

**Enable Geo-Replication and Prioritize Failovers**

Template Version: 2.0

**Introduction**

This exercise will walk you through the process of enabling geo-replication and setting failover priorities in the Azure portal.

**Estimated Time**

25 minutes.

**Objectives**

At the end of this lab, you will be able to:

* Enable Geo-Replication in Cosmos DB
* Set automatic failover priorities.
* Perform a manual failover
* Programmatically access regions within your Cosmos DB Account

LAB: Enable Geo-Replication and Prioritize Failovers

**Enable Geo-replication**

1. Navigate to your Cosmos DB Account created in Exercise 1.
2. In the Settings section, select **Replicate data globally**
3. Click on 3-4 new regions and click **Save** in the toolbar
4. Wait for the replication process (This may take several minutes)

**Configure Automatic Failover**

1. Click **Automatic Failover** in tool bar
2. Click **On** under *Enable Automatic Failover*
3. Drag and drop the regions to show failover priorities for your write region
4. Click **OK**

**Perform a** **Manual Failover**

1. Open the view-request-charges program from Exercise 1.
2. Navigate to *com.microsoft.azure.cosmosdb.sample.QueryManager.java* and modify the OutputResults method as follows:

queryObservable.subscribe(queryResultPage -> {

System.out.println(callingMethodName + ": Got a page of query result with " +

queryResultPage.getResults().size() + " document(s)" + " and request charge of \u001B[46m \u001B[30m " +

queryResultPage.getRequestCharge() + " \u001B[0m \u001B[40m **from " + client.getReadEndpoint()**);

1. From the root folder of the project, open a terminal/bash/cmd interface and run the following Maven CLI commands:

mvn clean package

mvn exec:java

1. Observe the output results and notice the read endpoint used for the query. Notice the datacenter region prefix that you initially selected.
2. From the Azure Portal, Settings->Replicate data globally blade, click on Manual Failover in the blade’s top menu.
3. Choose a read region to fail over the write region to.
4. Check the I understand and agree to trigger a failover on my current Write Region box and choose ok
5. Once the manual failover is complete, return to the view-request-charges program CLI and re-run the following command::

mvn exec:java

1. Observe the output results and notice the read endpoint used for the query. The datacenter region prefix has changed to the failover region.

**Programmatically override a read endpoint.**

1. Navigate to *com.microsoft.azure.cosmosdb.sample.QueryManager.java* and modify the QueryManager constructor(around line 48) as follows. Add this code:

ConnectionPolicy connectionPolicy = new ConnectionPolicy();

connectionPolicy.setEnableEndpointDiscovery(true);

List<String> locations = new ArrayList<>();

locations.add("UK West"); //Change to a valid location for your account

connectionPolicy.setPreferredLocations(locations);

1. Change the connection policy of the document client from ConnectionPolicy.GetDefault() to **connectionPolicy** (variable defined in the last step).
2. Return to the CLI and re-run the following command:

mvn exec:java

1. Observe the output results and notice the datacenter region prefix has changed to the programmatically defined region.