

# Lab 6 – Observing Autoscaling on the Cloud

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**Course:** 2IS077 – Big Data Analytics

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## Steps Performed

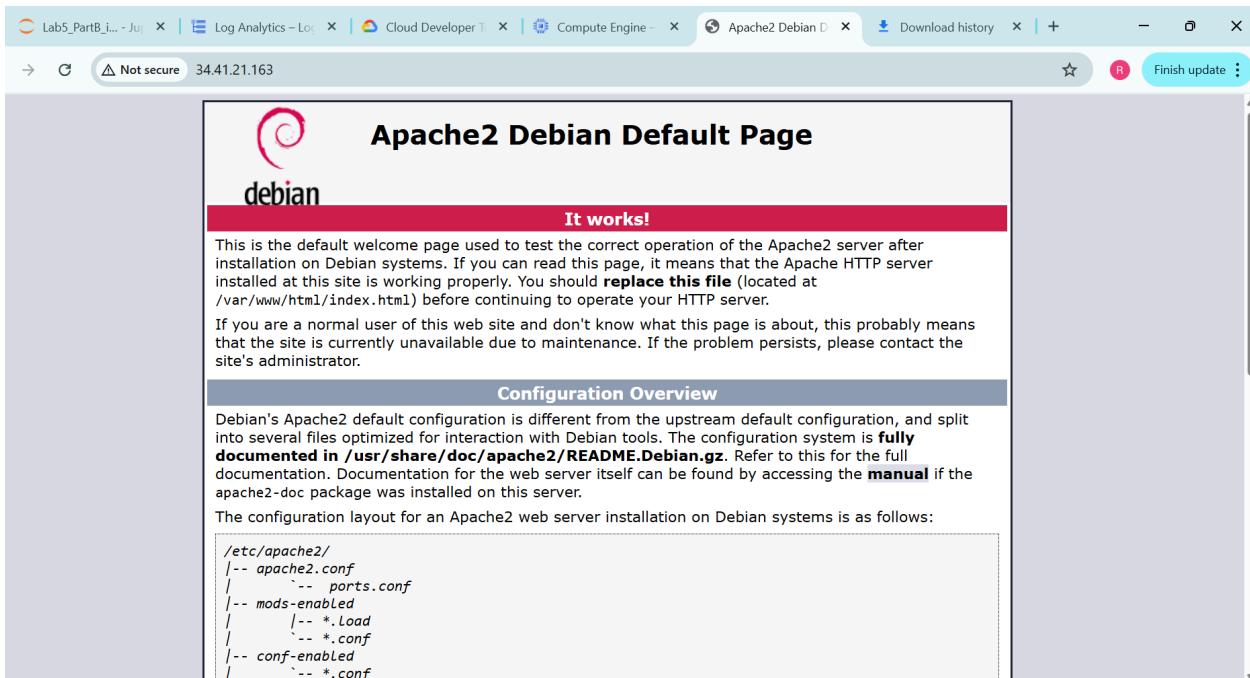
### 1. Prerequisites and Setup

- Google Cloud project with billing enabled.
- Compute Engine API active.
- Necessary IAM permissions available.

### 2. Instance Template Creation

- Created **autoscaling-web-app-template**.
- Machine type: **e2-medium** (2 vCPU, 4 GB memory).
- Boot disk: Debian GNU/Linux 12 (10 GB).
- Enabled HTTP traffic in firewall rules.
- Startup script installed Apache web server.

### 3. Screenshot: Apache default page verified



### 4. Managed Instance Group (MIG) Creation

- Created **autoscaling-web-app-mig** using the template.

- Autoscaling enabled: min 1, max 3 instances.
- Target metric: CPU utilization (75%).

## 5. Screenshot: Autoscaling – 3 VM instances

The screenshot shows the Google Cloud Compute Engine VM instances page. The left sidebar is collapsed. The main area displays a table of VM instances. The table has columns for Status, Name, Zone, Recommendations, In use by, Interr, Connect, and a more options menu. There are four rows in the table, but only the first three are fully visible. The first row shows an instance named 'autoscaling-web-app-mig-3j47' in 'us-central1-c' zone, managed by 'autoscaling-' and connected via SSH (nic0). The second row shows 'autoscaling-web-app-mig-k03g' in 'us-central1-f', also managed by 'autoscaling-' and connected via SSH (nic0). The third row shows 'autoscaling-web-app-mig-w4xr' in 'us-central1-b', managed by 'autoscaling-' and connected via SSH (nic0). The fourth row, 'lab5-notebook', is partially visible in the 'europe-west1-b' zone. A 'Related actions' section is at the bottom of the table.

Status	Name ↑	Zone	Recommendations	In use by	Interr	Connect
<input checked="" type="checkbox"/>	<a href="#">autoscaling-web-app-mig-3j47</a>	us-central1-c		<a href="#">autoscaling-</a> ↗	10.128 (nic0)	SSH ↴
<input checked="" type="checkbox"/>	<a href="#">autoscaling-web-app-mig-k03g</a>	us-central1-f		<a href="#">autoscaling-</a> ↗	10.128 (nic0)	SSH ↴
<input checked="" type="checkbox"/>	<a href="#">autoscaling-web-app-mig-w4xr</a>	us-central1-b		<a href="#">autoscaling-</a> ↗	10.128 (nic0)	SSH ↴
<input type="checkbox"/>	<a href="#">lab5-notebook</a>	europe-west1-b			10.132 (nic0)	SSH ↴

## 6. Testing Autoscaling

- Verified Apache default page loaded on external IP.
- Observed automatic scale-out and scale-in based on CPU load.

## 7. Logs Collection

- Opened **Logs Explorer** in GCP Console.
- Exported scaling events as a **JSON file**. This file includes timestamps, instance IDs, and scaling actions.

## Notes

- Only one VM was tested; no additional setup required.
- JSON file contains all recorded scaling events for the lab demonstration.