

School of Computer Science, Engineering and Applications (SCSEA)

B.C.A. TY (CCSA)

Subject: Advanced Cloud Computing (P)

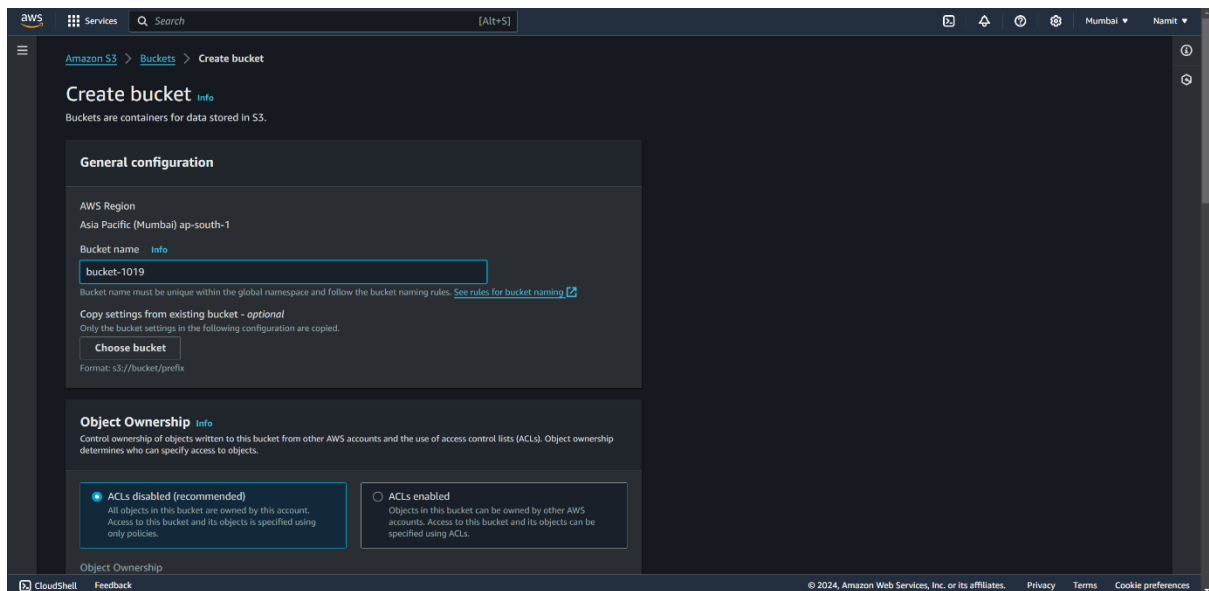
Name of the Student: Namit Agarwal

PRN: 20220801019

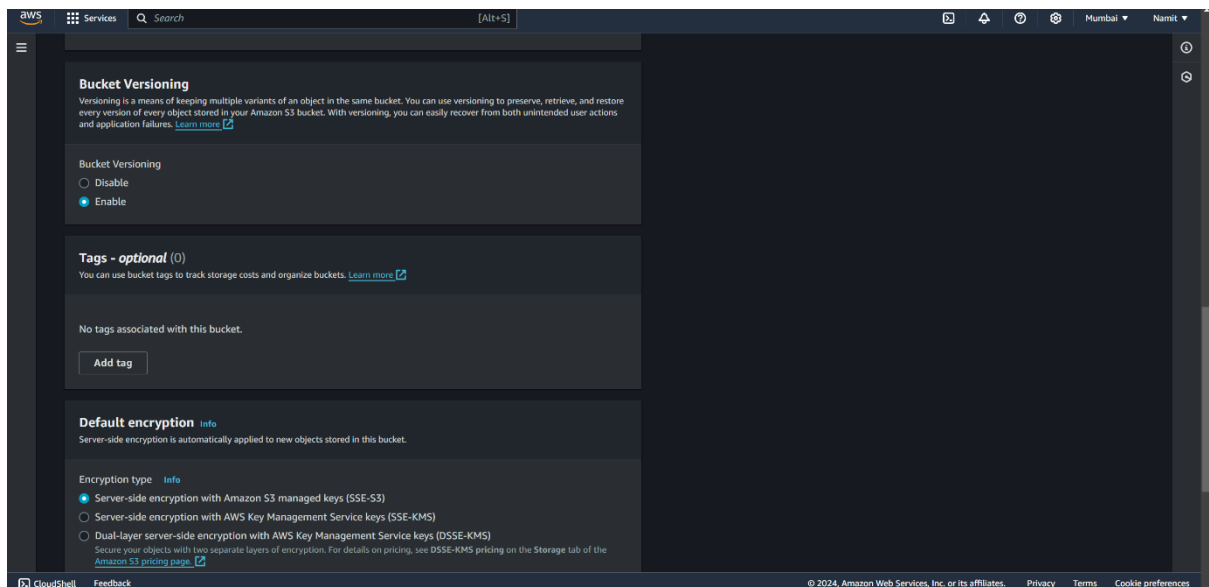
Title of Practical: AWS Cloud Trail with CloudWatch and SNS

Step 1: Create an S3 Bucket for CloudTrail Logs

- Navigate to AWS S3 Console.
- Click on **Create Bucket**.



- **Enable Bucket Versioning**



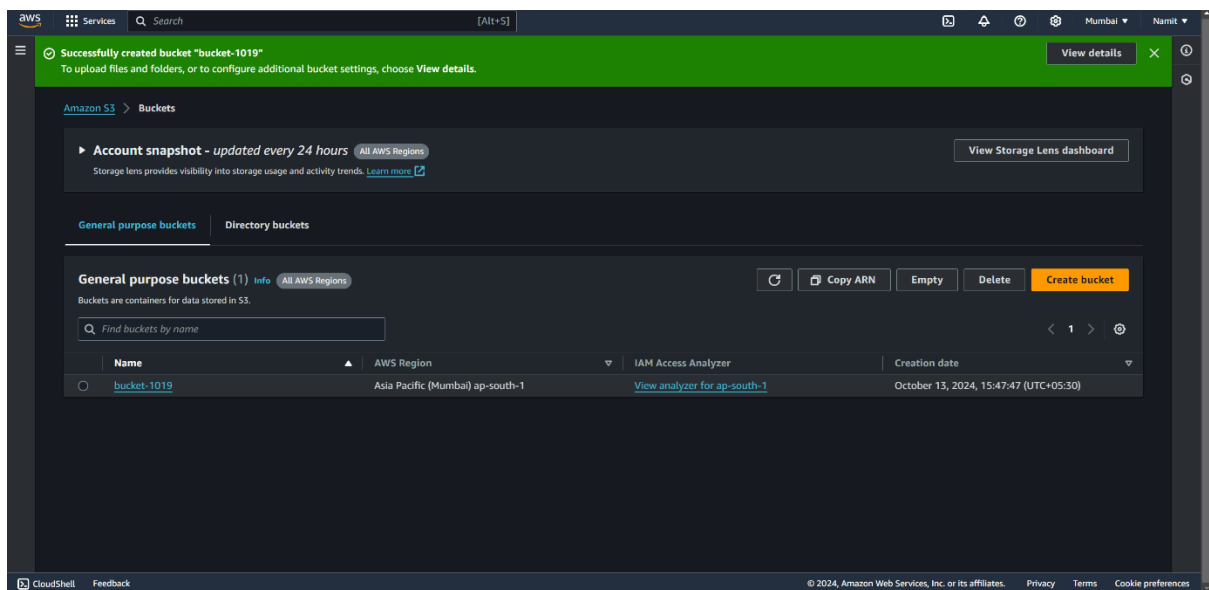
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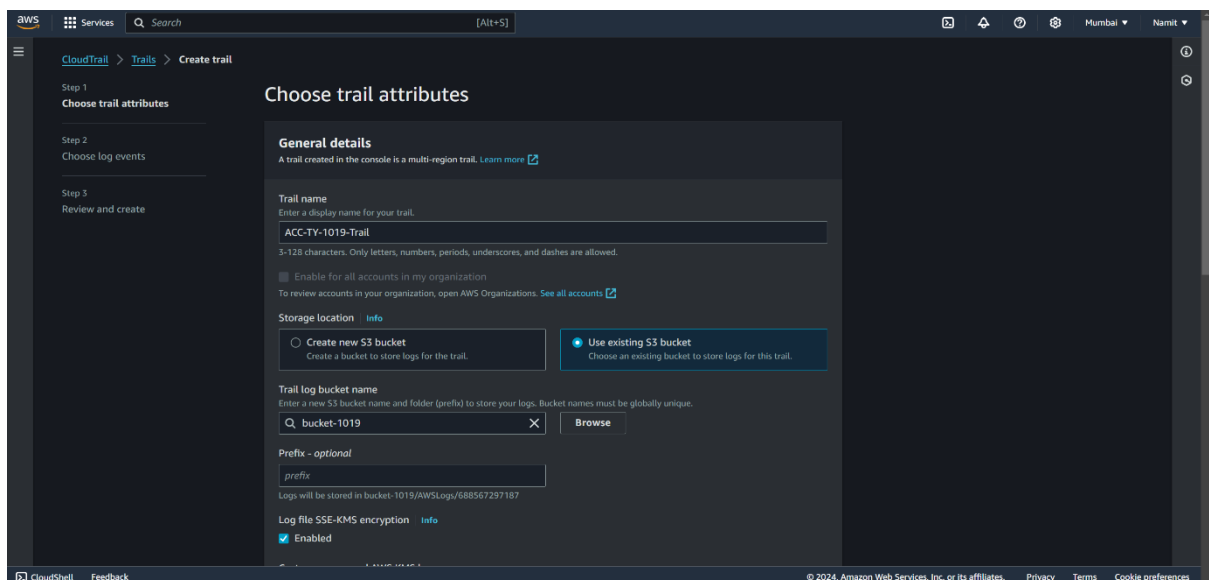
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- **Complete Bucket Creation**



Step 2: Set Up AWS CloudTrail

- **Trail Name:** Give a name to your trail (e.g., ACC-TY-1113-Trail).
- **Storage Location:** Choose the S3 bucket you created earlier



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Step 3: Set Up Encryption and SNS Notifications

1. Configure AWS KMS for Encryption:

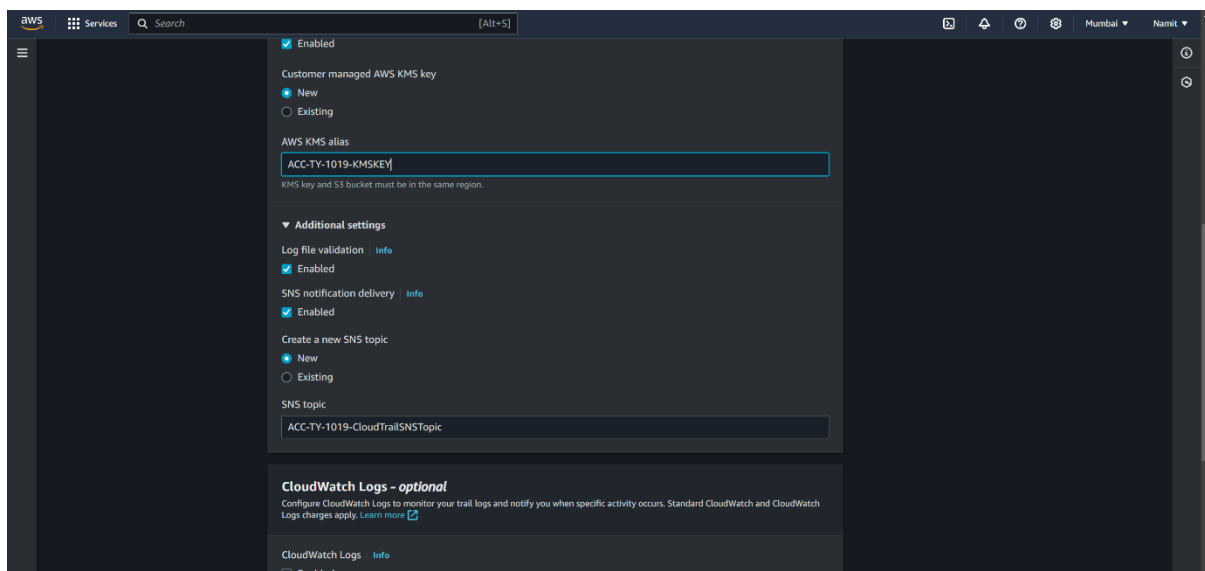
- In the **Customer Managed Key** section, select **New** to create a new AWS KMS key
- Give a name to your KMS key

2. Enable SNS Notifications:

- In Additional Settings, Tick the option for SNS Notification Delivery.
- Click Create New SNS Topic to create a new SNS topic.

3. Create a New SNS Topic:

- Give the SNS topic a name.
- Ensure CloudWatch Logs is enabled for better monitoring.



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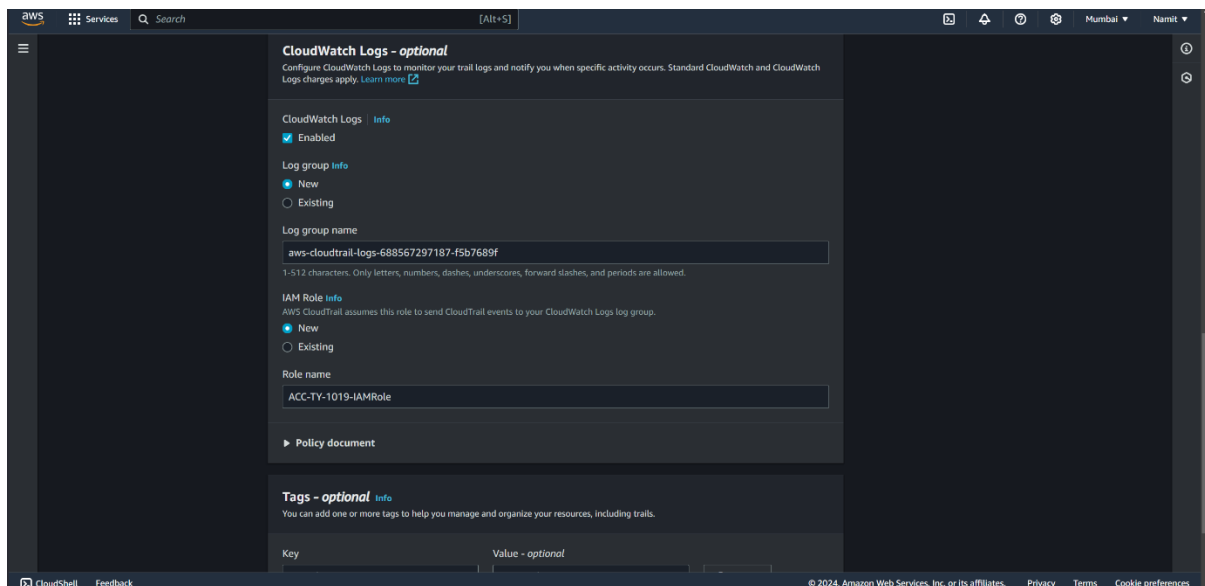
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Step 4: Set Up IAM Role for CloudTrail

1. Create a New IAM Role:

- During the trail creation process, you'll be prompted to create a new IAM Role.
- Give it a name (e.g., ACC-TY-1113-IAMRole).
- Click **Next** to proceed.



Step 5: Select Event Types to Log

1. Select Management and Data Events:

- Enable logging for **Management Events**, **Data Events**, and **Insights Events**.

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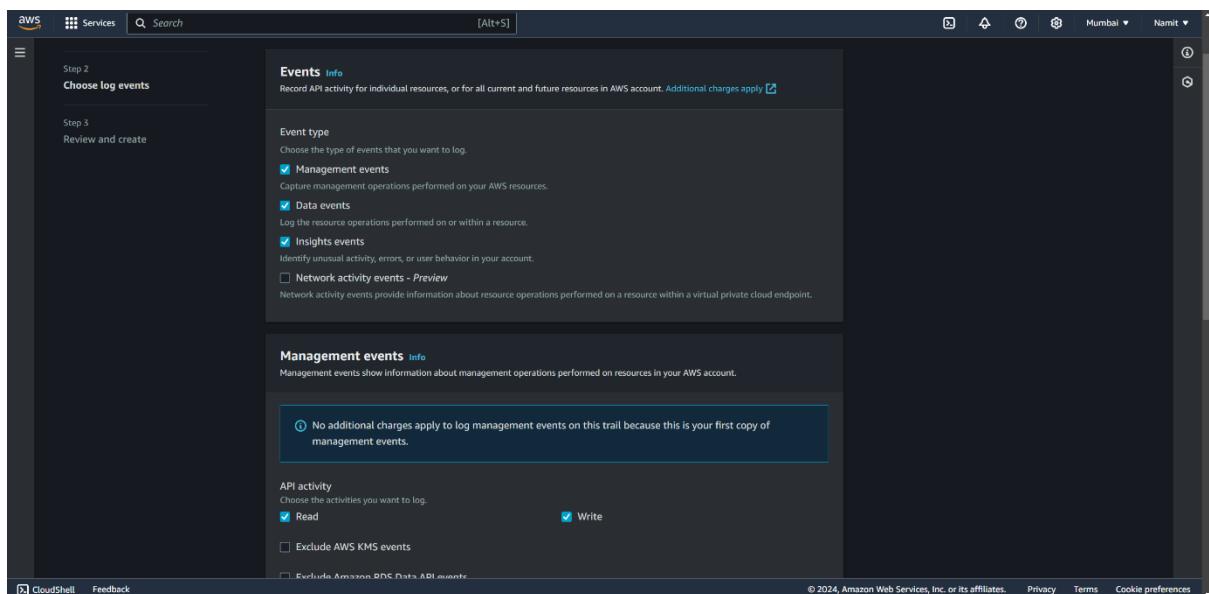
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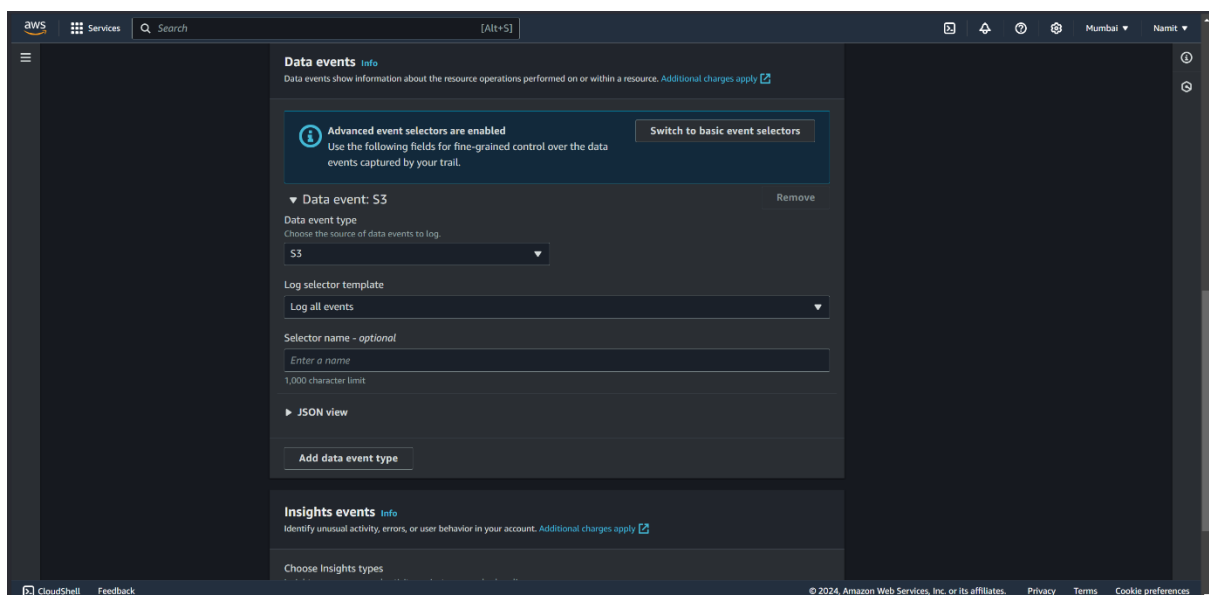
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2. Select Data Event Types:

- Under **Data Event Type**, choose **S3** to monitor bucket activities.



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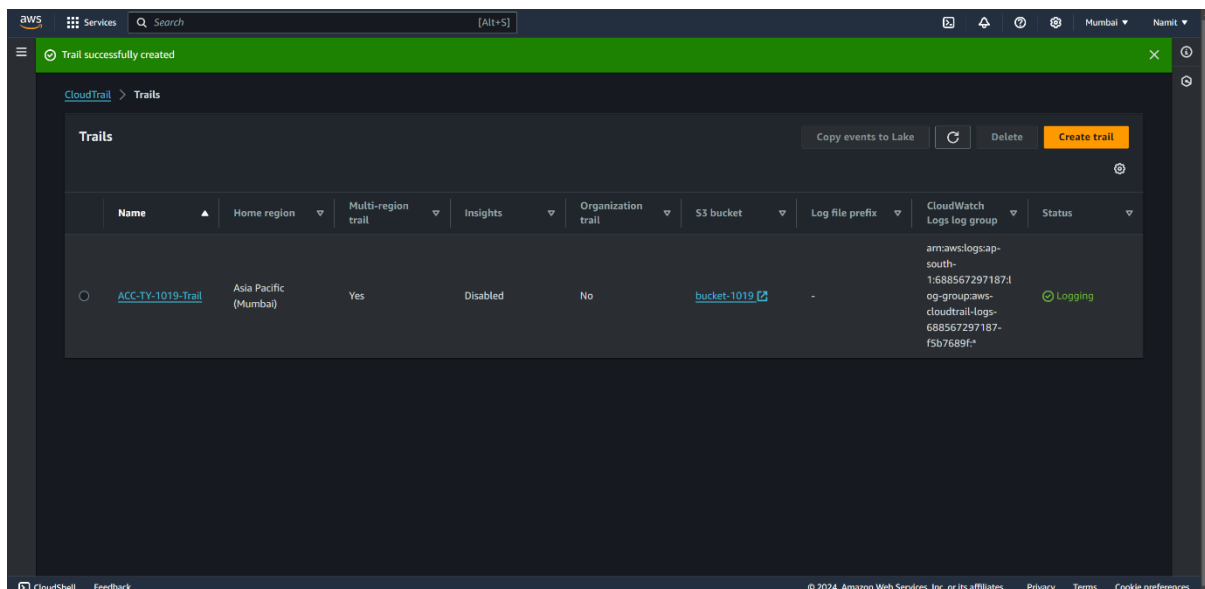
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3. Complete the Trail Setup:

- Click **Next**, review the settings, and then select **Create Trail**.



Step 6: Set Up SNS Notifications

1. Open the SNS Management Console:

- Navigate to AWS SNS Console.

2. Select the SNS Topic:

- In the left side-bar, click on **Topics**.
- Select the SNS topic you created earlier (e.g., ACC-TY-1113-CloudTrailSNSTopic).

3. Create an Email Subscription:

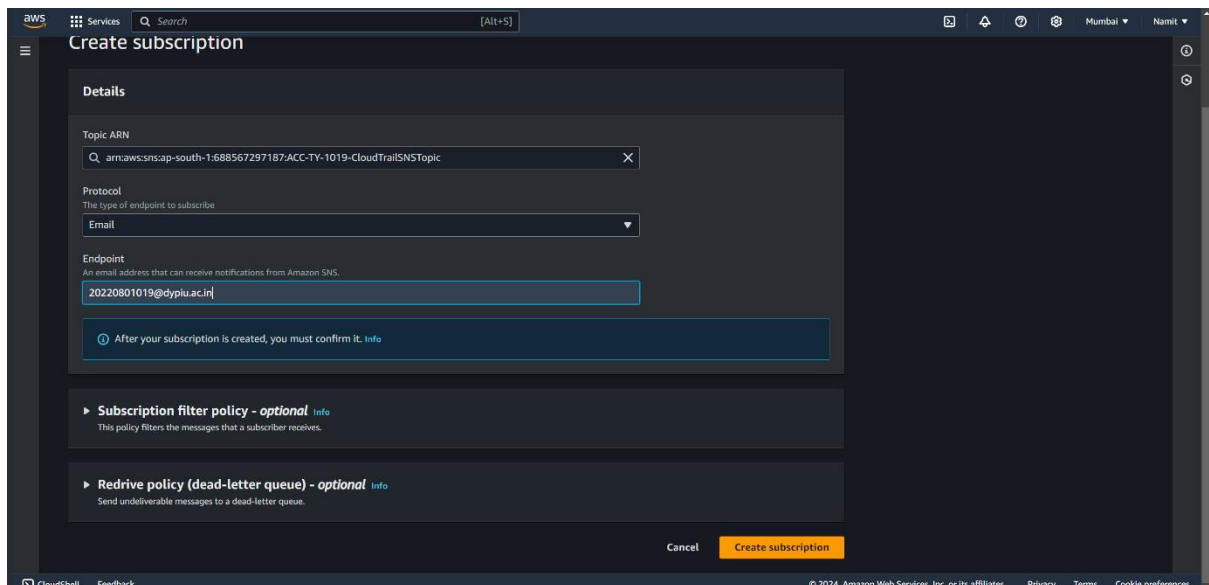
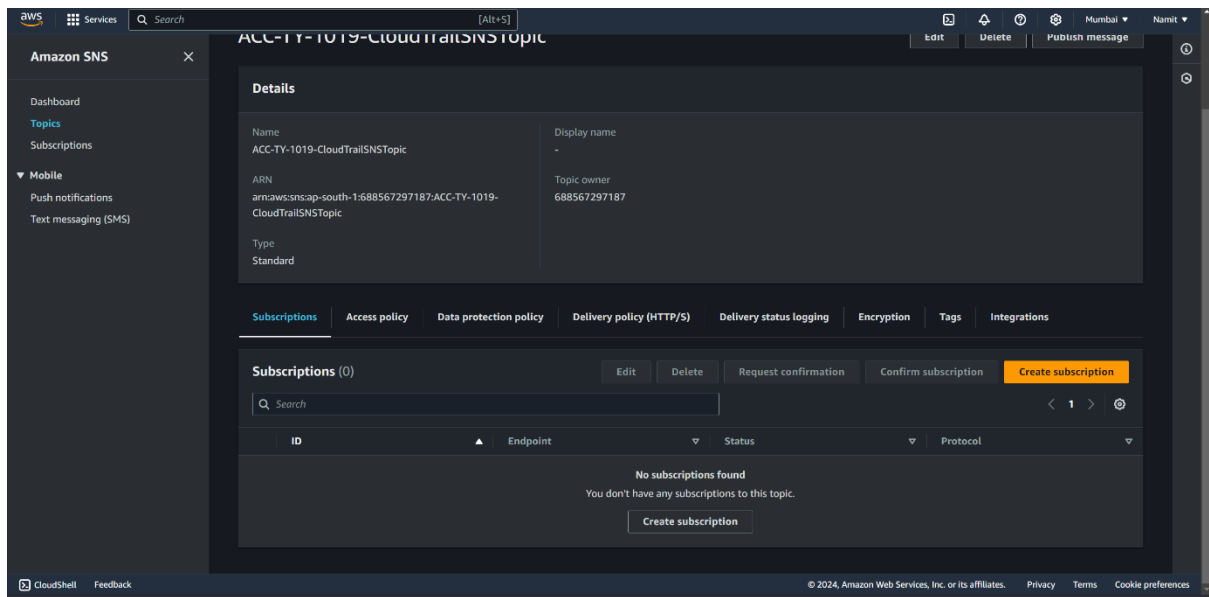
- Click **Create Subscription**.
- **Protocol:** Select **Email**.
- **Endpoint:** Enter your email address to receive notifications.

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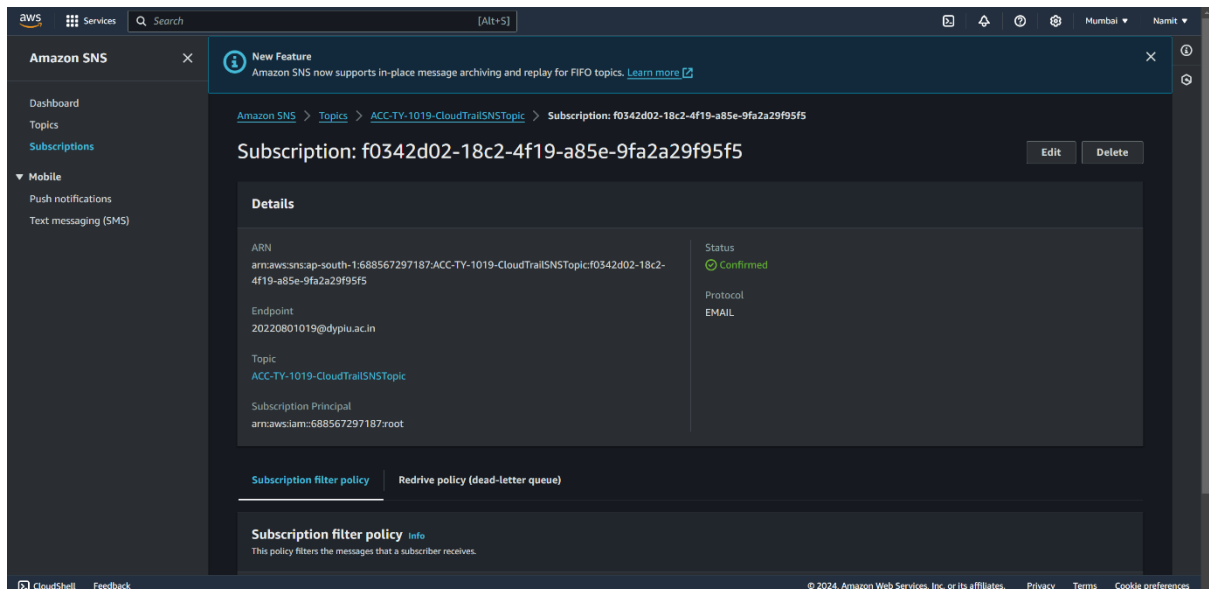
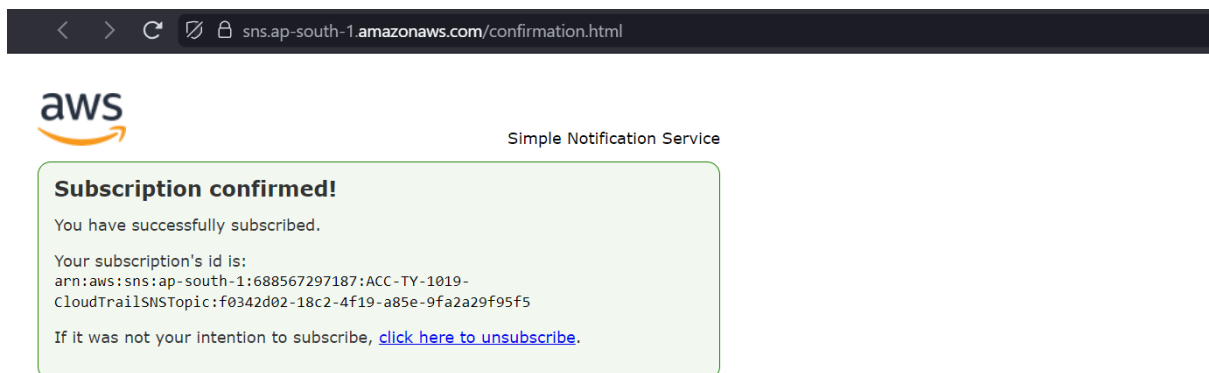
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Confirm the Subscription:

- Check your email and click the confirmation link to activate the subscription.



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Step 7: Configure CloudWatch Logs for Monitoring

1. Open CloudWatch Console:

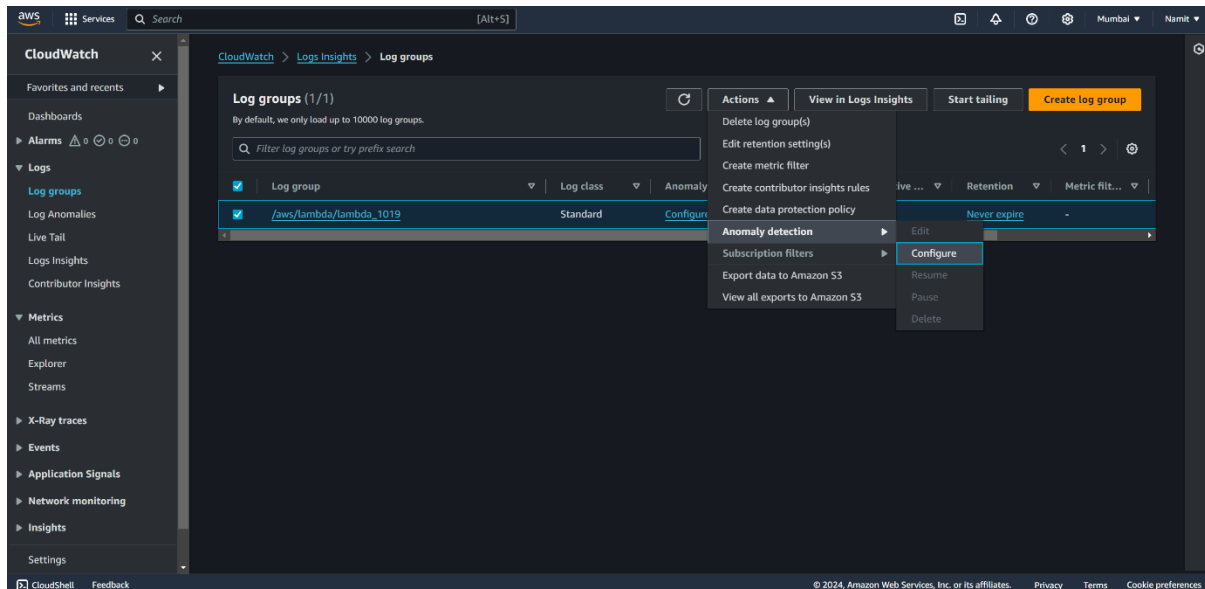
- Navigate to AWS CloudWatch Console.

2. Select the Log Group:

- In the left side-bar, select **Logs**.
- Find the log group associated with your CloudTrail trail.

3. Set Up a CloudWatch Alarm:

- Select the Log Group, then Click on **Actions** and then **Anomaly Detection**.



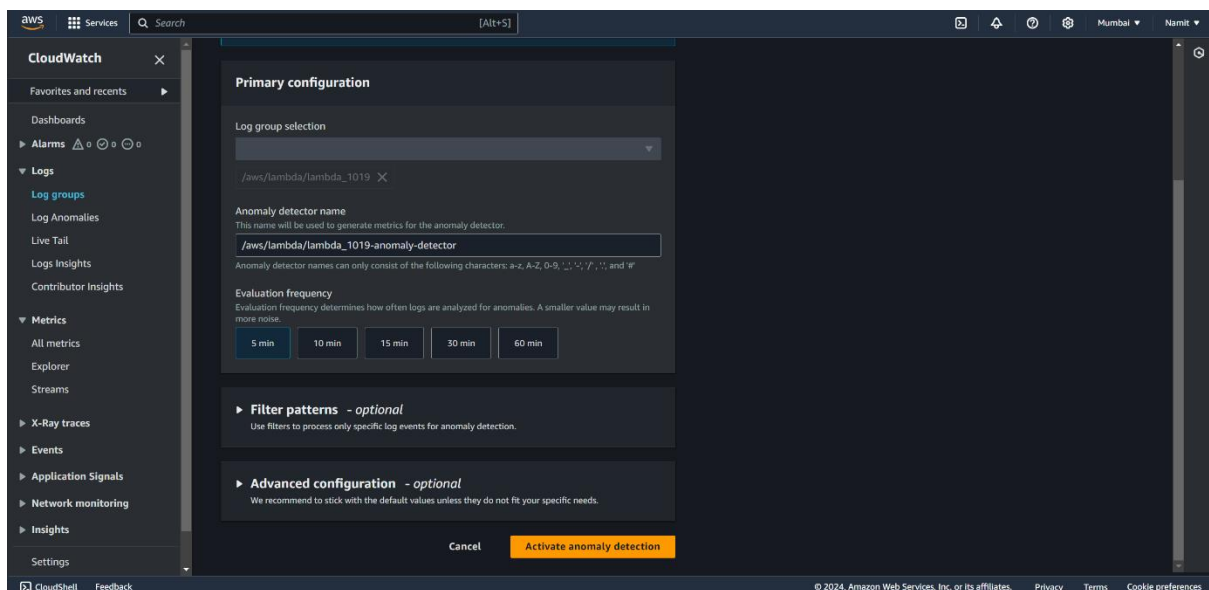
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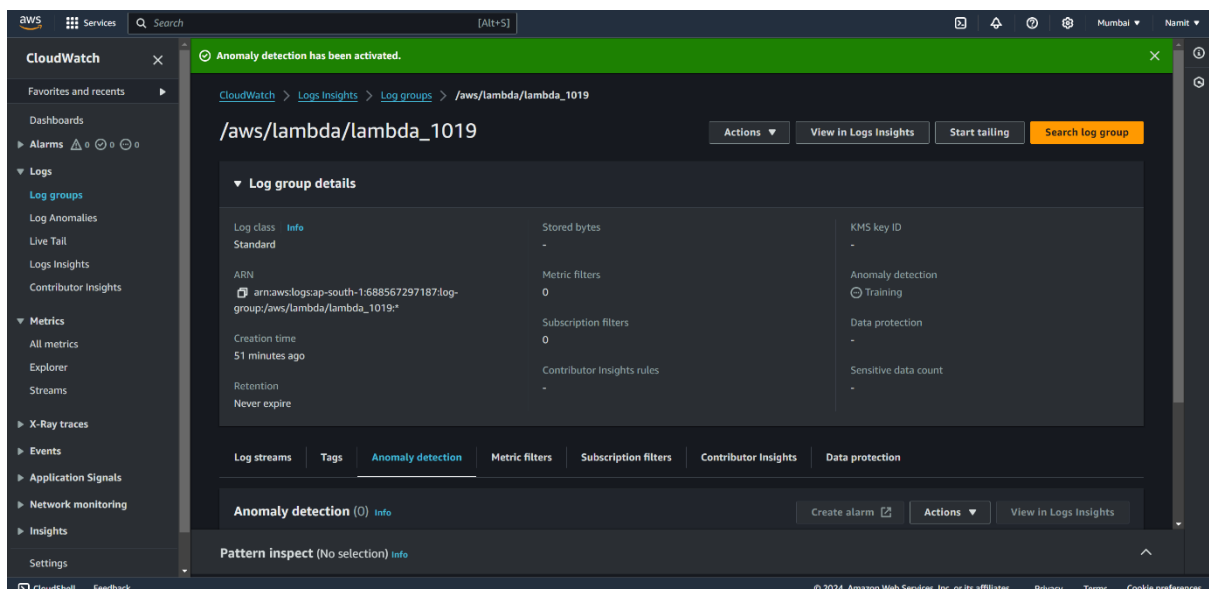
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- In Primary Configuration select Evaluation Frequency as 5 minutes.



- Then Click on **Activate Anomaly Detection**.



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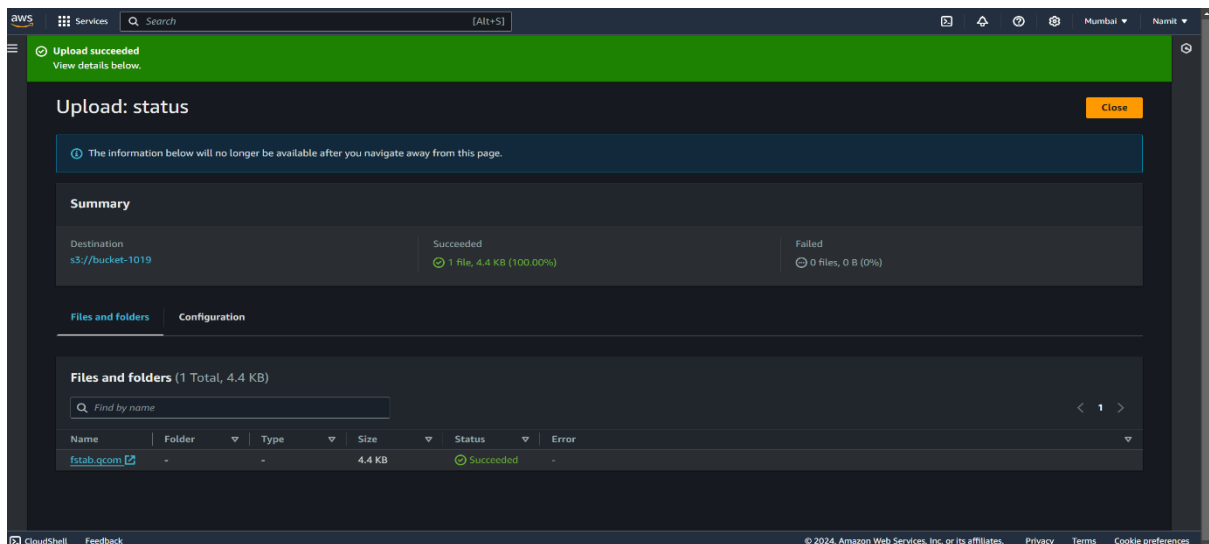
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Step 8: Test the Setup

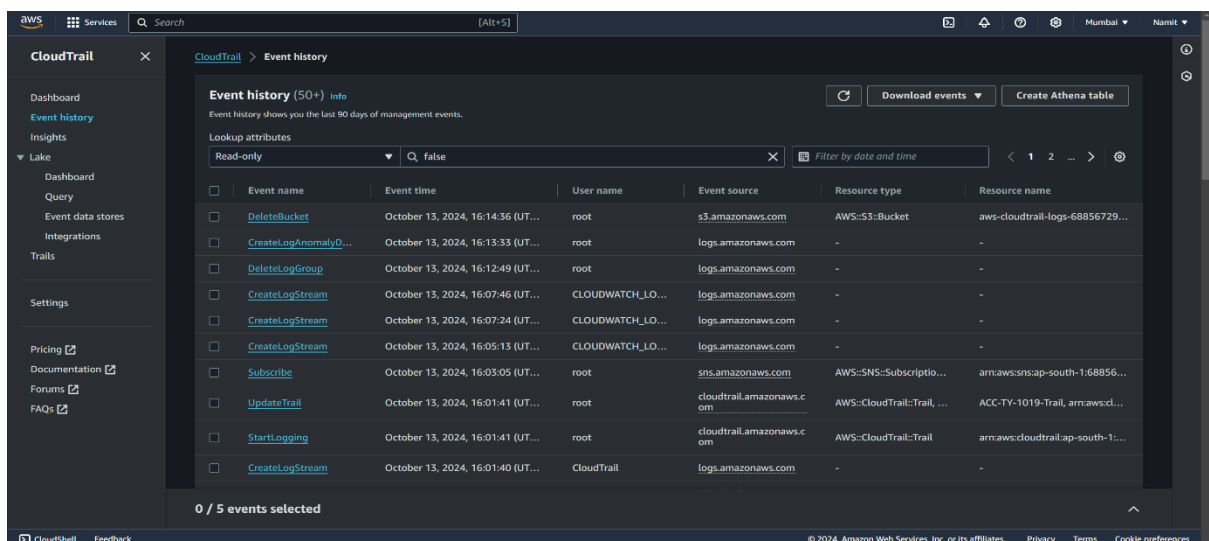
1. Upload a File to the S3 Bucket:

- Go to your S3 bucket and upload a file.



2. Check CloudWatch Logs:

- After uploading the file, you should see new log entries in CloudTrail Event History.



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3. Receive SNS Notification:

- You will receive an email notification from SNS alerting you about the activity.

