

Práctica Lección 6. In – memory DataGrid

Práctica 1. Creación de un cluster Hazelcast.

Se crea un clúster Hazelcast y luego se ejecuta tres veces y se obtienen los tres miembros de este. En la captura de pantalla se observan los tres miembros del clúster, un para cada ejecución.

```

package com.imdg.practicas;

import com.hazelcast.config.Config;

public class Practica1IMDG {

    public static void main(String[] args) {
        // Instanciar hazelcast y crear una cache
        HazelcastInstance hazInstance = Hazelcast.newHazelcastInstance();
        IMap<String, String> mapCustomers = hazInstance.getMap("practica5");
        // Insertar un dato y arrancar 3 veces el main,
        mapCustomers.put("EjemploClave", "EjemploValor");
        // Leer el output de consola y ver como hazelcast va encontrando "miembros"
        // Comprobar que se conectan (en el output deberian verse 3 miembros en la consola) y capturarlo
        Config config = new Config();
    }
}

```

```

Practica1IMDG [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (6 nov. 2019 10:21:24)
nov 06, 2019 10:22:51 AM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2] Accepting socket connection from /169.254.178.241:53679
nov 06, 2019 10:23:02 AM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2] Established socket connection between /169.254.178.241:5702 and /169.254.178.241:53679
nov 06, 2019 10:22:57 AM com.hazelcast.internal.cluster.ClusterService
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2]

Members [3] {
    Member [169.254.178.241]:5702 - c24d6e8e-dbf2-4207-ab30-b7515bcb1448 this
    Member [169.254.178.241]:5703 - d4284907-8cf7-4b72-b0a2-a93e19325c9e
    Member [169.254.178.241]:5704 - 0e2be6dc-b900-497a-9db0-6ee207270844
}

nov 06, 2019 10:22:58 AM com.hazelcast.internal.partition.impl.MigrationManager
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2] Re-partitioning cluster data... Migration queue size: 271
nov 06, 2019 10:23:02 AM com.hazelcast.internal.partition.InternalPartitionService
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2] Remaining migration tasks in queue => 41
nov 06, 2019 10:23:03 AM com.hazelcast.internal.partition.impl.MigrationThread
INFORMACIÓN: [169.254.178.241]:5702 [dev] [3.7.2] All migration tasks have been completed, queues are empty.

```

Practica 2. Uso básico de cache distribuida.

Se crean tres clases distintas con la estructura necesaria que pide la clase person y se ejecuta, pero da un error como se muestra en la siguiente pantalla, ya que se debe realizar la serialización binaria

```

package com.imdg.pojoos;

import java.io.Serializable;

/**
 * Created by Sobrema on 22/10/2016.
 */
public class Person {

    private String name;
    private Integer zipCode;
    private String streetName;
    private String fullAddress;
}

```

```

<terminated> Practica2IMDG2a [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (7 nov. 2019 10:15:11)
ADVERTENCIA: [127.0.0.1]:5702 [dev] [3.7.2] Config seed port is 5701 and cluster size is 1. Some of the ports seem occupied!
nov 07, 2019 10:15:21 AM com.hazelcast.core.LifecycleService
INFORMACIÓN: [127.0.0.1]:5702 [dev] [3.7.2] [127.0.0.1]:5702 is STARTED
nov 07, 2019 10:15:21 AM com.hazelcast.internal.partition.impl.PartitionStateManager
INFORMACIÓN: [127.0.0.1]:5702 [dev] [3.7.2] Initializing cluster partition table arrangement...
Exception in thread "main" com.hazelcast.nio.serialization.HazelcastSerializationException: Failed to serialize 'com.imdg.pojoos.Person'
    at com.hazelcast.internal.serialization.impl.SerializationUtil.handleSerializeException(SerializationUtil.java:73)
    at com.hazelcast.internal.serialization.impl.AbstractSerializationService.toBytes(AbstractSerializationService.java:143)
    at com.hazelcast.internal.serialization.impl.AbstractSerializationService.toData(AbstractSerializationService.java:118)
    at com.hazelcast.spi.impl.NodeEngineImpl.toData(NodeEngineImpl.java:382)
    at com.hazelcast.spi.AbstractDistributedObject.toData(AbstractDistributedObject.java:67)
    at com.hazelcast.map.impl.proxy.MapProxyImpl.put(MapProxyImpl.java:108)
    at com.hazelcast.map.impl.proxy.MapProxyImpl.put(MapProxyImpl.java:99)
    at com.imdg.practicas.Practica2IMDG2a.main(Practica2IMDG2a.java:24)
Caused by: com.hazelcast.nio.serialization.HazelcastSerializationException: There is no suitable serializer for class com.imdg.pojoos.Person
    at com.hazelcast.internal.serialization.impl.AbstractSerializationService.serializerFor(AbstractSerializationService.java:413)
    at com.hazelcast.internal.serialization.impl.AbstractSerializationService.toBytes(AbstractSerializationService.java:134)
    ... 7 more

```

Luego de modificar la clase person y ejecutar los nodos, el resultado es el siguiente:

```

10 import java.util.concurrent.TimeUnit;
11 import java.util.logging.Level;
12 import java.util.logging.Logger;
13
14 public class Practica1IMDG {
15
16     private final static Logger LOGGER = Logger.getLogger("com.imdg.practicas.Practica1IMDG");
17     public static void main(String[] args) {
18         // Instanciar hazelcast y crear una cache
19         HazelcastInstance hzInstance = Hazelcast.newHazelcastInstance();
20         IMap<String, Person> mapCustomers = hzInstance.getMap("practica1");
21         try {
22             TCountDownLatch latch = hzInstance.getCountDownLatch("practica1");
23         }
24     }
25 }

```

```

Practica1IMDG [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (7 nov. 2019 10:39:42)
INFORMACIÓN: [192.168.43.221]:5701 [dev] [3.7.2] All migration tasks have been completed, queues are empty.
nov 07, 2019 10:40:14 AM com.hazelcast.internal.cluster.ClusterService
INFORMACIÓN: [192.168.43.221]:5701 [dev] [3.7.2]

Members [3] {
  Member [192.168.43.221]:5701 - b9a6dc01-14e9-4a43-9511-b827f98f2ce6 this
  Member [192.168.43.221]:5702 - 016e29be-ebd0-43a4-b231-be7753547fb5
  Member [192.168.43.221]:5703 - d55f39ec-5863-43d6-8650-353e48b2fde4
}

nov 07, 2019 10:40:14 AM com.hazelcast.internal.partition.impl.MigrationManager
INFORMACIÓN: [192.168.43.221]:5701 [dev] [3.7.2] Re-partitioning cluster data... Migration queue size: 271
Person{name='Adrian', zipCode=28051, streetName='Rejas', fullAddress='calle alcala 62, Madrid'}
Person{name='Arianna', zipCode=28052, streetName='avenida', fullAddress='avenida america 2, Madrid'}
Person{name='Jocelyn', zipCode=28053, streetName='Callao', fullAddress='Callao 12, Castellon'}
nov 07, 2019 10:40:18 AM com.hazelcast.internal.partition.InternalPartitionService
INFORMACIÓN: [192.168.43.221]:5701 [dev] [3.7.2] Remaining migration tasks in queue => 3
nov 07, 2019 10:40:19 AM com.hazelcast.internal.partition.impl.MigrationThread
INFORMACIÓN: [192.168.43.221]:5701 [dev] [3.7.2] All migration tasks have been completed, queues are empty.

```

Practica 3. Utilizando nuestro propio servidor