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EXPERIMENT NO - 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

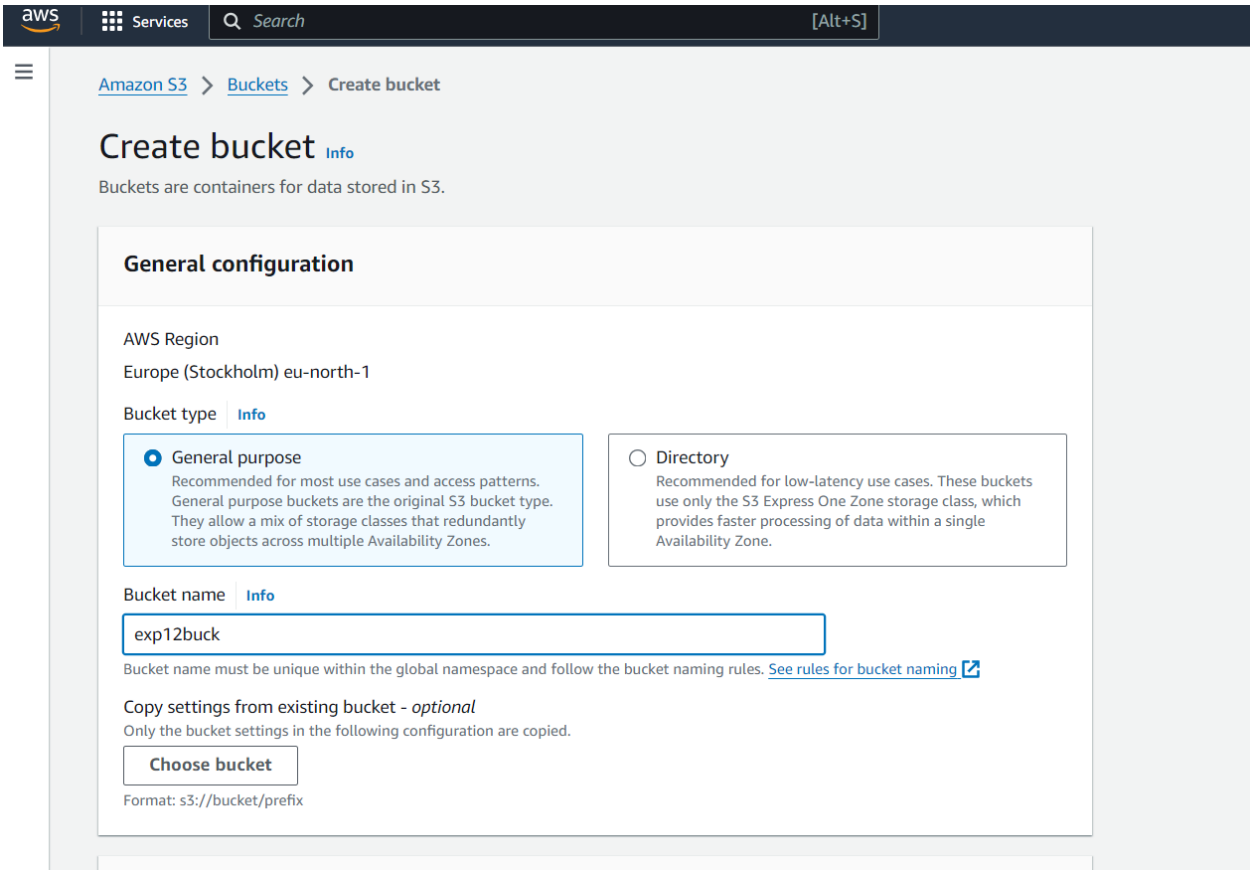
Theory:

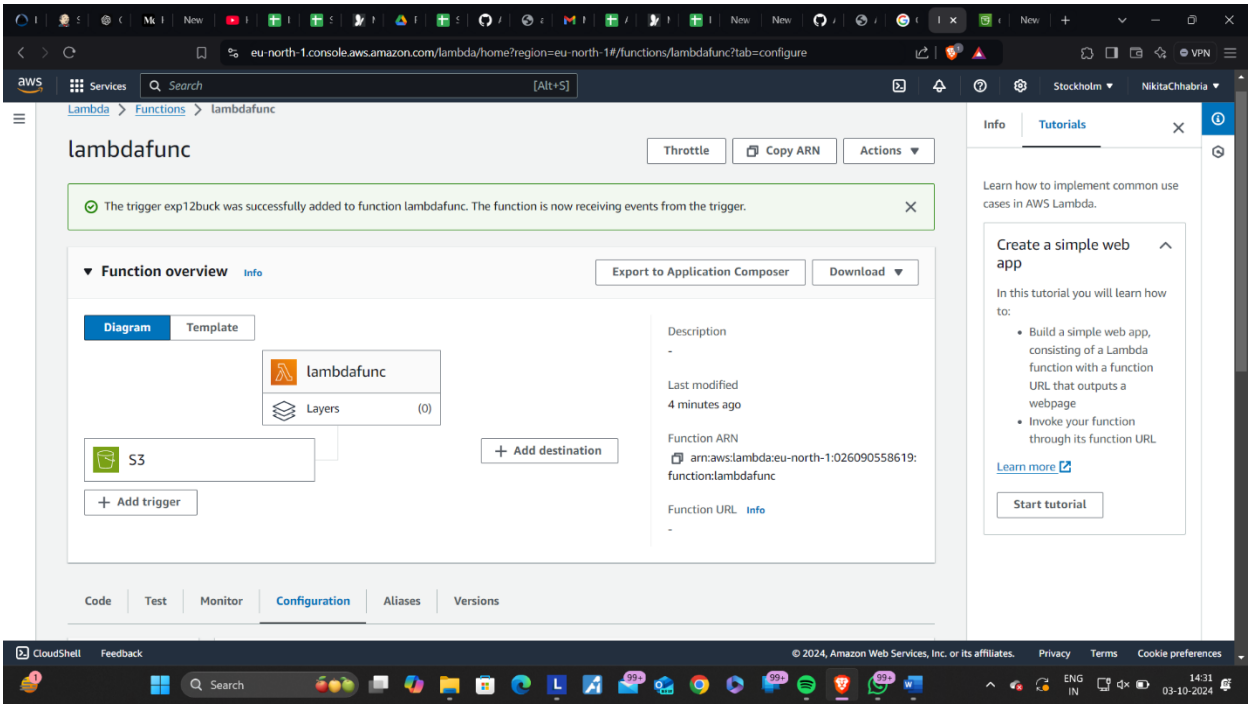
AWS Lambda and S3 Integration: AWS Lambda allows you to execute code in response to various events, including those triggered by Amazon S3. When an object is added to an S3 bucket, it can trigger a Lambda function to execute, allowing for event-driven processing without managing servers.

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.

Outcomes:


aws
Services
Search
[Alt+S]
Amazon S3 > Buckets > Create bucket
Create bucket Info
Buckets are containers for data stored in S3.
General configuration
AWS Region
Europe (Stockholm) eu-north-1
Bucket type Info
General purpose
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.
Directory
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.
Bucket name Info
exp12buck
Bucket name must be unique within the global namespace and follow the bucket naming rules. See rules for bucket naming
Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.
Choose bucket
Format: s3://bucket/prefix


eu-north-1.console.aws.amazon.com/lambda/home?region=eu-north-1#/functions/lambdafunc?tab=configure
Lambda > Functions > lambdafunc
lambdafunc
Throttle
Copy ARN
Actions
The trigger exp12buck was successfully added to function lambdafunc. The function is now receiving events from the trigger.
Function overview Info
Export to Application Composer
Download
Diagram
Template
lambdafunc
Layers (0)
S3
Add trigger
Add destination
Description
-
Last modified
4 minutes ago
Function ARN
arn:aws:lambda:eu-north-1:026090558619:function:lambdafunc
Function URL Info
-
Code
Test
Monitor
Configuration
Aliases
Versions
Info
Tutorials
Learn how to implement common use cases in AWS Lambda.
Create a simple web app
In this tutorial you will learn how to:
Build a simple web app, consisting of a Lambda function with a function URL that outputs a webpage
Invoke your function through its function URL
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CloudShell
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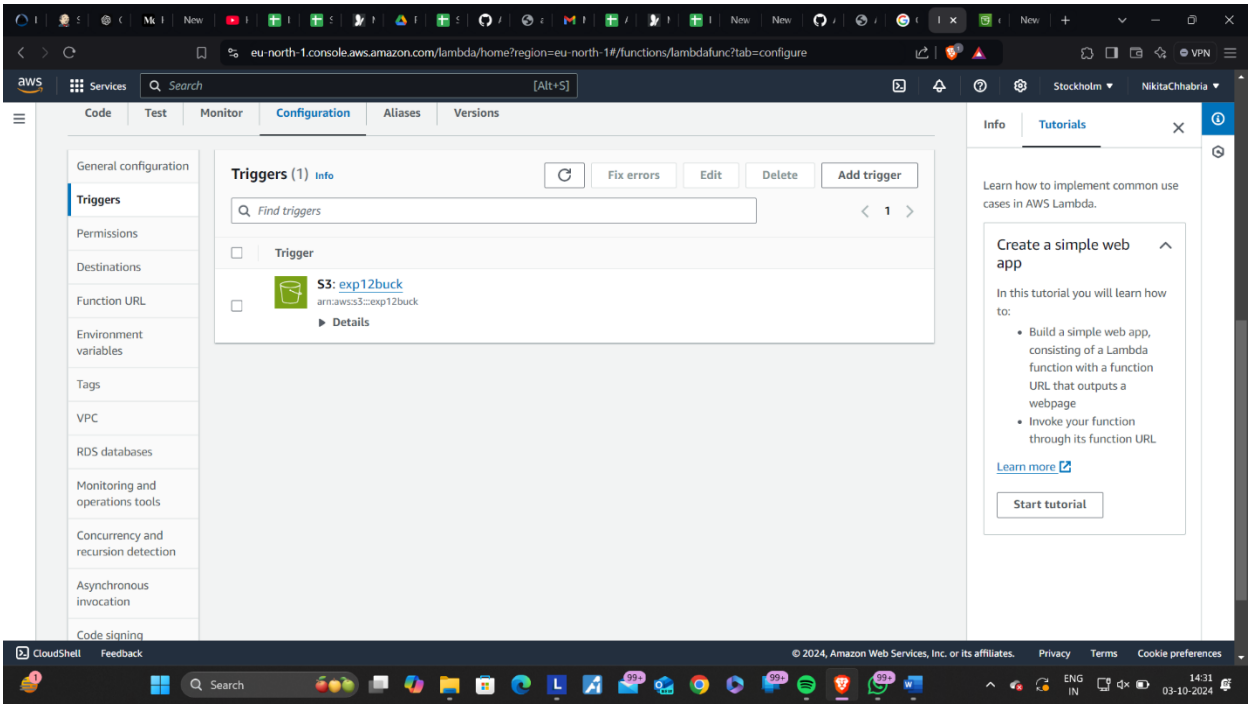
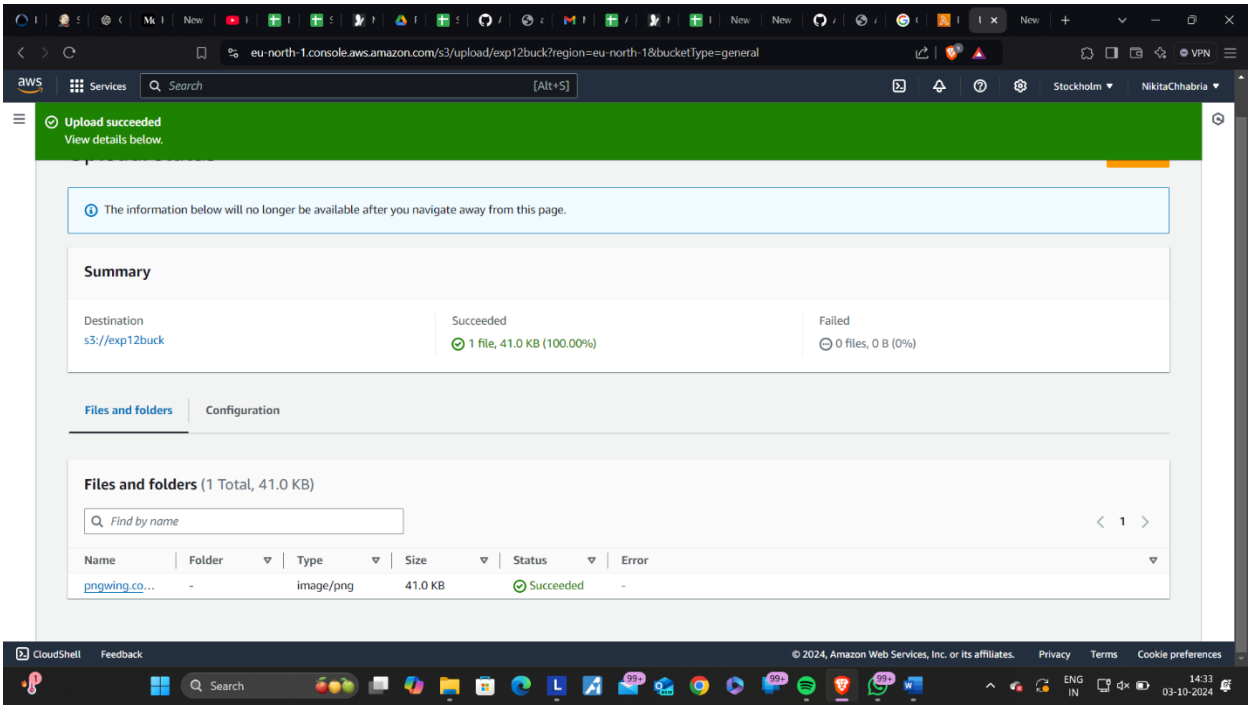
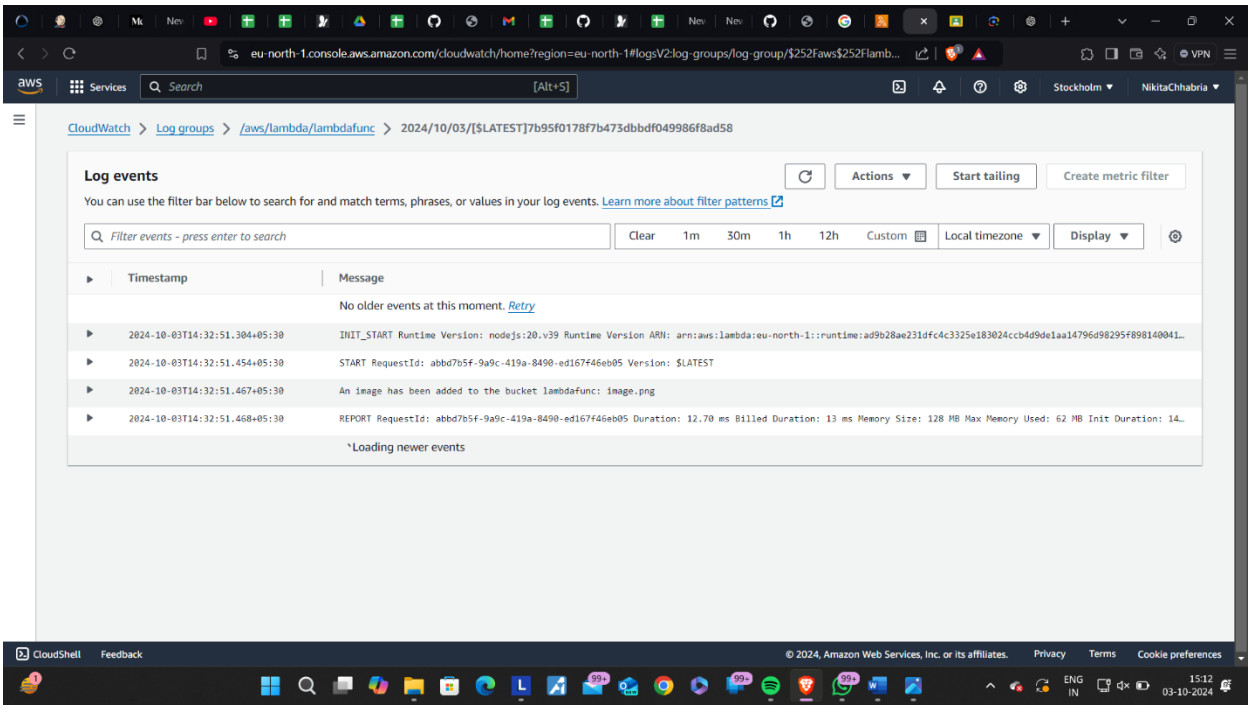
```python
import json

def lambda_handler(event, context):
    # Extract bucket name and object key from the event
    bucket_name = event['Records'][0]['s3']['bucket']['name']
    object_key = event['Records'][0]['s3']['object']['key']

    # Log a message
    print(f"An Image has been added to the bucket {bucket_name}: {object_key}")

    return {
        'statusCode': 200,
        'body': json.dumps('Log entry created successfully')
    }
```







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.