

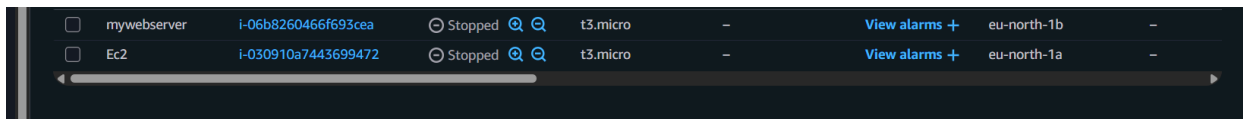
Assignment 1: Migration of Virtual Machine from AWS EC2 to Google Compute Engine

Objective

The objective of this assignment is to migrate a virtual machine hosted on Amazon Web Services (AWS) Elastic Compute Cloud (EC2) to Google Cloud Platform (GCP) Compute Engine using *Migrate to Virtual Machines* service.

Step 1: Launching the EC2 Instance on AWS

- Logged into AWS Management Console.
- Navigated to **EC2 Dashboard** and launched a new EC2 instance.







Step 2: Creating IAM User for Migration

- Opened the **IAM (Identity and Access Management)** service in AWS.
- Created a new user named `gcp-migration-user1`.
- Enabled **Programmatic Access** so that the user can be used with external tools.
- Attached the following key permissions:
 - `AmazonEC2FullAccess` – To allow managing and reading EC2 instance metadata.
 - `AmazonS3FullAccess` – Required because snapshots are temporarily exported.
 - `IAMReadOnlyAccess` – To read identity configuration.

- **Custom EBS (Elastic Block Store) Policy** – Because EC2 full access does not include block-level snapshot export.

Permissions policies (4) Remove Add permissions ▼

Permissions are defined by policies attached to the user directly or through groups.

Search	Filter by Type		
Policy name ↗	Type	Attached via ↗	
<input type="checkbox"/>  AmazonEC2FullAccess	AWS managed	Directly	
<input type="checkbox"/>  AmazonS3FullAccess	AWS managed	Directly	
<input type="checkbox"/>  GCP-EC2-Migration-EBS-Access	Customer managed	Directly	
<input type="checkbox"/>  IAMReadOnlyAccess	AWS managed	Directly	

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "ebs:ListSnapshotBlocks",
        "ebs:GetSnapshotBlock",
        "ec2:DescribeSnapshots",
        "ec2:CreateSnapshot",
        "ec2:CopySnapshot",
        "ec2:DescribeImages",
        "ec2:RegisterImage"
      ],
      "Resource": "*"
    }
  ]
}
```

These permissions allow GCP to read and transfer disk data from AWS.

Step 3: Setting Up Google Cloud Platform

- Logged into Google Cloud Console.
- Enabled Billing and activated the Compute Engine API.
- Opened Migrate to Virtual Machines service.

Creating AWS Source Connection:

- Clicked Add AWS Source.
- Entered Access Key ID and Secret Access Key of IAM User created earlier.
- Provided AWS region used by EC2 instance.
- Source status changed to Active, indicating successful connectivity.

The screenshot displays the 'Migrate to Virtual Machines' dashboard in the VMware vSphere interface. The left sidebar shows navigation options like 'Overview', 'Hosts', 'Templates', 'Nodes', 'Tags', 'Use Disk...', 'S...', and 'Virtual Machi...'. The main panel has tabs for 'Dashboard', 'Sources', 'Migrate VMs', 'Migrate attached disks', 'Image imports', 'Machine image imports', 'Groups', and 'Targets'. The 'Sources' tab is active, showing a dropdown menu with 'aws' selected and an 'Add source' button. Below this, a summary box indicates the source is 'Active', the AWS region is 'eu-north-1', the target region is 'asia-south1', there is 1 migrating VM, and 2 total VMs. A 'Source VM list' table is shown with columns for Source VM Name, Source VM ID, Source VM status, CPUs, Logical CPUs, Memory (GB), Number of disks, and Committed s. The table lists two VMs: 'Ec2' and 'mywebserver', both with status 'Suspended'. A note at the bottom states: 'Source VM list is updated periodically. It was last updated 6 minutes ago.'

Source VM Name	Source VM ID	Source VM status	CPUs	Logical CPUs	Memory (GB)	Number of disks	Committed s
Ec2	i-030910a7443699472	Suspended	1	2	1	1	8
mywebserver	i-06b8260466f693cea	Suspended	1	2	1	1	8

Migration Completion

Once replication completed:

- Status changed to Ready for Cutover.
- At this stage, GCP can create a bootable VM copy.

The migration process is now complete and the VM is ready to be tested or fully moved to GCP

DashboardSourcesMigrate VMsMigrate attached disksImage importsMachine image importsGroups

Finish the migration of a single VM

Set up a group of VMs

VM migrations are all of your VMs that are currently in the migration process. [Read more](#)

Total migrating VMs1

Ready0

First sync0

Active1

Paused0

Cut-over0

Finalised0

Expired0

Finalised (expired)0

Migrations (1 selected)Edit target detailsMigrationCut-over and test-cloneGroup AssignmentDelete

FilterFilter migrations

	Source asset name	Source asset ID	Source status	Region	Architecture	Replication status	Days until expiry	Estimated cost
<input checked="" type="checkbox"/>	Ec2	i-030910a7443699472	Active	asia-south1	x86-64	Active (Idle)	100	N/A

Replication was resumed