

# Disaster Recovery Plan

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# Disaster Recovery Processing Personnel

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# Disaster Recovery Procedure using Hot Disaster Recovery Pattern on Google Cloud

## 1. Steps to be taken before a disaster occurs

- a. Create a VPC network.
- b. Create a custom image that's configured with the application service.
- c. Use that image to create an instance template.
- d. Using this instance template, configure a regional managed instance group. This is to ensure resilience if the whole zone was to go down, the instances will still be available in other regions to keep the application running.
- e. Make sure the HTTP and instance health checks are configured at the managed instance groups to verify that the services and instances are properly running within a group. This ensures that if a service on an instance fails, the group automatically re-creates that instance.
- f. Configure load balancing using the managed instance group that spans across three zones.
- g. Create CloudSQL in one zone as a master and enable a replica in another zone. In case the master becomes unavailable replica can be promoted to become the master.
- h. Configure the Cloud DNS to point at the primary application.

## 2. Steps to be taken during/after the disaster occurs

In case of disaster, the system will recover on its own. There are no additional steps needed since the application is a self-healing system with High Availability built-in. The instances come and go as needed in different zones during the disaster.

# Data Disaster Recovery on Google Cloud

## 1. Steps to be taken before a disaster occurs

- a. Create a VPC network.
- b. Create a custom image that's configured with the application service. As part of the image, make sure a Persistent Disk is attached for data being processed.
- c. Create a snapshot from the attached Persistent Disk and configure a startup script to create a persistent disk from the latest snapshot and to mount the disk.
- d. Create an instance template from the image created.
- e. Using this instance template, configure a regional managed instance group with a target size of one.
- f. Make sure the health checks are configured at the Managed Instance Groups.
- g. Configure internal load balancing using the regional managed instance group.
- h. Configure a scheduled task to create regular snapshots of the persistent disk.

## 2. Steps to be taken during/after the disaster occurs

There is no need to initiate any failover steps as they occur automatically due to the default High Availability features available in Google cloud. In the event of a zonal failure, the regional instance group launches a replacement instance in a different zone in the same region. A new persistent disk is created from the latest snapshot and attached to the new instance.