

AWS S3 (Simple Storage Service)

Overview

- **Purpose**: AWS S3 allows you to store and retrieve any amount of data from anywhere on the web.
- **Analogy**: Think of S3 as a cloud-based drive where you can store files and folders.

Key Concepts

Buckets

- **Definition**: Buckets are containers for storing data, similar to folders.
- **Naming**: Bucket names must be globally unique as they form part of the bucket's URL.
- **Creating a Bucket**:
- Command: `aws s3 mb s3://your-unique-bucket-name`

Objects

- **Definition**: Objects are the files and data stored within a bucket.
- **Structure**: Each object has a key (filename) and a value (the data itself).

Bucket Policies

- **Purpose**: Define permissions to control access to the bucket and its contents.
- **Setting Up a Policy**:
- Example Policy (JSON format) to allow public read access:

```

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

}

...

- **Applying the Policy**:

- Command: `aws s3api put-bucket-policy --bucket your-unique-bucket-name --policy file://bucket-policy.json`

Commands

- **Creating a Bucket**:

- Command: `aws s3 mb s3://your-unique-bucket-name`

- **Uploading a File**:

- To upload a file to your bucket, use:

- Command: `aws s3 cp local-file.txt s3://your-unique-bucket-name/`

- **Listing Objects**:

- To list objects in your bucket, use:

- Command: `aws s3 ls s3://your-unique-bucket-name/`

- **Deleting a File**:

- To delete a file from your bucket, use:

- Command: `aws s3 rm s3://your-unique-bucket-name/local-file.txt`

Access Control

- **Bucket Policy**: Controls who can access the bucket and under what conditions.

- **IAM Policies**: Manage permissions for IAM users and roles to interact with S3.