

**School of Computer Science, Engineering and Applications(SCSEA)**

**B.C.A. TY (CCSA)**

**Subject : Advanced Cloud Computing (P)**

**Name of the Student:**      **Prakhar Anil Sharma**

**PRN:**    **20220801121**

**Title of Practical:**            **AWS CloudTrail with CloudWatch and SNS.**

Step-1] Sign In to AWS Management

Console .

Step-2] Search for S3.

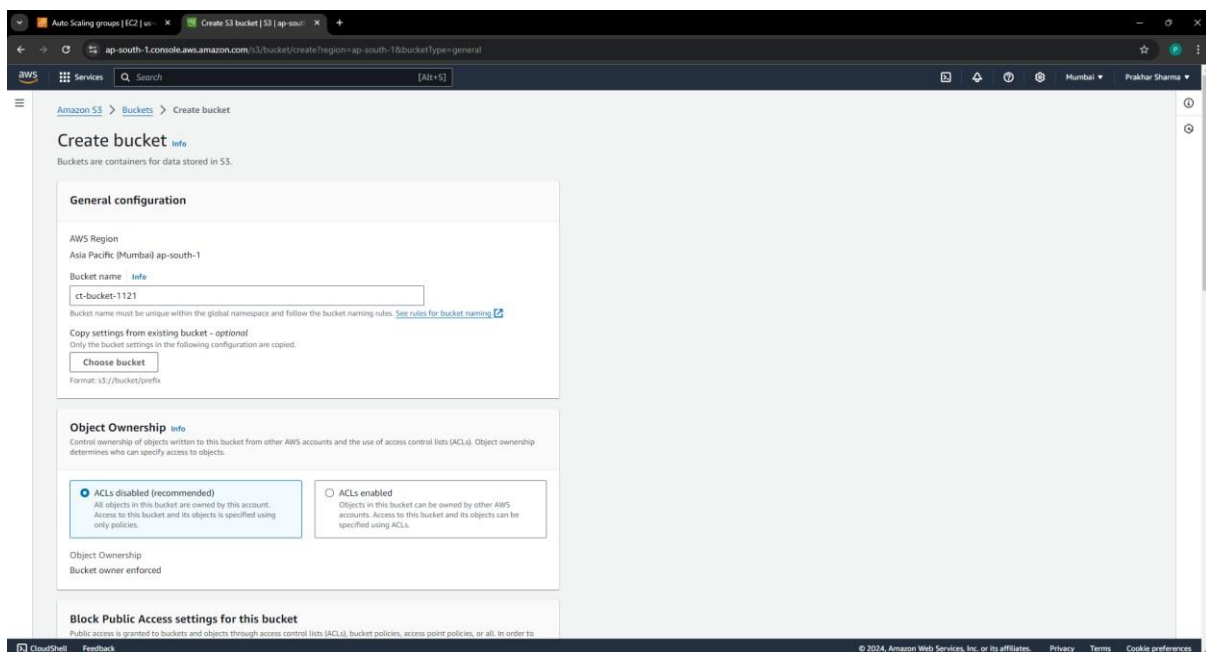
Step-3 Go to Buckets.

Step-4] Click on Create

Bucket.

Step-5] Write Bucket

Name.



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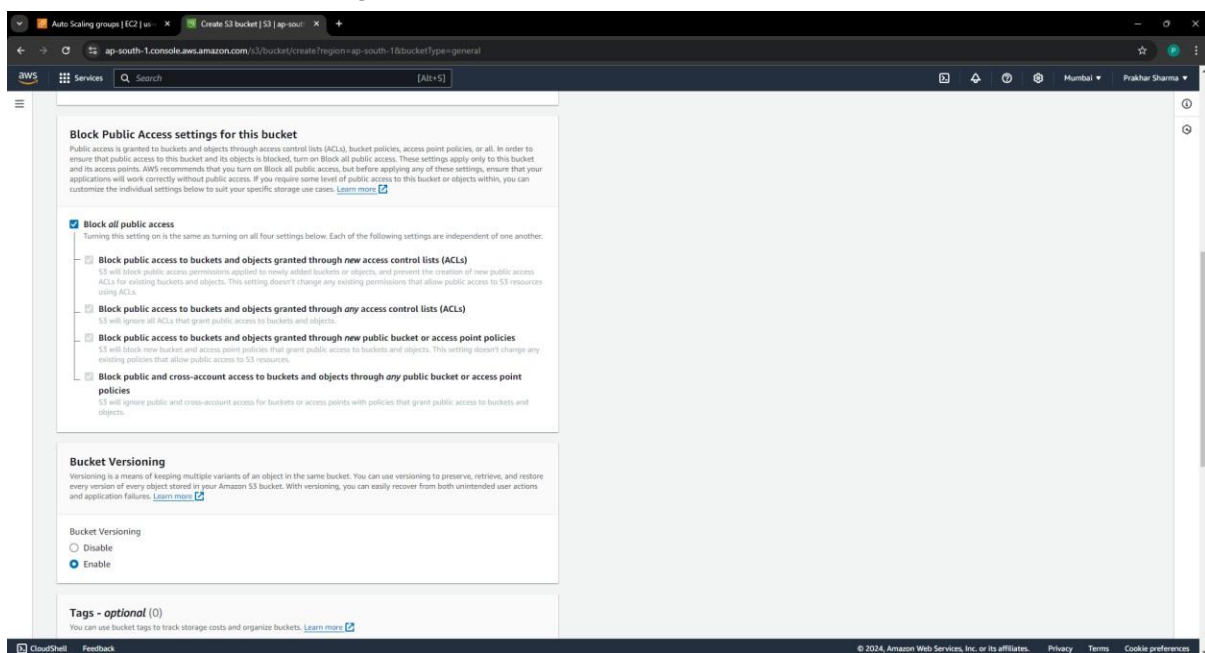
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Step-6] In Bucket Versioning, Select Enable.



Step-7] Click Create Bucket.

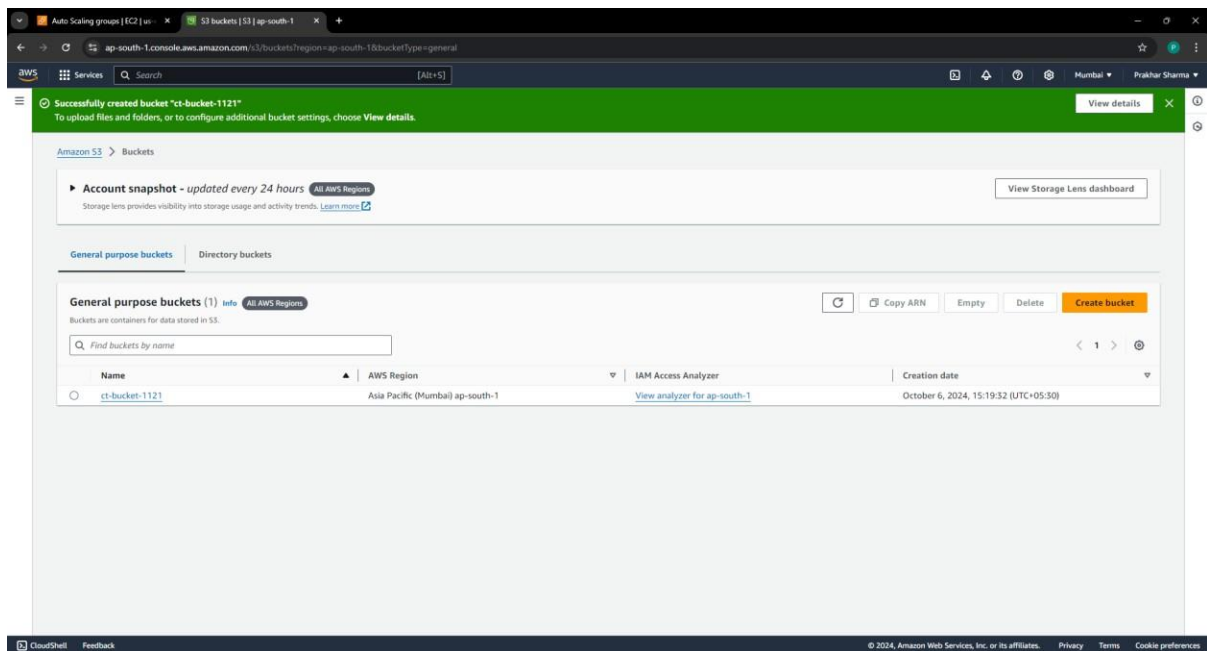
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Step-8] Go to Key Management Service.

Step-9] Go to Customer managed keys.

Step-10] Click on Create Key.

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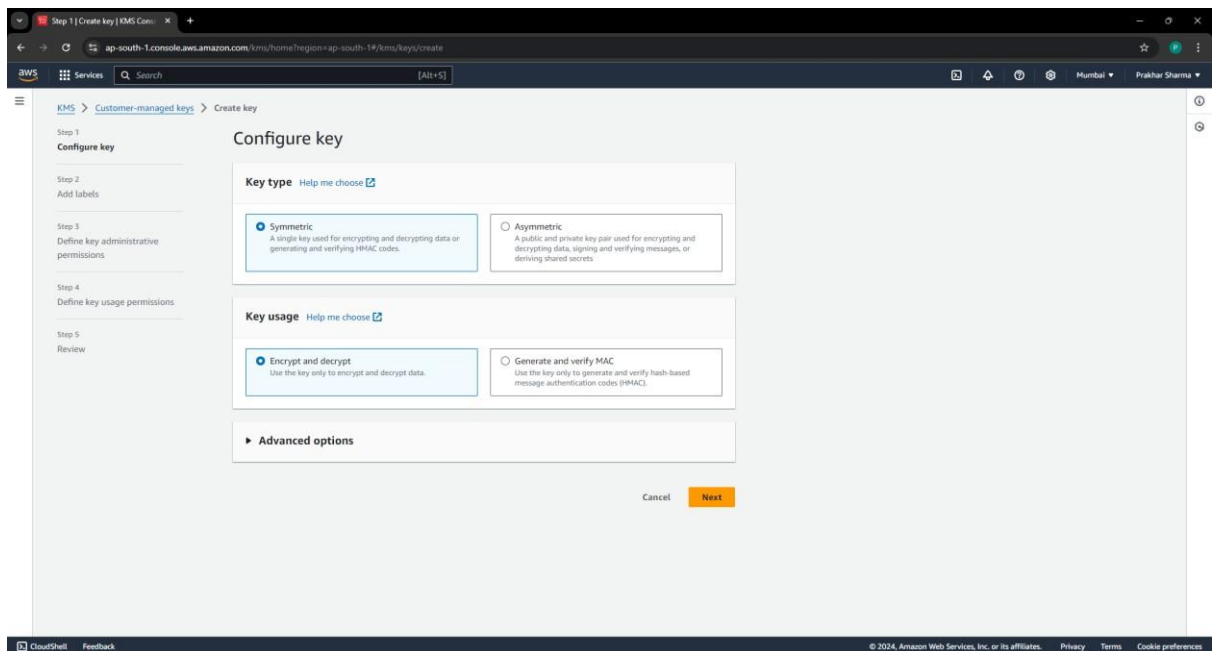
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Step-11]Click on

Next. Step-12]Name

the Alias.

Step-13]Add some Description .

Step-14]Click on Next still last step  
review.

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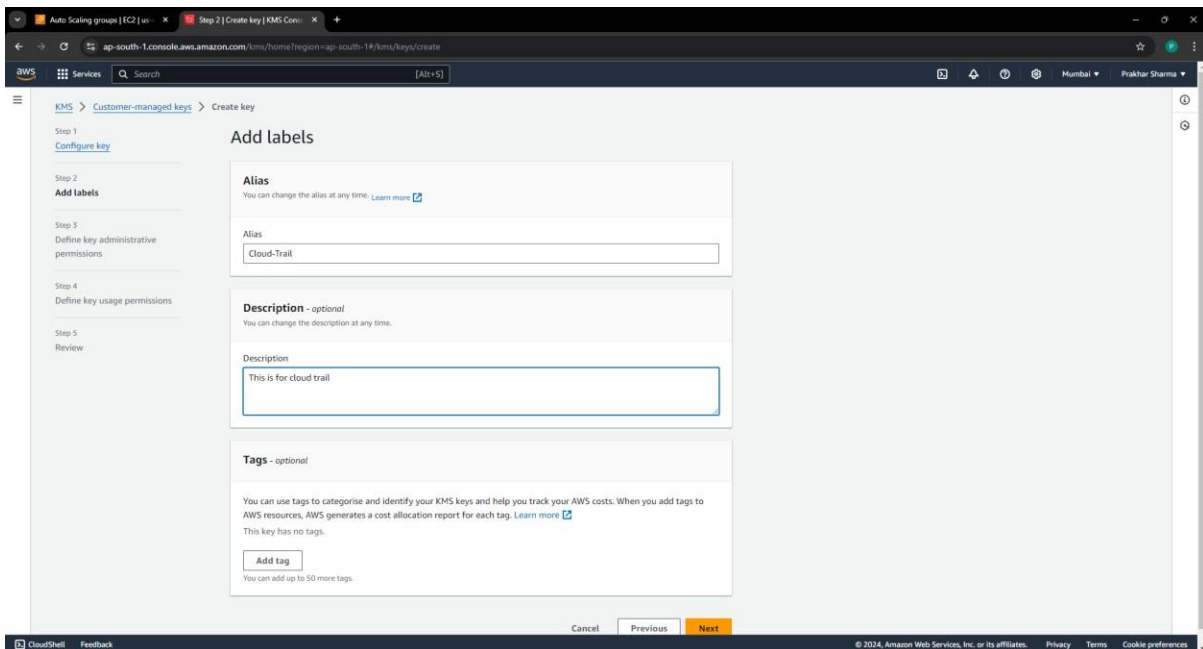
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Step-15]Click on Finish .



The screenshot displays the AWS Management Console interface for creating a new KMS key. The browser address bar shows the URL: `ap-south-1.console.aws.amazon.com/kms/home?region=ap-south-1#/keys/create`. The console header includes the AWS logo, a search bar, and the user's name 'Prakhar Sharma' in the top right corner. On the left, a navigation pane shows the 'Create key' wizard steps: Step 1 (Configure key), Step 2 (Add labels), Step 3 (Define key administrative permissions), Step 4 (Define key usage permissions), and Step 5 (Review). The main content area is titled 'Add labels' and contains three sections: 'Alias' with a text input field containing 'Cloud-Trail', 'Description - optional' with a text area containing 'This is for cloud trail', and 'Tags - optional' with an 'Add tag' button. At the bottom of the main content area, there are 'Cancel', 'Previous', and 'Next' buttons, with 'Next' being highlighted in orange. The footer of the console shows '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

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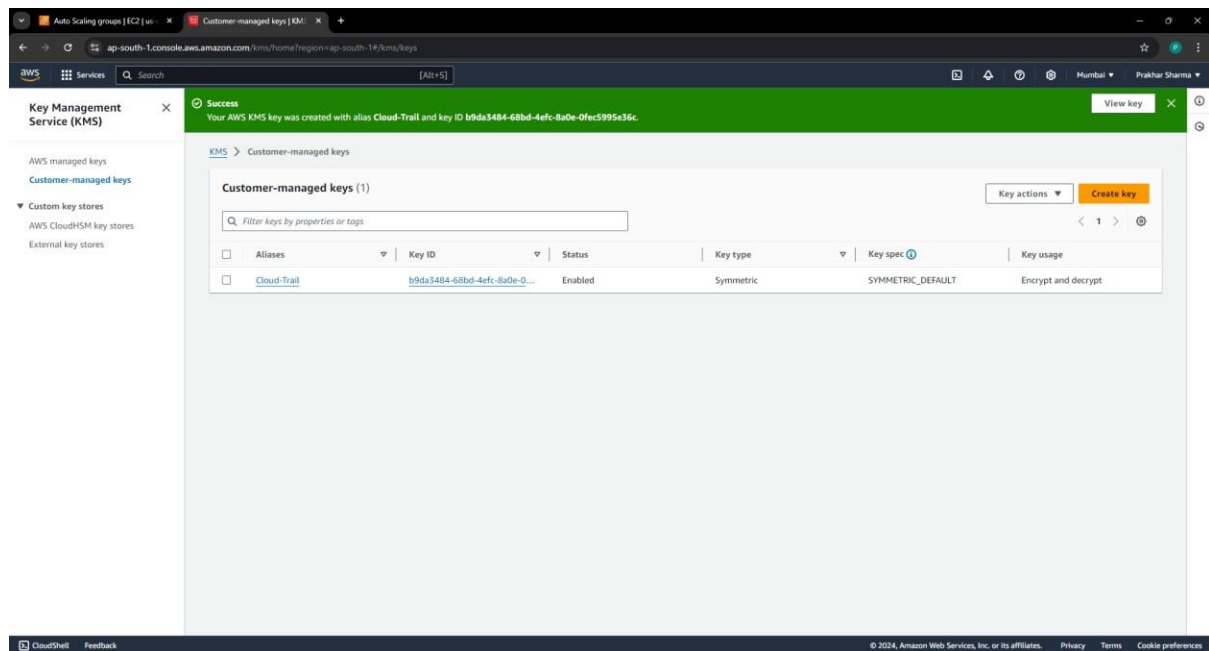
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Step-16] Go to Cloud

Trail. Step-17]Go to

Trails.

Step-18]Click on Create

trail

Step-19]Give Trail name

Step-20]Storage location : select existing S3

bucket

Step-21]Browse your existing bucket

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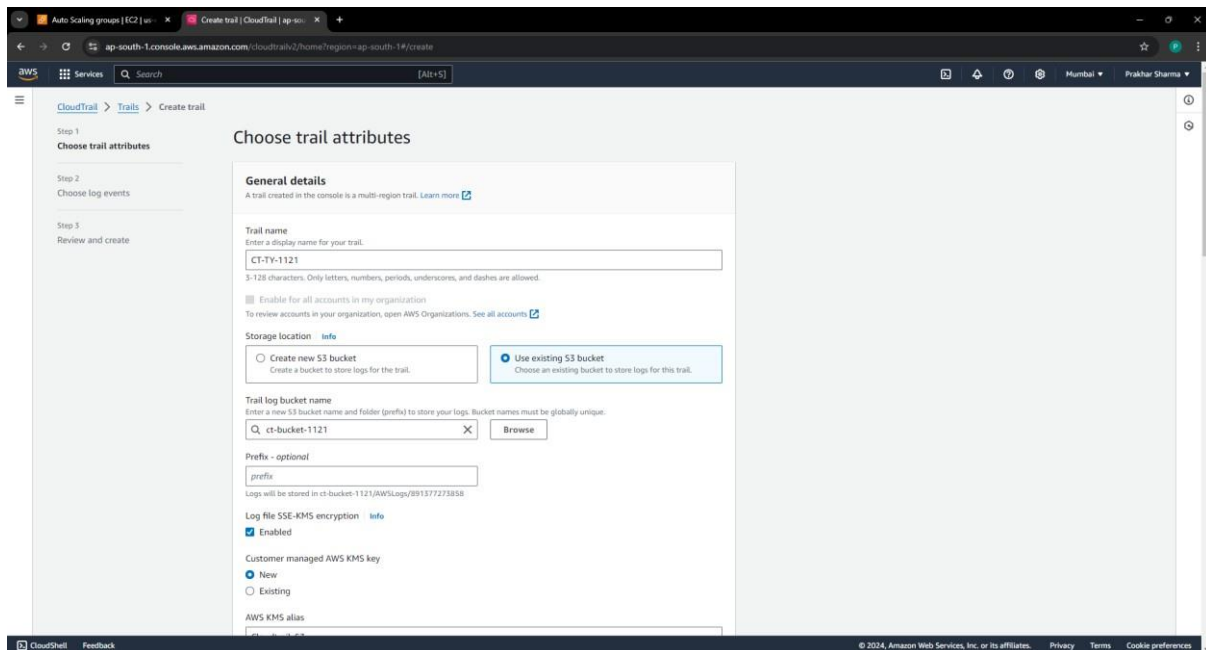
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Step-22]Give AWS KMS alias a Name.

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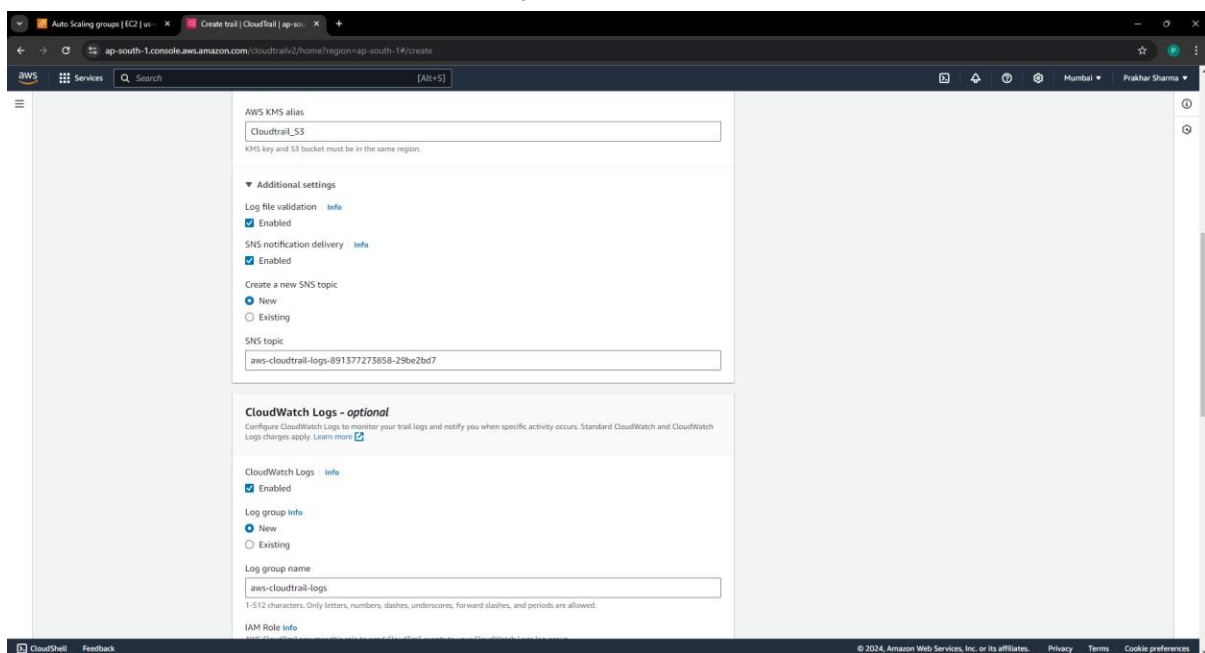
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Step-23] Enable SNS notification delivery and Select New as Create a new SNS Topic



Step-24] Go to cloud watch logs –  
optional .

Step-25]Give Log group name .

Step-26]Select New in IAM Role .

Step-27]Give Role  
Name.

Step-28]Click Next.

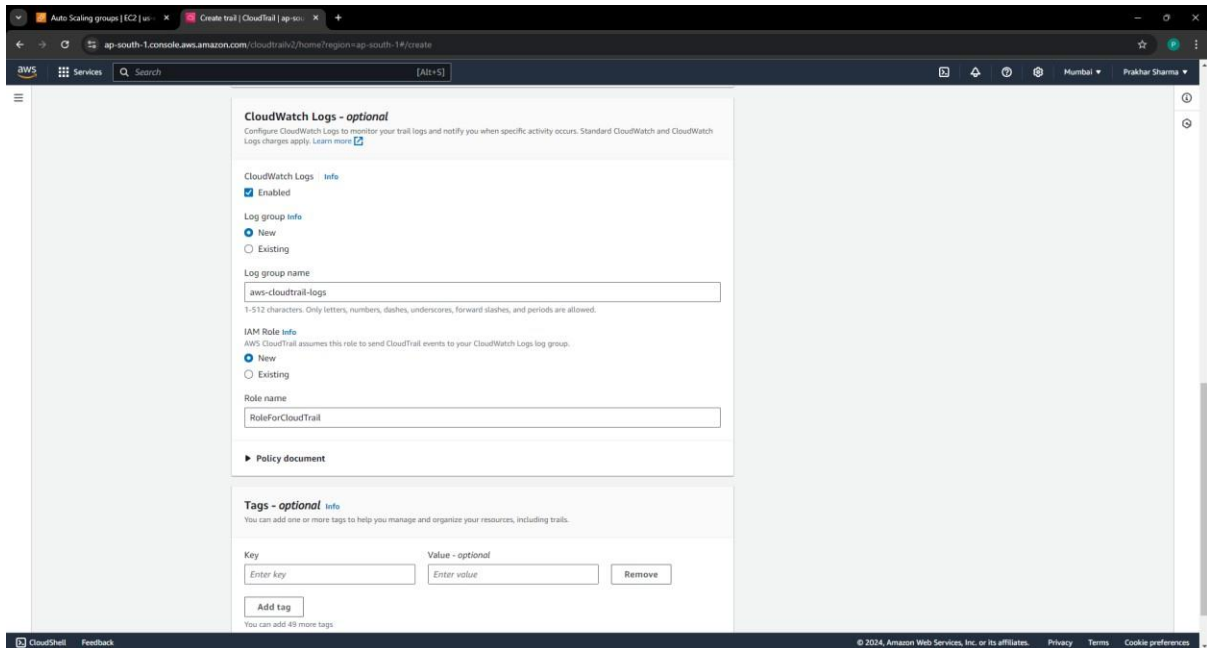


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The screenshot shows the AWS CloudTrail console 'Create trail' page. The page is titled 'CloudWatch Logs - optional' and includes instructions to configure CloudWatch Logs to monitor trail logs. The 'CloudWatch Logs' section has a checkbox for 'Enabled' which is checked. Below this, the 'Log group' section has a radio button for 'New' selected, and the 'Log group name' field contains 'aws-cloudtrail-logs'. The 'IAM Role' section has a radio button for 'New' selected, and the 'Role name' field contains 'RoleForCloudTrail'. There is a link to the 'Policy document'. At the bottom, the 'Tags' section is visible with fields for 'Key' and 'Value' and an 'Add tag' button.

**Step-29] In Event , Select Event Type**

- ✓ Management events
- ✓ Data Events

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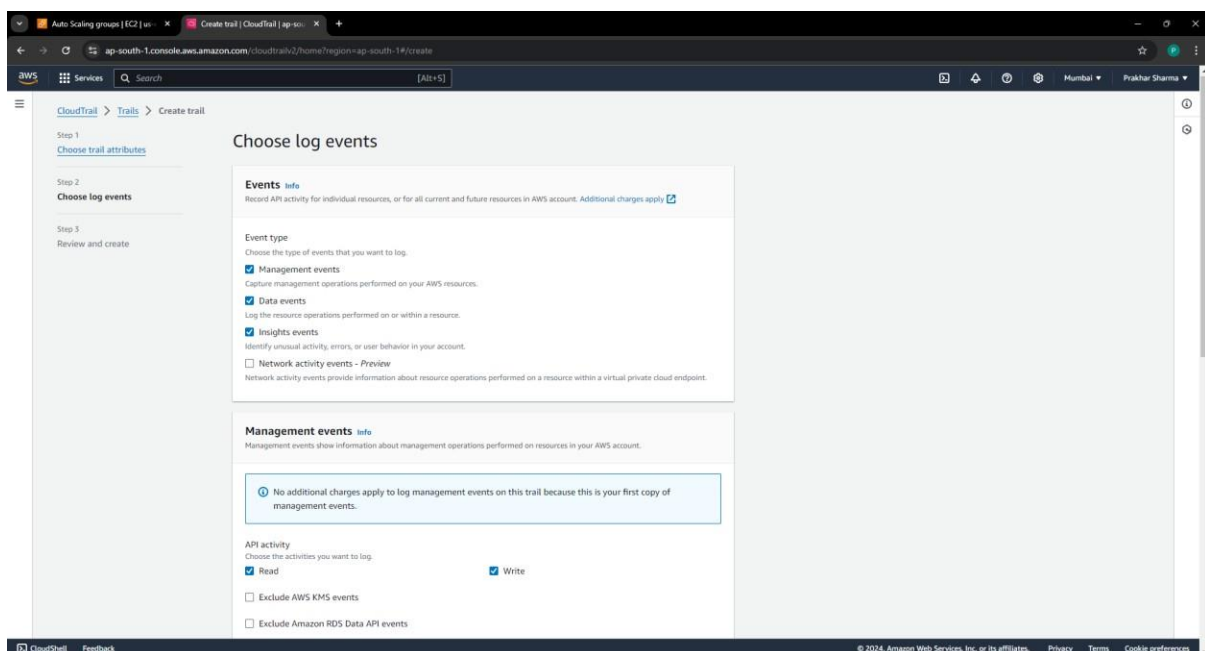
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✓ Insights Events



Step-30]In Data events, Select S3 as Data event

type.

Step-31]Click Next.

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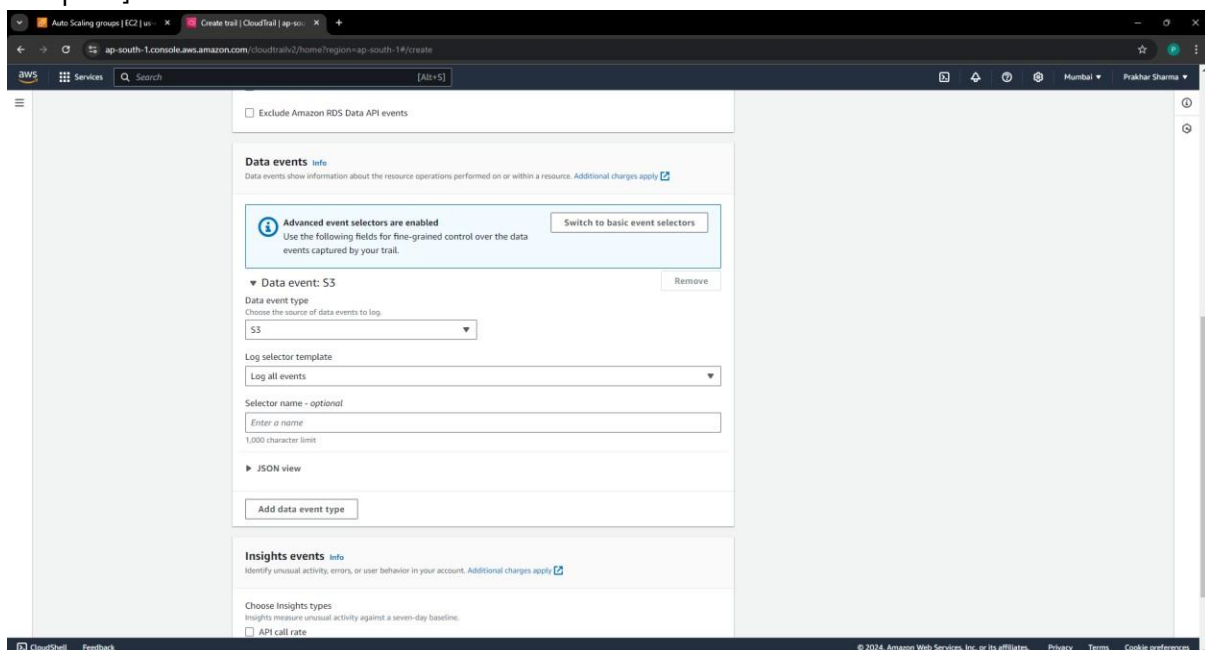
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Step-32]Click Create trail.



The screenshot shows the AWS CloudTrail console 'Create trail' page. The page is titled 'Create trail | CloudTrail | ap-sou-1'. The main content area has a sidebar on the left with a menu icon. The main area contains a form with the following sections:

- Exclude Amazon RDS Data API events**: A checkbox that is currently unchecked.
- Data events**: A section with a blue information box stating 'Advanced event selectors are enabled' and a 'Switch to basic event selectors' button. Below this, there is a 'Data event: S3' section with a 'Data event type' dropdown set to 'S3', a 'Log selector template' dropdown set to 'Log all events', and a 'Selector name - optional' text input field. There is also a 'JSON view' section and an 'Add data event type' button.
- Insights events**: A section with a blue information box stating 'Identify unusual activity, errors, or user behavior in your account. Additional charges apply'. Below this, there is a 'Choose Insights types' section with a checkbox for 'API call rate'.

The footer of the console shows 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc. or its affiliates.

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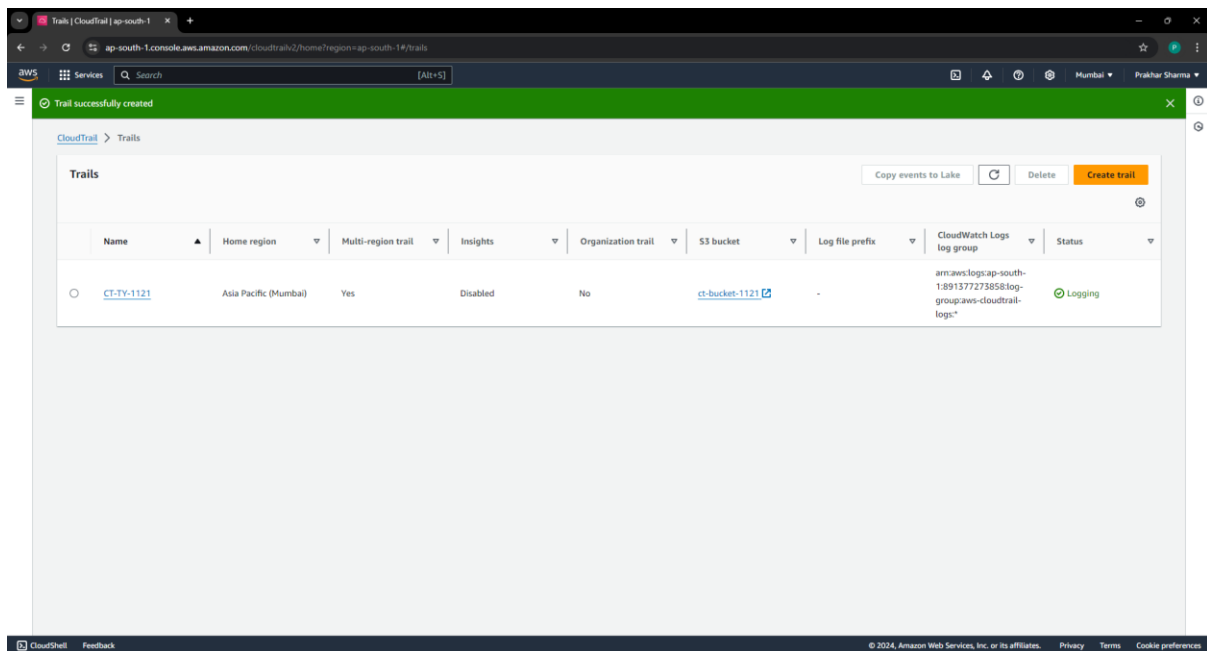
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Step-33] Go to SNS ( simple notification service )

Step-34] Go to Topics

Step-35] Click on the topic link.

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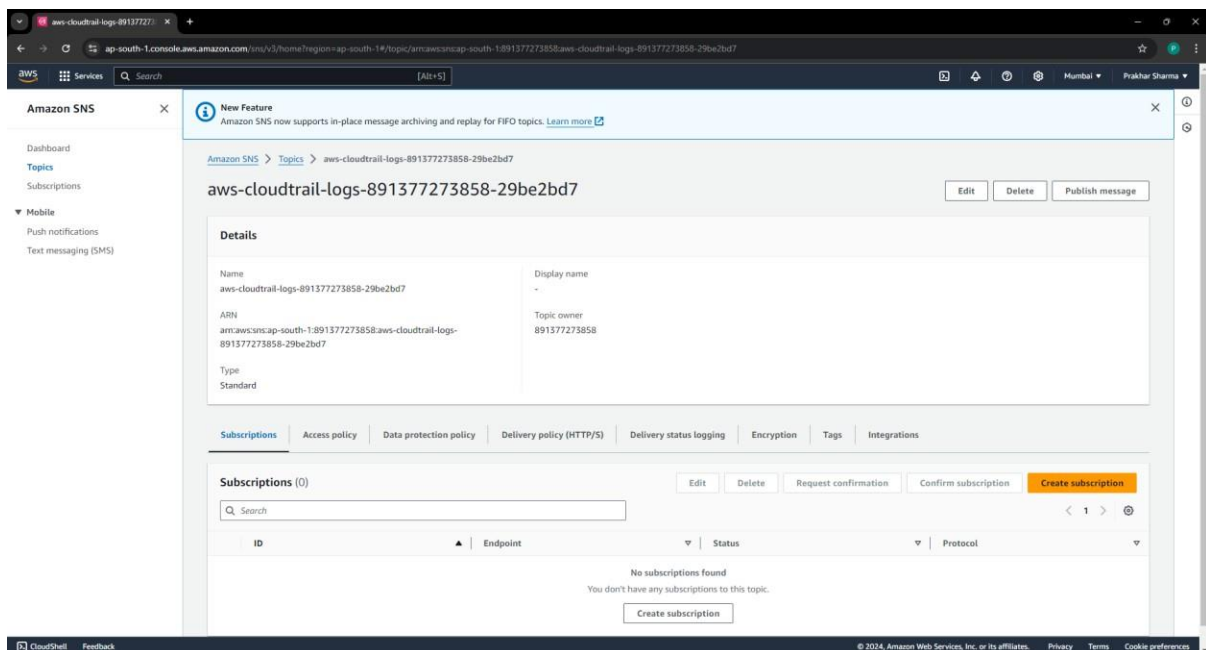
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Step-36]In Subscription, Click on Create Subscription.



Step-37]Select Email as Protocol.

Step-38]Enter your Email as

Endpoint.

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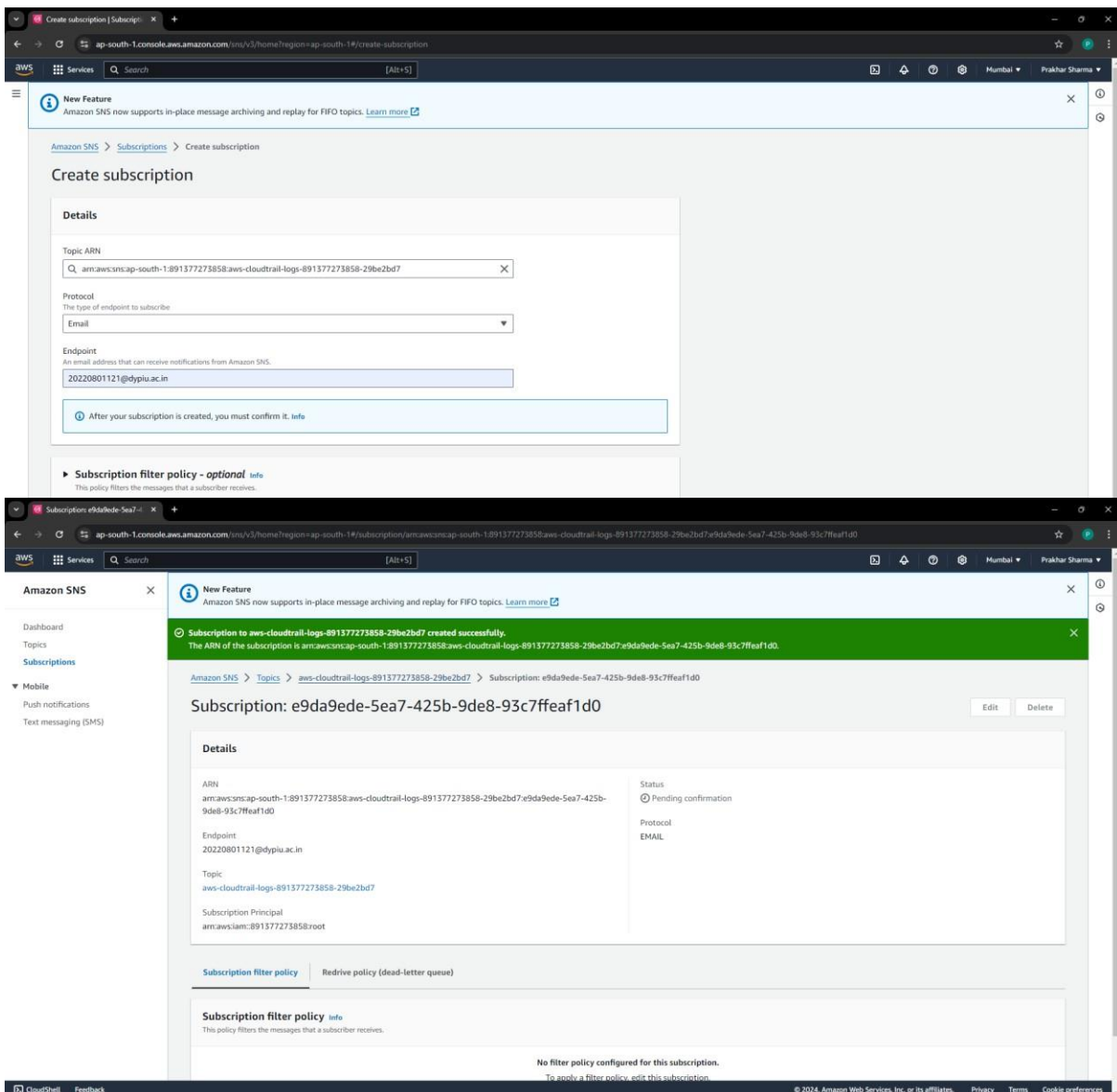
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Step-39]Click on Create Subscription.



The image shows two screenshots of the AWS Management Console. The top screenshot displays the 'Create subscription' page for Amazon SNS. The 'Details' section shows the 'Topic ARN' as 'arn:aws:sns:ap-south-1:891377273858:aws-cloudtrail-logs-891377273858-29be2bd7', the 'Protocol' as 'Email', and the 'Endpoint' as '20220801121@dyplu.ac.in'. A note indicates that after creation, the user must confirm the subscription. The bottom screenshot shows the 'Subscription details' page for the newly created subscription. The 'Subscription ARN' is 'arn:aws:sns:ap-south-1:891377273858:aws-cloudtrail-logs-891377273858-29be2bd7:e9da9ede-5ea7-425b-9de8-93c7ffef1d0'. The 'Status' is 'Pending confirmation', and the 'Protocol' is 'EMAIL'. The 'Endpoint' remains '20220801121@dyplu.ac.in'. The 'Topic' is 'aws-cloudtrail-logs-891377273858-29be2bd7'. The 'Subscription Principal' is 'arn:aws:iam::891377273858:root'. A note at the bottom states 'No filter policy configured for this subscription.'

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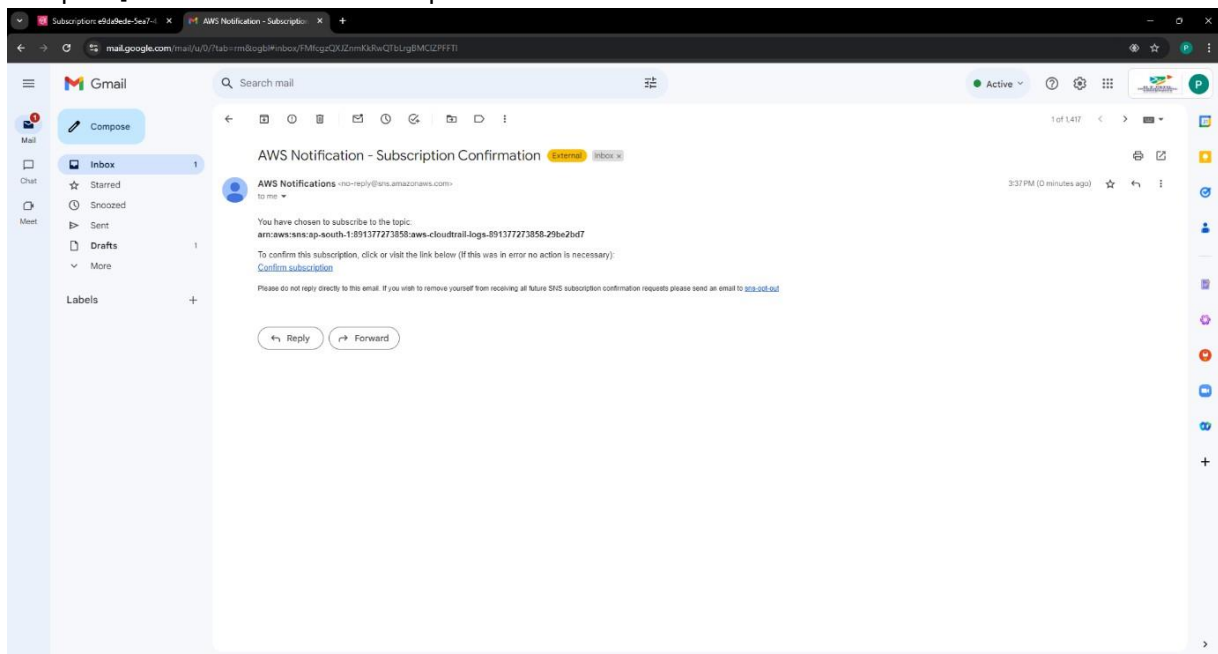
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**Title of Practical:       AWS CloudTrail with CloudWatch and SNS.**

Step-40]Go to your Email .

Step-41]Open the recent mail from AWS Notification.

Step-42]Click on confirm subscription.



Step-43]Now Go to Amazon

S3.

Step-44]Select your bucket.

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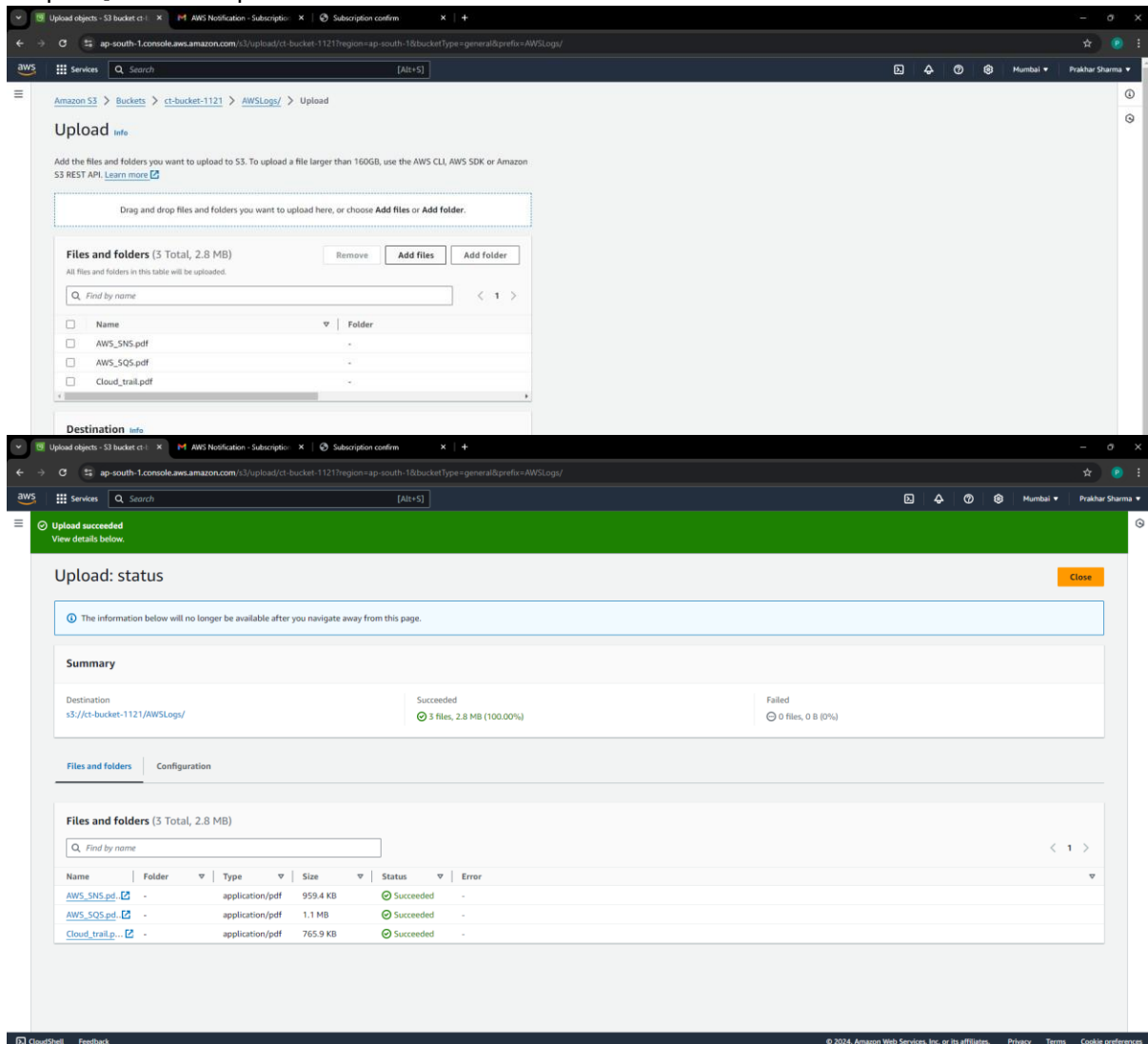
**Title of Practical:**

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Step-45]Select AWSLogs.

Step-46]Upload Some files by Clicking on Add files.

Step-47]Click on Upload.



The screenshot shows the AWS Management Console interface for uploading files to an S3 bucket. The top section, titled "Upload", includes instructions and buttons for "Add files" and "Add folder". Below this, a table lists the files to be uploaded: "AWS\_SNS.pdf", "AWS\_SQS.pdf", and "Cloud\_trail.pdf". The bottom section, titled "Upload: status", shows a summary of the upload process, indicating that 3 files (2.8 MB) were successfully uploaded to the destination "s3://ct-bucket-1121/AWSLogs/".

**Files and folders (3 Total, 2.8 MB)**

Name	Folder	Type	Size	Status	Error
AWS_SNS.pdf	-	application/pdf	959.4 KB	Succeeded	-
AWS_SQS.pdf	-	application/pdf	1.1 MB	Succeeded	-
Cloud_trail.pdf	-	application/pdf	765.9 KB	Succeeded	-

**Upload: status**

Summary

Destination	Succeeded	Failed
s3://ct-bucket-1121/AWSLogs/	3 files, 2.8 MB (100.00%)	0 files, 0 B (0%)

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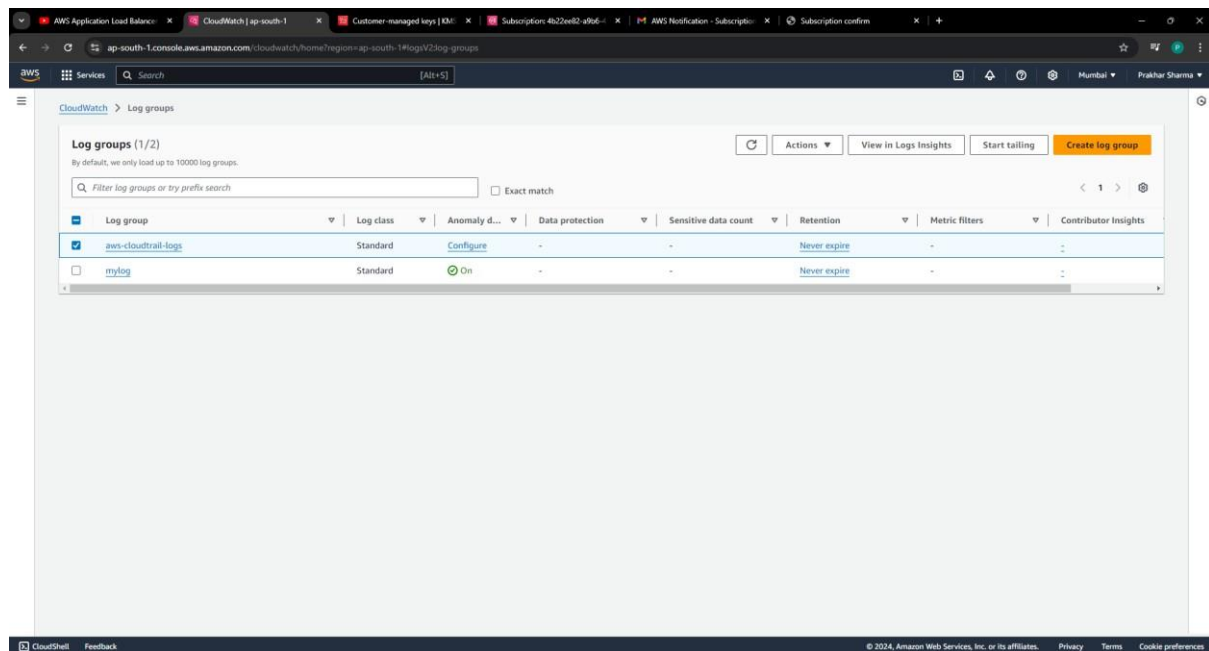
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Step-48] Go to CloudWatch.

Step-49]Open Log groups from left menu

Step-50]Select the log log group associated with your CloudTrail trail.



Step-51]Click **Actions** .

Step-52]Click on Anomaly  
detection .

Step-53]Click on edit.

Step-54]Set the Evaluation frequency to 5 min.

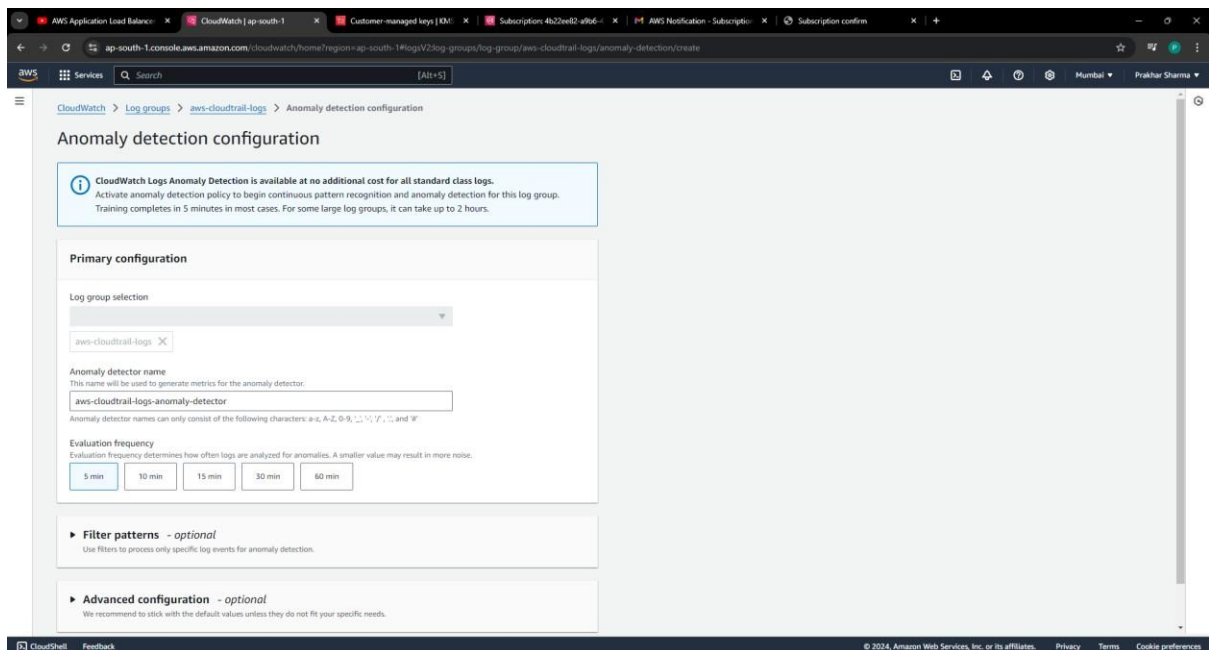
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Step-55]Click on Update Anomaly detection.

Step-56] You will receive an email notification from SNS alerting you about the activity.

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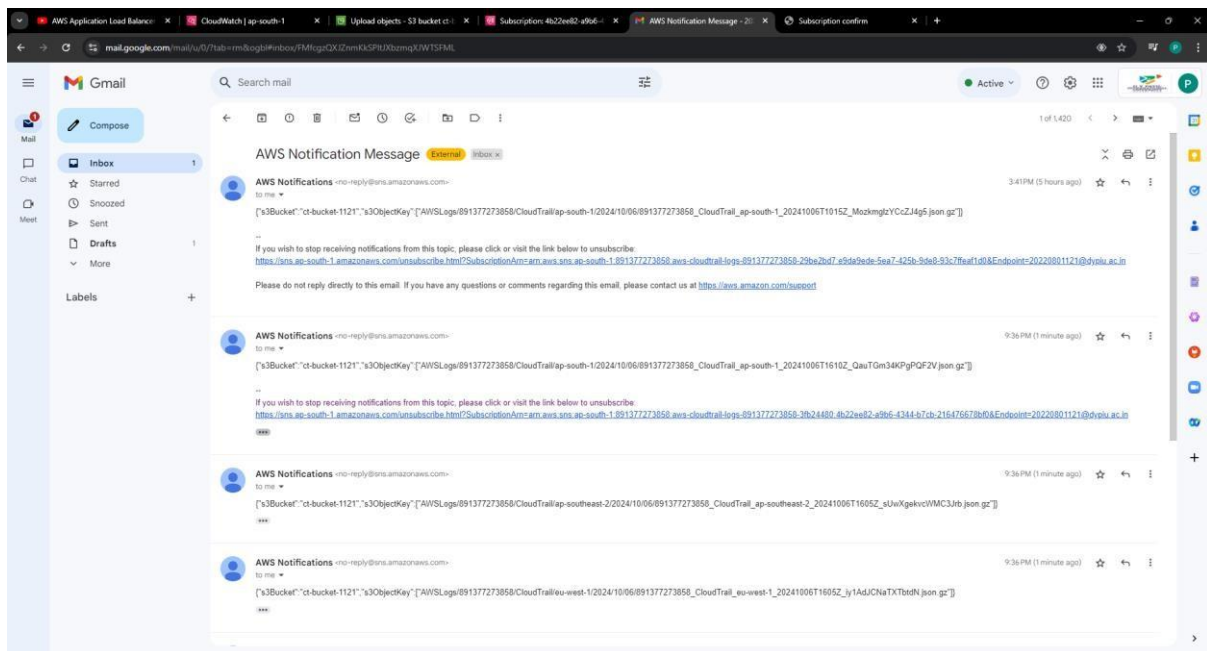
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Step-57]Go to Cloud  
Trail. Step-  
58]Go to Event History.

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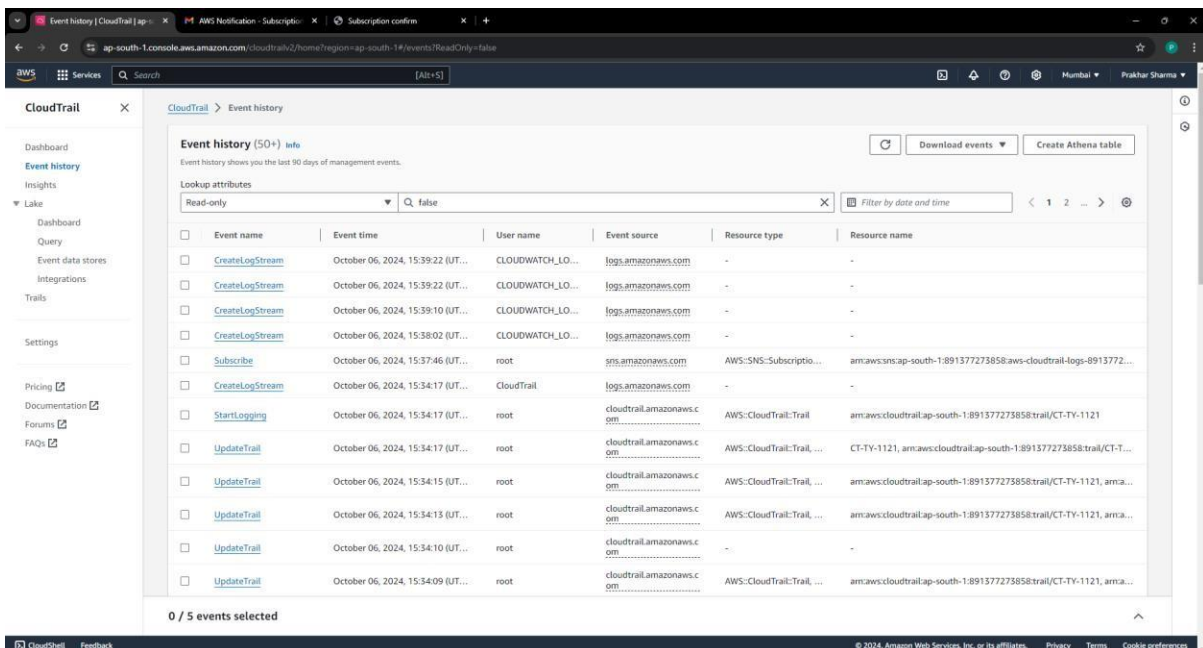
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You Can See the Events Occurred in AWS Cloud Trail.



The screenshot shows the AWS CloudTrail console 'Event history' page. It displays a table of events with columns: Event name, Event time, User name, Event source, Resource type, and Resource name. The events listed include 'CreateLogStream', 'Subscribe', 'StartLogging', and multiple 'UpdateTrail' events, all occurring on October 06, 2024. The console also shows filters and pagination options.

Event name	Event time	User name	Event source	Resource type	Resource name
CreateLogStream	October 06, 2024, 15:39:22 (UTC...)	CLOUDWATCH_LO...	logs.amazonaws.com	-	-
CreateLogStream	October 06, 2024, 15:39:22 (UTC...)	CLOUDWATCH_LO...	logs.amazonaws.com	-	-
CreateLogStream	October 06, 2024, 15:39:10 (UTC...)	CLOUDWATCH_LO...	logs.amazonaws.com	-	-
CreateLogStream	October 06, 2024, 15:38:02 (UTC...)	CLOUDWATCH_LO...	logs.amazonaws.com	-	-
Subscribe	October 06, 2024, 15:37:46 (UTC...)	root	sns.amazonaws.com	AWS::SNS::Subscriptio...	arn:aws:sns:ap-south-1:891377273858:aws-cloudtrail-logs-8913772...
CreateLogStream	October 06, 2024, 15:34:17 (UTC...)	CloudTrail	logs.amazonaws.com	-	-
StartLogging	October 06, 2024, 15:34:17 (UTC...)	root	cloudtrail.amazonaws.c...	AWS::CloudTrail::Trail	arn:aws:cloudtrail:ap-south-1:891377273858:trail/CT-TY-1121
UpdateTrail	October 06, 2024, 15:34:17 (UTC...)	root	cloudtrail.amazonaws.c...	AWS::CloudTrail::Trail, ...	CT-TY-1121, arn:aws:cloudtrail:ap-south-1:891377273858:trail/CT-T...
UpdateTrail	October 06, 2024, 15:34:15 (UTC...)	root	cloudtrail.amazonaws.c...	AWS::CloudTrail::Trail, ...	arn:aws:cloudtrail:ap-south-1:891377273858:trail/CT-TY-1121, arn:...
UpdateTrail	October 06, 2024, 15:34:13 (UTC...)	root	cloudtrail.amazonaws.c...	AWS::CloudTrail::Trail, ...	arn:aws:cloudtrail:ap-south-1:891377273858:trail/CT-TY-1121, arn:...
UpdateTrail	October 06, 2024, 15:34:10 (UTC...)	root	cloudtrail.amazonaws.c...	-	-
UpdateTrail	October 06, 2024, 15:34:09 (UTC...)	root	cloudtrail.amazonaws.c...	AWS::CloudTrail::Trail, ...	arn:aws:cloudtrail:ap-south-1:891377273858:trail/CT-TY-1121, arn:...

Step-59]Deactivate every AWS services.



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