

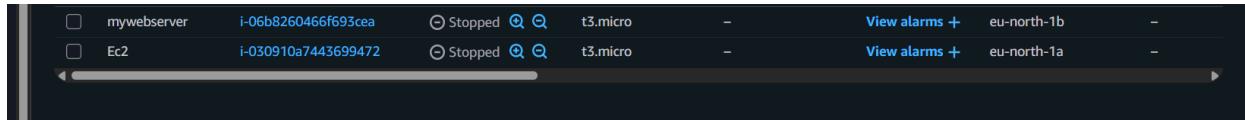
Assignment 1: Migration of Virtual Machine from AWS EC2 to Google Compute Engine

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)		
Permissions are defined by policies attached to the user directly or through groups.		
<input type="button" value="C"/> Remove <input type="button" value="Add permissions"/> <input type="button" value="▼"/>		
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 shows the 'Sources' tab of the Migrate to Virtual Machines interface. A dropdown menu is open, showing 'aws' selected. A button labeled 'Add source' is visible. Below this, a summary table provides details about the source environment:

Source status	AWS region	Target region	Migrating VMs	Total VMs
Active	eu-north-1	asia-south1	1	2

Below the summary table is a 'Source VM list' section. It includes a filter input, buttons for 'Add migrations', 'Add to group', and 'Export'. The table lists two VMs:

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

A note at the bottom states: 'Source VM list is updated periodically. It was last updated 6 minutes ago.'

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

Dashboard	Sources	Migrate VMs	Migrate attached disks	Image imports	Machine image imports	Groups	
plates	odes	yes	se discou...				Finish the migration of a single VM Set up a group of VMs

Total migrating VMs	Ready	First sync	Active	Paused	Cut-over	Finalised	Expired
1	0	0	1	0	0	0	0
Finalised (expired)							
0							

Migrations (1 selected) [Edit target details](#) [Migration](#) [Cut-over and test-clone](#) [Group Assignment](#) [Delete](#)

[Filter migrations](#)

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

Replication was resumed