

```

mao@Mao:/mnt/c/Users/piece/CryptographyTest$ mongosh --port 27017
Current Mongosh Log ID: 68d3ae32f2a0e3dd77ce5f46
Connecting to:      mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=20000&appName=mongosh+2.5.8
Using MongoDB:      6.0.26
Using Mongosh:      2.5.8

For mongosh info see: https://www.mongodb.com/docs/mongodb-shell/

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

-----
The server generated these startup warnings when booting
2025-09-24T15:38:42.073+07:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem
2025-09-24T15:38:42.439+07:00: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
2025-09-24T15:38:42.439+07:00: /sys/kernel/mm/transparent_hugepage/enabled is 'always'. We suggest setting it to 'never' in this binary version
2025-09-24T15:38:42.439+07:00: Soft rlimits for open file descriptors too low
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test>
test> rs.status().members.forEach(m => print(m.name, m.stateStr))
MongoServerError[NotYetInitialized]: no replset config has been received
test> rs.initiate({
...   _id: "rs0",
...   members: [
...     { _id: 0, host: "localhost:27017" },
...     { _id: 1, host: "localhost:27018" },
...     { _id: 2, host: "localhost:27019" }
...   ]
... })
...
{ ok: 1 }
rs0 [direct: secondary] test> rs.status().members.forEach(m => print(m.name, m.stateStr))
localhost:27017 SECONDARY
localhost:27018 SECONDARY
localhost:27019 SECONDARY

rs0 [direct: secondary] test> use testdb
... db.demo.insertOne({msg: "Hello from replica set"})
...
switched to db testdb
rs0 [direct: primary] testdb> mongod --shutdown --dbpath ~/mongo/node1
Uncaught:
SyntaxError: Missing semicolon. (1:9)

> 1 | mongod --shutdown --dbpath ~/mongo/node1
    |               ^
    2 |

```

Khởi tạo 3 nodes

```

    name: 'localhost:27018',
    health: 1,
    state: 2,
    stateStr: 'SECONDARY',
    uptime: 116,
    optime: { ts: Timestamp({ t: 1758703304, i: 1 }), t: Long('1') },
    optimeDurable: { ts: Timestamp({ t: 1758703304, i: 1 }), t: Long('1') },
    optimeDate: ISODate('2025-09-24T08:41:44.000Z'),
    optimeDurableDate: ISODate('2025-09-24T08:41:44.000Z'),
    lastAppliedWallTime: ISODate('2025-09-24T08:41:44.874Z'),
    lastDurableWallTime: ISODate('2025-09-24T08:41:44.874Z'),
    lastHeartbeat: ISODate('2025-09-24T08:41:49.316Z'),
    lastHeartbeatRecv: ISODate('2025-09-24T08:41:48.874Z'),
    pingMs: Long('0'),
    lastHeartbeatMessage: '',
    syncSourceHost: 'localhost:27017',
    syncSourceId: 0,
    infoMessage: '',
    configVersion: 1,
    configTerm: 1
  },
  {
    _id: 2,
    name: 'localhost:27019',
    health: 1,
    state: 2,
    stateStr: 'SECONDARY',
    uptime: 116,
    optime: { ts: Timestamp({ t: 1758703304, i: 1 }), t: Long('1') },
    optimeDurable: { ts: Timestamp({ t: 1758703304, i: 1 }), t: Long('1') },
    optimeDate: ISODate('2025-09-24T08:41:44.000Z'),
    optimeDurableDate: ISODate('2025-09-24T08:41:44.000Z'),
    lastAppliedWallTime: ISODate('2025-09-24T08:41:44.874Z'),
    lastDurableWallTime: ISODate('2025-09-24T08:41:44.874Z'),
    lastHeartbeat: ISODate('2025-09-24T08:41:49.317Z'),
    lastHeartbeatRecv: ISODate('2025-09-24T08:41:48.873Z'),
    pingMs: Long('0'),
    lastHeartbeatMessage: '',
    syncSourceHost: 'localhost:27017',
    syncSourceId: 0,
    infoMessage: '',
    configVersion: 1,
    configTerm: 1
  }
],
ok: 1,
'$clusterTime': {
  clusterTime: Timestamp({ t: 1758703304, i: 1 }),
  signature: {
    hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
    keyId: Long('0')
  }
},
operationTime: Timestamp({ t: 1758703304, i: 1 })

```

Kiểm tra master

```

rs0 [direct: primary] testdb> db.isMaster();
{
  topologyVersion: {
    processId: ObjectId('68d3ae12eb1a79184f3fd4e1'),
    counter: Long('6')
  },
  hosts: [ 'localhost:27017', 'localhost:27018', 'localhost:27019' ],
  setName: 'rs0',
  setVersion: 1,
  ismaster: true,
  secondary: false,
  primary: 'localhost:27017',
  me: 'localhost:27017',
  electionId: ObjectId('7fffffff0000000000000001'),
  lastWrite: {
    opTime: { ts: Timestamp({ t: 1758703505, i: 1 }), t: Long('1') },
    lastWriteDate: ISODate('2025-09-24T08:45:05.000Z'),
    majorityOpTime: { ts: Timestamp({ t: 1758703505, i: 1 }), t: Long('1') },
    majorityWriteDate: ISODate('2025-09-24T08:45:05.000Z')
  },
  maxBsonObjectSize: 16777216,
  maxMessageSizeBytes: 48000000,
  maxWriteBatchSize: 100000,
  localTime: ISODate('2025-09-24T08:45:15.593Z'),
  logicalSessionTimeoutMinutes: 30,
  connectionId: 4,
  minWireVersion: 0,
  maxWireVersion: 17,
  readOnly: false,
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1758703505, i: 1 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1758703505, i: 1 }),
  isWritablePrimary: true
}

```

Tiến hành shutdown máy node 2

For mongosh info see: <https://www.mongodb.com/docs/mongodb-shell/>

```
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-----

rs0 [direct: primary] test> rs.status().members.forEach(m => print(m.name, m.stateStr))
localhost:27017 PRIMARY
localhost:27018 (not reachable/healthy)
localhost:27019 SECONDARY

rs0 [direct: primary] test>
```

```
...
switched to db testdb
rs0 [direct: primary] testdb> db.demo.insertOne({msg: "Node2 down, cluster still works"})
{
  acknowledged: true,
  insertedId: ObjectId('68d3b12b7b6f45a629ce5f47')
}
rs0 [direct: primary] testdb> db.demo.find()
[
  {
    _id: ObjectId('68d3b12b7b6f45a629ce5f47'),
    msg: 'Node2 down, cluster still works'
  }
]
rs0 [direct: primary] testdb>
```

Kiểm tra hoạt động của server.

Tương tự với Trường hợp chỉ có 2 máy.