ADVANCED DEVOPS EXP 12

Aim: To create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3

Theory:

AWS Lambda and S3 Integration: AWS Lambda allows you to execute code in response to various events, including those triggered by Amazon S3. When an object is added to an S3 bucket, it can trigger a Lambda function to execute, allowing for event-driven processing without managing servers.

Workflow:

1. Create an S3 Bucket: First, create an S3 bucket that will store the objects. This bucket will act as the trigger source for the Lambda function.

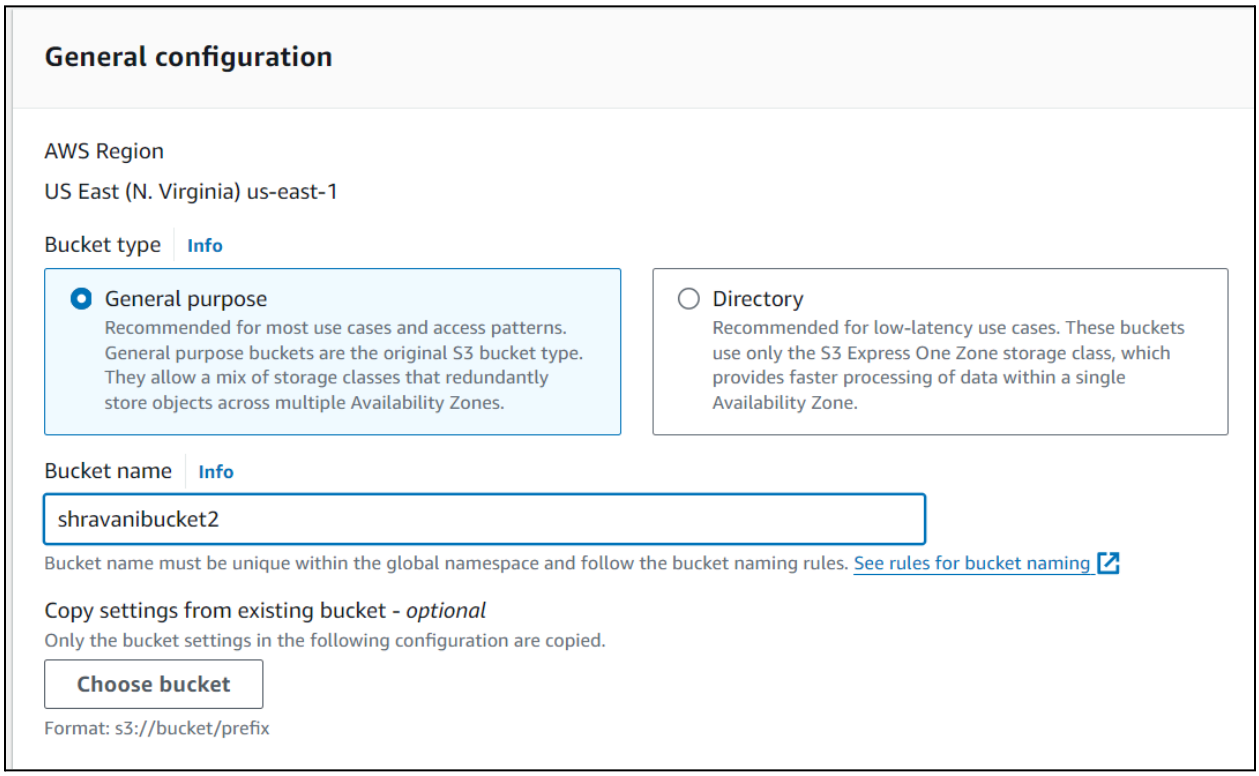
2. Create the Lambda Function: Set up a new Lambda function using AWS Lambda’s console. You can choose a runtime environment like Python, Node.js, or Java. Write code that logs a message like “An Image has been added” when triggered.

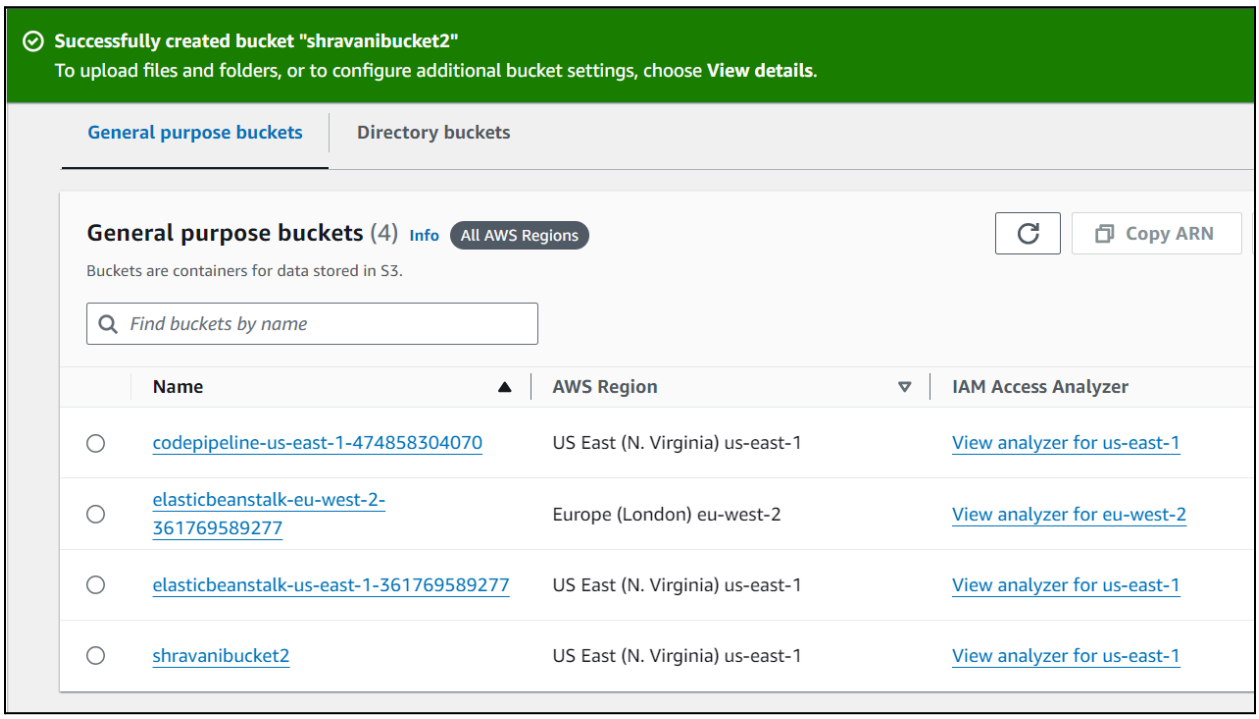
3. Set Up Permissions: Ensure that the Lambda function has the necessary permissions to access S3. You can do this by attaching an IAM role with policies that allow reading from the bucket and writing logs to CloudWatch.

4. Configure S3 Trigger: Link the S3 bucket to the Lambda function by setting up a trigger. Specify that the function should be triggered when an object is created in the bucket (e.g., when an image is uploaded).

5. Test the Setup: Upload an object (e.g., an image) to the S3 bucket to test the trigger. The Lambda function should execute and log the message “An Image has been added” in AWS CloudWatch Logs

1. Create an S3 Bucket: First, create an S3 bucket that will store the objects. This bucket will act as the trigger source for the Lambda function.





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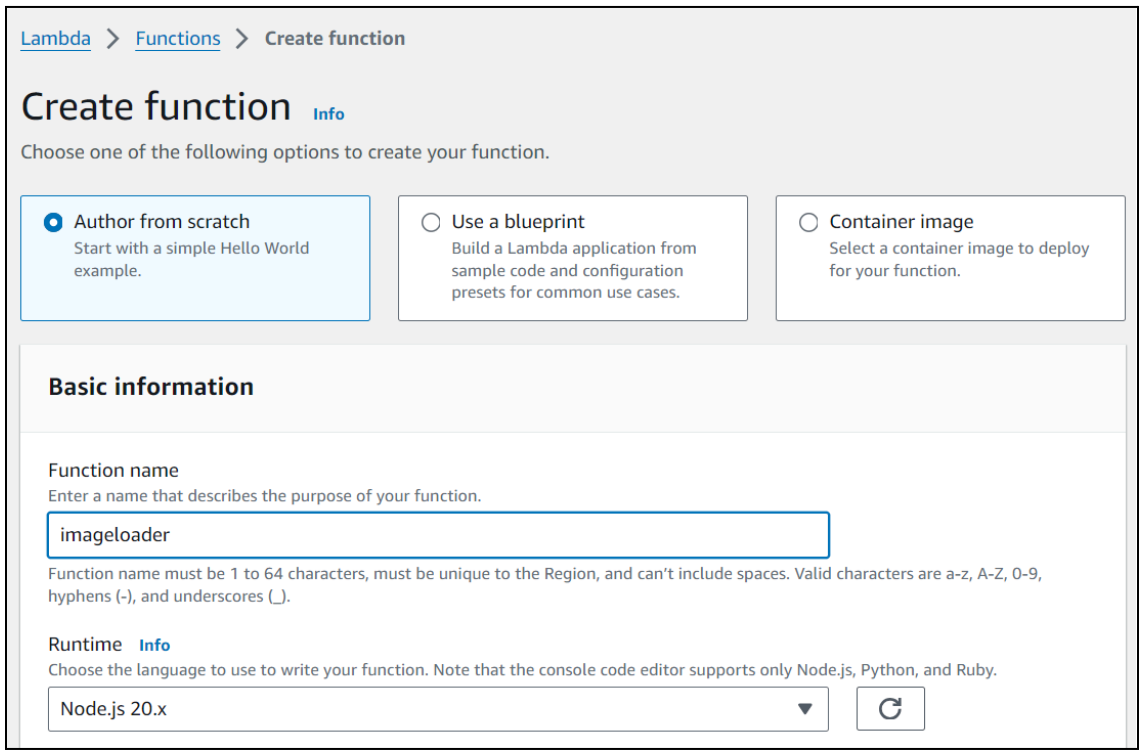
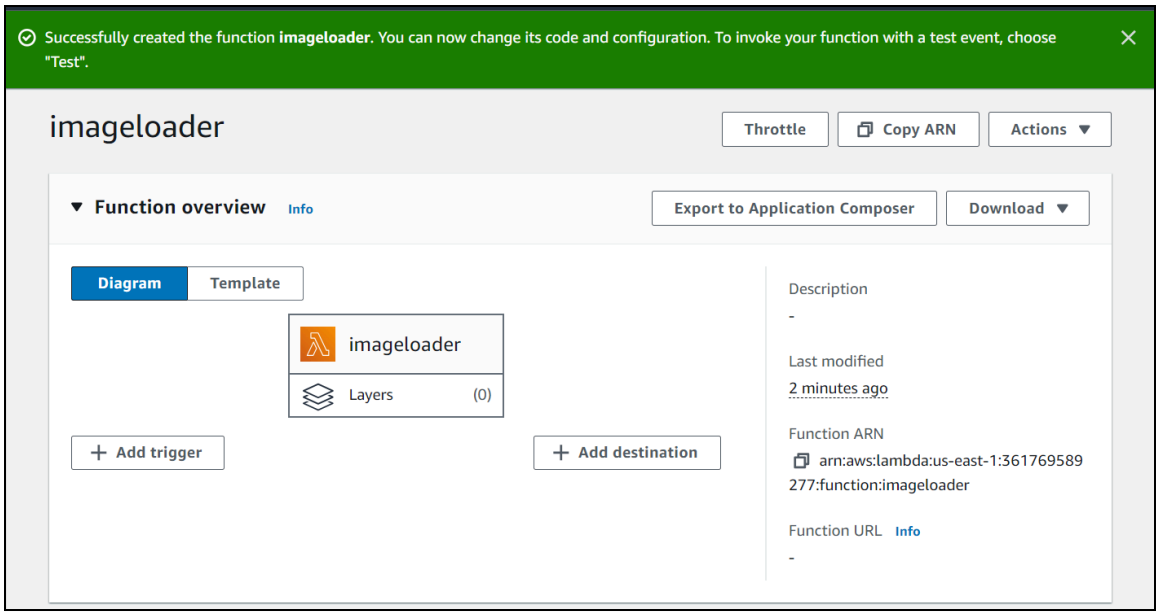
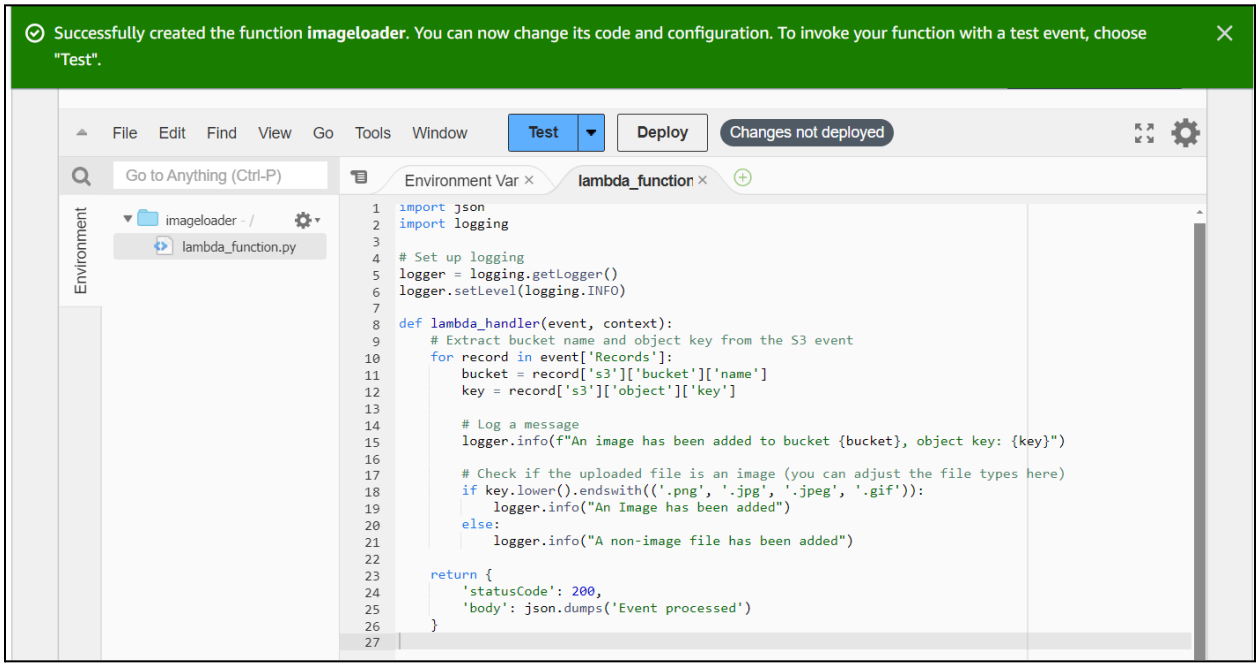




```
import json
import logging

# Set up logging
logger = logging.getLogger()
logger.setLevel(logging.INFO)

def lambda_handler(event, context):
    # Extract bucket name and object key from the S3 event
    for record in event['Records']:
        bucket = record['s3']['bucket']['name']
        key = record['s3']['object']['key']

        # Log a message
        logger.info(f"An image has been added to bucket {bucket}, object key: {key}")

        # Check if the uploaded file is an image (you can adjust the file types here)
        if key.lower().endswith(('.png', '.jpg', '.jpeg', '.gif')):
            logger.info("An Image has been added")
        else:
            logger.info("A non-image file has been added")

    return {
        'statusCode': 200,
        'body': json.dumps('Event processed')
    }
```



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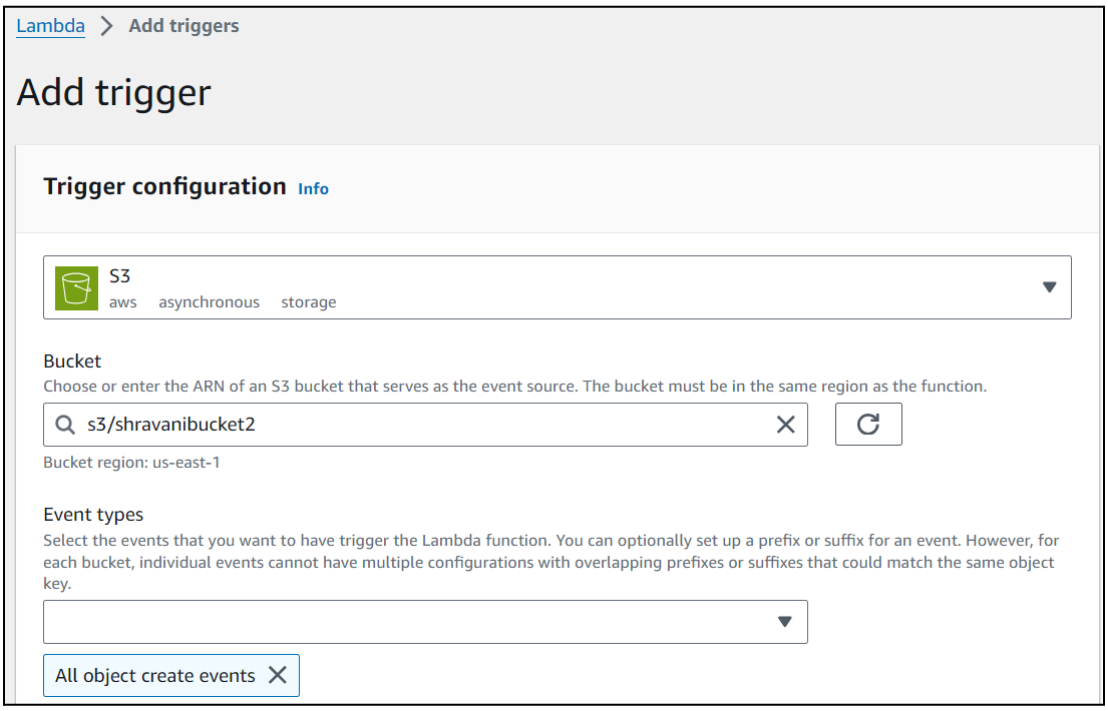

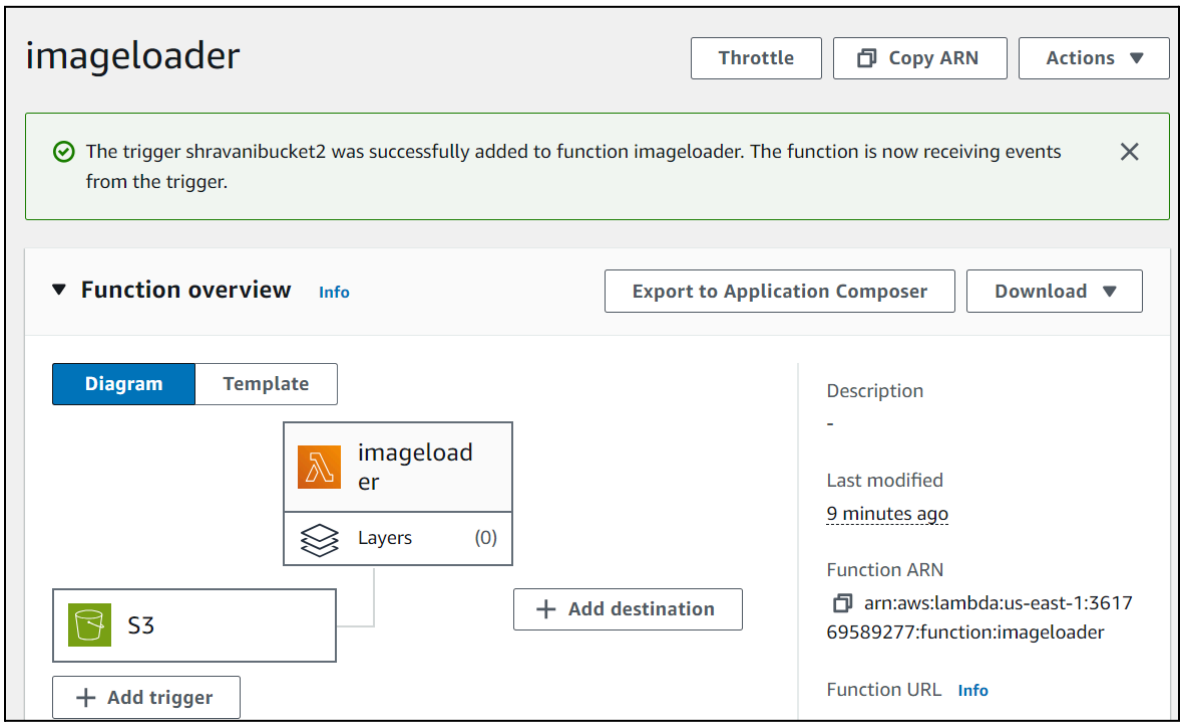

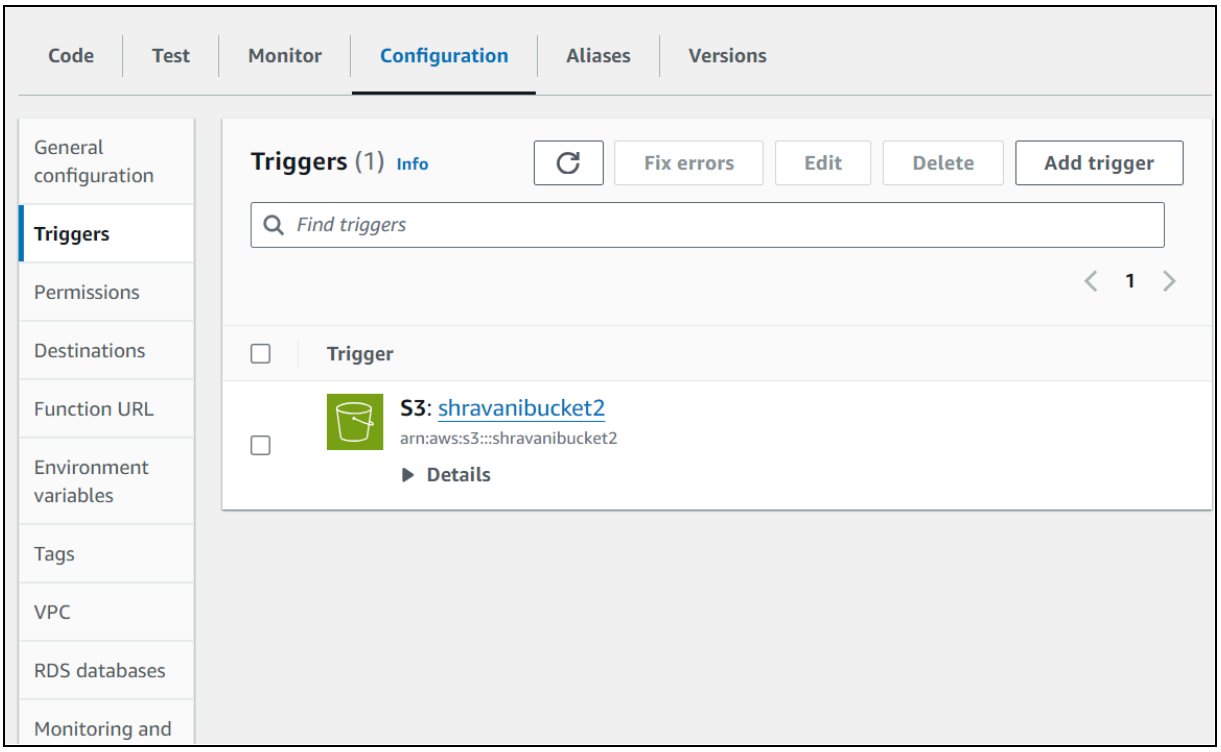

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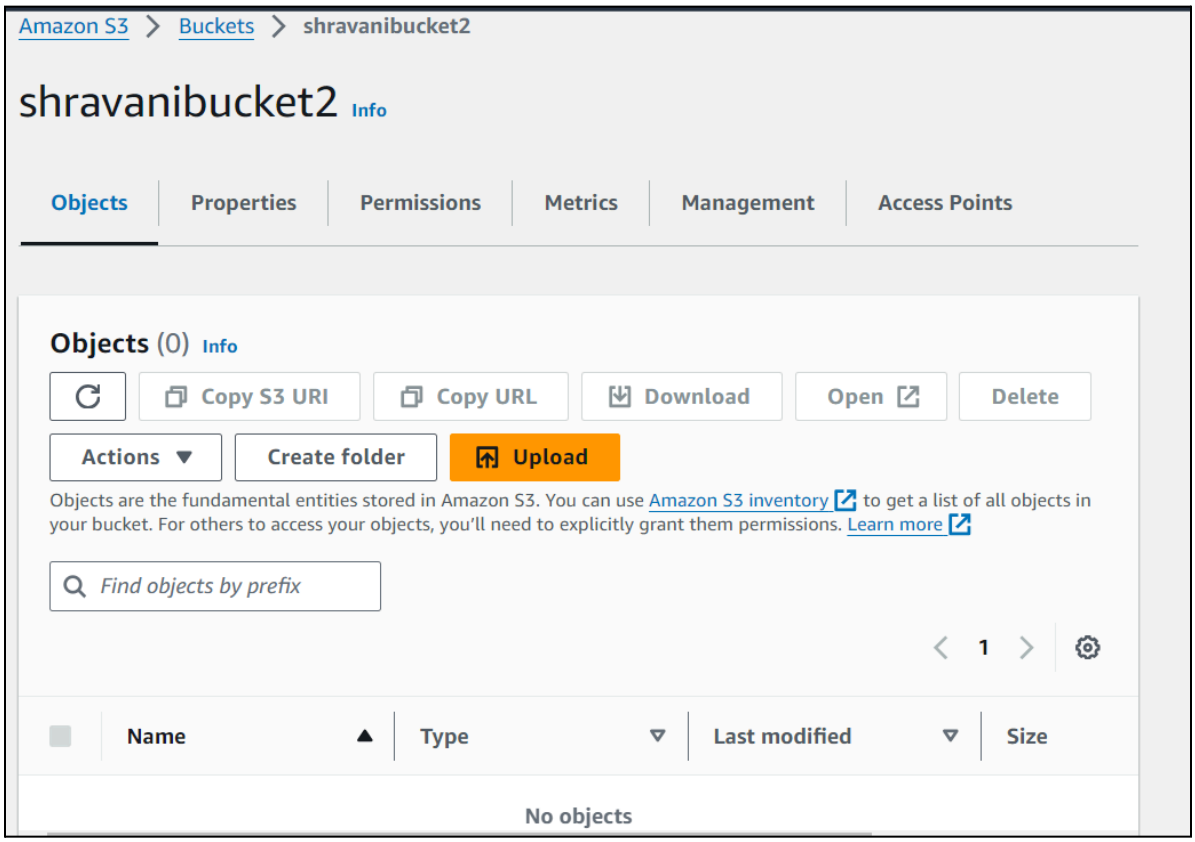
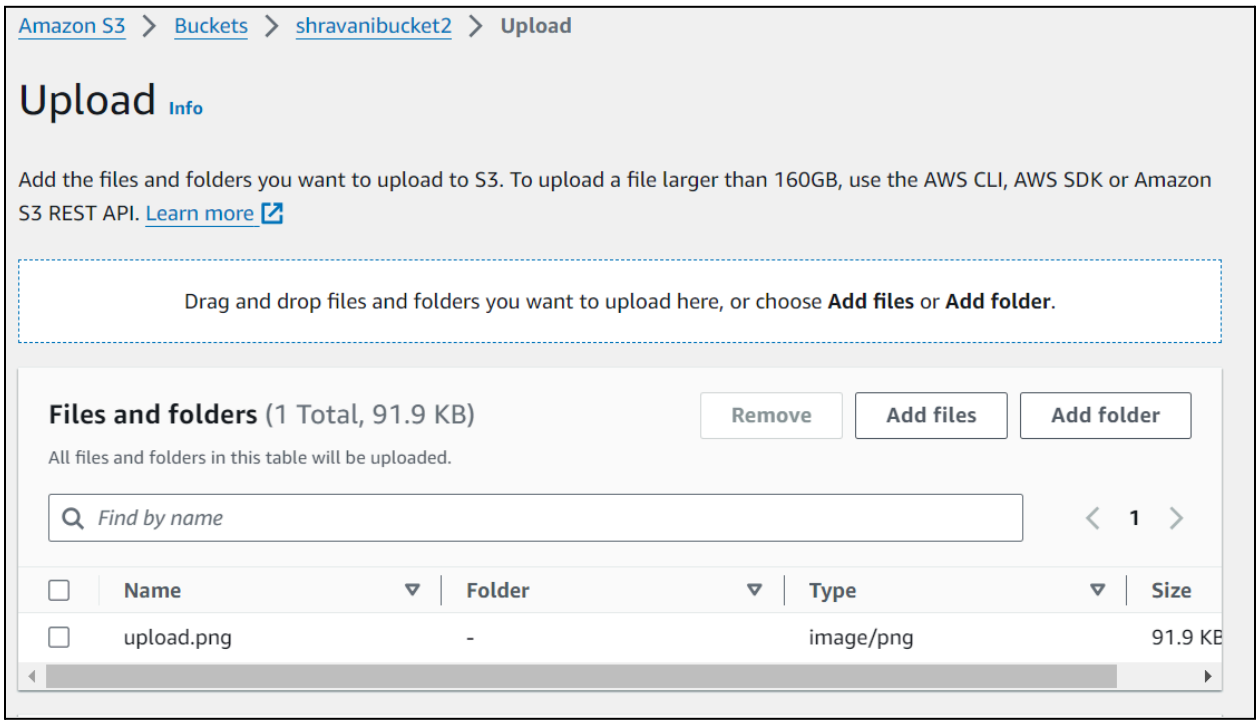
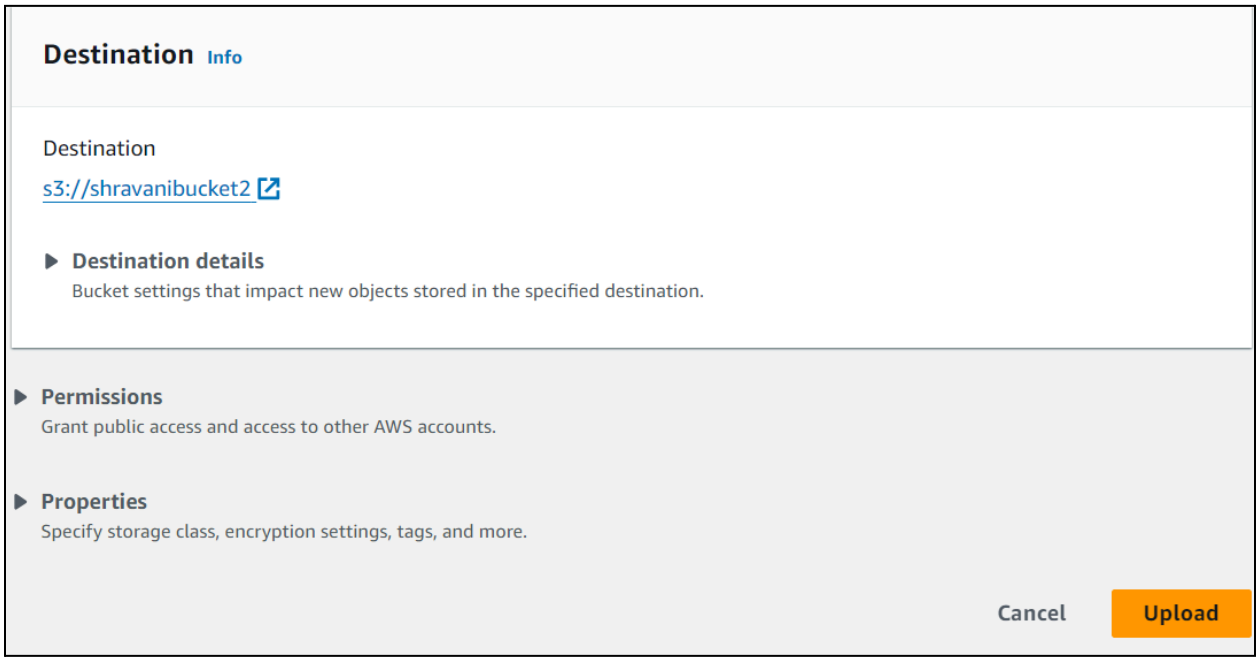
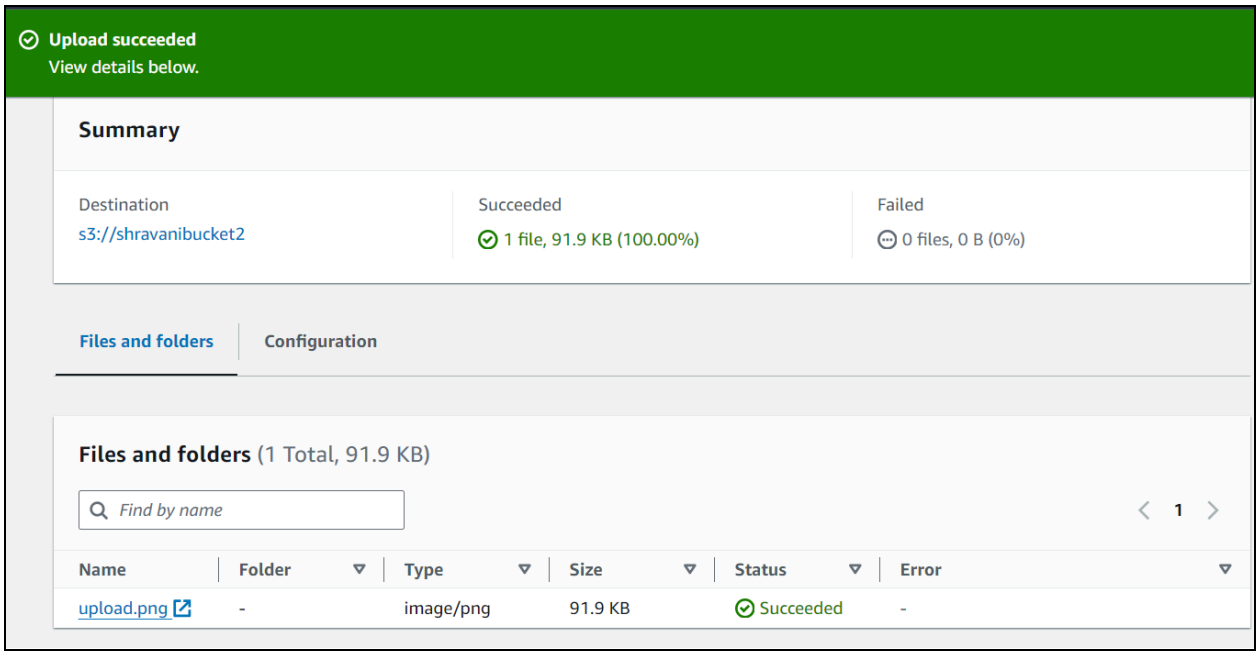



Amazon S3 > Buckets > shravanibucket2 > Upload
Upload Info
Add the files and folders you want to upload to S3. To upload a file larger than 160GB, use the AWS CLI, AWS SDK or Amazon S3 REST API. Learn more
Drag and drop files and folders you want to upload here, or choose Add files or Add folder.
Files and folders (1 Total, 91.9 KB)
Remove
Add files
Add folder
All files and folders in this table will be uploaded.
Find by name
1
Name
Folder
Type
Size
upload.png
-
image/png
91.9 KB


Destination Info
Destination
s3://shravanibucket2
Destination details
Bucket settings that impact new objects stored in the specified destination.
Permissions
Grant public access and access to other AWS accounts.
Properties
Specify storage class, encryption settings, tags, and more.
Cancel
Upload



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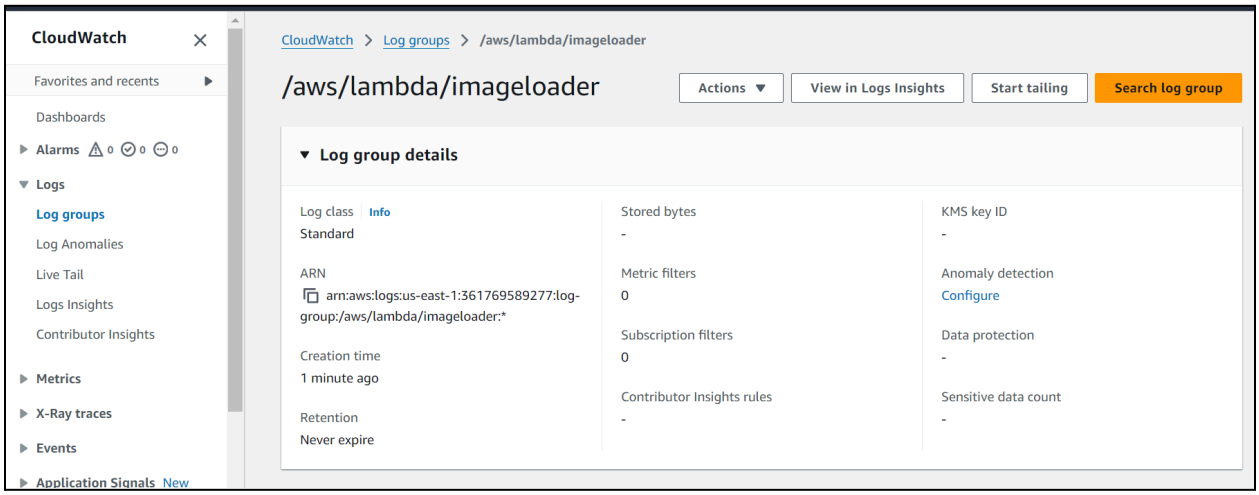

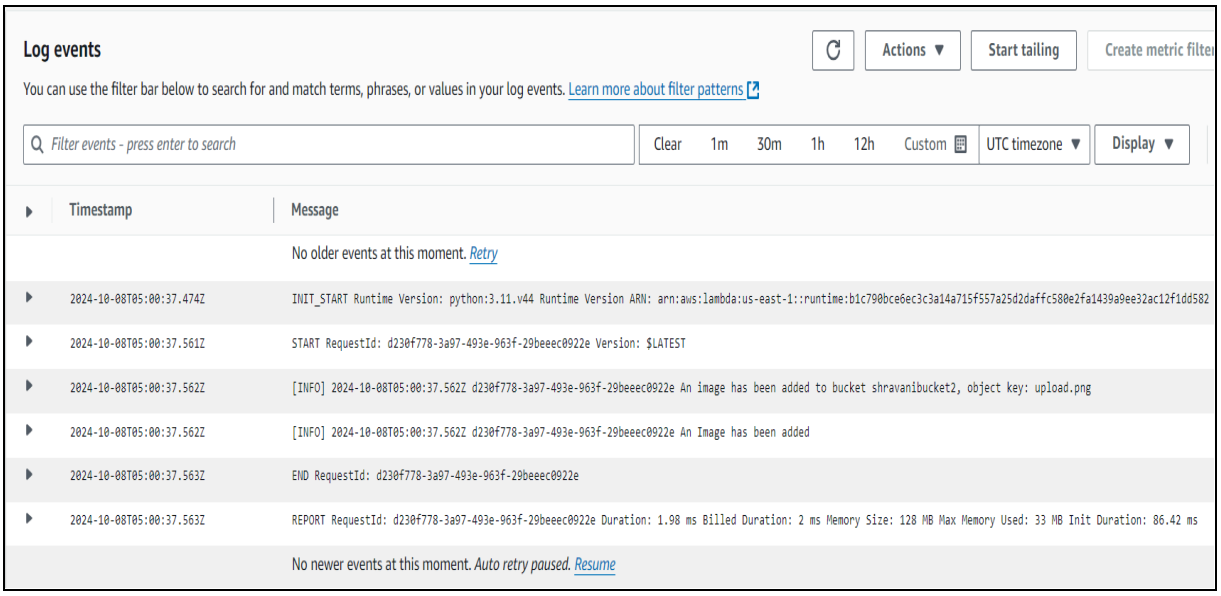


```
An image has been added to bucket shravanibucket2, object key: upload.png

An Image has been added
```

Conclusion:

Integrating AWS Lambda with S3 allows for real-time, automated processing of events such as file uploads. In this example, a Lambda function is configured to log a message whenever an image is added to a specific S3 bucket. This setup demonstrates the power and flexibility of serverless computing by automating tasks without requiring manual intervention or server management. By leveraging AWS Lambda, developers can efficiently handle event-driven workflows, reduce operational overhead, and quickly deploy scalable solutions that respond to specific actions within cloud environments