

Experiment 11 — Develop a Serverless Web App using AWS (Using Only S3 Buckets)

Aim

To develop and host a simple static web application using Amazon S3 buckets with static website hosting.

Description

In this experiment, a static website is created and hosted using Amazon Simple Storage Service (S3). S3 allows developers to store HTML, CSS, JavaScript, and image files and serve them directly over the internet using Static Website Hosting. This method is serverless because no EC2 instances or backend servers are needed — AWS automatically manages file storage and web access. The web application can include static content such as a homepage, about page, or a contact form (without backend processing).

Prerequisites

- An AWS Account
- Basic knowledge of HTML and CSS
- Prepared website files (e.g., index.html, style.css, script.js, image.png)
- Access to the AWS Management Console
- Internet browser

Procedure — Step by Step

Step 1: Create an S3 Bucket

1. Go to AWS Console → S3 → Create bucket.
2. Enter a unique bucket name (e.g., my-static-webapp-bucket).
3. Choose a region (e.g., ap-south-1).
4. In Block Public Access settings, uncheck “Block all public access.”
5. Acknowledge the warning and click Create bucket.

Step 2: Upload Website Files

1. Open your created bucket.
2. Click Upload → Add files and select your web files (index.html, style.css, etc.).
3. Click Upload to store them in the bucket.

Step 3: Enable Static Website Hosting

1. In your S3 bucket, go to the Properties tab.
2. Scroll down to Static website hosting and click Edit.
3. Select Enable.
4. For Index document, enter index.html.
5. Click Save changes.
6. Note down the Bucket website endpoint (this is your website’s public URL).

Step 4: Set Bucket Policy for Public Access

1. Go to the Permissions tab → Bucket Policy → Click Edit.
2. Paste the following policy (replace YOUR_BUCKET_NAME with your actual bucket name):

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

```
"Statement": [  
  {  
    "Sid": "PublicReadGetObject",  
    "Effect": "Allow",  
    "Principal": "*",  
    "Action": "s3:GetObject",  
    "Resource": "arn:aws:s3:::YOUR_BUCKET_NAME/*"  
  }  
]  
}
```

Step 5: Test the Website

1. Open the Static Website Hosting URL shown in the Properties tab.
2. Example: <http://my-static-webapp-bucket.s3-website-ap-south-1.amazonaws.com>
3. You should see your hosted webpage.

Step 6 (Optional):

Add more pages (like about.html, contact.html) and update links in index.html.

Expected Result

After completing this experiment, the static website should be successfully hosted on Amazon S3 and accessible using the S3 website endpoint. No web server or backend configuration is required, making it a completely serverless web app.

Verification Checklist

- Bucket created and public access allowed
- Website hosting enabled with index document set
- Files uploaded
- Public bucket policy applied
- Website loads using the S3 endpoint URL

Result

A static serverless web application is successfully developed and deployed using AWS S3 bucket static website hosting.