S3

-Infinitely scaling storage, Used for
- Backup, Archiving & Storage
- Hosting Media, Applications
- Static Websites

-S3 allows people to store files "objects" in buckets
-Buckets must have globally unique name
-S3 is global service but buckets are created in a region
-No uppercase, no underscore

Objects

-Objects have a key "full path"
- S3://cloudkode-bucket/filexyz.txt
- S3://cloudkode-bucket/folder1/filexyz.txt

-Version ID if versioning is enabled

-User Based:
   •IAM policy - which API is allowed for specific user

 -Resource Based:
   •Bucket policy - allows cross account

S3 Bucket policies is JSON based:
   •Resources: Buckets & Objects
   •Effect: Allow / Deny
   •Action: Get/Put
   •Principle: Account/User

S3 Bucket policy user for:
  •Give access to bucket
  •Force encryption

```json
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "PublicReadAccess",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:GetObject",
      "Resource": "arn:aws:s3:::example-bucket/*"
    }
  ]
}
```

IAM Permissions

IAM Permissions

IAM User

EC2

S3 Bucket

S3 Bucket policy

S3 Bucket policy

External User
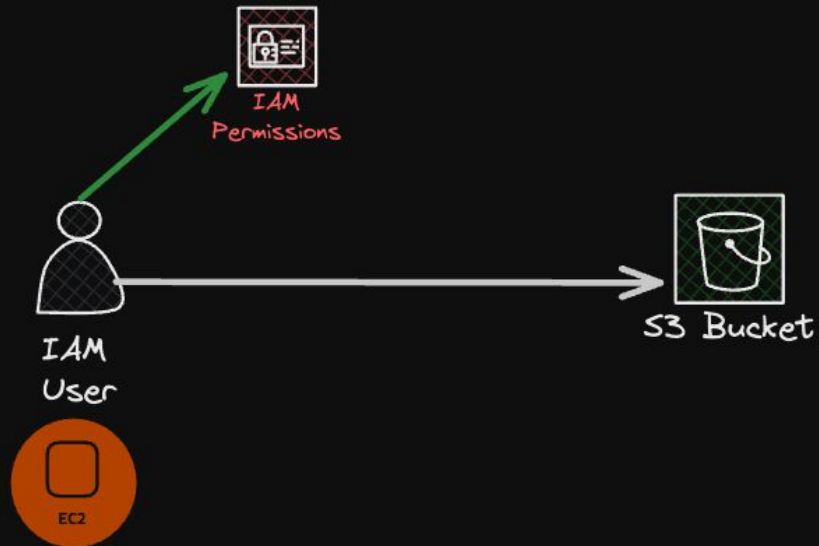
S3 Bucket

Versioning

- enabled on bucket level
- protect against unintended deletes
- easy to rollback
- suspend versioning doesn't delete old versions
- files uploaded before versioning has "null" version

S3 Replication

- Versioning must be enabled
- Cross Region Replication "CRR"
- Same Region Replication "SRR"
- Buckets can be in different accounts
- Give proper permissions to read & write from bucket

Replication Rule

US-east2

Source bucket

EU-West1

Destination bucket

Storage Classes

-S3 Standard - General Purpose "High cost"
-S3 Standard Infrequent Access (IA) "Rapid access"
-S3 One Zone Infrequent Access
-Glacier "pay for Storage & Retrieval"

    ·Instant Retrieval "milisecods Retrieval"
    ·Flexible Retrieval
        -Expedited 1min
        -Standard 3-5 hours
        -Bulk 5-12 hours
    ·Deep Archive
        -Standard 12 hours
        -Bulk 48 hours

-S3 Intelligent Tiering
-you move between Classes Manually or choose S3 Lifecycle configuration