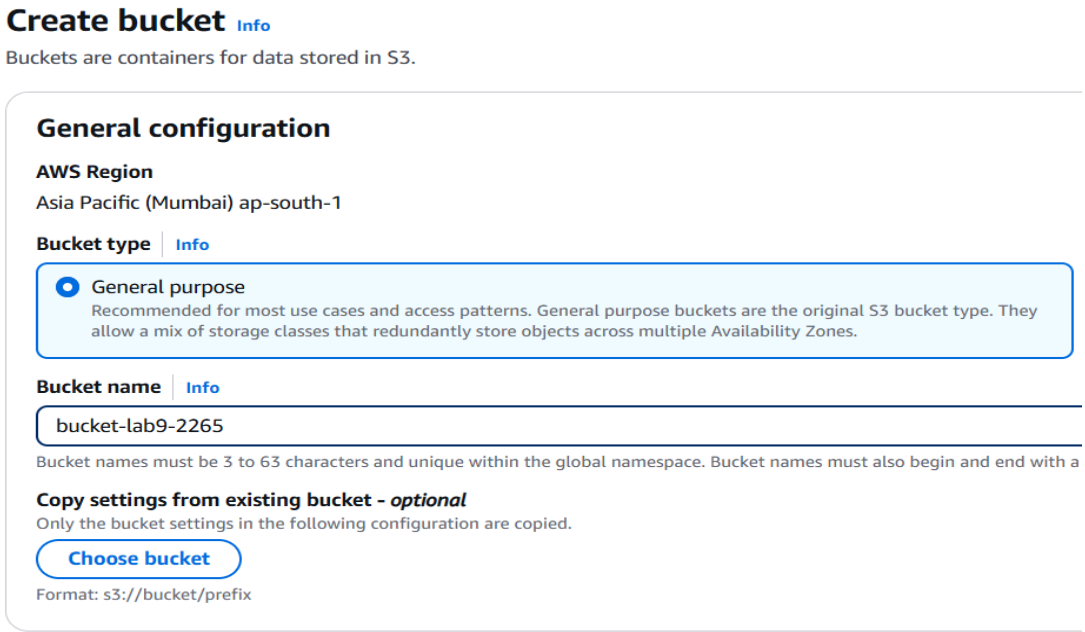
School of Computer Science, Engineering and Applications (SCSEA)
B. Tech TY (CCSA)
Subject: Cloud Architecture And Protocol

Name of the Student: Sahil S. Mandawgade PRN: 20220802265

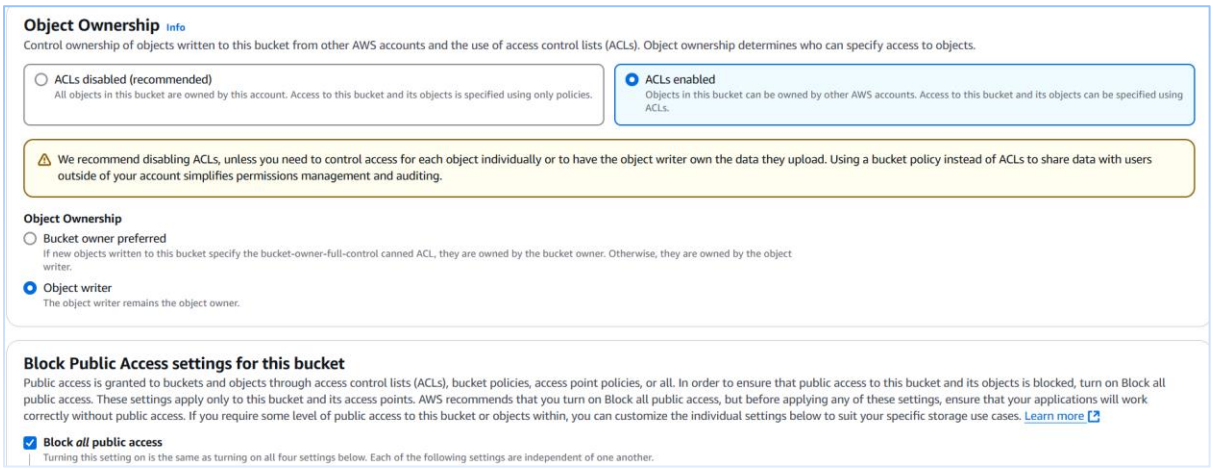
Title of Practical: 9. Implementing S3 Encryption with AWS KMS and Activity Monitoring via CloudTrail.

Step 1: Create one S3 Bucket.

- Go to S3 in AWS Dashboard.
- Click on Create bucket.
- Select Bucket type as "General Purpose".
- Give proper name to bucket as 'bucket-lab9-2265'.

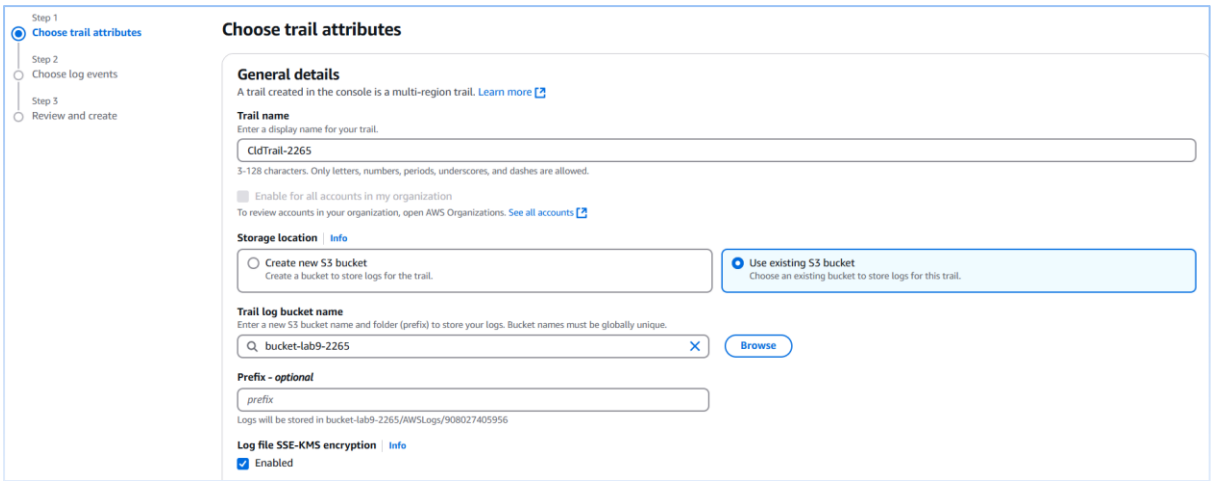


- In "Object Ownership" click on "ACLs enabled".
- In "Object Ownership" select "Object writer".
- Block all Public Access and then click Create Bucket.

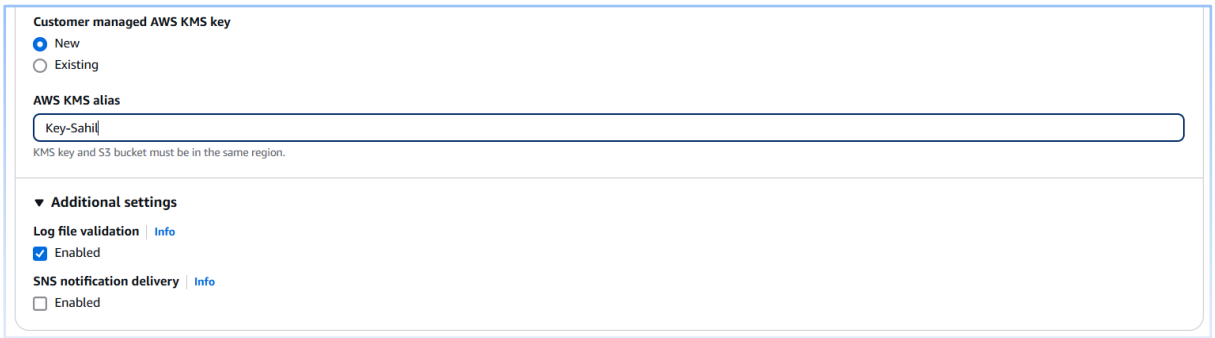


Step 2: In CloudTrail create one Trail.

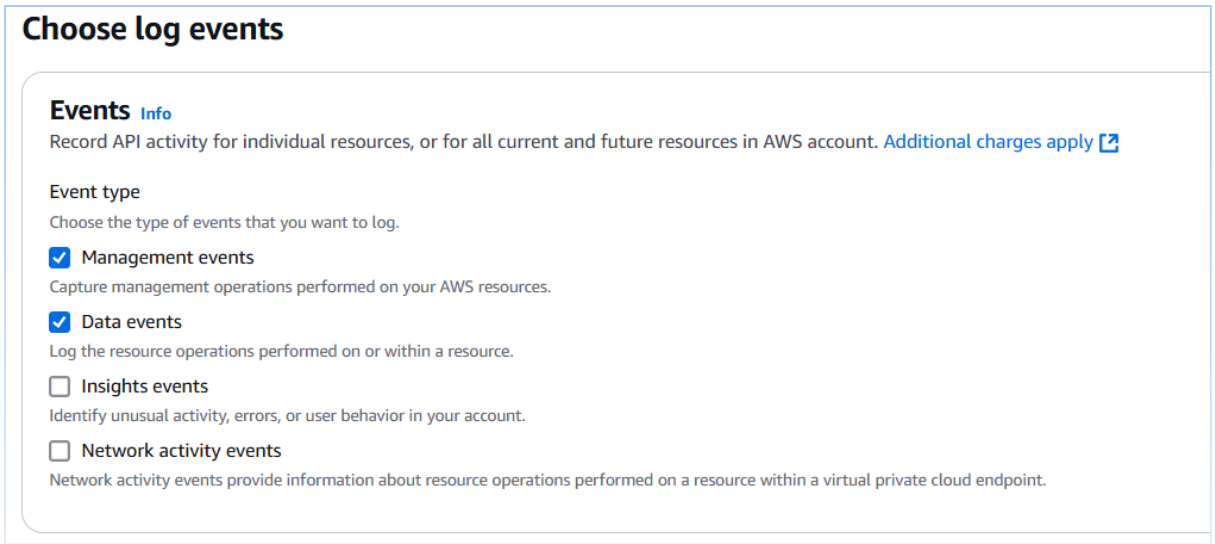
- Go to CloudTrail in AWS Dashboard.
- Click on Create Trail.
- Give proper name to trail as 'CldTrail-2265'.
- Select our existing Bucket i.e. – bucket-lab9-2265.
- Enable "Log file SSE-KMS encryption".



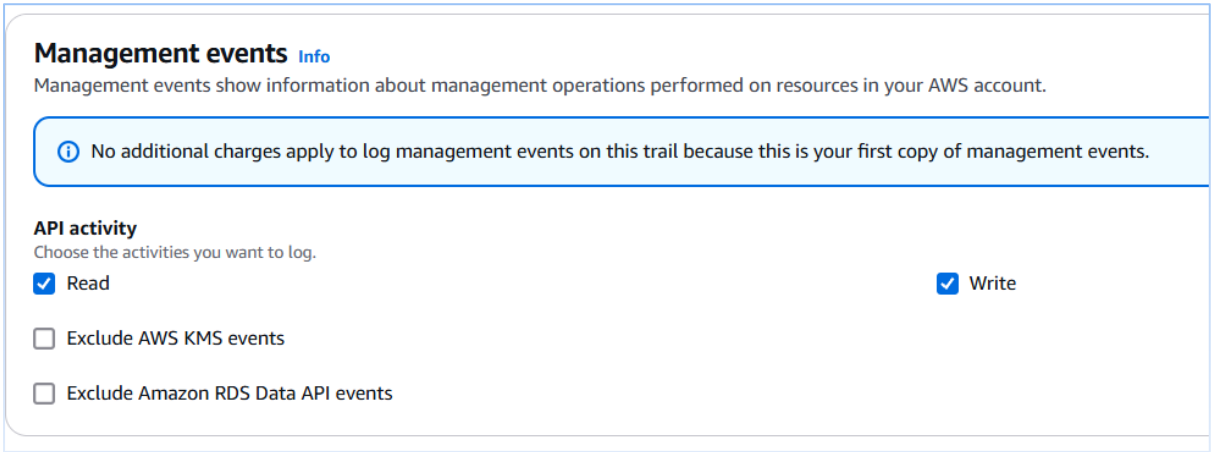
- Select "New" in Customer managed AWS KMS keys.
- Give proper key alias.
- Enable "Log file validation".



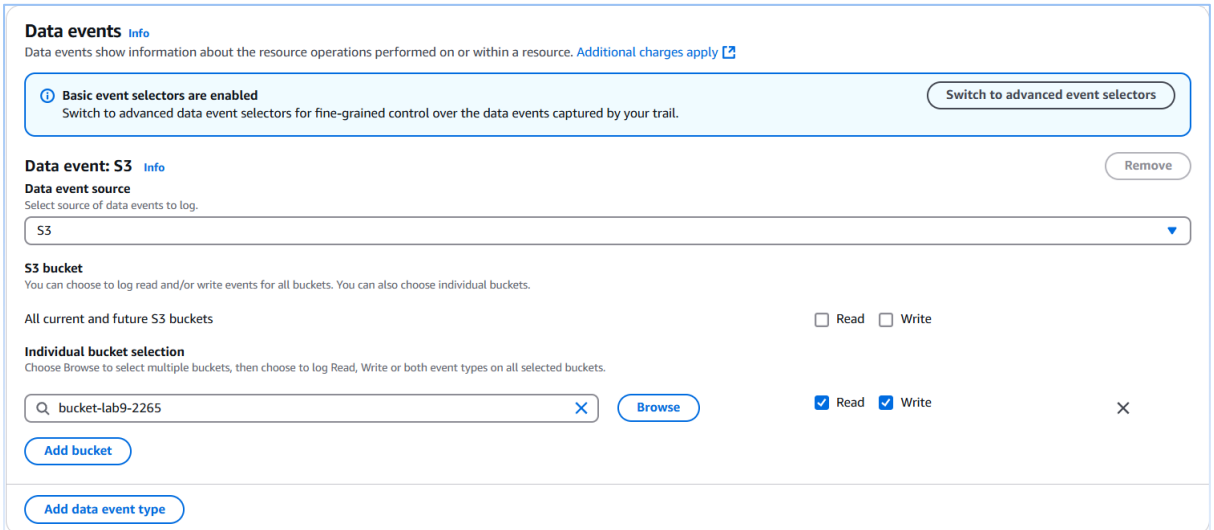
- In Events click on "Management" & "Data" events.



- In Management Event Select "Read" & "Write".



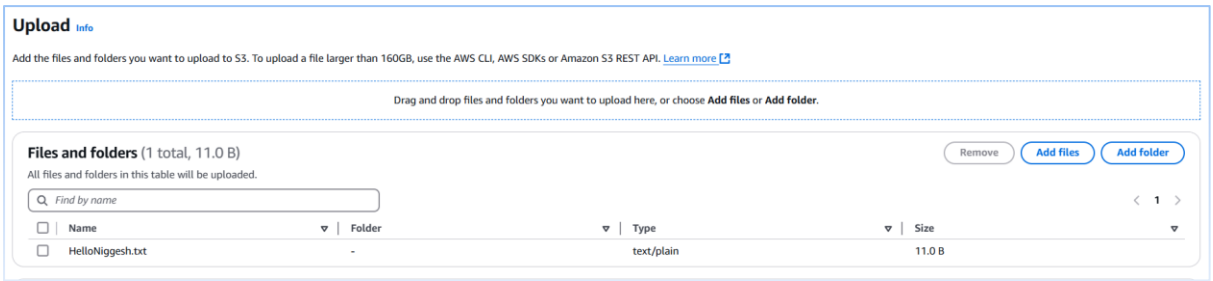
- In Data Event : Switch to basic event selectors – Select "Read" & "Write" on our created bucket.



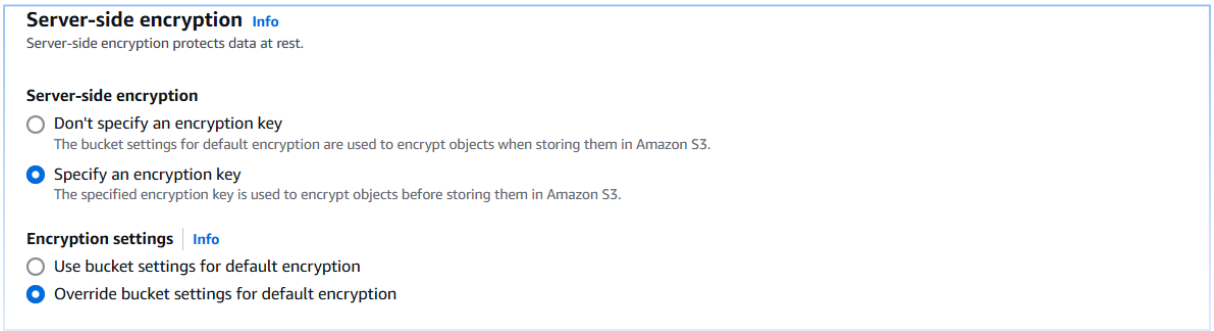
- Review all the settings and Create the Trail.

Step 3: Upload file in S3 bucket with encryption.

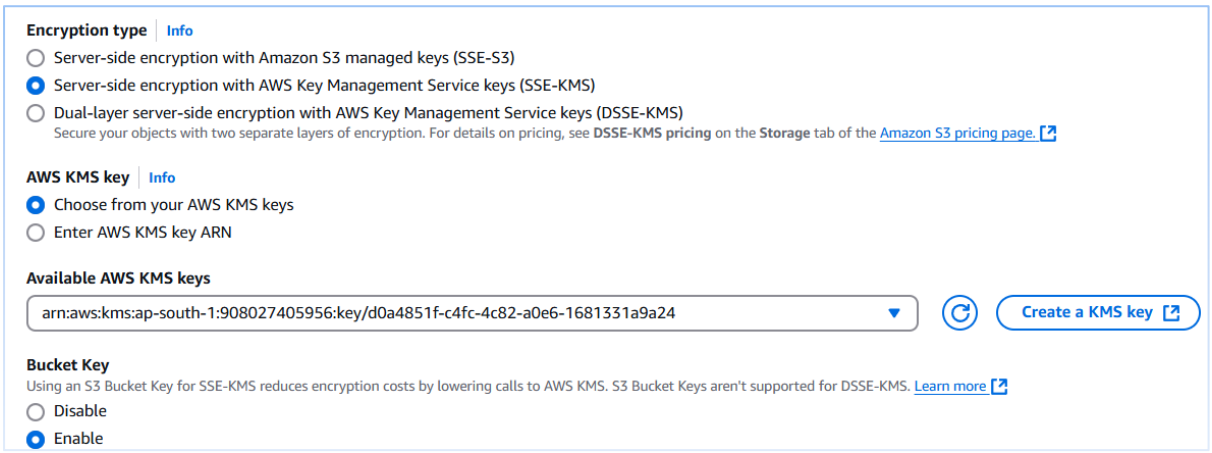
- Select our created bucket and click on “upload”.
- Add one file in bucket.



- Go in properties and in “server-side encryption” select “specify an encryption key”.

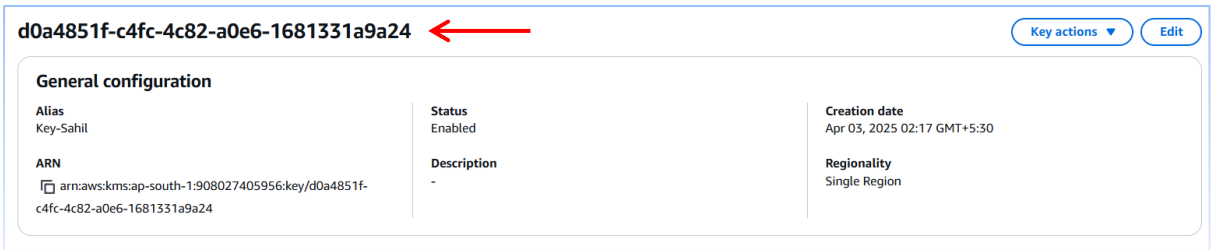


- In “Encryption Type” select “Server-side encryption with AWS Key
- Management Service (SSE-KMS)”.
- In AWS KMS Key select our created key.

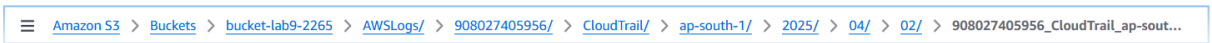


Step 4: Check if our key is used for Encryption using Key ID.

- Go to KMS and copy the Key ID.



- Now in S3 click on our bucket.
- In Bucket go in following Path:



- Open the logs -> Ctrl+f.

- Paste our key ID and see if it's used.

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https://bucket-lab9-2265.s3.ap-south-1.amazonaws.com/AWSLogs/908027405956/CloudTrail/ap-south-1/2025/04/02/908027405956_CloudTrail_ap-south-1_20250402T2100...

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-c4fc-4c82-a0e6-1681331a9a24 1/8

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