Lab Environment Setup - Local

In this hands-on exercise, you will:

- Download and install Hazelcast IMDG on your local device
- Modify the hazelcast.xml configuration file
- Launch a local Hazelcast cluster
- Launch Management Center

Before You Start

Hazelcast IMDG is a Java application and requires the Java Runtime Environment (JRE), version 8.0 or later. Make sure you have JRE installed. Download JRE

Part 1: Acquire Hazelcast IMDG

Choose one of the following options:

ZIP or TAR

1. Browse to hazelcast.org.
2. Download the package `hazelcast-<version>.zip` or `hazelcast-<version>.tar.gz`.
3. Extract the downloaded file.
4. Open a new project in your IDE. Add the file `hazelcast-<version>.jar` to your classpath.

Docker

You can use Docker to launch one or more instances of Hazelcast within a Docker container. Simply launch Hazelcast from your Linux prompt – see the syntax under Part 3.

Part 2: Customizing the Configuration

One of the labs demonstrates map eviction. As this is a function performed by the Hazelcast cluster, you need to include the eviction configuration in the cluster configuration file hazelcast.xml.

1. Find the default configuration file.
    a. If you downloaded Hazelcast, `hazelcast.xml` is located in the `/bin` directory.
    b. If you're using Docker, download `hazelcast-default.xml` from GitHub. Rename it `hazelcast.xml`.

2. Open `hazelcast.xml` in your favorite text editor.

3. Find the `<map name=”default>` section in the file. Above that, insert the following lines:

```
<map name="training-eviction">
    <eviction eviction-policy="LFU" max-size-policy="USED_HEAP_SIZE" size="1"/>
</map>
```

4. Save the file.

Part 3: Start the Cluster

Starting the cluster will depend on the method you used to acquire Hazelcast.

ZIP/TAR

Go to the `bin` directory and use the `start.sh` script (or `start.bat` if you are on Windows) to start two instances of Hazelcast.

Docker

1. Mount the folder that contains `hazelcast.xml`.
2. Use the following command twice to start two instances of Hazelcast.

```
docker run -e JAVA_OPTS="-Dhazelcast.config=/opt/hazelcast/config_ext/hazelcast.xml" -
v PATH_TO_LOCAL_CONFIG_FOLDER:/opt/hazelcast/config_ext hazelcast/hazelcast:4.0.2
```

For all methods, you should see output similar to the following, indicating that the two cluster members are running and have found each other:

```
Members {size:2, ver:2} [
      Member [192.168.10.115]:5701 - e2a3f163-4d6e-4ef9-8030-7dfdfbd734f4
      Member [192.168.10.115]:5702 - 8f904e45-5417-46ca-a7e7-70d71969d76d this
]
```

Part 4: Management Center

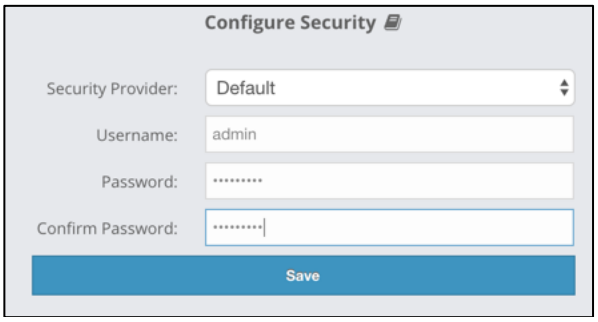
1. Start Management Center

   ZIP/TAR: Go to the directory `management-center` under the main Hazelcast directory. Run `start.sh` (or `start.bat` if you are on Windows).

   Docker: `docker run -p 8080:8080 hazelcast/management-center`

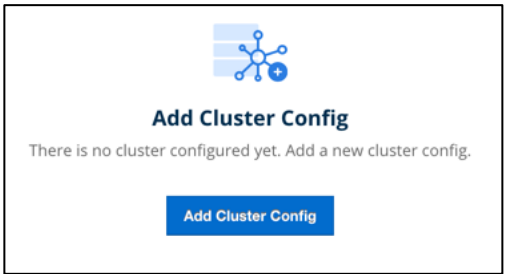
2. Open a browser window to http://localhost:8080.

3. Create a username and password under the **Default** security provider.



4. Log in to Management Center.

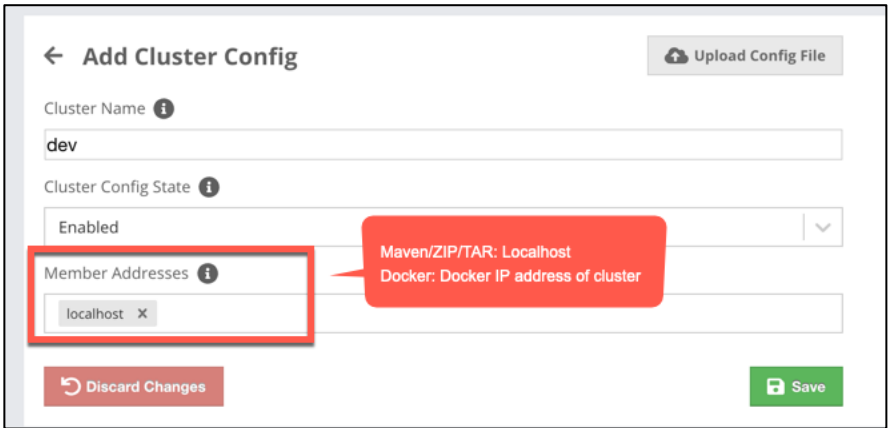
5. Click on the **Add Cluster Config** button.



6. For ZIP/TAR, leave the settings at the default and click **Save**.

   For Docker, find out the IP addresses used for the cluster and use that address for Member Addresses. (Docker usually defaults to 172.17.0.2 for the first instance and .0.3 for the second).

```
Members {size:2, ver:2} [
     Member [172.17.0.2]:5701 - c6a5e083-d1de-4968-a182-1593edf5011a
     Member [172.17.0.3]:5701 - 125d6afc-ce98-4b76-9e6b-0af60c9cf929 this
]
```



7. Open the cluster view by clicking **Select**.