### **Lab Guide: Amazon S3 - Managing Buckets, Files, Access Control, and Hosting a Static Website**

## **Objective**

This lab provides a step-by-step guide to:

1. Create an Amazon S3 bucket.
2. Upload a file to the S3 bucket.
3. Grant access to a file for another user.
4. Enable versioning on the bucket.
5. Create a bucket policy and IAM policy.
6. Host a static website on S3.

## **Prerequisites**

1. **AWS Account**: Ensure you have an active AWS account.
2. **AWS CLI Installed**: [Download AWS CLI](https://aws.amazon.com/cli/).
3. **AWS IAM User**: Ensure you have IAM permissions to create and manage S3 resources.

## **Part 1: Creating an S3 Bucket**

### **Step 1: Log in to AWS Management Console**

1. Navigate to [AWS Console](https://aws.amazon.com/console/).
2. Search for **S3** in the AWS services search bar and select **S3**.
3. Click **Create bucket**.

A screenshot of a computer

AI-generated content may be incorrect.

**Summary:** Logged into the AWS management console and then created a bucket.

### **Step 2: Configure the S3 Bucket**

1. **Bucket name**: Enter a globally unique name (e.g., my-s3-bucket-example).
2. **Region**: Choose a preferred AWS region (e.g., us-east-1).

A screenshot of a computer

AI-generated content may be incorrect.

1. **Block Public Access Settings**: Keep **Block all public access** enabled (modify later for public access).

A screenshot of a computer

AI-generated content may be incorrect.

1. Click **Create bucket**.

A screenshot of a computer

AI-generated content may be incorrect.

**Summary:** The bucket is then configured to provide security by blocking public access settings, cost control, scalability, and better accessibility.

## **Part 2: Uploading a File to the S3 Bucket**

### **Step 1: Upload a File via Console**

1. Click on the created bucket.
2. Click **Upload**.
3. Click **Add files** and select a file from your computer.
4. Click **Upload** to complete the process.

A screenshot of a computer

AI-generated content may be incorrect.

### **Step 2: Upload a File via AWS CLI**

Run the following command in the terminal:

aws s3 cp example.txt s3://my-s3-bucket-example/

Replace example.txt with your file name and my-s3-bucket-example with your bucket name.

A computer screen with white text

AI-generated content may be incorrect.

**Summary:** In this step, a file is uploaded to the bucket. Then, a file via AWS CLI is uploaded using the above-mentioned command.

## **Part 3: Enabling Versioning on the Bucket**

### **Step 1: Enable Versioning**

1. Navigate to your S3 bucket.
2. Click **Properties**.
3. Scroll to **Bucket Versioning** and click **Edit**.

A screenshot of a computer

AI-generated content may be incorrect.

1. Enable **Versioning**.
2. Click **Save changes**.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

### **Step 2: Upload a New Version of the File**

1. Re-upload the same file with the same name.
2. Go to the **Versions** tab to see previous versions of the file.

A screenshot of a computer

AI-generated content may be incorrect.

**Summary:** In this step, versioning is enabled to create multiple versions of a file just in case of accidental deletions and for security purposes. Then, a new version of the file is uploaded with the same name.

## **Part 4: Creating a Bucket Policy and IAM Policy**

### **Step 1: Create a Bucket Policy**

1. Navigate to **Permissions** in the bucket.
2. Click **Bucket Policy** and paste the following JSON example:

  
{

"Version": "2012-10-17",

"Statement": [

{

"Effect": "Allow",

"Principal": "\*",

"Action": "s3:GetObject",

"Resource": "arn:aws:s3:::my-s3-bucket-example/\*"

}

]

1. }

A screenshot of a computer

AI-generated content may be incorrect.

1. Click **Save changes**.

A screenshot of a computer

AI-generated content may be incorrect.

### **Step 2: Create an IAM Policy for Access Control**

1. Navigate to **IAM > Policies**.
2. Click **Create policy**.

A screenshot of a computer

AI-generated content may be incorrect.

1. Go to the **JSON** tab and enter the following:

  
{

"Version": "2012-10-17",

"Statement": [

{

"Effect": "Allow",

"Action": "s3:\*",

"Resource": "arn:aws:s3:::my-s3-bucket-example/\*"

}

]

1. }

A screenshot of a computer

AI-generated content may be incorrect.

1. Click **Next** and attach the policy to a user or group.
2. Click **Create policy**.

A green line on a black background

AI-generated content may be incorrect.

**Summary:** In this step, a bucket policy and an IAM policy are created to manage access control in AWS. JSON structure is defined with S3 bucket settings in S3 bucket policy while it is defined attached to users in IAM policies.

## **Part 5: Hosting a Static Website on S3**

### **Step 1: Enable Static Website Hosting**

1. Navigate to your S3 bucket.
2. Click **Properties**.
3. Scroll to **Static website hosting** and click **Edit**.

A screenshot of a computer

AI-generated content may be incorrect.

1. Enable **Static website hosting**.
2. Set **Index document** to index.html.
3. Click **Save changes**.

A screenshot of a computer

AI-generated content may be incorrect.

A green and white rectangle

AI-generated content may be incorrect.

### **Step 2: Upload an HTML File**

1. Create a basic index.html file:

  
<html>

<head><title>My S3 Website</title></head>

<body>

<h1>Welcome to My Static Website on S3</h1>

</body>

1. </html>
2. Upload index.html to the bucket.

A screenshot of a computer

AI-generated content may be incorrect.

### **Step 3: Allow Public Access**

1. Navigate to **Permissions**.
2. Click **Edit public access settings** and uncheck **Block all public access**.
3. Save changes.

A screenshot of a computer

AI-generated content may be incorrect.

1. Apply a **Bucket Policy** for public access:

  
{

"Version": "2012-10-17",

"Statement": [

{

"Effect": "Allow",

"Principal": "\*",

"Action": "s3:GetObject",

"Resource": "arn:aws:s3:::my-s3-bucket-example/\*"

}

]

1. }

A screenshot of a computer

AI-generated content may be incorrect.

1. Save the policy.

### **Step 4: Access the Website**

1. Navigate to **Properties**.
2. Copy the **Bucket Website Endpoint** and open it in a browser.

A screenshot of a computer

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

**Summary:** In this step, a static website is hosted on s3. For that, static website hosting is enabled. Generally, this step is performed for object storage.

## **Deliverables**

1. **Screenshots of:**
   * Bucket creation.
   * File upload.
   * Versioning enabled.
   * Access granted to another user.
   * Static website working in a browser.
2. **Summary Report:**
   * Steps followed.
   * Issues encountered and solutions.