# AWS Cloud Cost Optimization: Identifying Stale EBS Snapshots

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## Goal

Automatically detect and delete EBS snapshots that are no longer associated with active EC2 instances to save storage costs.

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## Step-by-Step Execution Process

### Step 1: Log in to AWS Console

- Open AWS Management Console.
- Ensure IAM permissions to list EC2 instances, describe snapshots, and delete snapshots.

### Step 2: Open AWS Lambda

- Go to **Services → Lambda → Create Function**.
- Choose **Author from Scratch**.
- Function name: `CleanupStaleSnapshots`.
- Runtime: **Python 3.10**.
- IAM Role with permissions:
- `ec2:DescribeSnapshots`
- `ec2:DescribeInstances`
- `ec2:DeleteSnapshot`

### Step 3: Write the Lambda Function

```
import boto3

ec2 = boto3.client('ec2')

def lambda_handler(event, context):
    snapshots = ec2.describe_snapshots(OwnerIds=['self'])['Snapshots']
    instances = ec2.describe_instances(Filters=[{'Name': 'instance-state-
name', 'Values': ['running','stopped']}])
    active_volumes = set()
    for reservation in instances['Reservations']:
        for instance in reservation['Instances']:
            for volume in instance['BlockDeviceMappings']:
                active_volumes.add(volume['Ebs']['VolumeId'])
    for snap in snapshots:
        if 'VolumeId' in snap and snap['VolumeId'] not in active_volumes:
            print(f"Deleting stale snapshot: {snap['SnapshotId']}")
```

```
            ec2.delete_snapshot(SnapshotId=snap['SnapshotId'])
    return {"status": "Completed"}
```

### Step 4: Configure Lambda Trigger (Optional)

- Go to **Triggers → Add Trigger → EventBridge (CloudWatch Events)**.
- Set a schedule (daily/weekly) for automatic execution.

### Step 5: Test the Lambda Function

- Click **Test → Configure Test Event**.
- Use a dummy event `{}`.
- Run test → Verify output in CloudWatch Logs.

### Step 6: Monitor and Optimize

- Monitor **CloudWatch Logs** to confirm deleted snapshots.
- Add filters or tags to protect important snapshots.

### Step 7: Result

- Stale snapshots are deleted automatically.
- Storage costs are optimized without manual intervention.