

CLASE 45

Es importante leer toda la práctica antes de reproducir el video.

Visualizar el video:

Elección de un líder de Znodes en ZooKeeper

https://youtu.be/szSOij1b_6U

Ejecute en su PC todos los comandos del cliente ZooKeeper zkCli.sh mostrados en el video y anote un breve resumen de cómo se utiliza cada uno.

Posteriormente cree un nuevo proyecto Maven en Netbeans como muestra el video, y construya el cliente Java ClienteZooKeeperEleccion tal y como se indica. A continuación, están las líneas de código que se exponen en el video. Además de incluirlas en su código cliente básico es necesario comentarlas.

ClienteZooKeeperEleccion.java (fragmento)

```
private static final String ELECTION_NAMESPACE = "/eleccion";
private String currentZnodeName;

public void voluntarioParaLiderazgo() throws KeeperException, InterruptedException {
    String znodePrefix = ELECTION_NAMESPACE + "/c_";
    String znodeFullPath = zooKeeper.create(znodePrefix, new
byte[{}], ZooDefs.Ids.OPEN_ACL_UNSAFE, CreateMode.EPHEMERAL_SEQUENTIAL);
    System.out.println("Nombre del znode: " + znodeFullPath);
    this.currentZnodeName = znodeFullPath.replace("/eleccion/", "");
}

public void liderElecto() throws KeeperException, InterruptedException {
    List<String> children = zooKeeper.getChildren(ELECTION_NAMESPACE, false);
    Collections.sort(children);
    String smallestChild = children.get(0);

    if (smallestChild.equals(currentZnodeName)) {
        System.out.println("Yo soy el lider");
        return;
    }
    System.out.println("Yo no soy el lider, " + smallestChild + " es el lider");
}
```

pom.xml (fragmento)

```
<executions>
  <execution>
    <phase>package</phase>
    <goals>
      <goal>single</goal>
    </goals>
  </execution>
</executions>
```

</execution>
</executions>

Envíe como comprobante de su trabajo (individual) una captura de pantalla del escritorio donde aparezcan simultáneamente:

- La terminal del cliente ZooKeeper mostrando tres hijos del nodo /eleccion
- las tres terminales donde se encuentran ejecutándose los clientes programados en la presente práctica.

Ejemplo de captura:

```
enabled=false
Welcome to zookeeper!
2022-06-07 15:37:16,280 [myid:localhost:2181] - INFO [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1171] - Opening socket connection to server localhost/127.0.0.1:2181.
2022-06-07 15:37:16,281 [myid:localhost:2181] - INFO [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1173] - SASL config status: Will not attempt to authenticate using SASL (unknown error)
2022-06-07 15:37:16,295 [myid:localhost:2181] - INFO [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1085] - Socket connection established, initiating session, client: /127.0.0.1:35940, server: localhost/127.0.0.1:2181
3line support is enabled
2022-06-07 15:37:16,491 [myid:localhost:2181] - INFO [main-SendThread(localhost:2181):o.a.z.ClientCnxn$SendThread@1445] - Session establishment complete on server localhost/127.0.0.1:2181, session id = 0x1000000a9b50000, negotiated timeout = 30000

WATCHER::
WatchedEvent state:SyncConnected type:None path:null
[zk: localhost:2181(CONNECTED) 0] create /eleccion
Created /eleccion
[zk: localhost:2181(CONNECTED) 1] delete /eleccion
[zk: localhost:2181(CONNECTED) 2] create /eleccion
Created /eleccion
[zk: localhost:2181(CONNECTED) 3] ls /
/eleccion, zookeeper
[zk: localhost:2181(CONNECTED) 4] ls /eleccion
c_0000000000
[zk: localhost:2181(CONNECTED) 5] ls /eleccion
c_0000000000, c_0000000002
[zk: localhost:2181(CONNECTED) 6] ls /eleccion
c_0000000000, c_0000000002, c_0000000003, c_0000000004
[zk: localhost:2181(CONNECTED) 7]

id: 0x1000000a9b50005 after 2ms.
15:51:09.532 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.
15:51:10.878 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.
15:51:12.205 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:13.539 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.
15:51:14.874 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.
15:51:16.218 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.
15:51:17.546 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:18.881 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:20.215 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:21.551 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:22.886 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:25.556 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 1ms.
15:51:26.892 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50005 after 2ms.

id: 0x1000000a9b50004 after 2ms.
15:51:08.794 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:10.129 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:11.466 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:12.801 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:14.136 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:15.472 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:16.808 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:18.143 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:19.477 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
15:51:20.813 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:22.148 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:23.482 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:24.818 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 1ms.
15:51:26.154 [main-SendThread(localhost:2181)] DEBUG org.apache.zookeeper.ClientCnxn - Got ping response for session id: 0x1000000a9b50004 after 2ms.
```