

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: "rao",
...   pwd: "secret_password",
...   roles: [ { role: "userAdminAnyDatabase", db: "admin" }, "readWriteAnyDatabase" ]
... }
... )
Successfully added user: {
  "user" : "rao",
  "roles" : [
    {
      "role" : "userAdminAnyDatabase",
      "db" : "admin"
    },
    "readWriteAnyDatabase"
  ]
}

```

```
]
}
```

```
C:\>mongo --port 36001 -u rao -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" }
```