```
[direct: mongos] test> sh.addShard("shard1ReplSet/localhost:27022,localhost:27023,localhost:27024")
... sh.addShard("shard2ReplSet/localhost:27025,localhost:27026,localhost:27027")
...
{
  shardAdded: 'shard2ReplSet',
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1749823886, i: 3 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1749823886, i: 1 })
}
[direct: mongos] test> sh.enableSharding("testDB")
... sh.shardCollection("testDB.testCollection", { "userId": 1 })
... // or use hashed key:
... // sh.shardCollection("testDB.testCollection", { "_id": "hashed" })
...
{
  collectionsharded: 'testDB.testCollection',
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1749823893, i: 1 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1749823893, i: 1 })
}
[direct: mongos] test> use testDB
...
... let bulk = [];
... for (let i = 0; i < 10000; i++) {
...   bulk.push({
...     userId: i,
...     data: "Sample data " + i,
...     timestamp: new Date()
...   });
...
...   // Insert in batches of 1000
...   if (bulk.length === 1000) {
...     db.testCollection.insertMany(bulk);
...     bulk = [];
...   }
... }
...
... // Insert remaining docs
... if (bulk.length > 0) {
...   db.testCollection.insertMany(bulk);
... }
...
switched to db testDB
```

```
[direct: mongos] testDB> db.testCollection.getShardDistribution()
... sh.status()
...
shardingVersion
{ _id: 1, clusterId: ObjectId('684c262320c5c7b8b628830a') }
---
shards
[
  {
    _id: 'shard1ReplSet',
    host: 'shard1ReplSet/localhost:27022,localhost:27023,localhost:27024',
    state: 1,
    topologyTime: Timestamp({ t: 1749821437, i: 9 }),
    replSetConfigVersion: Long('-1')
  },
  {
    _id: 'shard2ReplSet',
    host: 'shard2ReplSet/localhost:27025,localhost:27026,localhost:27027',
    state: 1,
    topologyTime: Timestamp({ t: 1749821437, i: 27 }),
    replSetConfigVersion: Long('-1')
  }
]
---
active mongoses
[ { '8.0.9': 1 } ]
---
autosplit
{ 'Currently enabled': 'yes' }
---
balancer
{
  'Currently enabled': 'yes',
  'Currently running': 'no',
  'Failed balancer rounds in last 5 attempts': 0,
  'Migration Results for the last 24 hours': { '1': 'Success' }
}
---
shardedDataDistribution
[
  {
    ns: 'config.system.sessions',
    shards: [
      {
        shardName: 'shard1ReplSet',
        numOrphanedDocs: 0,
        numOwnedDocuments: 17,
        ownedSizeBytes: 1683,
        orphanedSizeBytes: 0
      }
    ]
  },
  {
    ns: 'testDB.testCollection',
    shards: [
      {
        shardName: 'shard2ReplSet',
        numOrphanedDocs: 0,
        numOwnedDocuments: 379,
        ownedSizeBytes: 30320,
        orphanedSizeBytes: 0
```

```
        numOrphanedDocs: 0,
        numOwnedDocuments: 379,
        ownedSizeBytes: 30320,
        orphanedSizeBytes: 0
      },
      {
        shardName: 'shard1ReplSet',
        numOrphanedDocs: 379,
        numOwnedDocuments: 5000,
        ownedSizeBytes: 395000,
        orphanedSizeBytes: 29941
      }
    ]
  }
]
---
databases
[
  {
    database: { _id: 'config', primary: 'config', partitioned: true },
    collections: {
      'config.system.sessions': {
        shardKey: { _id: 1 },
        unique: false,
        balancing: true,
        chunkMetadata: [ { shard: 'shard1ReplSet', nChunks: 1 } ],
        chunks: [
          { min: { _id: MinKey() }, max: { _id: MaxKey() }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 1, i: 0 }) }
        ],
        tags: []
      }
    }
  },
  {
    database: {
      _id: 'testDB',
      primary: 'shard1ReplSet',
      version: {
        uuid: UUID('db282852-4fa5-4157-ae64-33d31a830512'),
        timestamp: Timestamp({ t: 1749821472, i: 3 }),
        lastMod: 1
      }
    },
    collections: {
      'testDB.testCollection': {
        shardKey: { userId: 1 },
        unique: false,
        balancing: true,
        chunkMetadata: [
          { shard: 'shard1ReplSet', nChunks: 1 },
          { shard: 'shard2ReplSet', nChunks: 1 }
        ],
        chunks: [
          { min: { userId: MinKey() }, max: { userId: 5000 }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 2, i: 1 }) },
          { min: { userId: 5000 }, max: { userId: MaxKey() }, 'on shard': 'shard2ReplSet', 'last modified': Timestamp({ t: 2, i: 0 }) }
        ],
        tags: []
      }
    }
  }
]
```

```
[direct: mongos] testDB> db.testCollection.find({ userId: 5500 })  // Routed to shard2
... db.testCollection.find({ userId: 3000 })  // Routed to shard1
...
[
  {
    _id: ObjectId('684c314dbfbb132077661878'),
    userId: 3000,
    data: 'Sample data 3000',
    timestamp: ISODate('2025-06-13T14:10:21.787Z')
  }
]
[direct: mongos] testDB> sh.splitAt("testDB.testCollection", { userId: 2500 })
... sh.splitAt("testDB.testCollection", { userId: 7500 })
...
{
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1749824961, i: 17 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1749824961, i: 17 })
}
[direct: mongos] testDB> sh.status({ verbose: true })
...
shardingVersion
{ _id: 1, clusterId: ObjectId('684c262320c5c7b8b628830a') }
---
shards
[
  {
    _id: 'shard1ReplSet',
    host: 'shard1ReplSet/localhost:27022,localhost:27023,localhost:27024',
    state: 1,
    topologyTime: Timestamp({ t: 1749821437, i: 9 }),
    replSetConfigVersion: Long('-1')
  },
  {
    _id: 'shard2ReplSet',
    host: 'shard2ReplSet/localhost:27025,localhost:27026,localhost:27027',
    state: 1,
    topologyTime: Timestamp({ t: 1749821437, i: 27 }),
    replSetConfigVersion: Long('-1')
  }
]
---
active mongoses
[
  {
    _id: 'Anshus-MacBook-Air.local:27018',
    advisoryHostFQDNs: [ 'anshus-macbook-air.local' ],
    created: ISODate('2025-06-13T13:30:16.484Z'),
    mongoVersion: '8.0.9',
    ping: ISODate('2025-06-13T14:29:18.669Z'),
    up: Long('3542'),
    waiting: true
  }
]
```

```
]
---
autosplit
{ 'Currently enabled': 'yes' }
---
balancer
{
  'Currently enabled': 'yes',
  'Failed balancer rounds in last 5 attempts': 0,
  'Currently running': 'no',
  'Migration Results for the last 24 hours': { '1': 'Success' }
}
---
shardedDataDistribution
[
  {
    ns: 'testDB.testCollection',
    shards: [
      {
        shardName: 'shard1ReplSet',
        numOrphanedDocs: 379,
        numOwnedDocuments: 5000,
        ownedSizeBytes: 395000,
        orphanedSizeBytes: 29941
      },
      {
        shardName: 'shard2ReplSet',
        numOrphanedDocs: 0,
        numOwnedDocuments: 379,
        ownedSizeBytes: 30320,
        orphanedSizeBytes: 0
      }
    ]
  },
  {
    ns: 'config.system.sessions',
    shards: [
      {
        shardName: 'shard1ReplSet',
        numOrphanedDocs: 0,
        numOwnedDocuments: 18,
        ownedSizeBytes: 1782,
        orphanedSizeBytes: 0
      }
    ]
  }
]
---
databases
[
  {
    database: { _id: 'config', primary: 'config', partitioned: true },
    collections: {
      'config.system.sessions': {
        shardKey: { _id: 1 },
        unique: false,
        balancing: true,
        chunkMetadata: [ { shard: 'shard1ReplSet', nChunks: 1 } ],
        chunks: [
          { min: { _id: MinKey() }, max: { _id: MaxKey() }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 1, i: 0 }) }
        ],
        tags: []
      }
```

```
---
databases
[
  {
    database: { _id: 'config', primary: 'config', partitioned: true },
    collections: {
      'config.system.sessions': {
        shardKey: { _id: 1 },
        unique: false,
        balancing: true,
        chunkMetadata: [ { shard: 'shard1ReplSet', nChunks: 1 } ],
        chunks: [
          { min: { _id: MinKey() }, max: { _id: MaxKey() }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 1, i: 0 }) }
        ],
        tags: []
      }
    }
  },
  {
    database: {
      _id: 'testDB',
      primary: 'shard1ReplSet',
      version: {
        uuid: UUID('db282852-4fa5-4157-ae64-33d31a830512'),
        timestamp: Timestamp({ t: 1749821472, i: 3 }),
        lastMod: 1
      }
    },
    collections: {
      'testDB.testCollection': {
        shardKey: { userId: 1 },
        unique: false,
        balancing: true,
        chunkMetadata: [
          { shard: 'shard1ReplSet', nChunks: 2 },
          { shard: 'shard2ReplSet', nChunks: 2 }
        ],
        chunks: [
          { min: { userId: MinKey() }, max: { userId: 2500 }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 2, i: 2 }) },
          { min: { userId: 2500 }, max: { userId: 5000 }, 'on shard': 'shard1ReplSet', 'last modified': Timestamp({ t: 2, i: 3 }) },
          { min: { userId: 5000 }, max: { userId: 7500 }, 'on shard': 'shard2ReplSet', 'last modified': Timestamp({ t: 2, i: 4 }) },
          { min: { userId: 7500 }, max: { userId: MaxKey() }, 'on shard': 'shard2ReplSet', 'last modified': Timestamp({ t: 2, i: 5 }) }
        ],
        tags: []
      }
    }
  }
]
[direct: mongos] testDB>
```

rilu — mongod --shardsvr --replSet shard2ReplSet --port 27027 --dbpath ~/mongo-shard-data/shard2_3 --bind_ip localhost — 152×38

```
Last login: Fri Jun 13 18:57:01 on ttys008
rilu@Anshus-MacBook-Air ~ % mongod --shardsvr --replSet shard2ReplSet --port 27026 --dbpath ~/mongo-shard-data/shard2_2 --bind_ip localhost

{"t":{"$date":"2025-06-13T18:58:26.458+05:30"},"s":"I",  "c":"CONTROL",  "id":23285,   "ctx":"thread1","msg":"Automatically disabling TLS 1.0, to force-
enable TLS 1.0 specify --sslDisabledProtocols 'none'"}
{"t":{"$date":"2025-06-13T18:58:26.460+05:30"},"s":"I",  "c":"CONTROL",  "id":5945603, "svc":"-", "ctx":"thread1","msg":"Multi threading initialized"}
{"t":{"$date":"2025-06-13T18:58:26.460+05:30"},"s":"I",  "c":"NETWORK",  "id":4648601, "svc":"-", "ctx":"thread1","msg":"Implicit TCP FastOpen unavailab
le. If TCP FastOpen is required, set at least one of the related parameters","attr":{"relatedParameters":["tcpFastOpenServer","tcpFastOpenClient","tcpFa
stOpenQueueSize"]}}
{"t":{"$date":"2025-06-13T18:58:26.460+05:30"},"s":"I",  "c":"NETWORK",  "id":4915701, "svc":"-", "ctx":"thread1","msg":"Initialized wire specification"
,"attr":{"spec":{"incomingExternalClient":{"minWireVersion":0,"maxWireVersion":25},"incomingInternalClient":{"minWireVersion":0,"maxWireVersion":25},"ou
tgoing":{"minWireVersion":6,"maxWireVersion":25},"isInternalClient":true}}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"REPL",     "id":5123008, "svc":"-", "ctx":"thread1","msg":"Successfully registered Primary
OnlyService","attr":{"service":"RenameCollectionParticipantService","namespace":"config.localRenameParticipants"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"REPL",     "id":5123008, "svc":"-", "ctx":"thread1","msg":"Successfully registered Primary
OnlyService","attr":{"service":"ShardingDDLCoordinator","namespace":"config.system.sharding_ddl_coordinators"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"REPL",     "id":5123008, "svc":"-", "ctx":"thread1","msg":"Successfully registered Primary
OnlyService","attr":{"service":"ReshardingDonorService","namespace":"config.localReshardingOperations.donor"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"REPL",     "id":5123008, "svc":"-", "ctx":"thread1","msg":"Successfully registered Primary
OnlyService","attr":{"service":"ReshardingRecipientService","namespace":"config.localReshardingOperations.recipient"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"REPL",     "id":5123008, "svc":"-", "ctx":"thread1","msg":"Successfully registered Primary
OnlyService","attr":{"service":"MultiUpdateCoordinatorService","namespace":"config.localMigrationBlockingOperations.multiUpdateCoordinators"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"TENANT_M", "id":7091600, "svc":"-", "ctx":"thread1","msg":"Starting TenantMigrationAccessB
lockerRegistry"}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"CONTROL",  "id":4615611, "svc":"S", "ctx":"initandlisten","msg":"MongoDB starting","attr":
{"pid":68232,"port":27026,"dbPath":"/Users/rilu/mongo-shard-data/shard2_2","architecture":"64-bit","host":"Anshus-MacBook-Air.local"}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"CONTROL",  "id":23403,   "svc":"S", "ctx":"initandlisten","msg":"Build Info","attr":{"buil
dInfo":{"version":"8.0.9","gitVersion":"f882ef816d531ecfbb593843e4c554fda90ca416","modules":[],"allocator":"system","environment":{"distarch":"aarch64",
"target_arch":"aarch64"}}}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"CONTROL",  "id":51765,   "svc":"S", "ctx":"initandlisten","msg":"Operating System","attr":
{"os":{"name":"Mac OS X","version":"24.4.0"}}}
{"t":{"$date":"2025-06-13T18:58:26.461+05:30"},"s":"I",  "c":"CONTROL",  "id":21951,   "svc":"S", "ctx":"initandlisten","msg":"Options set by command li
ne","attr":{"options":{"net":{"bindIp":"localhost","port":27026},"replication":{"replSet":"shard2ReplSet"},"sharding":{"clusterRole":"shardsvr"},"storag
e":{"dbPath":"/Users/rilu/mongo-shard-data/shard2_2"}}}}
{"t":{"$date":"2025-06-13T18:58:26.462+05:30"},"s":"I",  "c":"NETWORK",  "id":5693100, "svc":"S", "ctx":"initandlisten","msg":"Asio socket.set_option fa
iled with std::system_error","attr":{"note":"acceptor TCP fast open","option":{"level":6,"name":261,"data":"00 04 00 00"},"error":{"what":"set_option: I
nvalid argument","message":"Invalid argument","category":"asio.system","value":22}}}
{"t":{"$date":"2025-06-13T18:58:26.462+05:30"},"s":"E",  "c":"CONTROL",  "id":20568,   "svc":"S", "ctx":"initandlisten","msg":"Error setting up listener
```

rilu — mongod --shardsvr --replSet shard2ReplSet --port 27026 --dbpat...


```
{"t":{"$date":"2025-06-13T20:12:43.584+05:30"},"s":"I",  "c":"NETWORK",  "id":51
800,   "svc":"S", "ctx":"conn90","msg":"client metadata","attr":{"remote":"127.0
.0.1:49995","client":"conn90","negotiatedCompressors":["snappy","zstd","zlib"],"
doc":{"driver":{"name":"NetworkInterfaceTL-TaskExecutorPool-0","version":"8.0.9"
},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version":"24.4
.0"}}}}
{"t":{"$date":"2025-06-13T20:12:43.584+05:30"},"s":"I",  "c":"NETWORK",  "id":67
88700, "svc":"S", "ctx":"conn90","msg":"Received first command on ingress connec
tion since session start or auth handshake","attr":{"elapsedMillis":0}}
{"t":{"$date":"2025-06-13T20:13:39.239+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825819,"ts_usec":239289,"thread":"68227:0x16ee63000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 958, snapshot max: 958 snapshot count: 0, oldest timestamp: (174982
5516, 1) , meta checkpoint timestamp: (1749825816, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:14:39.284+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825879,"ts_usec":284525,"thread":"68227:0x16ee63000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 966, snapshot max: 966 snapshot count: 0, oldest timestamp: (174982
5576, 1) , meta checkpoint timestamp: (1749825876, 1) base write gen: 1"}}}
```


rilu — mongod --shardsvr --replSet shard2ReplSet --port 27025 --dbpat...


```
800,   "svc":"S", "ctx":"conn97","msg":"client metadata","attr":{"remote":"127.0
.0.1:49996","client":"conn97","negotiatedCompressors":["snappy","zstd","zlib"],"
doc":{"driver":{"name":"NetworkInterfaceTL-TaskExecutorPool-0","version":"8.0.9"
},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version":"24.4
.0"}}}}
{"t":{"$date":"2025-06-13T20:13:27.435+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825807,"ts_usec":435580,"thread":"68222:0x16c72f000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 935, snapshot max: 935 snapshot count: 0, oldest timestamp: (174982
5506, 1) , meta checkpoint timestamp: (1749825806, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:14:27.468+05:30"},"s":"I",  "c":"NETWORK",  "id":64
96702, "svc":"-", "ctx":"ReplicaSetMonitor-TaskExecutor","msg":"Acquired connect
ion for remote operation and completed writing to wire","attr":{"durationMicros"
:1057}}
{"t":{"$date":"2025-06-13T20:14:27.475+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825867,"ts_usec":475014,"thread":"68222:0x16c72f000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 943, snapshot max: 943 snapshot count: 0, oldest timestamp: (174982
5566, 1) , meta checkpoint timestamp: (1749825866, 1) base write gen: 1"}}}
```


rilu — mongod --shardsvr --replSet shard1ReplSet --port 27024 --dbpath...


```
"127.0.0.1:50002","uuid":{"uuid":{"$uuid":"ec3feb7f-1a5b-4d04-8fae-0426de3039d4"
}},"connectionId":120,"connectionCount":31}}
{"t":{"$date":"2025-06-13T20:13:49.034+05:30"},"s":"I",  "c":"NETWORK",  "id":51
800,   "svc":"S", "ctx":"conn120","msg":"client metadata","attr":{"remote":"127.
0.0.1:50002","client":"conn120","negotiatedCompressors":["snappy","zstd","zlib"]
,"doc":{"driver":{"name":"NetworkInterfaceTL-TaskExecutorPool-0","version":"8.0.
9"},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version":"24
.4.0"}}}}
{"t":{"$date":"2025-06-13T20:13:53.601+05:30"},"s":"I",  "c":"CONNPOOL", "id":22
567,   "svc":"-", "ctx":"ReplCoordExternNetwork","msg":"Ending idle connection b
ecause the pool meets constraints","attr":{"hostAndPort":"localhost:27022","numO
penConns":1}}
{"t":{"$date":"2025-06-13T20:14:34.107+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825874,"ts_usec":107444,"thread":"67051:0x16c823000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 17765, snapshot max: 17765 snapshot count: 0, oldest timestamp: (17
49825569, 1) , meta checkpoint timestamp: (1749825869, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:14:53.359+05:30"},"s":"I",  "c":"CONNPOOL", "id":22
567,   "svc":"-", "ctx":"ReplNetwork","msg":"Ending idle connection because the
pool meets constraints","attr":{"hostAndPort":"localhost:27022","numOpenConns":2
}}
```


rilu — mongod --shardsvr --replSet shard1ReplSet --port 27023 --dbpath...


```
napshot min: 17758, snapshot max: 17758 snapshot count: 0, oldest timestamp: (17
49825509, 1) , meta checkpoint timestamp: (1749825809, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:13:49.034+05:30"},"s":"I",  "c":"NETWORK",  "id":22
943,   "svc":"-", "ctx":"listener","msg":"Connection accepted","attr":{"remote":
"127.0.0.1:50003","uuid":{"uuid":{"$uuid":"971d43c1-4b03-4f8a-b949-5a71c6f3aa0f"
}},"connectionId":113,"connectionCount":30}}
{"t":{"$date":"2025-06-13T20:13:49.034+05:30"},"s":"I",  "c":"NETWORK",  "id":51
800,   "svc":"S", "ctx":"conn113","msg":"client metadata","attr":{"remote":"127.
0.0.1:50003","client":"conn113","negotiatedCompressors":["snappy","zstd","zlib"]
,"doc":{"driver":{"name":"NetworkInterfaceTL-TaskExecutorPool-0","version":"8.0.
9"},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version":"24
.4.0"}}}}
{"t":{"$date":"2025-06-13T20:13:53.604+05:30"},"s":"I",  "c":"CONNPOOL", "id":22
567,   "svc":"-", "ctx":"ReplCoordExternNetwork","msg":"Ending idle connection b
ecause the pool meets constraints","attr":{"hostAndPort":"localhost:27022","numO
penConns":1}}
{"t":{"$date":"2025-06-13T20:14:33.918+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825873,"ts_usec":918521,"thread":"66762:0x16ccf7000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 17766, snapshot max: 17766 snapshot count: 0, oldest timestamp: (17
49825569, 1) , meta checkpoint timestamp: (1749825869, 1) base write gen: 1"}}}
```

rilu — mongod --shardsvr --replSet shard1ReplSet --port 27022 --dbpath...


```
,"doc":{"driver":{"name":"NetworkInterfaceTL-TaskExecutorPool-0","version":"8.0.
9"},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version":"24
.4.0"}}}}
{"t":{"$date":"2025-06-13T20:15:16.537+05:30"},"s":"I",  "c":"NETWORK",  "id":22
944,   "svc":"S", "ctx":"conn169","msg":"Connection ended","attr":{"remote":"127
.0.0.1:49967","uuid":{"uuid":{"$uuid":"7ce1c722-2de6-46be-be3b-45ff6e914f8e"}},"
connectionId":169,"connectionCount":42}}
{"t":{"$date":"2025-06-13T20:15:16.537+05:30"},"s":"I",  "c":"ACCESS",   "id":52
86307, "svc":"-", "ctx":"conn169","msg":"Failed to authenticate","attr":{"client
":"127.0.0.1:49967","isSpeculative":false,"isClusterMember":false,"mechanism":""
,"user":"","db":"","error":"AuthenticationAbandoned: Authentication session aban
doned, client has likely disconnected","result":337,"metrics":{"conversation_dur
ation":{"micros":600013055,"summary":{}}},"extraInfo":{}}}
{"t":{"$date":"2025-06-13T20:15:16.537+05:30"},"s":"I",  "c":"NETWORK",  "id":67
88700, "svc":"S", "ctx":"conn185","msg":"Received first command on ingress conne
ction since session start or auth handshake","attr":{"elapsedMillis":0}}
{"t":{"$date":"2025-06-13T20:15:22.996+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825922,"ts_usec":996695,"thread":"66460:0x17061f000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 12724, snapshot max: 12724 snapshot count: 0, oldest timestamp: (17
49825621, 1) , meta checkpoint timestamp: (1749825921, 1) base write gen: 1"}}}
```


rilu — mongod --configsvr --replSet configReplSet --port 27021 --dbpath...


```
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 5919, snapshot max: 5919 snapshot count: 0, oldest timestamp: (1749
825469, 1) , meta checkpoint timestamp: (1749825769, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:13:49.796+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825829,"ts_usec":796255,"thread":"65841:0x170b93000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 5987, snapshot max: 5987 snapshot count: 0, oldest timestamp: (1749
825529, 1) , meta checkpoint timestamp: (1749825829, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:14:26.819+05:30"},"s":"I",  "c":"NETWORK",  "id":64
96702, "svc":"S", "ctx":"ReplCoordExtern-10","msg":"Acquired connection for remo
te operation and completed writing to wire","attr":{"durationMicros":2685}}
{"t":{"$date":"2025-06-13T20:14:49.848+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825889,"ts_usec":848860,"thread":"65841:0x170b93000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 6054, snapshot max: 6054 snapshot count: 0, oldest timestamp: (1749
825588, 1) , meta checkpoint timestamp: (1749825888, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:15:27.019+05:30"},"s":"I",  "c":"CONNPOOL", "id":22
576,   "svc":"-", "ctx":"ReplCoordExternNetwork","msg":"Connecting","attr":{"hos
tAndPort":"localhost:27019"}}
```


rilu — mongod --configsvr --replSet configReplSet --port 27020 --dbpat...


```
{"t":{"$date":"2025-06-13T20:13:49.513+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825829,"ts_usec":513525,"thread":"65550:0x16c12f000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 5986, snapshot max: 5986 snapshot count: 0, oldest timestamp: (1749
825528, 1) , meta checkpoint timestamp: (1749825828, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:14:49.565+05:30"},"s":"I",  "c":"WTCHKPT",  "id":22
430,   "svc":"S", "ctx":"Checkpointer","msg":"WiredTiger message","attr":{"messa
ge":{"ts_sec":1749825889,"ts_usec":565197,"thread":"65550:0x16c12f000","session_
name":"WT_SESSION.checkpoint","category":"WT_VERB_CHECKPOINT_PROGRESS","category
_id":7,"verbose_level":"DEBUG_1","verbose_level_id":1,"msg":"saving checkpoint s
napshot min: 6054, snapshot max: 6054 snapshot count: 0, oldest timestamp: (1749
825588, 1) , meta checkpoint timestamp: (1749825888, 1) base write gen: 1"}}}
{"t":{"$date":"2025-06-13T20:15:04.351+05:30"},"s":"I",  "c":"NETWORK",  "id":64
96702, "svc":"S", "ctx":"ReplCoordExtern-10","msg":"Acquired connection for remo
te operation and completed writing to wire","attr":{"durationMicros":1947}}
{"t":{"$date":"2025-06-13T20:15:27.005+05:30"},"s":"I",  "c":"NETWORK",  "id":64
96702, "svc":"S", "ctx":"ReplCoordExtern-10","msg":"Acquired connection for remo
te operation and completed writing to wire","attr":{"durationMicros":1376}}
{"t":{"$date":"2025-06-13T20:15:27.019+05:30"},"s":"I",  "c":"CONNPOOL", "id":22
```


rilu — mongod --configsvr --replSet configReplSet --port 27019 --dbpath...


```
}},"connectionId":251,"connectionCount":44}}
{"t":{"$date":"2025-06-13T20:15:27.021+05:30"},"s":"I",  "c":"NETWORK",  "id":22
943,   "svc":"-", "ctx":"listener","msg":"Connection accepted","attr":{"remote":
"127.0.0.1:50010","uuid":{"uuid":{"$uuid":"23d4ca61-31e4-4e46-a40a-3533827adb04"
}},"connectionId":252,"connectionCount":45}}
{"t":{"$date":"2025-06-13T20:15:27.021+05:30"},"s":"I",  "c":"NETWORK",  "id":51
800,   "svc":"S", "ctx":"conn251","msg":"client metadata","attr":{"remote":"127.
0.0.1:50009","client":"conn251","negotiatedCompressors":["snappy","zstd","zlib"]
,"doc":{"driver":{"name":"NetworkInterfaceTL-ReplCoordExternNetwork","version":"
8.0.9"},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version"
:"24.4.0"}}}}
{"t":{"$date":"2025-06-13T20:15:27.021+05:30"},"s":"I",  "c":"NETWORK",  "id":51
800,   "svc":"S", "ctx":"conn252","msg":"client metadata","attr":{"remote":"127.
0.0.1:50010","client":"conn252","negotiatedCompressors":["snappy","zstd","zlib"]
,"doc":{"driver":{"name":"NetworkInterfaceTL-ReplCoordExternNetwork","version":"
8.0.9"},"os":{"type":"Darwin","name":"Mac OS X","architecture":"arm64","version"
:"24.4.0"}}}}
{"t":{"$date":"2025-06-13T20:15:28.016+05:30"},"s":"I",  "c":"NETWORK",  "id":67
88700, "svc":"S", "ctx":"conn252","msg":"Received first command on ingress conne
ction since session start or auth handshake","attr":{"elapsedMillis":995}}
{"t":{"$date":"2025-06-13T20:15:28.016+05:30"},"s":"I",  "c":"NETWORK",  "id":67
88700, "svc":"S", "ctx":"conn251","msg":"Received first command on ingress conne
```

rilu — -zsh — 80×24

```
ins/javaFX/lib/javaFX-jps.jar:/Applications/IntelliJ IDEA CE.app/Contents/plugin
s/javaFX/lib/javaFX-common.jar:/Applications/IntelliJ IDEA CE.app/Contents/plugi
ns/platform-langInjection/lib/java-langInjection-jps.jar:/Applications/IntelliJ
IDEA CE.app/Contents/plugins/Groovy/lib/groovy-jps.jar:/Applications/IntelliJ ID
EA CE.app/Contents/plugins/Groovy/lib/groovy-constants-rt.jar:/Applications/Inte
lliJ IDEA CE.app/Contents/plugins/uiDesigner/lib/jps/java-guiForms-jps.jar:/Appl
ications/IntelliJ IDEA CE.app/Contents/plugins/maven/lib/maven-jps.jar:/Applicat
ions/IntelliJ IDEA CE.app/Contents/plugins/space/lib/space-java-jps.jar:/Applica
tions/IntelliJ IDEA CE.app/Contents/plugins/gradle-java/lib/gradle-jps.jar org.j
etbrains.jps.cmdline.BuildMain 127.0.0.1 52997 eee72ee6-ed95-4502-979a-42258a6bb
3d5 /Users/rilu/Library/Caches/JetBrains/IdeaIC2023.3/compile-server
rilu             64941   0.0  0.0 410724256   1456 s000  S+    6:49PM   0:00.00
grep mongod
rilu@Anshus-MacBook-Air ~ % kill -9 58133 58432 58725

kill: kill 58133 failed: no such process
kill: kill 58432 failed: no such process
kill: kill 58725 failed: no such process
rilu@Anshus-MacBook-Air ~ % mkdir -p ~/mongo-shard-data/cfg{1,2,3}
mkdir -p ~/mongo-shard-data/shard1_{1,2,3}
mkdir -p ~/mongo-shard-data/shard2_{1,2,3}
mkdir -p ~/mongo-shard-data/mongos

rilu@Anshus-MacBook-Air ~ %
```

```
rilu@Anshus-MacBook-Air ~ % mongosh --port 27019

Current Mongosh Log ID: 684c260c83d161c9f5bdab6d
Connecting to:          mongodb://127.0.0.1:27019/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.5.1
Using MongoDB:          8.0.9
Using Mongosh:          2.5.1
mongosh 2.5.2 is available for download: https://www.mongodb.com/try/download/shell

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

------
   The server generated these startup warnings when booting
   2025-06-13T18:51:42.373+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestrict
ed
   2025-06-13T18:51:42.373+05:30: Soft rlimits for open file descriptors too low
------

test> rs.initiate({
...   _id: "configReplSet",
...   configsvr: true,
...   members: [
...     { _id: 0, host: "localhost:27019" },
...     { _id: 1, host: "localhost:27020" },
...     { _id: 2, host: "localhost:27021" }
...   ]
... })
...
{
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1749820951, i: 1 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1749820951, i: 1 })
}
configReplSet [direct: secondary] test> rs.status()
...
{
  set: 'configReplSet',
  date: ISODate('2025-06-13T13:25:27.995Z'),
  myState: 1,
  term: Long('1'),
  syncSourceHost: '',
  syncSourceId: -1,
  configsvr: true,
  heartbeatIntervalMillis: Long('2000'),
```

```
rilu@Anshus-MacBook-Air ~ % mongosh --port 27022

Current Mongosh Log ID: 684c272e681af0bd293ffb76
Connecting to:          mongodb://127.0.0.1:27022/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+2.5.1
Using MongoDB:          8.0.9
Using Mongosh:          2.5.1
mongosh 2.5.2 is available for download: https://www.mongodb.com/try/download/shell

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

------
   The server generated these startup warnings when booting
   2025-06-13T18:56:21.581+05:30: Access control is not enabled for the database. Read and write access to data and configuration is unrestricted
   2025-06-13T18:56:21.581+05:30: Soft rlimits for open file descriptors too low
------

test> rs.initiate({
...   _id: "shard1ReplSet",
...   members: [
...     { _id: 0, host: "localhost:27022" },
...     { _id: 1, host: "localhost:27023" },
...     { _id: 2, host: "localhost:27024" }
...   ]
... })
...
{
  ok: 1,
  '$clusterTime': {
    clusterTime: Timestamp({ t: 1749821237, i: 1 }),
    signature: {
      hash: Binary.createFromBase64('AAAAAAAAAAAAAAAAAAAAAAAAAAA=', 0),
      keyId: Long('0')
    }
  },
  operationTime: Timestamp({ t: 1749821237, i: 1 })
}
shard1ReplSet [direct: secondary] test> rs.status()
{
  set: 'shard1ReplSet',
  date: ISODate('2025-06-13T13:27:34.658Z'),
  myState: 1,
  term: Long('1'),
  syncSourceHost: '',
  syncSourceId: -1,
  heartbeatIntervalMillis: Long('2000'),
  majorityVoteCount: 2,
  writeMajorityCount: 2,
  votingMembersCount: 3,
  writableVotingMembersCount: 3,
  optimes: {
    lastCommittedOpTime: { ts: Timestamp({ t: 1749821247, i: 15 }), t: Long('1') },
```