Lab 01: S3 Static Website Hosting

Lab Overview

Amazon S3 (Simple Storage Service) can host entire static websites. When you enable static website hosting on a bucket, S3 serves your HTML, CSS, and JavaScript files directly to visitors — no EC2 instance, no web server, no OS to patch. This is Lab 01 of the Cloud Practice Labs AWS study series.

Service	Purpose	Free Tier
Amazon S3	Stores and serves HTML, CSS, and image files as a static website	Yes
AWS IAM	Bucket policy grants public read access so visitors can load pages	Yes

■ **NOTE:** S3 Free Tier: 5 GB storage, 20,000 GET requests, and 2,000 PUT requests per month at no charge.

Prerequisites

- An active AWS account (free tier is sufficient)
- Access to the AWS Management Console at console.aws.amazon.com
- A basic index.html file ready to upload
- A text editor (Notepad, VS Code, or any editor)

✓ **TIP:** Start simple: save Hello, AWS Cloud! as index.html. Replace with a polished page later.

1 AWS Management Console — Sign In and Navigate to S3

1. Go to console.aws.amazon.com and sign in
2. In the top-right corner click the region dropdown
3. Select US East (N. Virginia) — us-east-1
4. In the top search bar type S3 and click S3

■ **NOTE:** Choosing us-east-1 is required for CloudFront compatibility in Lab 02.

2 Amazon S3 — Create Your S3 Bucket

Bucket names must be globally unique across all of AWS.

1. On the S3 console click Create bucket
2. Bucket name: enter a unique name — example: my-cloudpracticelabs-site
3. AWS Region: confirm us-east-1 is selected
4. Object Ownership: leave default (ACLs disabled)
5. Block Public Access settings — UNCHECK Block all public access
6. Check the acknowledgment checkbox and click Create bucket

■ **WARNING:** Naming rules: globally unique, lowercase, 3–63 characters, letters/numbers/hyphens only.

3 Amazon S3 — Properties Tab
Enable Static Website Hosting

1. Click on your bucket name to open it
2. Click the Properties tab
3. Scroll to the bottom — find Static website hosting and click Edit
4. Select Enable → Hosting type: Host a static website
5. Index document: index.html
6. Error document: error.html
7. Click Save changes
8. Copy and save the Bucket website endpoint URL that now appears

✓ **TIP:** The Index document is the default page served at the root of your site.

4 AWS IAM — Bucket Policy
Add a Public Read Bucket Policy

Paste the following JSON policy. Replace YOUR-BUCKET-NAME with your actual bucket name.

```
{
  "Version": "2012-10-17",
  "Statement": [{
    "Sid": "PublicReadGetObject",
    "Effect": "Allow",
    "Principal": "*",
    "Action": "s3:GetObject",
    "Resource": "arn:aws:s3:::YOUR-BUCKET-NAME/*"
  }]
}
```

1. Click the Permissions tab → Bucket policy → Edit
2. Paste the JSON above (replacing YOUR-BUCKET-NAME) and click Save changes
3. A red Publicly accessible badge will appear — this confirms the policy is active

✗ **IMPORTANT:** The Resource line must end with /* — without it files will return 403 Access Denied errors.

5 Amazon S3 — Objects Tab
Upload Your Website Files

1. Click the Objects tab on your bucket
2. Click Upload → Add files → select index.html (and error.html if you have it)
3. Leave all other settings as default and click Upload
4. Wait for the green success banner then click Close

Optional — Upload via AWS CLI

```
aws s3 cp index.html s3://your-bucket-name/
aws s3 sync ./website/ s3://your-bucket-name/ --delete
```

6 **Web Browser**
Test Your Live Website

1. Go back to Properties → Static website hosting
2. Click the Bucket website endpoint URL
3. Your index.html page should load in the browser
4. Test the error page: add /fakepage.html to the URL — error.html should appear

✓ **TIP:** Your site is live on AWS over HTTP. Proceed to Lab 02 to add HTTPS and a custom domain.

Problem	Cause	Fix
403 Access Denied	Bucket policy missing or wrong	Re-check Step 4 — Resource must end with /*
404 Not Found	index.html not uploaded	Check Objects tab — confirm index.html exists
Blank/no CSS	Supporting files not uploaded	Upload all CSS, JS, and image files too

Verification Checklist

- ■ S3 bucket created with a globally unique name in us-east-1
- ■ Block Public Access is disabled on the bucket
- ■ Static website hosting enabled — index document: index.html
- ■ Bucket policy saved with Resource ARN ending in /*
- ■ index.html uploaded and visible in the Objects tab
- ■ Bucket website endpoint URL opens index.html in a browser
- ■ A non-existent path returns the error.html page

What You Learned

- • Amazon S3 fundamentals — buckets, objects, global naming, regions, and storage classes
- • Static website hosting — how to configure S3 to serve HTML, index documents, and error documents
- • IAM bucket policies — JSON structure and how s3:GetObject grants public read access
- • Block Public Access — multi-layer protection and how to allow access via policy
- • HTTP vs. HTTPS — S3 endpoints serve HTTP only; Lab 02 adds HTTPS via CloudFront and ACM

Lab Cleanup — Delete Your Resources

✗ **IMPORTANT:** If you plan to continue to Lab 02, keep this bucket — Lab 02 builds on it.

#	Resource	How to Delete
1	S3 Bucket Objects	S3 → bucket → Objects tab → select all → Delete → type permanently delete → confirm
2	S3 Bucket	S3 → bucket list → select bucket → Delete → type bucket name → confirm

■ **NOTE:** S3 buckets cannot be deleted unless completely empty. Always empty the bucket first.