

Practica HazelCast

Parte 1

Se levanta el primer nodo

```
nov 05, 2019 2:41:30 PM com.hazelcast.system
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Copyright (c) 2008-2016, Hazelcast, Inc. All Rights Reserved.
nov 05, 2019 2:41:30 PM com.hazelcast.system
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Configured Hazelcast Serialization version : 1
nov 05, 2019 2:41:30 PM com.hazelcast.spi.impl.operationexecutor.impl.BackpressureRegulator
nov 05, 2019 2:41:32 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5701 [dev] [3.7.2] [192.168.1.158]:5701 is STARTING
nov 05, 2019 2:41:32 PM com.hazelcast.spi.impl.operationexecutor.impl.OperationExecutorImpl
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Starting 8 partition threads
nov 05, 2019 2:41:32 PM com.hazelcast.spi.impl.operationexecutor.impl.OperationExecutorImpl
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Starting 5 generic threads (1 dedicated for priority tasks)
nov 05, 2019 2:41:32 PM com.hazelcast.nio.tcp.nonblocking.NonBlockingIOThreadingModel
INFO: [192.168.1.158]:5701 [dev] [3.7.2] TcpIpConnectionManager configured with Non Blocking IO-threading model: 3 input threads and 3 output threads
nov 05, 2019 2:41:36 PM com.hazelcast.internal.cluster.impl.MulticastJoiner
INFO: [192.168.1.158]:5701 [dev] [3.7.2]

Members [1] {
    Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975 this
}

nov 05, 2019 2:41:36 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5701 [dev] [3.7.2] [192.168.1.158]:5701 is STARTED
nov 05, 2019 2:41:36 PM com.hazelcast.internal.partition.impl.PartitionStateManager
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Initializing cluster partition table arrangement...
[]
```

Se levanta el segundo nodo

```
INFO: [192.168.1.158]:5702 [dev] [3.7.2] TcpIpConnectionManager configured with Non Blocking IO-threading model: 3 input threads and 3 output threads
nov 05, 2019 2:42:39 PM com.hazelcast.internal.cluster.impl.MulticastJoiner
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Trying to join to discovered node: [192.168.1.158]:5701
nov 05, 2019 2:42:39 PM com.hazelcast.nio.tcp.InitConnectionTask
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Connecting to /192.168.1.158:5701, timeout: 0, bind-any: true
nov 05, 2019 2:42:39 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Established socket connection between /192.168.1.158:55689 and /192.168.1.158:5701
nov 05, 2019 2:42:46 PM com.hazelcast.internal.cluster.ClusterService
INFO: [192.168.1.158]:5702 [dev] [3.7.2]

Members [2] {
    Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975
    Member [192.168.1.158]:5702 - 25f1f7a5-d2f4-4966-ae68-8dc59533a75c this
}

nov 05, 2019 2:42:48 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5702 [dev] [3.7.2] [192.168.1.158]:5702 is STARTED
[]
```

Desde la terminal donde se visualiza la ejecución del primer nodo, se puede ver que el segundo se conecta

```
INFO: [192.168.1.158]:5701 [dev] [3.7.2] [192.168.1.158]:5701 is STARTING
nov 05, 2019 2:41:32 PM com.hazelcast.spi.impl.operationexecutor.impl.OperationExecutorImpl

Members [1] {
    Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975 this
}

nov 05, 2019 2:41:36 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5701 [dev] [3.7.2] [192.168.1.158]:5701 is STARTED
nov 05, 2019 2:41:36 PM com.hazelcast.internal.partition.impl.PartitionStateManager
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Initializing cluster partition table arrangement...
nov 05, 2019 2:42:39 PM com.hazelcast.nio.tcp.SocketAcceptorThread
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Accepting socket connection from /192.168.1.158:55689
nov 05, 2019 2:42:39 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Established socket connection between /192.168.1.158:5701 and /192.168.1.158:55689
nov 05, 2019 2:42:46 PM com.hazelcast.internal.cluster.ClusterService
INFO: [192.168.1.158]:5701 [dev] [3.7.2]

Members [2] {
    Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975 this
    Member [192.168.1.158]:5702 - 25f1f7a5-d2f4-4966-ae68-8dc59533a75c
}

nov 05, 2019 2:42:46 PM com.hazelcast.internal.partition.impl.MigrationManager
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Re-partitioning cluster data... Migration queue size: 271
nov 05, 2019 2:42:47 PM com.hazelcast.internal.partition.InternalPartitionService
INFO: [192.168.1.158]:5701 [dev] [3.7.2] Remaining migration tasks in queue => 17
nov 05, 2019 2:42:48 PM com.hazelcast.internal.partition.impl.MigrationThread
INFO: [192.168.1.158]:5701 [dev] [3.7.2] All migration tasks have been completed, queues are empty.
[]
```

Se levanta el tercer nodo

```
Markers Properties Servers Data Source Explorer Snippets Console Progress Debug
Practica1IMDG [Java Application] C:\Program Files\Java\jdk1.8.0_161\bin\javaw.exe (5 nov. 2019 14:44:39)
nov 05, 2019 2:44:45 PM com.hazelcast.nio.tcp.nonblocking.NonBlockingIOThreadingModel
INFO: [192.168.1.158]:5703 [dev] [3.7.2] TcpIpConnectionManager configured with Non Blocking IO-threading model: 3 input threads and 3 output threads
nov 05, 2019 2:44:45 PM com.hazelcast.internal.cluster.impl.MulticastJoiner
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Trying to join to discovered node: [192.168.1.158]:5701
nov 05, 2019 2:44:45 PM com.hazelcast.nio.tcp.InitConnectionTask
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Connecting to /192.168.1.158:5701, timeout: 0, bind-any: true
nov 05, 2019 2:44:45 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Established socket connection between /192.168.1.158:55880 and /192.168.1.158:5701
nov 05, 2019 2:44:51 PM com.hazelcast.internal.cluster.ClusterService
INFO: [192.168.1.158]:5703 [dev] [3.7.2]

Members [3] {
    Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975
    Member [192.168.1.158]:5702 - 25f1f7a5-d2f4-4966-ae68-8dc59533a75c
    Member [192.168.1.158]:5703 - 29f6cae3-8474-4a18-816b-20dc71755e74 this
}

nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.InitConnectionTask
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Connecting to /192.168.1.158:5702, timeout: 0, bind-any: true
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Established socket connection between /192.168.1.158:55884 and /192.168.1.158:5702
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.SocketAcceptorThread
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Accepting socket connection from /192.168.1.158:55883
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5703 [dev] [3.7.2] Established socket connection between /192.168.1.158:5703 and /192.168.1.158:55883
nov 05, 2019 2:44:53 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5703 [dev] [3.7.2] [192.168.1.158]:5703 is STARTED
```

Desde la terminal donde se visualiza la ejecución del segundo nodo, se puede ver que el tercero se conecta

```
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Trying to join to discovered node: [192.168.1.158]:5701
nov 05, 2019 2:42:39 PM com.hazelcast.nio.tcp.InitConnectionTask
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Connecting to /192.168.1.158:5701, timeout: 0, bind-any: true
Member [192.168.1.158]:5702 - 25f1f7a5-d2f4-4966-ae68-8dc59533a75c this
}

nov 05, 2019 2:42:48 PM com.hazelcast.core.LifecycleService
INFO: [192.168.1.158]:5702 [dev] [3.7.2] [192.168.1.158]:5702 is STARTED
nov 05, 2019 2:44:51 PM com.hazelcast.internal.cluster.ClusterService
INFO: [192.168.1.158]:5702 [dev] [3.7.2]

Members [3] {
  Member [192.168.1.158]:5701 - 133ea03a-7165-4c1f-98d8-ac30422b1975
  Member [192.168.1.158]:5702 - 25f1f7a5-d2f4-4966-ae68-8dc59533a75c this
  Member [192.168.1.158]:5703 - 29f6cae3-8474-4a18-816b-20dc71755e74
}

nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.InitConnectionTask
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Connecting to /192.168.1.158:5703, timeout: 0, bind-any: true
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.SocketAcceptorThread
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Accepting socket connection from /192.168.1.158:55884
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Established socket connection between /192.168.1.158:55883 and /192.168.1.158:5703
nov 05, 2019 2:44:51 PM com.hazelcast.nio.tcp.TcpIpConnectionManager
INFO: [192.168.1.158]:5702 [dev] [3.7.2] Established socket connection between /192.168.1.158:5702 and /192.168.1.158:55884
[]
```

Parte 2

En el siguiente código se expresa la implementación del nodo leader junto con dos nodos seguidores mediante contadores distribuidos de hazelCast (countdownlatch)

```
public static void main(String[] args) throws InterruptedException {
    // Instanciar hazelcast y crear una cache
    // Insertar un dato y arrancar 3 veces el main,
    // 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();
    config.getNetworkConfig().getJoin().getTcpIpConfig().addMember("localhost").setEnabled(true);
    config.getNetworkConfig().getJoin().getMulticastConfig().setEnabled(false);

    DataGridNode node = new DataGridNode();
    //Leader node
    ICountDownLatch latch = node.getHzInstance().getCountDownLatch( "countDownLatch" );
    System.out.println( "Leader Starting" );
    latch.trySetCount( 1 );
    Thread.sleep( 30000 );
    //Process to be executed-----
    Person p = new Person("Alvaro", 28051, "", "");
    node.addToCache(p);
    node.printCache();
    //-----

    latch.countDown();
    System.out.println( "Leader finished" );
    latch.destroy();
}
```

Y el nodo Follower

```
public static void main(String[] args) throws InterruptedException {
    // Instanciar hazelcast y crear una cache
    // Insertar un dato y arrancar 3 veces el main,
    // 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();
    config.getNetworkConfig().getJoin().getTcpIpConfig().addMember("localhost").setEnabled(true);
    config.getNetworkConfig().getJoin().getMulticastConfig().setEnabled(false);

    DataGridNode node = new DataGridNode();
    //Follower node
    ICountDownLatch latch = node.getHzInstance().getCountDownLatch( "countDownLatch" );
    System.out.println( "Waiting" );
    boolean success = latch.await( 10, TimeUnit.SECONDS );
    System.out.println( "Complete: " + success );
    //Process to be executed-----
    Person p = new Person("Irene", 28052, "", "");
    node.addToCache(p);
    node.printCache();
    //-----
}
```