Steps to create a bucket:

1. Go to S3 Bucket & click on 'Create Bucket'
2. Select 'General Purpose Buckets'.
   - automatically tells me the region.
3. Provide a bucket name.
4. Object Ownership : ACLs disabled.
5. Check the box for Block public access settings.
6. Bucket Versioning -> Enabled.
7. Click on 'Create a Bucket'.

Max. storage limit of EBS -> 16 TiB

GiB ≠ GB
R&D on diff b/w GiB and GB
R&D on JSON

-> S3 provides unlimited storage which can be used to store big dat, backup log file, host a static website.

Static Web Hosting using S3

1. Create a S3 Bucket.
2. Uploading website files.
   - Go to browser and search for '2132 clean work template' provided by 'Tooplate'
   - Download & extract it.
   - Go to bucket and 1st upload all the files.
   - Then, upload the remaining folders, one-by-one.

3. Disable Public Access Block
   - In S3 console, select the Bucket & click on 'Permissions'.
   - Navigate to 'Block Public Access'.
   - Click on 'Edit' & uncheck the box & save the changes.

4. Bucket Policy (some set of rules that will define who can the access the bucket & what actions they can perform on the objects/resources)

- In S3 console, select the Bucket & click on 'Permissions'.
- Navigate to 'Bucket Policy' & click on Edit.
- Click on 'Policy generator' and a new tab will open for you.

Step1: Select 'Policy Type' -> S3 Bucket Policy

Step2: Adding statement(permissions)

- Prinicipal -> * (all users)

↓

specifies to which AWS account, users, roles, these policies will affect/applies to. (Imagine it like a target audience)

- Actions -> GetObject (permission to open,read & download data)

↓

permissions for Prinicipal, i.e, what are they allowed to do

- ARN (Amazon Resource Name) -> arn:aws:s3:::static-web-hosting-m3/*

↓

- a unique identifier for any AWS resources like S3, EC2, VPC, etc. & every resource has an ARN.
- Go back to S3 bucket policy and you will find the bucket's ARN.

arn:partition:service:region:account-id:resource

- Click on 'Add Statement'
- Click on 'Generate policy' -> to generate a JSON with the permissions.
- Copy the policy & click 'Close'.
- Go back to Bucket Policy and inside 'Policy', there is an editor. Paste the generated policy there and click on 'Save changes'.

4. Enable Static Web Hosting

- Go to 'Properties' and check for 'Static Web Hosting'.
- For enabling -> click on 'Edit' & click on 'Enable'.
- Under document -> gave a name 'index.html' & click on 'Save Changes'

-> A URL will be generated will be generated for hosting the website.

Bucket Replication:

>> Bucket replication & Bucket versioning goes hand-in-hand.

Steps:

1. Go inside the bucket & click on 'Management'.
2. Go to the option 'Replication Rules'.
   - It is a configuration that tells, "whatever you upload in the bucket, automatically it will get copied into an another bucket.
3. Click on 'Create Replication rules'.
   - to create a replication rule, Bucket versioning should be enabled.

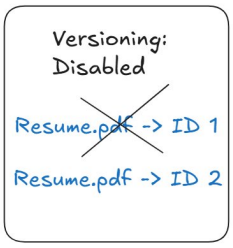
   Resume.pdf -> ID 1 -> Copy of resume.pdf (ID1)
   Resume.pdf -> ID 2 -> Copy of resume.pdf (ID2)
4. For enabling 'Versioninig', click on 'Properties' -> Verify whether Versioning is Enabled. If not, click on 'Edit' & enable it.
5. Before creating replication rule, we need to create a new & separate destination bucket (versioning should be enabled).
   - Source Bucket: the bucket with the real objects.
   - Destination Bucket: the bucket where replicas/duplicates will get stored.
6. Now go to Management & click on 'Create Replication rules'.
7. Give a Replication name & set the status to 'Enable'.
8. Choose the scope of the rule, where select 'Apply to all the objects in the bucket'.
9. Choose the 'Destination bucket from the same account'.
10. In 'IAM Role', select 'Create new role'.
11. In 'Additional replication options', select 'Delete marker replication'.
12. Click on 'Save' & click on 'Yes, replace the objects'.
13. In 'Create Batch Operation Job', you have to create a job.
    - Destination: Browse for destination bucket.
    - Permissions: Create a new IAM role

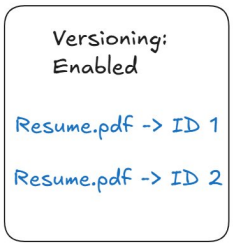
job

source -> dest. ✓
dest. -> source ✗

Bucket Versioning:

Versioning -> to keep track of changes & keeping multiple copies of an object.





>> Enabled : It will keep all the version separately & you can access all the versions by selecting the option of 'Show Versions'.

>> Disabled : It will just keep the latest version of the object & discards the previous versions of the object.

Object size Limit:

1. An individual S3 object can be anywhere from 0 bytes -> to 5 TB.
2. Largest object that can be uploaded in a single operation: 5 GB