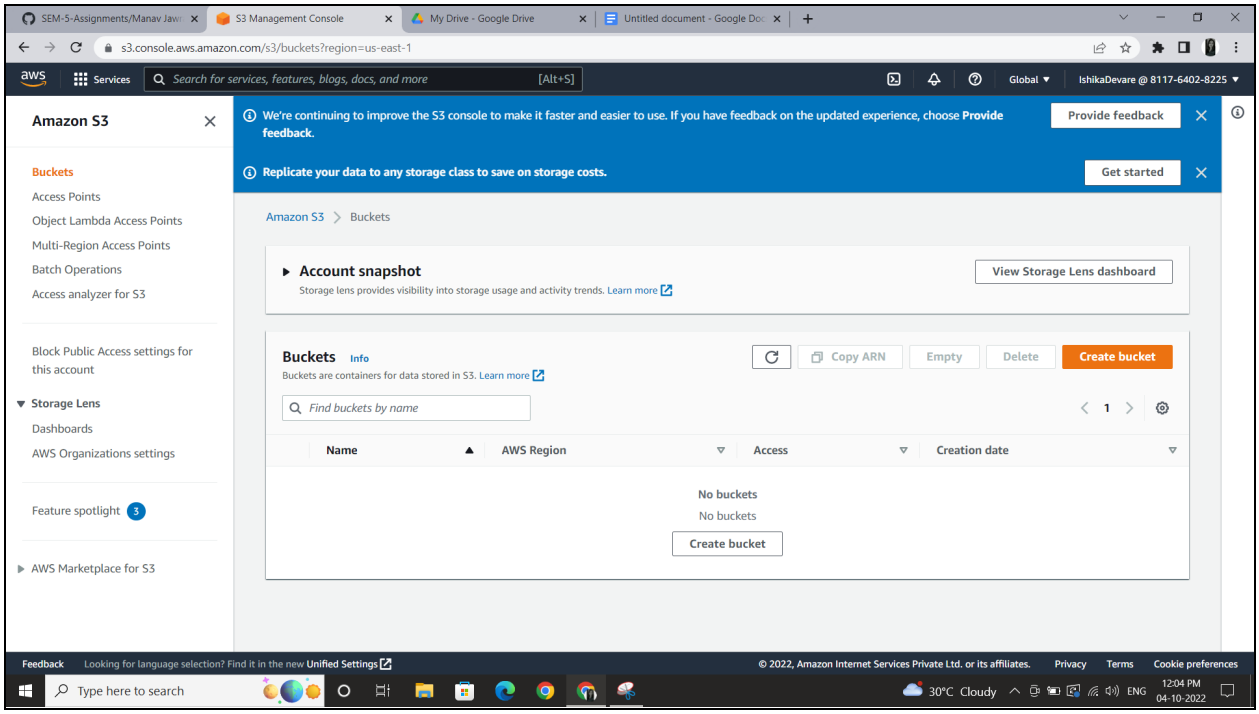


Step 6: Click on Test and choose the 'S3 Put' Template.

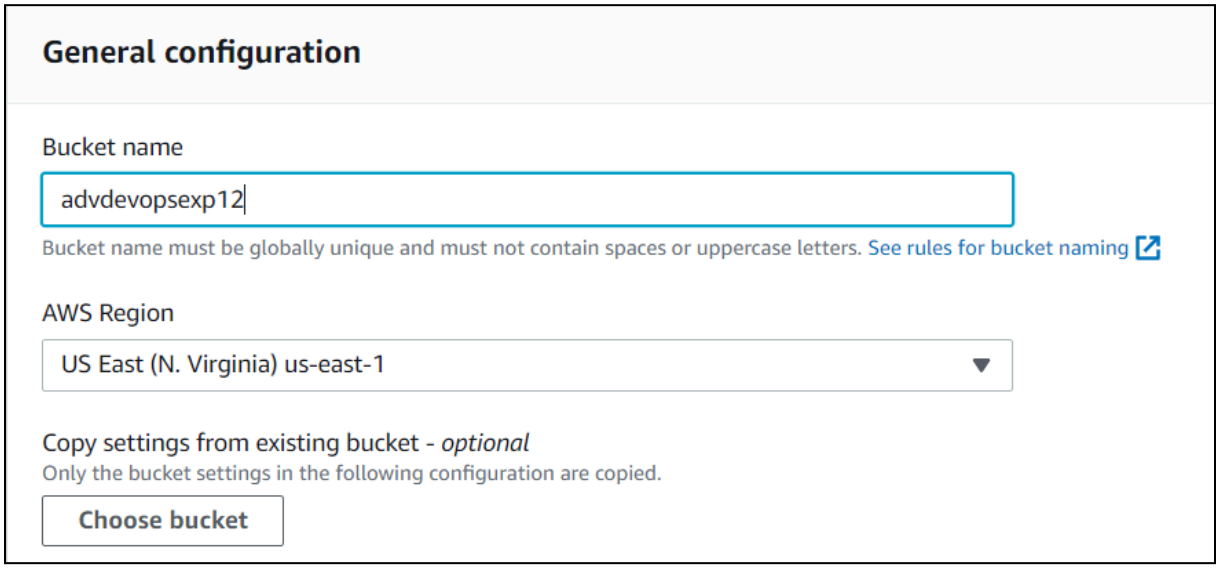




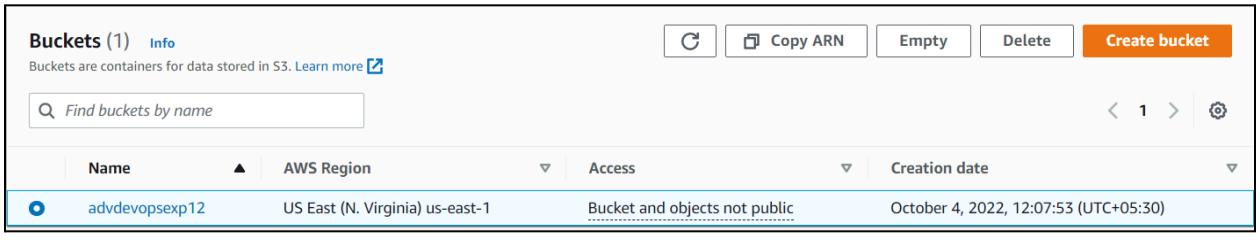
Step 7: Open up the S3 Console and create a new bucket.

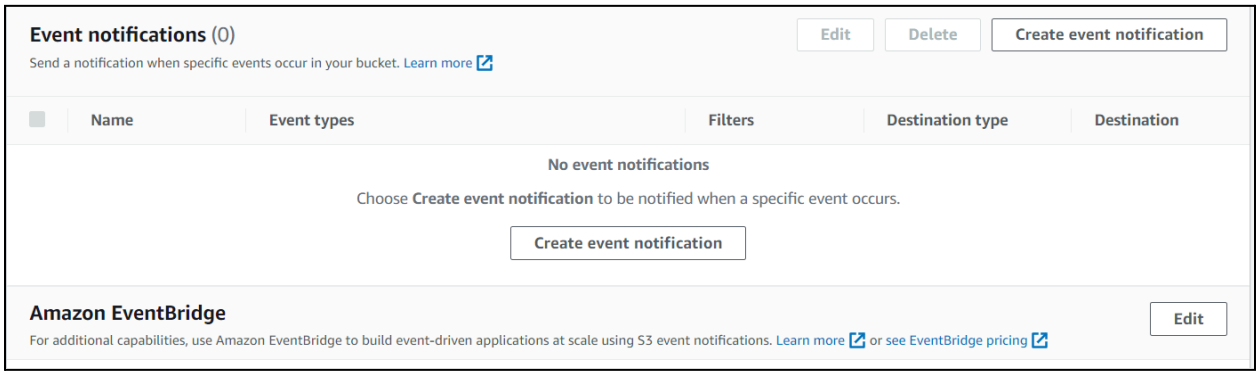


Step 8: With all general settings, create the bucket in the same region as the function



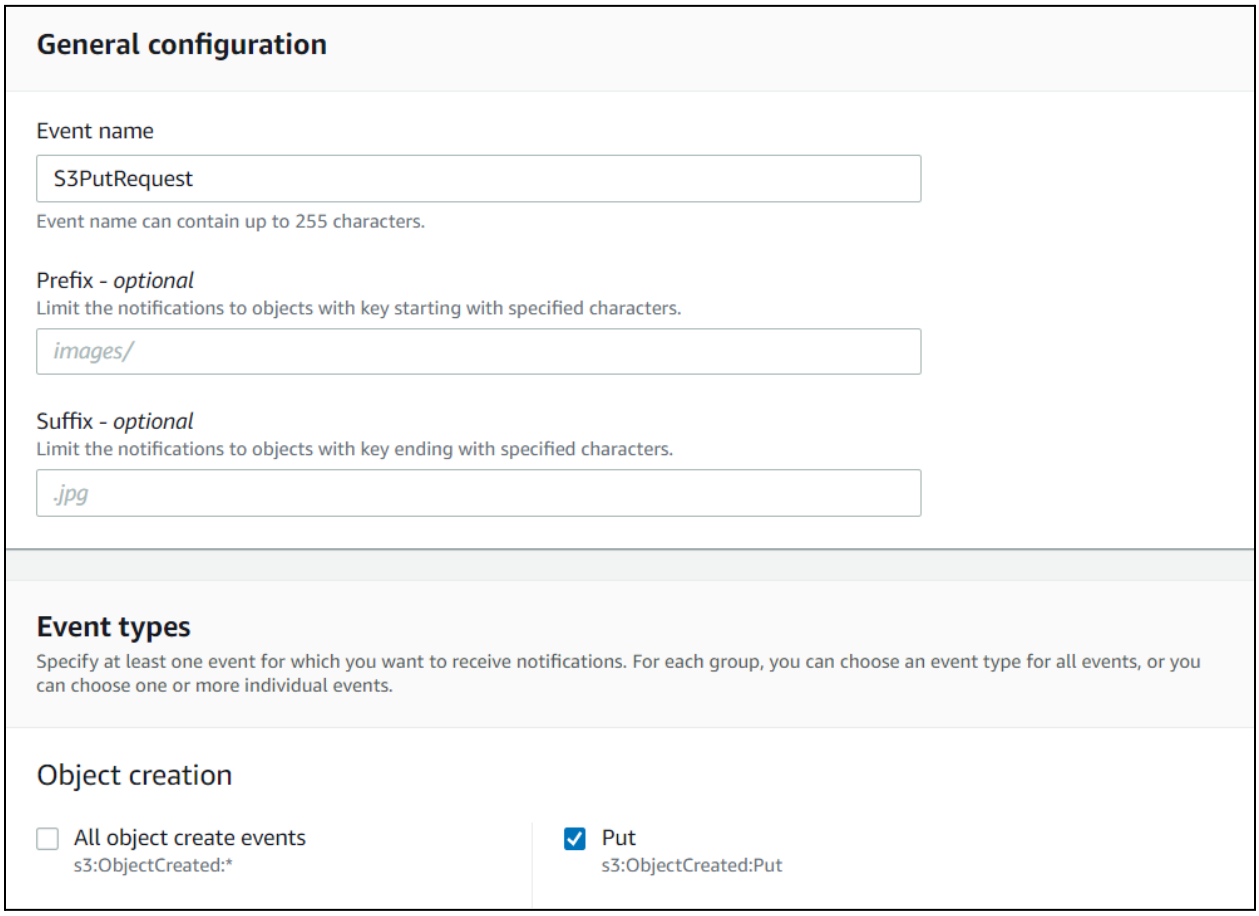
Step 9: Click on the created bucket and under properties, look for events.



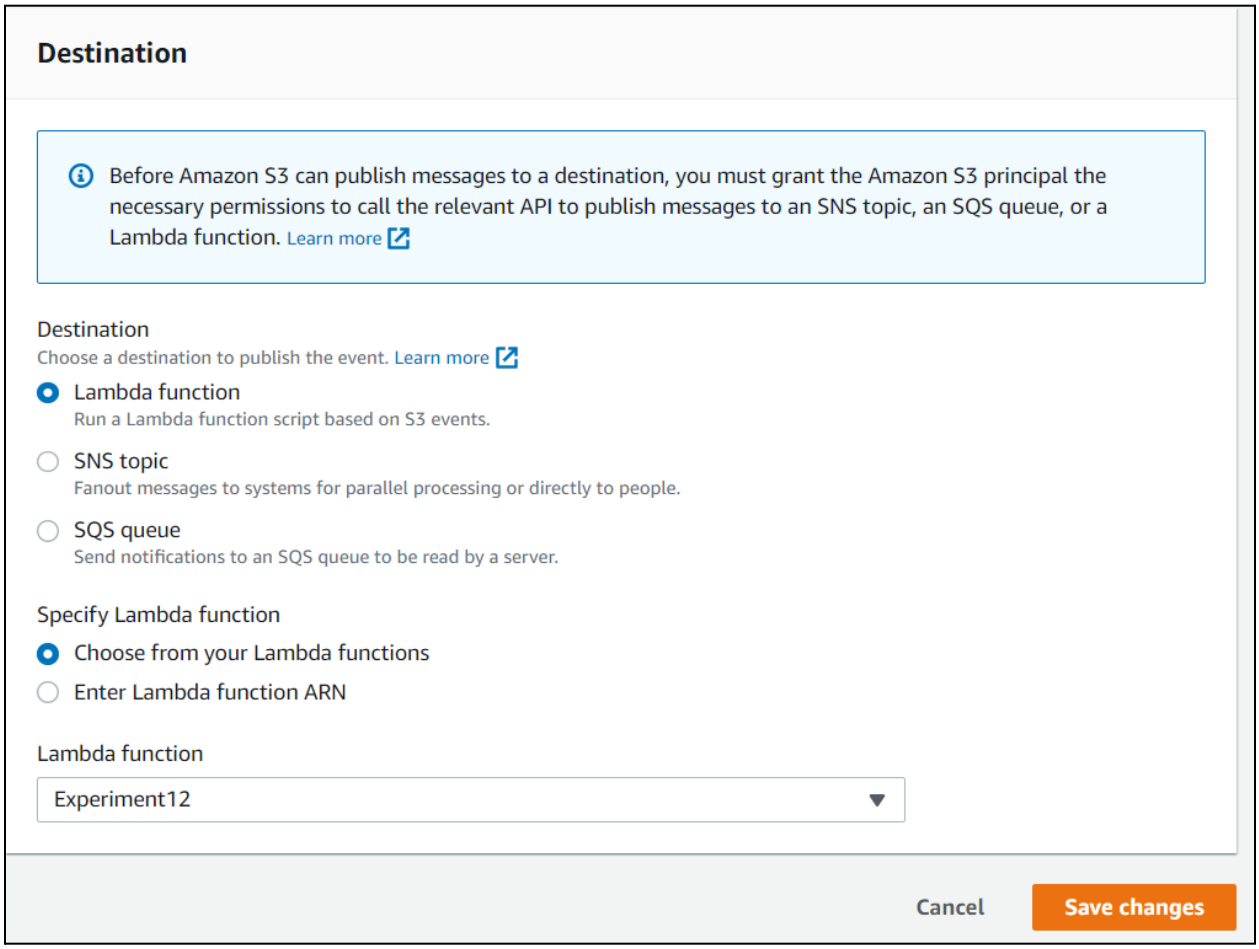


Click on Create Event Notification.

Step 10: Mention an event name and check Put under event types.



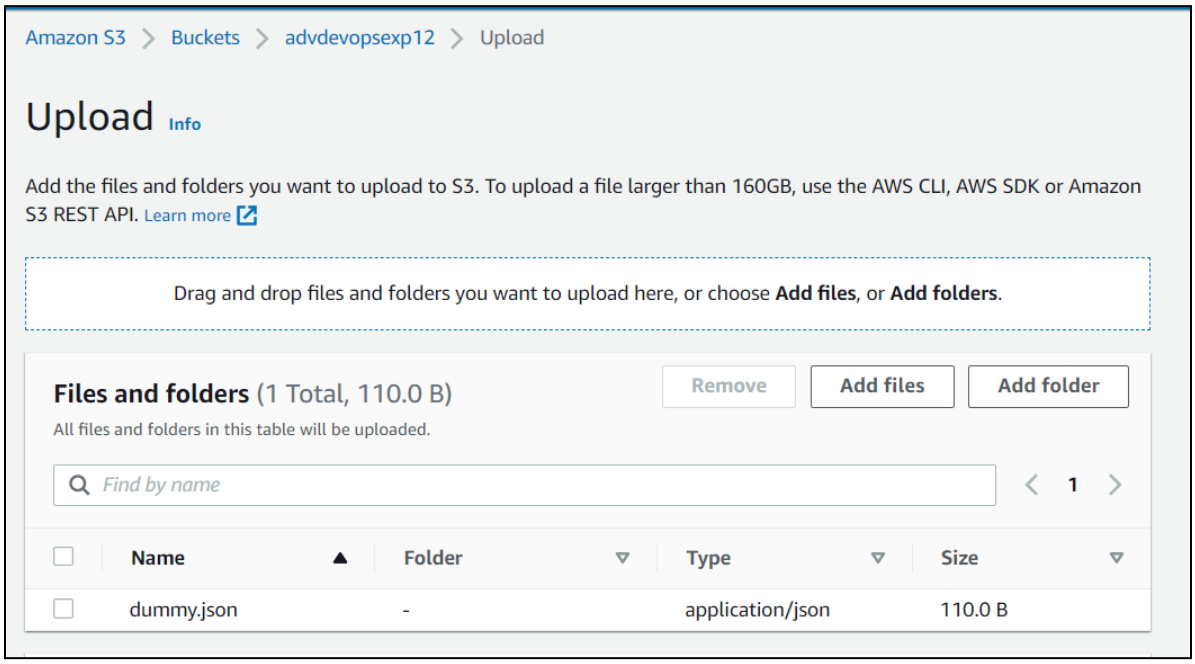
Choose Lambda function as destination and choose your lambda function and save the changes.



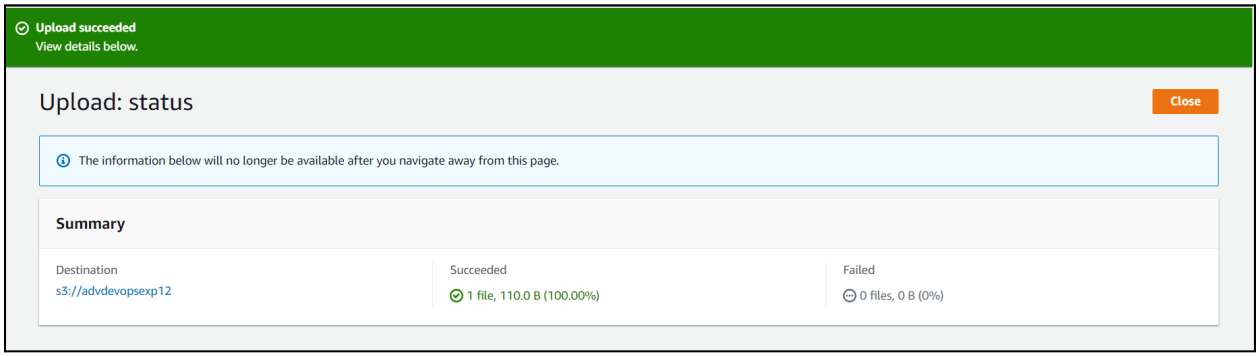
Step 11: Refresh the Lambda function console and you should be able to see an S3 Trigger in the overview.

Step 12: Now, create a dummy JSON file locally

Step 13: Go back to your S3 Bucket and click on Add Files to upload a new file.

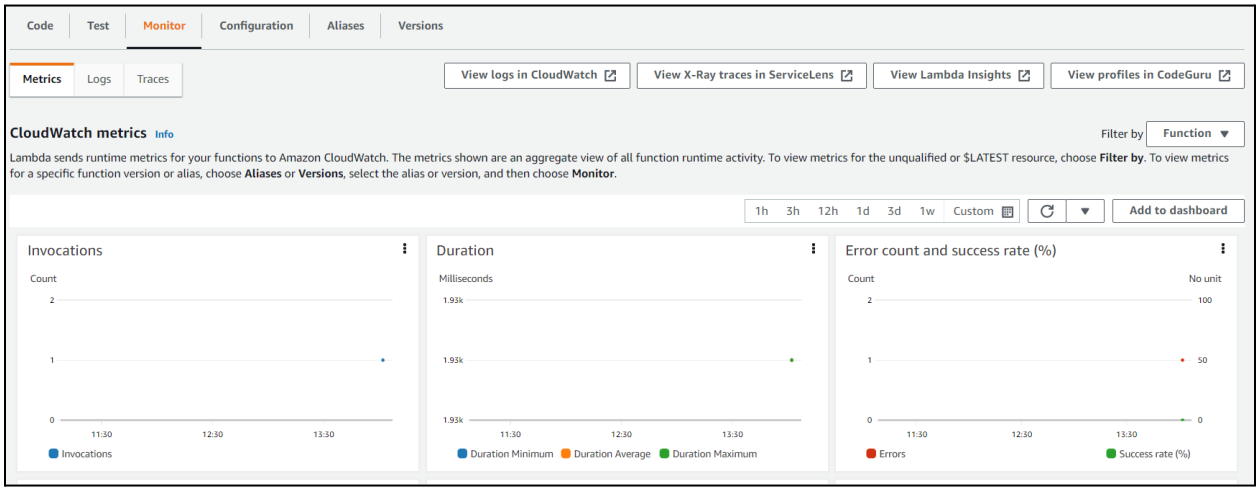


Step 14: Select the dummy data file from your computer and click Upload.

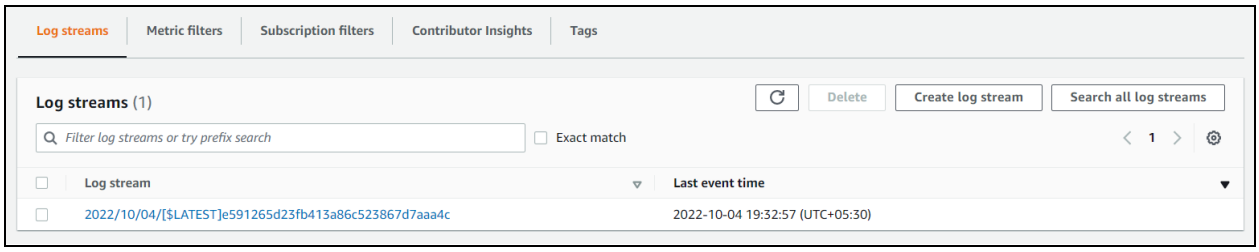


Step 15: After this make the necessary changes in the Test configuration file which we created previously by replacing the Bucket Name and the ARN of Bucket.

Step 16: Go back to your Lambda function , Refresh it and check the Monitor ta



Under Log streams, click on View logs in Cloudwatch to check the Function logs.



Step 17: Click on this log Stream that was created to view what was logged by your function.

As you can see, our function logged that a file was uploaded with its file name and the bucket to which it was uploaded. It also mentions the contents inside the file as our function was defined to.

Hence, we have successfully created a Python function inside AWS Lambda which logs every time an object is uploaded to an S3 Bucket.

* Conclusion - Here, we created a python function, inside AWS function which logs everytime when an object is uploaded to an AWS S3 bucket.