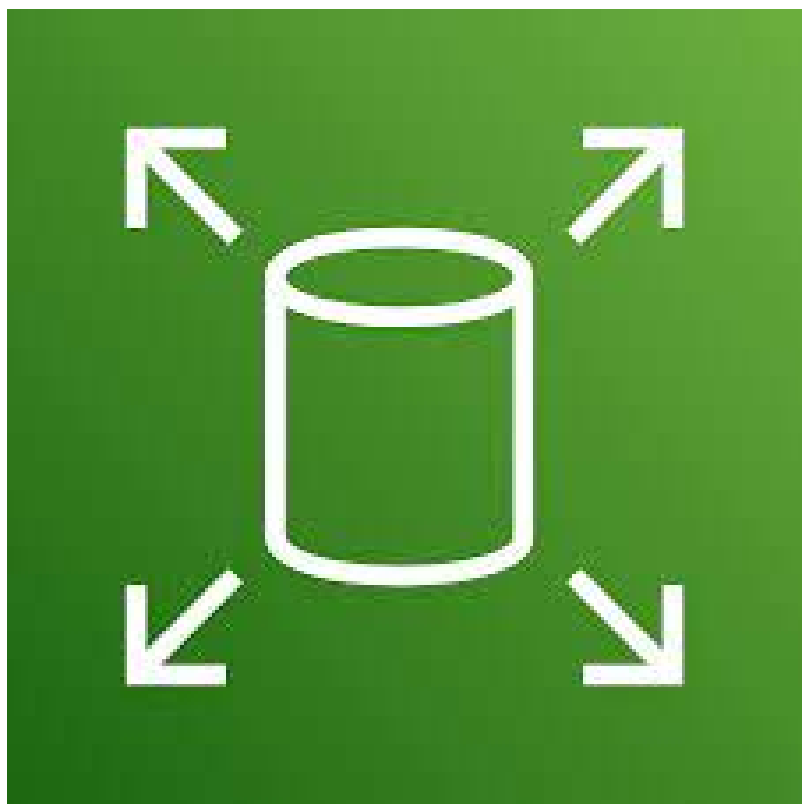
54°

Lab - AWS re/Start

Administración del almacenamiento



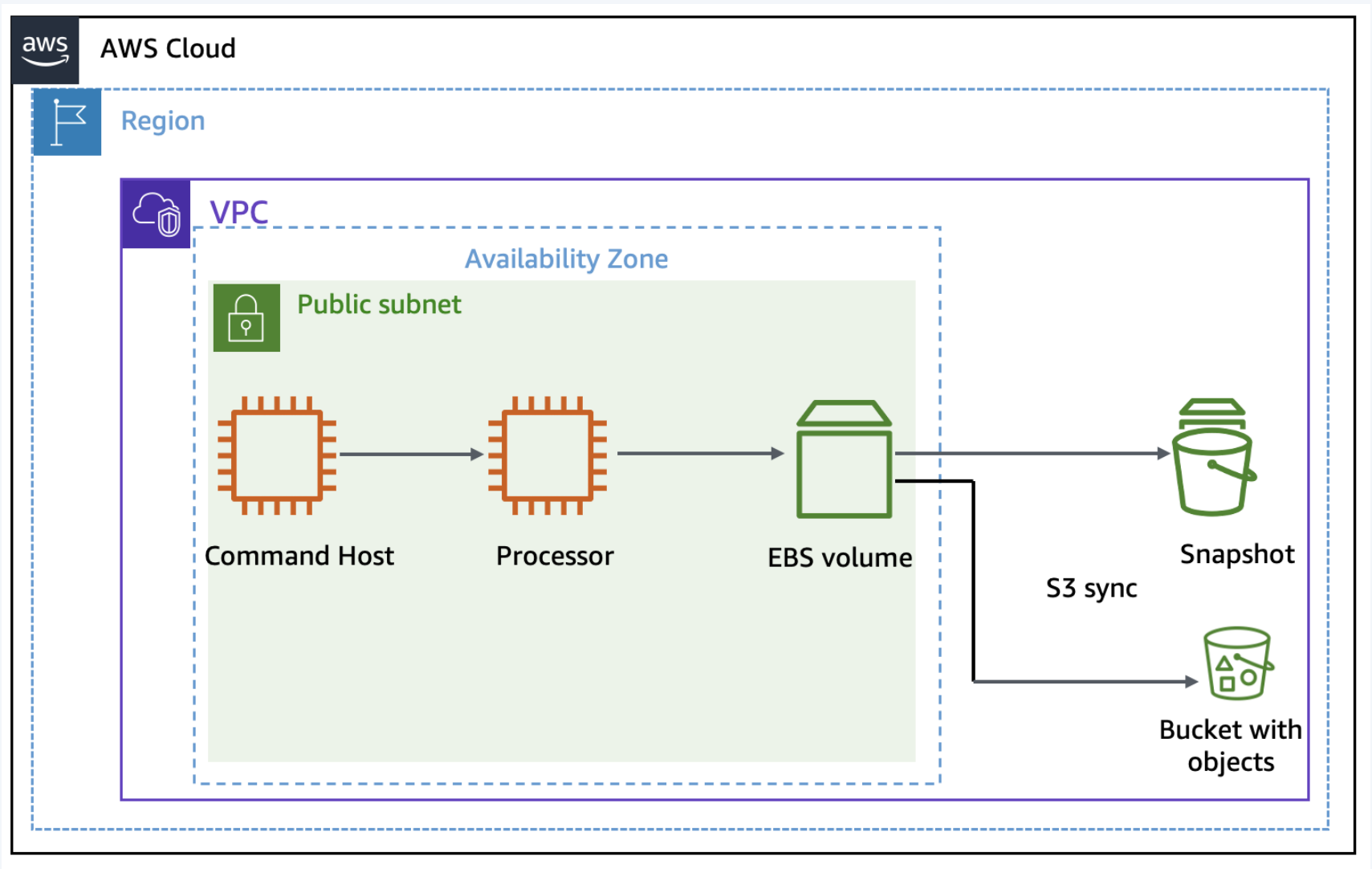
SWIPE

Tarea 01

Interactuando con Amazon EBS

Los objetivos son:

- Crear y mantener snapshots para instancias de EC2.
- Utilizar la sincronización de Amazon S3 para copiar archivos de un volumen de EBS a un bucket de S3.
- Utilizar el versionado de S3 para recuperar archivos eliminados.



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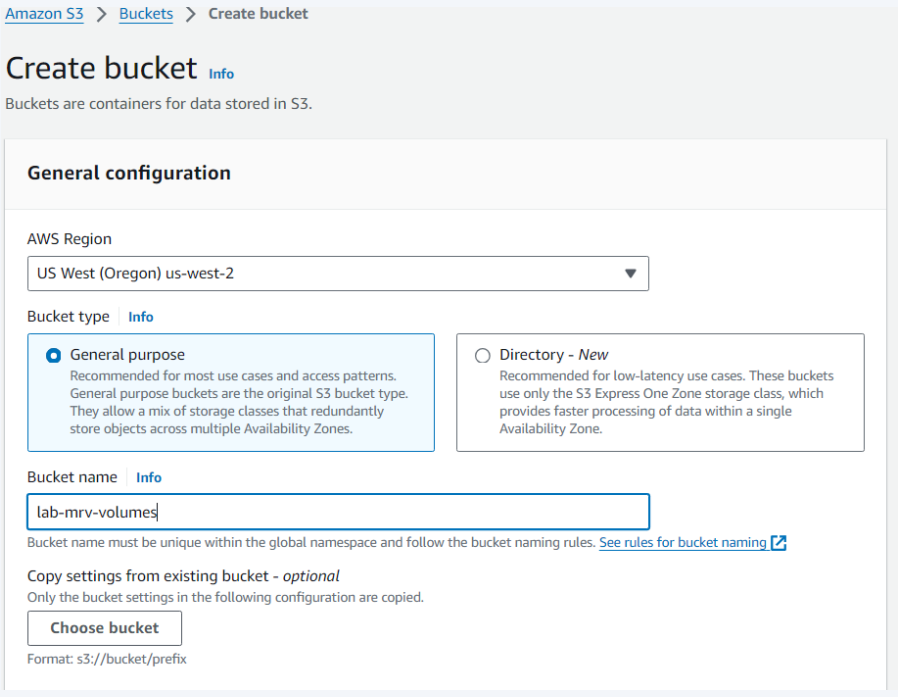
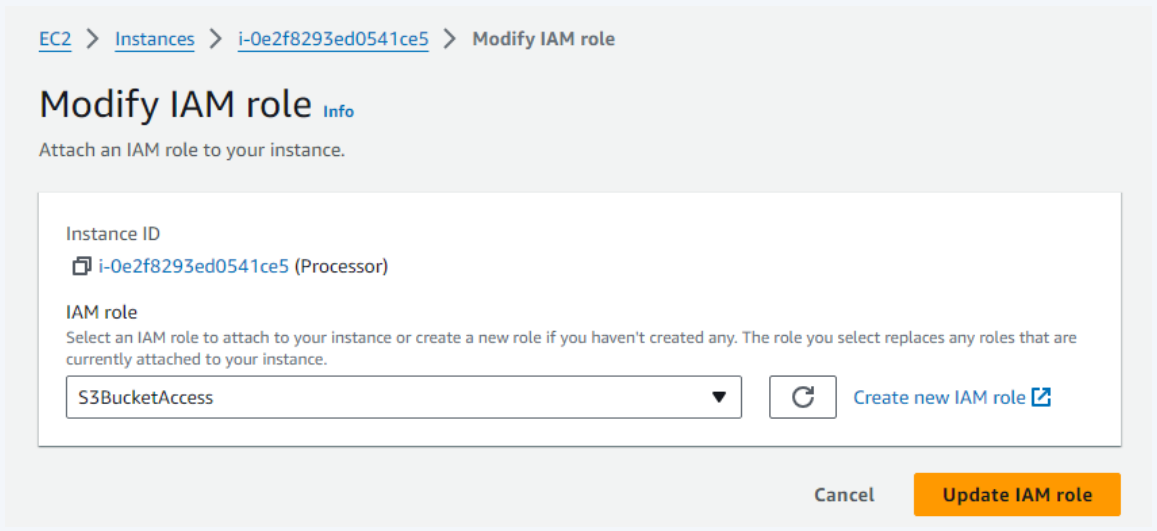
Tarea 01

Empezamos creando un bucket de S3



Asimismo, asignamos un rol a la instancia Processor que le permita interactuar con el bucket de S3



Después, procederemos a tomar el snapshot al volumen EBS que está montado en la instancia Processor

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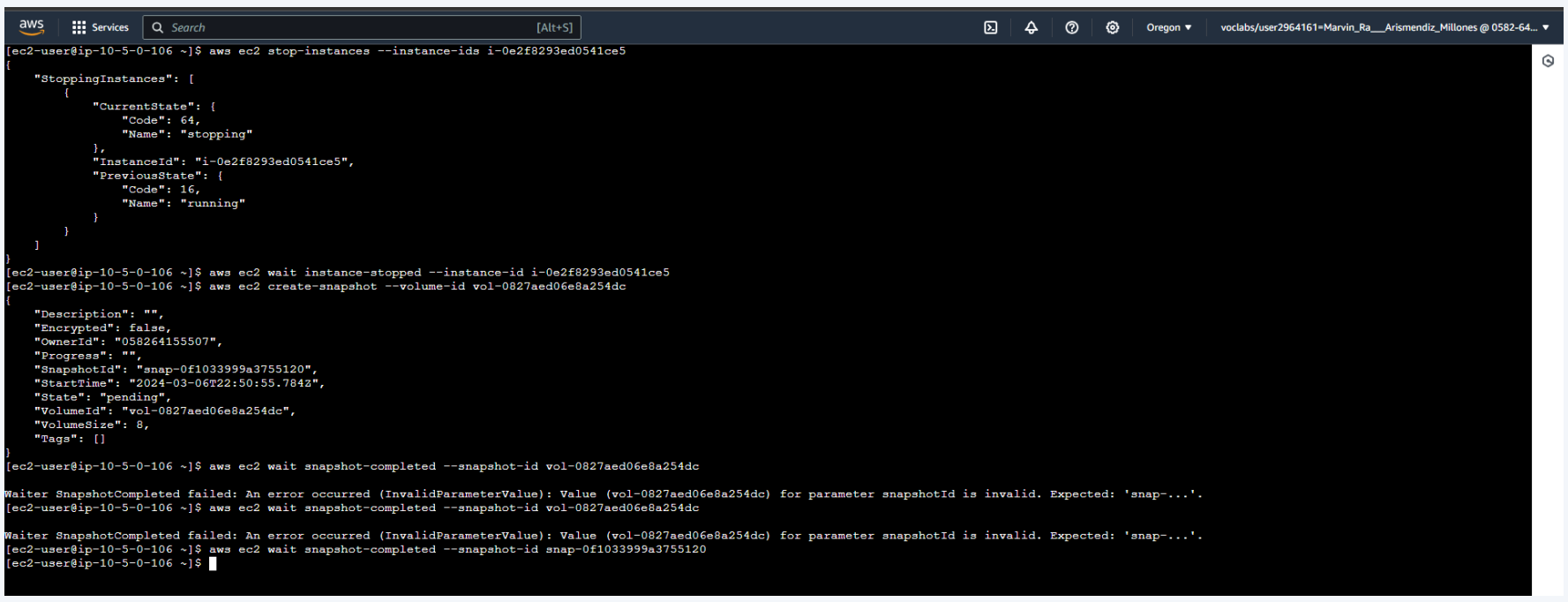
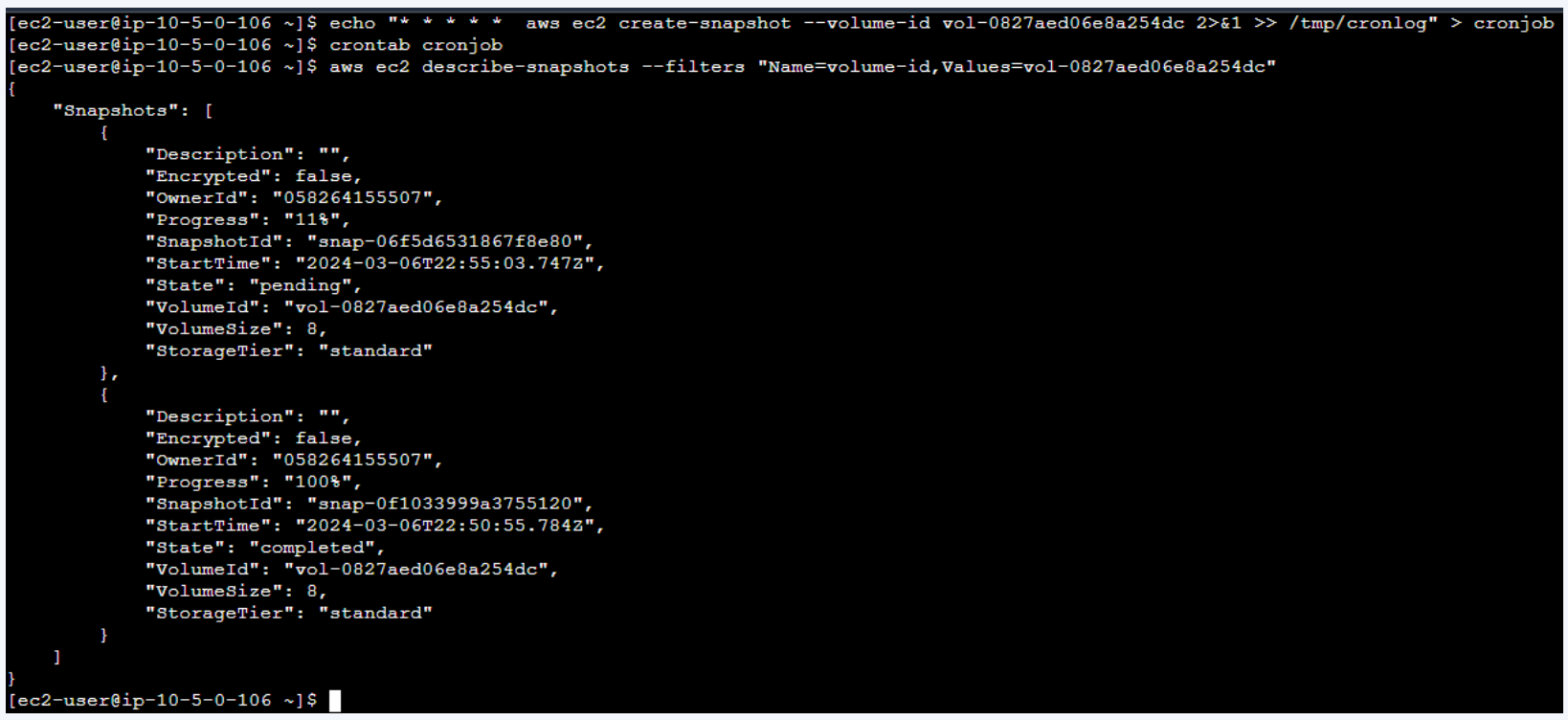
Tarea 01

Esto en la AWS CLI, OJO la instancia debe ser **detenida**



Luego, volvemos a iniciar la instancia EC2. A continuación, programaremos la creación de los siguientes snapshots



Esto lo hacemos mediante un *cron job*

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Tarea 01

Para mantener los dos últimos *snapshots*:

```
[ec2-user@ip-10-5-0-106 ~]$ more /home/ec2-user/snapshotter_v2.py
#!/usr/bin/env python

import boto3

MAX_SNAPSHOTS = 2   # Number of snapshots to keep

# Create the EC2 resource
ec2 = boto3.resource('ec2')

# Get a list of all volumes
volume_iterator = ec2.volumes.all()

# Create a snapshot of each volume
for v in volume_iterator:
  v.create_snapshot()

  # Too many snapshots?
  snapshots = list(v.snapshots.all())
  if len(snapshots) > MAX_SNAPSHOTS:

    # Delete oldest snapshots, but keep MAX_SNAPSHOTS available
    snap_sorted = sorted([(s.id, s.start_time, s) for s in snapshots], key=lambda k: k[1])
    for s in snap_sorted[:-MAX_SNAPSHOTS]:
      print("Deleting snapshot", s[0])
      s[2].delete()
[ec2-user@ip-10-5-0-106 ~]$ python3 snapshotter_v2.py
/usr/local/lib/python3.7/site-packages/boto3/compat.py:82: PythonDeprecationWarning: Boto3 will no longer support Python 3.7 starting December 13, 2023. To continue receiving service updates, bug fixes, and
curity updates please upgrade to Python 3.8 or later. More information can be found here: https://aws.amazon.com/blogs/developer/python-support-policy-updates-for-aws-sdks-and-tools/
  warnings.warn(warning, PythonDeprecationWarning)
Deleting snapshot snap-0f1033999a3755120
Deleting snapshot snap-06f5d6531867f8e80
Deleting snapshot snap-0fe4acb6c85821306
[ec2-user@ip-10-5-0-106 ~]$ aws ec2 describe-snapshots --filters "Name=volume-id, Values=vol-0827aed06e8a254dc" --query 'Snapshots[*].SnapshotId'
[
    "snap-0bad7a06419211f9f",
    "snap-08de8b390087e2672"
]
[ec2-user@ip-10-5-0-106 ~]$
```

Ahora sincronizaremos estos respaldos para que se almacenen en un bucket de S3.

```
us-west-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0f9ee2686242f5318&osUser=ec2-user&region=us-west-2&sshPort=22#/
aws  Services  Search [Alt+S]  Oregon ▾  voclabs/user2964161=Marvin_Ra__Arismendiz_Millones @ 0582-64... ▾
[ec2-user@ip-10-5-0-106 ~]$ wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-100-RSJAWS-1-23732/183-lab-JAWS-managing-storage/s3/files.zip
--2024-03-06 23:03:56--  https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-100-RSJAWS-1-23732/183-lab-JAWS-managing-storage/s3/files.zip
Resolving aws-tc-largeobjects.s3.us-west-2.amazonaws.com (aws-tc-largeobjects.s3.us-west-2.amazonaws.com)... 52.92.138.10, 3.5.78.105, 52.218.170.74, ...
Connecting to aws-tc-largeobjects.s3.us-west-2.amazonaws.com (aws-tc-largeobjects.s3.us-west-2.amazonaws.com)|52.92.138.10|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 72110 (70K) [application/zip]
Saving to: 'files.zip'

100%[=========================================================================================================================================================>] 72,110      --.-K/s   in 0s

2024-03-06 23:03:57 (197 MB/s) - 'files.zip' saved [72110/72110]

[ec2-user@ip-10-5-0-106 ~]$ unzip files.zip
Archive:  files.zip
  inflating: files/file1.txt
  inflating: files/file2.txt
  inflating: files/file3.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3api put-bucket-versioning --bucket lab-mrv-volumesE --versioning-configuration Status=Enabled

An error occurred (NoSuchBucket) when calling the PutBucketVersioning operation: The specified bucket does not exist
[ec2-user@ip-10-5-0-106 ~]$ aws s3api put-bucket-versioning --bucket lab-mrv-volumes --versioning-configuration Status=Enabled
[ec2-user@ip-10-5-0-106 ~]$ aws s3 sync files s3://lab-mrv-volumes/files/
upload: files/file1.txt to s3://lab-mrv-volumes/files/file1.txt
upload: files/file3.txt to s3://lab-mrv-volumes/files/file3.txt
upload: files/file2.txt to s3://lab-mrv-volumes/files/file2.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3 ls s3://lab-mrv-volumes/files/
2024-03-06 23:05:05      30318 file1.txt
2024-03-06 23:05:05      43784 file2.txt
2024-03-06 23:05:05      96675 file3.txt
[ec2-user@ip-10-5-0-106 ~]$ rm files/file1.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3 sync files s3://lab-mrv-volumes/files/ --delete
delete: s3://lab-mrv-volumes/files/file1.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3 ls s3://lab-mrv-volumes/files/
2024-03-06 23:05:05      43784 file2.txt
2024-03-06 23:05:05      96675 file3.txt
[ec2-user@ip-10-5-0-106 ~]$
```

Y también podemos ver como el versionado nos ayuda a recuperar versiones antiguas que hemos eliminado

SWIPE

Tarea 01

Veamos

```
[ec2-user@ip-10-5-0-106 ~]$ aws s3api list-object-versions --bucket lab-mrv-volumes --prefix files/file1.txt

{
    "Versions": [
        {
            "ETag": "\"b76b2b775023e60be16bc332496f8409\"",
            "Size": 30318,
            "StorageClass": "STANDARD",
            "Key": "files/file1.txt",
            "VersionId": "RriyRV1mqkNRpmqIePPldyM4HkRfWDXI",
            "IsLatest": false,
            "LastModified": "2024-03-06T23:05:05.000Z",
            "Owner": {
                "DisplayName": "awslabsc0w7434404t1709383734",
                "ID": "3a1c9c4ea4ecc548519a581069c5dfe839abec1008cdf2f3c97f93aa9c28478d"
            }
        }
    ],
    "DeleteMarkers": [
        {
            "Owner": {
                "DisplayName": "awslabsc0w7434404t1709383734",
                "ID": "3a1c9c4ea4ecc548519a581069c5dfe839abec1008cdf2f3c97f93aa9c28478d"
            },
            "Key": "files/file1.txt",
            "VersionId": "Kw_QRygc.2wFmpJE0xfID0lJJzQH0I_b",
            "IsLatest": true,
            "LastModified": "2024-03-06T23:05:54.000Z"
        }
    ],
    "RequestCharged": null
}
```

Y recuperar dicho archivo “eliminado”

```
[ec2-user@ip-10-5-0-106 ~]$ aws s3api get-object --bucket lab-mrv-volumes --key files/file1.txt --version-id RriyRV1mqkNRpmqIePPldyM4HkRfWDXI files/file1.txt
{
    "AcceptRanges": "bytes",
    "LastModified": "Wed, 06 Mar 2024 23:05:05 GMT",
    "ContentLength": 30318,
    "ETag": "\"b76b2b775023e60be16bc332496f8409\"",
    "VersionId": "RriyRV1mqkNRpmqIePPldyM4HkRfWDXI",
    "ContentType": "text/plain",
    "ServerSideEncryption": "AES256",
    "Metadata": {}
}
[ec2-user@ip-10-5-0-106 ~]$ ls files
file1.txt  file2.txt  file3.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3 sync files s3://lab-mrv-volumes/files/
upload: files/file1.txt to s3://lab-mrv-volumes/files/file1.txt
[ec2-user@ip-10-5-0-106 ~]$ aws s3 ls s3://lab-mrv-volumes/files/
2024-03-06 23:12:39      30318 file1.txt
2024-03-06 23:05:05      43784 file2.txt
2024-03-06 23:05:05      96675 file3.txt
[ec2-user@ip-10-5-0-106 ~]$
```

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