Replica Set

Download and install openssl for windows

Create key file :
openssl rand -base64 768 > data/keys/m103-keyfile

Open multiple windows cmd prompt's as needed to run following three mongod processes to setup three node replica set.

mongod   --keyFile data/keys/m103-keyfile --replSet test-replicas --port 36000   --dbpath data/node1 --keyFile data/keys/m103-keyfile   --logpath data/logs/node1.log --bind_ip localhost

mongod --keyFile data/keys/m103-keyfile --replSet test-replicas   --port 36001   --dbpath data/node2   --logpath data/logs/node2.log --bind_ip localhost

mongod --keyFile data/keys/m103-keyfile --replSet test-replicas   --port 36002   --dbpath data/node3   --logpath data/logs/node3.log --bind_ip localhost

 Open windows cmd prompt
mongo --port 36000

```
rs.initiate(
 {
   _id: "test-replicas",
    members: [
     { _id : 0, host : "localhost:36000" },
     { _id : 1, host : "localhost:36001" },
     { _id : 2, host : "localhost:36002" }
   ]
 }
)
```

test-replicas:SECONDARY> rs.status()

test-replicas:PRIMARY> db
test

test-replicas:PRIMARY> use cars
switched to db cars

test-replicas:PRIMARY> db.list.insert({_id:0,name:'Toyota'})

WriteResult({ "nInserted" : 1 })

test-replicas:PRIMARY> show collections
list

test-replicas:PRIMARY> db.list.find()
{ "_id" : 0, "name" : "Toyota" }

mongo --port 36000
MongoDB shell version v4.4.6
connecting to:
mongodb://127.0.0.1:36000/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("a99f3c14-a8af-4ec2-89f7-3e9bb5ce4269") }
MongoDB server version: 4.4.6
test-replicas:PRIMARY>

test-replicas:PRIMARY> rs.status()
{
        "set" : "test-replicas",
        "date" : ISODate("2021-06-04T00:12:04.405Z"),
        "myState" : 1,
        "term" : NumberLong(5),
        "syncSourceHost" : "",
        "syncSourceId" : -1,
        "heartbeatIntervalMillis" : NumberLong(2000),
        "majorityVoteCount" : 2,
        "writeMajorityCount" : 2,
        "votingMembersCount" : 3,
        "writableVotingMembersCount" : 3,
        "optimes" : {
            "lastCommittedOpTime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "lastCommittedWallTime" : ISODate("2021-06-04T00:12:03.962Z"),
            "readConcernMajorityOpTime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "readConcernMajorityWallTime" : ISODate("2021-06-04T00:12:03.962Z"),
            "appliedOpTime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)

```
        },
        "durableOpTime" : {
            "ts" : Timestamp(1622765523, 1),
            "t" : NumberLong(5)
        },
        "lastAppliedWallTime" : ISODate("2021-06-04T00:12:03.962Z"),
        "lastDurableWallTime" : ISODate("2021-06-04T00:12:03.962Z")
    },
    "lastStableRecoveryTimestamp" : Timestamp(1622765503, 1),
    "electionCandidateMetrics" : {
        "lastElectionReason" : "electionTimeout",
        "lastElectionDate" : ISODate("2021-06-04T00:06:03.525Z"),
        "electionTerm" : NumberLong(5),
        "lastCommittedOpTimeAtElection" : {
            "ts" : Timestamp(0, 0),
            "t" : NumberLong(-1)
        },
        "lastSeenOpTimeAtElection" : {
            "ts" : Timestamp(1622765137, 1),
            "t" : NumberLong(3)
        },
        "numVotesNeeded" : 2,
        "priorityAtElection" : 1,
        "electionTimeoutMillis" : NumberLong(10000),
        "numCatchUpOps" : NumberLong(0),
        "newTermStartDate" : ISODate("2021-06-04T00:06:03.922Z"),
        "wMajorityWriteAvailabilityDate" : ISODate("2021-06-04T00:06:06.291Z")
    },
    "members" : [
        {
            "_id" : 0,
            "name" : "localhost:36000",
            "health" : 1,
            "state" : 1,
            "stateStr" : "PRIMARY",
            "uptime" : 376,
            "optime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "optimeDate" : ISODate("2021-06-04T00:12:03Z"),
            "syncSourceHost" : "",
            "syncSourceId" : -1,
            "infoMessage" : "",
```

```
            "electionTime" : Timestamp(1622765163, 1),
            "electionDate" : ISODate("2021-06-04T00:06:03Z"),
            "configVersion" : 1,
            "configTerm" : 5,
            "self" : true,
            "lastHeartbeatMessage" : ""
    },
    {
            "_id" : 1,
            "name" : "localhost:36001",
            "health" : 1,
            "state" : 2,
            "stateStr" : "SECONDARY",
            "uptime" : 371,
            "optime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "optimeDurable" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "optimeDate" : ISODate("2021-06-04T00:12:03Z"),
            "optimeDurableDate" : ISODate("2021-06-04T00:12:03Z"),
            "lastHeartbeat" : ISODate("2021-06-04T00:12:04.142Z"),
            "lastHeartbeatRecv" : ISODate("2021-06-04T00:12:04.093Z"),
            "pingMs" : NumberLong(0),
            "lastHeartbeatMessage" : "",
            "syncSourceHost" : "localhost:36000",
            "syncSourceId" : 0,
            "infoMessage" : "",
            "configVersion" : 1,
            "configTerm" : 5
    },
    {
            "_id" : 2,
            "name" : "localhost:36002",
            "health" : 1,
            "state" : 2,
            "stateStr" : "SECONDARY",
            "uptime" : 371,
            "optime" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
```

```
            },
            "optimeDurable" : {
                "ts" : Timestamp(1622765523, 1),
                "t" : NumberLong(5)
            },
            "optimeDate" : ISODate("2021-06-04T00:12:03Z"),
            "optimeDurableDate" : ISODate("2021-06-04T00:12:03Z"),
            "lastHeartbeat" : ISODate("2021-06-04T00:12:04.139Z"),
            "lastHeartbeatRecv" : ISODate("2021-06-04T00:12:04.034Z"),
            "pingMs" : NumberLong(0),
            "lastHeartbeatMessage" : "",
            "syncSourceHost" : "localhost:36000",
            "syncSourceId" : 0,
            "infoMessage" : "",
            "configVersion" : 1,
            "configTerm" : 5
        }
    ],
    "ok" : 1,
    "$clusterTime" : {
        "clusterTime" : Timestamp(1622765523, 1),
        "signature" : {
            "hash" : BinData(0,"hneFO3yy5u6B5to0pPzdzsuxt6Y="),
            "keyId" : NumberLong("6969704999022493699")
        }
    },
    "operationTime" : Timestamp(1622765523, 1)
}
test-replicas:PRIMARY>
test-replicas:PRIMARY> db.createUser(
...  {
...    user: "user1",
...    pwd: "secret_password",
...    roles: [ { role: "userAdminAnyDatabase", db: "admin" }, "readWriteAnyDatabase" ]
...  }
... )
Successfully added user: {
    "user" : "user1",
    "roles" : [
        {
            "role" : "userAdminAnyDatabase",
            "db" : "admin"
        },
        "readWriteAnyDatabase"
```

```
        ]
}


C:\ >mongo --port 36001 -u user1 -p secret_password
MongoDB shell version v4.4.6
connecting to:
mongodb://127.0.0.1:36001/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("5aead968-66c6-4425-b6b6-4fd48a9dc670") }
MongoDB server version: 4.4.6
test-replicas:SECONDARY>

test-replicas:SECONDARY> rs.secondaryOk()
test-replicas:SECONDARY> show collections
list
test-replicas:SECONDARY> db.list.find()
{ "_id" : 0, "name" : "Toyota" }
```