**Intern ID: CT06DG1190**

TASK 4

**Step 1: Create an IAM Policy and User**

**Goal**: Restrict access to specific resources using IAM.

1. **Navigate to IAM Console**:
    - Go to **AWS Management Console** > **Services** > **IAM**.
    - **Screenshot 1**: Capture the IAM dashboard.
      **Heading**: *IAM Dashboard Overview*.
2. **Create a Custom IAM Policy**:
    - In IAM, go to **Policies** > **Create Policy** > Switch to **JSON** tab.
    - Paste this policy (replace YOUR_BUCKET_NAME with your bucket name):

json

Copy

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": ["s3:GetObject", "s3:PutObject"],
      "Resource": "arn:aws:s3:::YOUR_BUCKET_NAME/*"
    }
  ]
}
```

    - Name the policy (e.g., S3-ReadWrite-Access).
    - **Screenshot 2**: Capture the JSON policy editor.
      **Heading**: *Custom IAM Policy JSON Configuration*.
3. **Create an IAM User**:

- Go to **Users** > **Add user**.
- Enter a username (e.g., SecureS3User).
- Select **Programmatic access** and **AWS Management Console access**.
- Attach the policy S3-ReadWrite-Access created earlier.
- **Screenshot 3**: Capture the user summary page with the attached policy.
  **Heading**: *IAM User Creation with Custom Policy*.

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**Step 2: Create a Secure S3 Bucket**

**Goal**: Configure an S3 bucket with encryption, versioning, and blocking public access.

1. **Create an S3 Bucket**:
   - Go to **S3 Console** > **Create bucket**.
   - Enter a **unique bucket name** and ensure the region is unchanged.
   - **Screenshot 4**: Capture the bucket creation page (region visible).
     **Heading**: *S3 Bucket Creation in Default Region*.
2. **Block Public Access**:
   - Under **Block Public Access settings**, check **Block all public access**.
   - **Screenshot 5**: Capture the public access blocking settings.
     **Heading**: *S3 Bucket Public Access Block Configuration*.
3. **Enable Versioning**:
   - Go to the bucket's **Properties** tab > **Bucket Versioning** > **Enable**.
   - **Screenshot 6**: Capture the versioning settings.
     **Heading**: *S3 Bucket Versioning Enabled*.
4. **Enable Server-Side Encryption**:
   - Go to the bucket's **Properties** tab > **Default encryption**.
   - Select **AWS Key Management Service (SSE-KMS)**.
   - Choose **AWS managed key (aws/s3)** or create a new KMS key (see Step 3).
   - **Screenshot 7**: Capture the encryption settings.
     **Heading**: *S3 Bucket Default Encryption Configuration*.

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**Step 3: Configure AWS KMS Encryption**

**Goal**: Create a KMS key for S3 encryption.

1. **Create a KMS Key**:
    - Go to **AWS KMS Console** > **Customer managed keys** > **Create key**.
    - Set **Key type** as **Symmetric** and **Usage** as **Encrypt and decrypt**.
    - Add a key alias (e.g., S3-Encryption-Key).
    - Assign the IAM user as a **key user** in the key policy.
    - **Screenshot 8**: Capture the KMS key policy configuration.
      **Heading**: *KMS Key Policy with IAM User Permissions*.
2. **Apply KMS Key to S3 Bucket**:
    - Return to the S3 bucket's **Default encryption** settings.
    - Select the KMS key you created (e.g., S3-Encryption-Key).
    - **Screenshot 9**: Capture the S3 bucket's KMS key selection.
      **Heading**: *S3 Bucket KMS Encryption Key Assignment*.

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**Step 4: Test and Validate**

**Goal**: Verify security policies and encryption.

1. **Upload a Test File**:
    - Use the IAM user credentials to log in to the AWS Console.
    - Upload a file to the S3 bucket.
    - **Screenshot 10**: Capture the successful upload.
      **Heading**: *File Upload to S3 Using Restricted IAM User*.
2. **Check Encryption Status**:
    - Select the uploaded file in S3 > **Properties** > **Server-Side Encryption**.
    - Confirm encryption is enabled with the KMS key.
    - **Screenshot 11**: Capture the file's encryption details.
      **Heading**: *S3 Object Encryption Status with KMS*.

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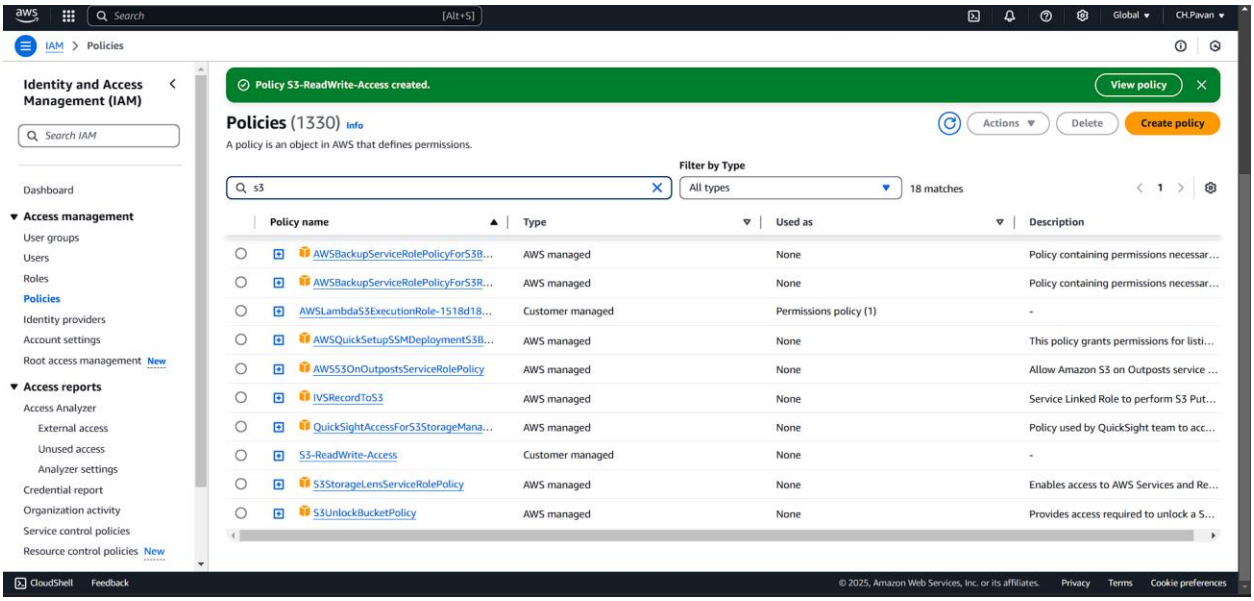
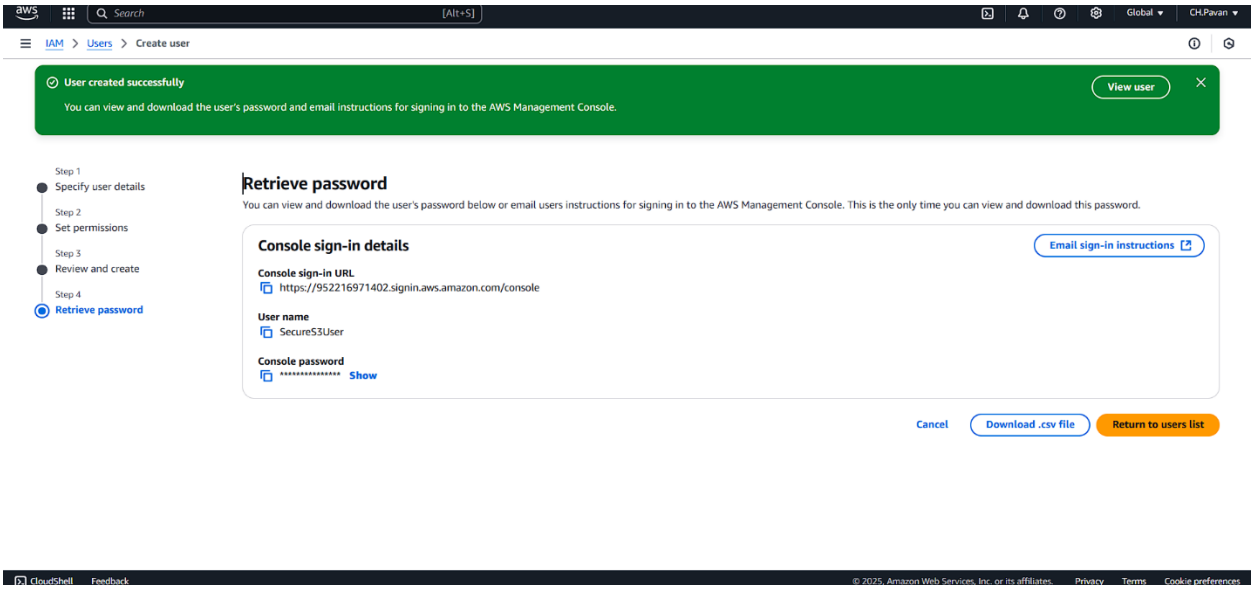
**Final Deliverable: Report Structure**

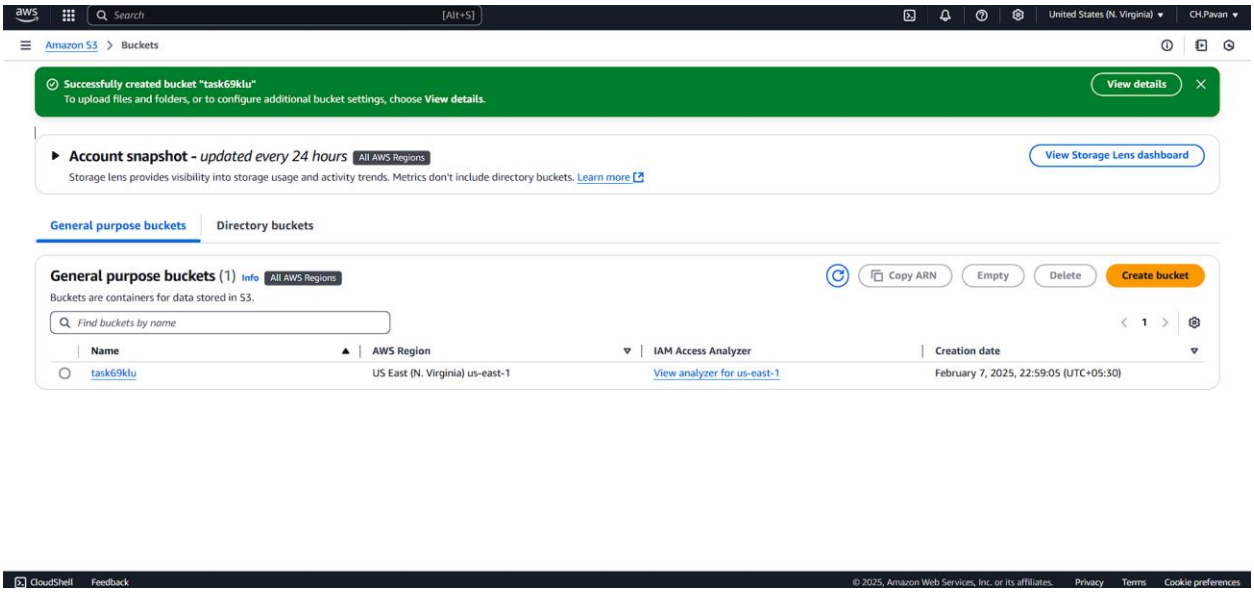
1. **Introduction**: Explain the purpose of securing AWS resources.
2. **IAM Configuration**: Include Screenshots 1-3.
3. **S3 Security**: Include Screenshots 4-7.
4. **KMS Encryption**: Include Screenshots 8-9.
5. **Validation**: Include Screenshots 10-11.
6. **Conclusion**: Summarize how IAM, S3, and KMS enhance security.

S3 Read Write

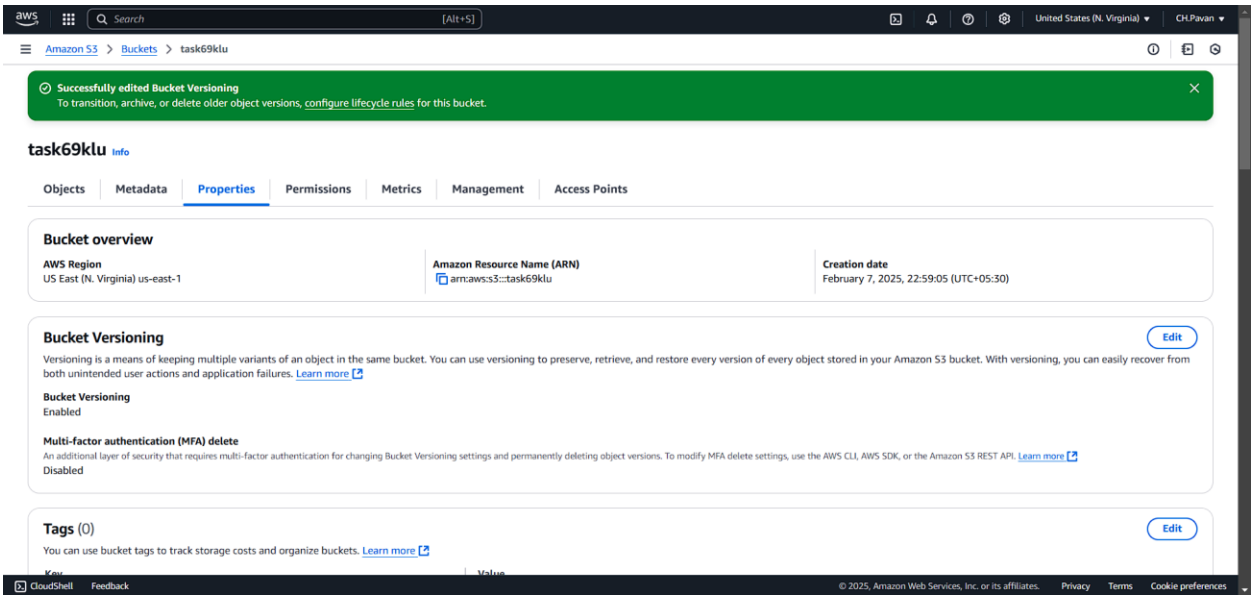



Created a User

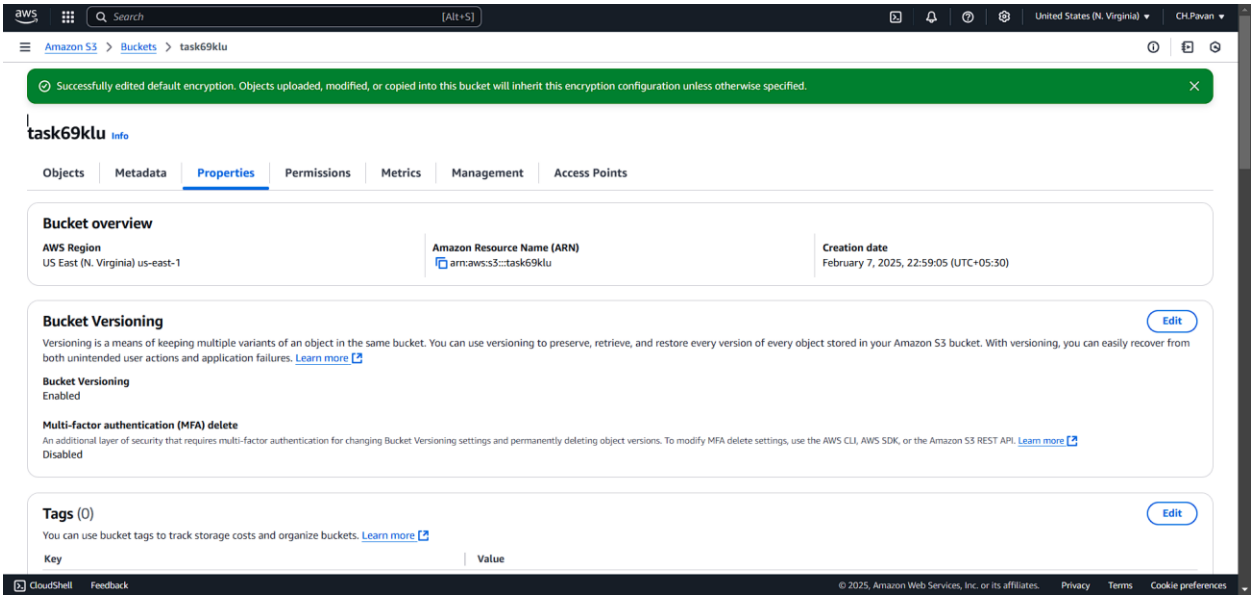


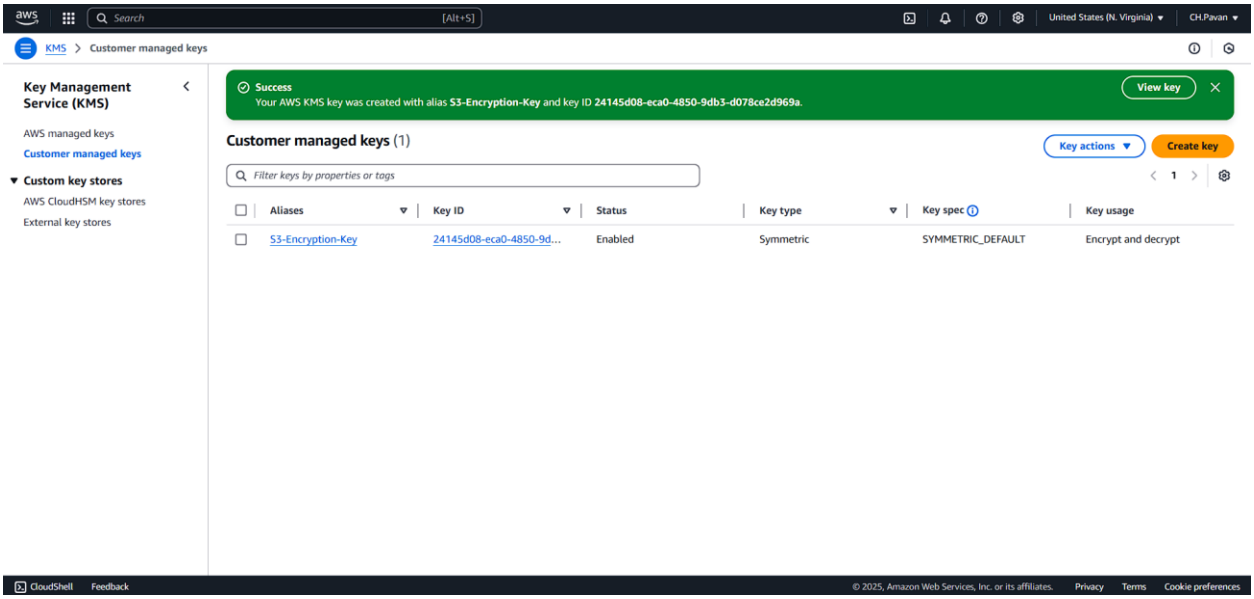

Bucket Visionary setting



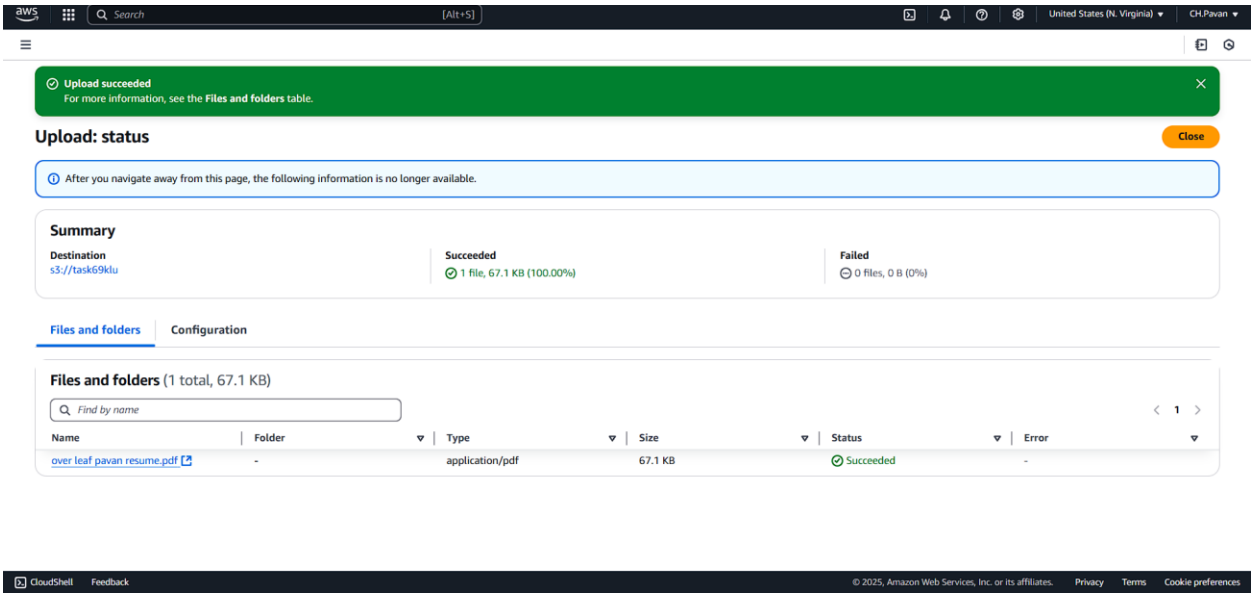

Default Encryption



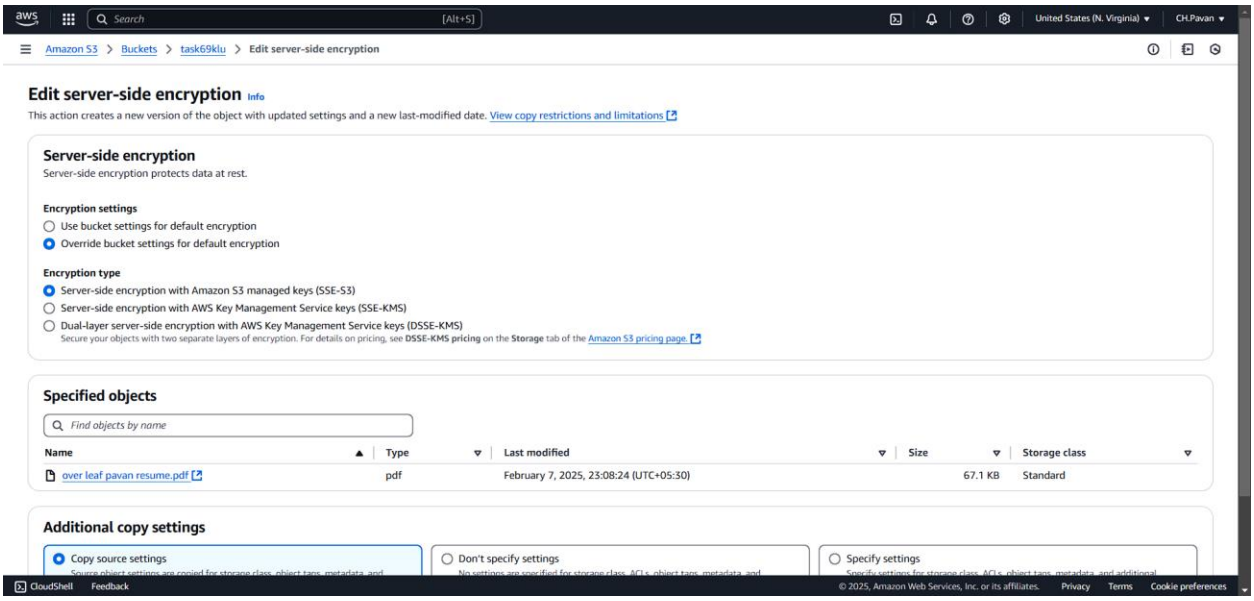

Created Key User




File Uploaded




Server side Encryption

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