

JSON SOTRES LAB (MongoDB)

MongoDB installed Succefuly.

> mongod --dbpath ./LabMongoDB

port: 27017 (waiting for connections on port 27017)

> mongoimport --db test --collection moviepeople10 --drop ./moviepeople-10.json

> use test

> db.moviepeople10.find().pretty()

> show dbs

test 0.078GB

1. import moviepeople-1000.json / cities.json

> mongoimport --db test --collection moviepeople1000 --drop ./moviepeople-1000.json

> mongoimport --db test --collection cities --drop ./cities.json

> db.moviepeople1000.find()

2. The person named Anabela Teixeira

> db.moviepeople1000.find({"person-name": "Teixeira, Anabela"}).pretty()

```
{
    "_id" : ObjectId("5811b791c1092dbac2574b01"),
    "person-name" : "Teixeira, Anabela",
    "info" : {
        "trivia" : [
            "Her favorite actor is 'Marcello Mastroianni' (qv) and her favorite actress is 'Juliette Binoche' (qv).",
            "Partner of musician Frederico Pereira.",
            "Has two brothers, one biological and one adopted.",
            "Vice-President of the Portuguese Cinema Academy.",
            "She was first noticed by the public with the Tv series A Viúva do Enforcado (1992).",
            "Made her theater debut in 1992 in the play Os Processos of Dostolevsky.",
            "Did some workshops of dance: dance in movement with Peter Diez and dance classes with Madalena Vitorino.",
            "Besides Portuguese, she speaks English and French."
        ],
        "birthnotes" : [
            "Lisbon, Portugal"
        ],
        "birthdate" : [
            "18 May 1973"
        ],
        "birthname" : [
            "Teixeira, Anabela Cristina Alves"
        ],
        "interviews" : [
            "TV Guia (Portugal), 1997, Iss. 960, pg. 24-25, by: Pedro Teixeira",
            "A Capital (Portugal), 30 April 1998, pg. 55, by: Helena Mata"
        ]
    }
}
```

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3. The birthplace of Steven Spielberg

```
db.moviepeople1000.find({"person-name":"Spielberg, Steven"}, {"info.birthnotes":1}).pretty()
```

```
{  
    "_id" : ObjectId("5811b791c1092dbac2574c4a"),  
    "info" : {  
        "birthnotes" : [  
            "Cincinnati, Ohio, USA"  
        ]  
    }  
}
```

4. Number of people born in Lisbon:

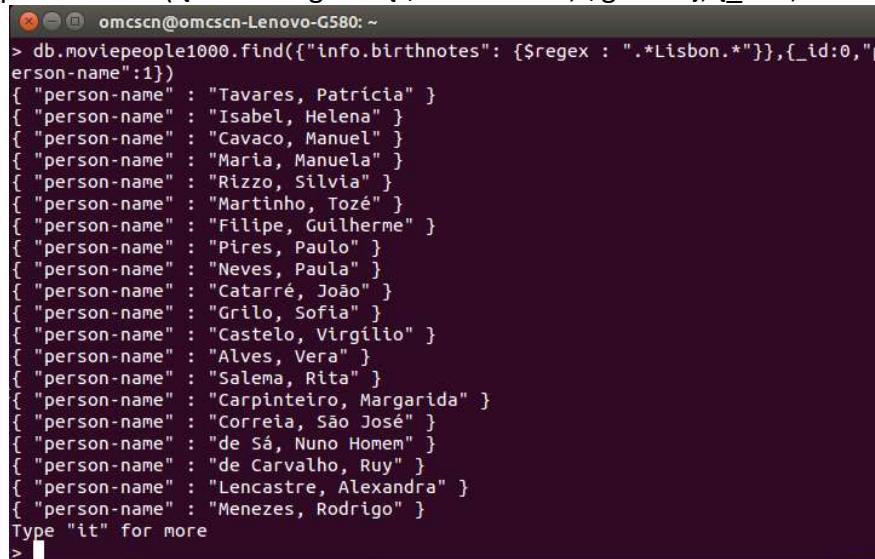
```
> db.moviepeople1000.find({"info.birthnotes":"Lisbon, Portugal"},{_id:0,"person-name":1}).count()
```

```
> db.moviepeople1000.find({"info.birthnotes": {$regex : ".*Lisbon.*"}}, {_id:0,"person-name":1}).count()
```

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5. The people taller than 170 cm

```
> db.moviepeople1000.find( { "info.height" : { $exists : true, $gt: 170}, {_id:0,"info.height":1} );
```



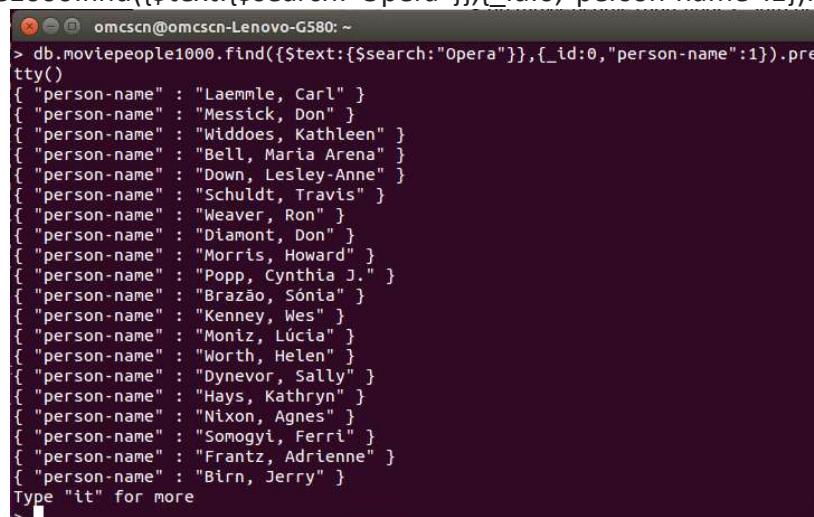
A screenshot of a terminal window titled 'omcscn@omcscn-Lenovo-G580: ~'. It shows the MongoDB shell command: > db.moviepeople1000.find({ "info.height" : { \$exists : true, \$gt: 170}, {_id:0,"info.height":1} }). The output lists numerous person names, such as Tavares, Patricia; Isabel, Helena; Cavaco, Manuel; Maria, Manuela; Rizzo, Silvia; Martinho, Tozé; Filipe, Guilherme; Pires, Paulo; Neves, Paula; Catarré, João; Grilo, Sofia; Castelo, Virgílio; Alves, Vera; Salema, Rita; Carpinteiro, Margarida; Correia, São José; de Sá, Nuno Homem; de Carvalho, Ruy; Lencastre, Alexandra; Menezes, Rodrigo.

6. The names of people whose information contains “Opera”

“Full text search”

```
> db.moviepeople1000.createIndex({"$**":"text"})
```

```
> db.moviepeople1000.find({$text:{$search:"Opera"}}, {_id:0,"person-name":1}).pretty()
```



A screenshot of a terminal window titled 'omcscn@omcscn-Lenovo-G580: ~'. It shows the MongoDB shell command: > db.moviepeople1000.find({\$text:{\$search:"Opera"}}, {_id:0,"person-name":1}).pretty(). The output lists numerous person names containing the word 'Opera', such as Laemmle, Carl; Messick, Don; Widdoes, Kathleen; Bell, Maria Arena; Down, Lesley-Anne; Schuldt, Travis; Weaver, Ron; Diamont, Don; Morris, Howard; Popp, Cynthia J.; Brazão, Sónia; Kenney, Wes; Moniz, Lúcia; Worth, Helen; Dynevior, Sally; Hays, Kathryn; Nixon, Agnes; Somogyi, Ferri; Frantz, Adrienne; Birn, Jerry.

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MongoDB replication:

8.

```
> mkdir ./mongo1 ./mongo2 ./mongo3  
> mongod --replSet small-movie --dbpath ./mongo1 --port 27011  
> mongod --replSet small-movie --dbpath ./mongo2 --port 27012  
> mongod --replSet small-movie --dbpath ./mongo3 --port 27013  
> mongo localhost:27011
```

The screenshot shows two terminal windows. The left window displays logs for node 27011, and the right window displays logs for node 27012. Both nodes are reporting various startup messages, including configuration settings and diagnostic data capture. The logs are identical for both nodes at this stage.

```
2016-11-04T19:13:51.715+0100 I CONTROL [initandlisten] 2016-11-04T19:13:59.188+0100 I CONTROL [initandlisten] ** WARNING: /sys/kernel/mm/transparent_hugepage/defrag is 'always'.  
ind local voted for document at startup; NoMatchingDocument: Did not find replica set lastVote document in local.replset.election setting it to 'never'  
2016-11-04T19:13:51.966+0100 I REPL [initandlisten] Did not find local replica set configuration document at startup; NoMatch 2016-11-04T19:13:59.188+0100 I CONTROL [initandlisten] ** We suggest se  
ingDocument: Did not find replica set configuration document in ld for document at startup; NoMatchingDocument: Did not find replica set lastVo  
cal.system.replset 2016-11-04T19:13:51.967+0100 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory './mongo1/diagnostic.data'  
2016-11-04T19:13:51.967+0100 I NETWORK [HostnameCanonicalizationWorker] Starting hostname canonicalization worker  
2016-11-04T19:13:52.195+0100 I NETWORK [initandlisten] waiting for connections on port 27011  
2016-11-04T19:14:18.999+0100 I NETWORK [initandlisten] accepted connection from 127.0.0.1:56465 #1 (1 connection now open)  
2016-11-04T19:13:51.714+0100 I CONTROL [initandlisten] 2016-11-04T19:13:59.397+0100 I REPL [initandlisten] Did not find local repl  
G: /sys/kernel/mm/transparent_hugepage/enabled is 'always'. 2016-11-04T19:13:59.397+0100 I FTDC [initandlisten] Initializing full-time  
2016-11-04T19:13:51.714+0100 I CONTROL [initandlisten] ** We suggest setting it to 'never'  
2016-11-04T19:13:51.715+0100 I CONTROL [initandlisten] 2016-11-04T19:14:08.044+0100 I CONTROL [initandlisten]  
G: /sys/kernel/mm/transparent_hugepage/defrag is 'always'. 2016-11-04T19:14:08.044+0100 I CONTROL [initandlisten] ** We suggest se  
2016-11-04T19:13:51.714+0100 I CONTROL [initandlisten] ** We suggest setting it to 'never'  
2016-11-04T19:13:51.715+0100 I CONTROL [initandlisten] 2016-11-04T19:14:08.045+0100 I CONTROL [initandlisten] ** We suggest se  
G: /sys/kernel/mm/transparent_hugepage/defrag is 'always'. 2016-11-04T19:14:08.045+0100 I CONTROL [initandlisten] ** We suggest se  
2016-11-04T19:13:51.714+0100 I CONTROL [initandlisten] 2016-11-04T19:14:08.276+0100 I REPL [initandlisten] Did not find local vote  
dry election run succeeded, running for election 2016-11-04T19:14:08.276+0100 I FTDC [initandlisten] Initializing full-time  
2016-11-04T19:13:51.715+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27012 2016-11-04T19:14:08.276+0100 I NETWORK [HostnameCanonicalizationWorker] Starti  
2016-11-04T19:13:51.586+0100 I REPL [ReplicationExecutor] election succeeded, assuming primary role in term 1 2016-11-04T19:14:08.488+0100 I NETWORK [initandlisten] waiting for connections  
2016-11-04T19:13:51.587+0100 I REPL [ReplicationExecutor] transition to PRIMARY 2016-11-04T19:14:08.488+0100 I NETWORK [initandlisten] on port 27013  
> 2016-11-04T19:20:20.971+0100 I REPL [ReplicationExecutor] Starting an election, since we've seen no PRIMARY in the past 10000ms  
2016-11-04T19:20:20.971+0100 I REPL [ReplicationExecutor] conducting a dry run election to see if we could be elected  
2016-11-04T19:20:21.330+0100 I REPL [ReplicationExecutor] dry run succeeded, running for election  
2016-11-04T19:20:21.583+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27012  
2016-11-04T19:20:21.586+0100 I REPL [ReplicationExecutor] election succeeded, assuming primary role in term 1  
2016-11-04T19:20:21.587+0100 I REPL [ReplicationExecutor] transition to PRIMARY  
2016-11-04T19:20:21.587+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27012  
2016-11-04T19:20:21.594+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Successfully connected to localhost:27012  
2016-11-04T19:20:21.596+0100 I ASIO [NetworkInterfaceASIO-Replication-0] 2016-11-04T19:20:17.770+0100 I REPL [ReplicationExecutor] Member localhost:  
2016-11-04T19:20:21.440+0100 I COMMAND [conn2] command local.replset.election command: replSetRequestVotes { replSetRequestVotes: 1, setName: "small-movie", dryRun: true, term: 0, candidateIndex: 0, configVersion: 1, lastCommittedOp: { ts: Timestamp 1478283609000|1, t: -1 } } keyUpdates:0 writeConflicts:0 numYield  
s:0 reslen:63 locks:{ Global: { acquireCount: { r: 2, w: 2 } }, Database: { acquireCount: { W: 2 } } } protocol:op_command 468ms  
2016-11-04T19:20:21.440+0100 I NETWORK [conn2] end connection 127.0.0.1:52704 (1 connection now open)  
2016-11-04T19:20:21.586+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52716 #5 (2 connections now open)  
2016-11-04T19:20:21.587+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52717 #6 (3 connections now open)  
2016-11-04T19:20:22.771+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY  
2016-11-04T19:20:22.772+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011  
2016-11-04T19:20:23.721+0100 I REPL [ReplicationExecutor] Member localhost:27012 is now in state SECONDARY  
2016-11-04T19:20:21.330+0100 I COMMAND [conn2] command local.replset.election command: replSetRequestVotes { replSetRequestVotes: 1, setName: "small-movie", dryRun: true, term: 0, candidateIndex: 0, configVersion: 1, lastCommittedOp: { ts: Timestamp 1478283609000|1, t: -1 } } keyUpdates:0 writeConflicts:0 numYield  
s:0 reslen:63 locks:{ Global: { acquireCount: { r: 2, w: 2 } }, Database: { acquireCount: { W: 2 } } } protocol:op_command 358ms  
2016-11-04T19:20:23.721+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY  
2016-11-04T19:20:23.722+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011  
2016-11-04T19:20:23.724+0100 I REPL [SyncSourceFeedback] setting syncSource feedback to localhost:27011  
2016-11-04T19:20:23.724+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Connected to localhost:27011  
2016-11-04T19:20:23.726+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Success fully connected to localhost:27011
```

```
> rs.initiate({_id:'small-movie', members:[{_id:1, host:'localhost:27011'}, {_id:2, host:'localhost:27012'}, {_id:3, host:'localhost:27013'}]})
```

The screenshot shows two terminal windows. The left window shows the command being run: rs.initiate({_id:'small-movie', members:[{_id:1, host:'localhost:27011'}, {_id:2, host:'localhost:27012'}, {_id:3, host:'localhost:27013'}]}). The right window shows the response from the MongoDB shell, indicating successful initiation of the 'small-movie' replicaset with three members: 27011 (PRIMARY), 27012 (SECONDARY), and 27013 (SECONDARY).

```
2016-11-04T19:20:20.971+0100 I REPL [ReplicationExecutor] Starting an election, since we've seen no PRIMARY in the past 10000ms  
2016-11-04T19:20:20.971+0100 I REPL [ReplicationExecutor] conducting a dry run election to see if we could be elected  
2016-11-04T19:20:21.330+0100 I REPL [ReplicationExecutor] dry run succeeded, running for election  
2016-11-04T19:20:21.583+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27012  
2016-11-04T19:20:21.586+0100 I REPL [ReplicationExecutor] election succeeded, assuming primary role in term 1  
2016-11-04T19:20:21.587+0100 I REPL [ReplicationExecutor] transition to PRIMARY  
2016-11-04T19:20:21.587+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27012  
2016-11-04T19:20:21.594+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Successfully connected to localhost:27012  
2016-11-04T19:20:21.596+0100 I ASIO [NetworkInterfaceASIO-Replication-0] 2016-11-04T19:20:17.770+0100 I REPL [ReplicationExecutor] Member localhost:  
2016-11-04T19:20:21.440+0100 I COMMAND [conn2] command local.replset.election command: replSetRequestVotes { replSetRequestVotes: 1, setName: "small-movie", dryRun: true, term: 0, candidateIndex: 0, configVersion: 1, lastCommittedOp: { ts: Timestamp 1478283609000|1, t: -1 } } keyUpdates:0 writeConflicts:0 numYield  
s:0 reslen:63 locks:{ Global: { acquireCount: { r: 2, w: 2 } }, Database: { acquireCount: { W: 2 } } } protocol:op_command 468ms  
2016-11-04T19:20:21.440+0100 I NETWORK [conn2] end connection 127.0.0.1:52704 (1 connection now open)  
2016-11-04T19:20:21.586+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52716 #5 (2 connections now open)  
2016-11-04T19:20:21.587+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52717 #6 (3 connections now open)  
2016-11-04T19:20:22.771+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY  
2016-11-04T19:20:22.772+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011  
2016-11-04T19:20:23.721+0100 I REPL [ReplicationExecutor] Member localhost:27012 is now in state SECONDARY  
2016-11-04T19:20:21.330+0100 I COMMAND [conn2] command local.replset.election command: replSetRequestVotes { replSetRequestVotes: 1, setName: "small-movie", dryRun: true, term: 0, candidateIndex: 0, configVersion: 1, lastCommittedOp: { ts: Timestamp 1478283609000|1, t: -1 } } keyUpdates:0 writeConflicts:0 numYield  
s:0 reslen:63 locks:{ Global: { acquireCount: { r: 2, w: 2 } }, Database: { acquireCount: { W: 2 } } } protocol:op_command 358ms  
2016-11-04T19:20:23.721+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY  
2016-11-04T19:20:23.722+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011  
2016-11-04T19:20:23.724+0100 I REPL [SyncSourceFeedback] setting syncSource feedback to localhost:27011  
2016-11-04T19:20:23.724+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Connected to localhost:27011  
2016-11-04T19:20:23.726+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Success fully connected to localhost:27011
```

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> small-movie:SECONDARY> rs.conf()

```
{  
    "_id" : "small-movie",  
    "version" : 1,  
    "protocolVersion" : NumberLong(1),  
    "members" : [  
        {  
            "_id" : 1,  
            "host" : "localhost:27011",  
            "arbiterOnly" : false,  
            "buildIndexes" : true,  
            "hidden" : false,  
            "priority" : 1,  
            "tags" : {  
                },  
            "slaveDelay" : NumberLong(0),  
            "votes" : 1  
        },  
        {  
            "_id" : 2,  
            "host" : "localhost:27012",  
            "arbiterOnly" : false,  
            "buildIndexes" : true,  
            "hidden" : false,  
            "priority" : 1,  
            "tags" : {  
                },  
            "slaveDelay" : NumberLong(0),  
            "votes" : 1  
        },  
        {  
            "_id" : 3,  
            "host" : "localhost:27013",  
            "arbiterOnly" : false,  
            "buildIndexes" : true,  
            "hidden" : false,  
            "priority" : 1,  
            "tags" : {  
                },  
            "slaveDelay" : NumberLong(0),  
            "votes" : 1  
        }  
    ],  
    "settings" : {  
        "chainingAllowed" : true,  
        "heartbeatIntervalMillis" : 2000,  
        "heartbeatTimeoutSecs" : 10,  
        "electionTimeoutMillis" : 10000,  
        "getLastErrorMessage" : {  
            },  
        "getLastErrorMessageDefaults" : {  
            "w" : 1,  
            "wtimeout" : 0  
        },  
        "replicaSetId" : ObjectId("581cd159841bdc5b4534fd21")  
    }  
}
```

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> small-movie:PRIMARY> db.isMaster()

```
{  
    "hosts" : [  
        "localhost:27011",  
        "localhost:27012",  
        "localhost:27013"  
    ],  
    "setName" : "small-movie",  
    "setVersion" : 1,  
    "ismaster" : true,  
    "secondary" : false,  
    "primary" : "localhost:27011",  
    "me" : "localhost:27011",  
    "electionId" : ObjectId("7fffffff000000000000000001"),  
    "maxBsonObjectSize" : 16777216,  
    "maxMessageSizeBytes" : 48000000,  
    "maxWriteBatchSize" : 1000,  
    "localTime" : ISODate("2016-11-04T18:34:01.436Z"),  
    "maxWireVersion" : 4,  
    "minWireVersion" : 0,  
    "ok" : 1  
}
```

The screenshot displays three terminal windows on a Linux desktop. The top-left window shows the configuration of shard 10 ('small-movie') with hosts 27011, 27012, and 27013. The shard 10 log (top-right) shows it becoming primary and accepting connections. The bottom-left window shows shard 10's initial sync from the primary ('small-movie'). The bottom-right window shows the primary ('small-movie') accepting connections and shard 10's sync progress.

```
omcscn@omcscn-Lenovo-G580: ~/Desktop  
2016-11-04T19:02:54.244+0100 I REPL [ReplicationExecutor] election succeeded, assuming primary role in term 1  
2016-11-04T19:02:54.244+0100 I REPL [ReplicationExecutor] transition to PRIMARY  
2016-11-04T19:02:54.244+0100 I ASIO [NetworkInterfaceASIO-Replica-0] Connecting to localhost:27012  
2016-11-04T19:02:54.245+0100 I ASIO [NetworkInterfaceASIO-Replica-0] Successfully connected to localhost:27012  
2016-11-04T19:02:55.240+0100 I REPL [rsSync] transition to primary complete; database writes are now permitted  
2016-11-04T19:02:56.107+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:56449 #8 (4 connections now open)  
2016-11-04T19:02:56.109+0100 I NETWORK [conn8] end connection 127.0.0.1:56449 (3 connections now open)  
2016-11-04T19:02:56.109+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:56450 #9 (4 connections now open)  
2016-11-04T19:02:56.109+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:56451 #10 (5 connections now open)  
VAILLANT  
omcscn@omcscn-Lenovo-G580: ~/Desktop  
127.0.0.1:52669 (1 connection now open)  
2016-11-04T19:02:54.243+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52681 #5 (2 connections now open)  
2016-11-04T19:02:54.244+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52682 #6 (3 connections now open)  
2016-11-04T19:02:54.245+0100 I NETWORK [conn5] end connection 127.0.0.1:52681 (2 connections now open)  
2016-11-04T19:02:55.119+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY  
2016-11-04T19:03:00.126+0100 I REPL [ReplicationExecutor] syncing from: localhost:27013  
2016-11-04T19:03:00.127+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54326 #5 (3 connections now open)  
2016-11-04T19:03:00.127+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54327 #6 (4 connections now open)  
2016-11-04T19:03:00.127+0100 I NETWORK [conn5] end connection 127.0.0.1:54326 (3 connections now open)  
2016-11-04T19:03:00.128+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54328 #7 (4 connections now open)  
omcscn@omcscn-Lenovo-G580: ~/Desktop  
2016-11-04T19:02:56.107+0100 I REPL [SyncSourceFeedback] setting syncSourceFeedback to localhost:27011  
2016-11-04T19:02:56.108+0100 I REPL [SyncSourceFeedback] setting syncSourceFeedback to localhost:27011  
2016-11-04T19:02:56.108+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Connecting to localhost:27011  
2016-11-04T19:02:56.110+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Successfully connected to localhost:27011  
2016-11-04T19:03:00.126+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54326 #5 (3 connections now open)  
2016-11-04T19:03:00.127+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54327 #6 (4 connections now open)  
2016-11-04T19:03:00.127+0100 I NETWORK [conn5] end connection 127.0.0.1:54326 (3 connections now open)  
2016-11-04T19:03:00.128+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:54328 #7 (4 connections now open)
```

OUMOUSS EL MEHDI (D&K)

9.

```
> mongoimport --host localhost:27011t --collection moviepeople10 --file ./moviepeople10.json
```

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
s
2016-11-04T19:59:18.600+0100 I NETWORK [conn17] end connection 127.0.0.1:56765 (7 connections now open)
2016-11-04T19:59:28.733+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:56766 #18 (8 connections now open)
2016-11-04T19:59:28.911+0100 I COMMAND [conn18] command test.moviepeople10 command: insert: {"moviepeople10", documents: 10, writeConcern: { getLastError: 1, w: "majority" }, ordered: false } nInserted:10 keyUpdates:0 writeConflicts:0 numYields:0 reslen:100 locks:{ Global: { acquireCount: { r: 11, w: 11 } }, Database: { acquireCount: { w: 11 } }, Collection: { acquireCount: { w: 1 } }, Metadata: { acquireCount: { w: 10 } }, oplag: { acquireCount: { w: 10 } } } protocol:op_query 174ms
2016-11-04T19:59:28.914+0100 I NETWORK [conn18] end connection 127.0.0.1:56766 (7 connections now open)

omcscn@omcscn-Lenovo-G580: ~
omcscn@omcscn-Lenovo-G580:~$ mongoimport --host localhost:27011 --collection moviepeople10 --file /home/omcscn/Desktop/moviepeople10.json
2016-11-04T19:59:28.734+0100 connected to: localhost:27011
2016-11-04T19:59:28.911+0100 imported 10 documents
omcscn@omcscn-Lenovo-G580:~
```

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
(1 connection now open)
2016-11-04T19:20:21.586+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52716 #5 (2 connections now open)
2016-11-04T19:20:21.587+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52717 #6 (3 connections now open)
2016-11-04T19:20:22.771+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY
2016-11-04T19:20:22.772+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011
2016-11-04T19:20:22.774+0100 I REPL [SyncSourceFeedback] setting syncSourceFeedback to localhost:27011
2016-11-04T19:20:22.774+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Connecting to localhost:27011
2016-11-04T19:20:22.776+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Successfully connected to localhost:27011
2016-11-04T19:21:21.597+0100 I NETWORK [conn6] end connection 127.0.0.1:52717 (2 connections now open)

omcscn@omcscn-Lenovo-G580: ~
omcscn@omcscn-Lenovo-G580:~/Desktop
ember to sync from
2016-11-04T19:20:13.719+0100 I REPL [ReplicationExecutor] Member localhost:27012 is now in state SECONDARY
2016-11-04T19:20:21.330+0100 I COMMAND [conn2] command local.replset.election command: replSetRequestVotes { replSetRequestVotes: 1, setName: "small-movie", fsyncRun: true, term: 0, candidateIndex: 0, configVersion: 1, lastCommittedOp: { ts: Timestamp 1478283699000|1, t: -1 } } keyUpdates:0 writeConflicts:0 numYields:0 reslen:63 locks:{ Global: { acquireCount: { r: 2, w: 2 } }, Database: { acquireCount: { W: 2 } } } protocol:op_command 358ms
2016-11-04T19:20:23.721+0100 I REPL [ReplicationExecutor] Member localhost:27011 is now in state PRIMARY
2016-11-04T19:20:23.722+0100 I REPL [ReplicationExecutor] syncing from: localhost:27011
2016-11-04T19:20:23.724+0100 I REPL [SyncSourceFeedback] setting syncSourceFeedback to localhost:27011
2016-11-04T19:20:23.724+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Connecting to localhost:27011
2016-11-04T19:20:23.726+0100 I ASIO [NetworkInterfaceASIO-BGSync-0] Successfully connected to localhost:27011
```

After stopping the master:

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
dj removing socket file: /tmp/mongodb-27011.sock
2016-11-04T20:01:03.274+0100 I NETWORK [signalProcessingThread] shutdown: going to flush diaglog...
2016-11-04T20:01:03.275+0100 I NETWORK [signalProcessingThread] shutdown: going to close sockets...
2016-11-04T20:01:03.275+0100 I STORAGE [signalProcessingThread] WiredTigerKVEngine shutting down
2016-11-04T20:01:03.276+0100 I NETWORK [conn12] end connection 127.0.0.1:56488 (4 connections now open)
2016-11-04T20:01:03.277+0100 I NETWORK [conn1] end connection 127.0.0.1:56485 (3 connections now open)
2016-11-04T20:01:03.277+0100 I NETWORK [conn9] end connection 127.0.0.1:56485 (3 connections now open)
2016-11-04T20:01:03.561+0100 I STORAGE [signalProcessingThread] shutdown: removing fs lock...
2016-11-04T20:01:03.562+0100 I CONTROL [signalProcessingThread] dbexit: rc: 0
omcscn@omcscn-Lenovo-G580:~/Desktop
```

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
connecting to localhost:27011
2016-11-04T20:01:35.330+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:35.331+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
2016-11-04T20:01:35.331+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:35.331+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:35.332+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
2016-11-04T20:01:35.332+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:35.333+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:35.333+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
omcscn@omcscn-Lenovo-G580:~/Desktop
```

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
2016-11-04T19:54:36.380+0100 E QUERY [thread1] SyntaxError: mit request to localhost:27011; HostUnreachable: Connection refused
ssing ; before statement @($shell):1:14
small-movie:PRIMARY> mongoimport --host localhost:27011 --collection moviepeople10 --file /home/omcscn/Desktop/moviepeople10.json
2016-11-04T20:01:34.617+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:34.617+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:34.618+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
2016-11-04T20:01:34.618+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:34.618+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:34.619+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
2016-11-04T20:01:34.619+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:34.620+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:34.620+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
small-movie:PRIMARY> mongoimport --host localhost:27011 --collection moviepeople10 --file /home/omcscn/Desktop/moviepeople10.json
2016-11-04T19:55:01.815+0100 E QUERY [thread1] SyntaxError: milled to connect to localhost:27011 - HostUnreachable: Connection refused
ssing ; before statement @($shell):1:14
small-movie:PRIMARY> mongoimport --host localhost:27011 --collection moviepeople10 --file /home/omcscn/Desktop/moviepeople10.json
2016-11-04T20:01:34.619+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:34.620+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:34.620+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
2016-11-04T20:01:34.620+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Connecting to localhost:27011
2016-11-04T20:01:34.620+0100 I ASIO [NetworkInterfaceASIO-Replication-0] Failed to connect to localhost:27011 - HostUnreachable: Connection refused
2016-11-04T20:01:34.620+0100 I REPL [ReplicationExecutor] Error in heartbeat request to localhost:27011; HostUnreachable: Connection refused
small-movie:PRIMARY>
```

10. Sharding

```
> mkdir ./mongo4 ./mongo5
> mongod --shardsvr --dbpath ./mongo4 --port 27014
```

OUMOUSS EL MEHDI (D&K)

```
omcscn@omcscn-Lenovo-G580:~/Desktop$ mongod --shardsvr --dbpath ./mongo4 --port 27014
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] MongoDB starting : pid=9951 port=27014 dbpath=./mongo4 64-bit host=omcscn-Lenovo-G580
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] db version v3.2.10
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] git version: 79d9b3ab5ce20f51c272b441120271
0a082d0317
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.1f 6 Jan 2014
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] allocator: tcmalloc
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] modules: none
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] build environment:
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] distmod: ubuntu1404
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] distarch: x86_64
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] target_arch: x86_64
2016-11-04T17:49:37.367+0100 I CONTROL [initandlisten] options: { net: { port: 27014 }, sharding: { clusterRole: "shardsvr" }, storage: { dbPath: "./mongo4" } }
2016-11-04T17:49:37.406+0100 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=5G,session_max=20000,eviction=(threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000),checkpoint=(wait=60,log_size=2GB),statistics_log=(wait=0),
2016-11-04T17:49:38.134+0100 I CONTROL [initandlisten]
2016-11-04T17:49:38.135+0100 I CONTROL [initandlisten] ** WARNING: /sys/kernel/mm/transparent_hugepage/enabled is 'always'.
2016-11-04T17:49:38.135+0100 I CONTROL [initandlisten] ** We suggest setting it to 'never'
2016-11-04T17:49:38.135+0100 I CONTROL [initandlisten]
2016-11-04T17:49:38.135+0100 I CONTROL [initandlisten] ** WARNING: /sys/kernel/mm/transparent_hugepage/defrag is 'always'.
2016-11-04T17:49:38.135+0100 I CONTROL [initandlisten] ** We suggest setting it to 'never'
```

> mongod --shardsvr --dbpath ./mongo5 --port 27015

```
omcscn@omcscn-Lenovo-G580:~/Desktop$ mongod --shardsvr --dbpath ./mongo5 --port 27015
2016-11-04T17:53:13.188+0100 I CONTROL [initandlisten] MongoDB starting : pid=1005 port=27015 dbpath=./mongo5 64-bit host=omcscn-Lenovo-G580
2016-11-04T17:53:13.188+0100 I CONTROL [initandlisten] db version v3.2.10
2016-11-04T17:53:13.188+0100 I CONTROL [initandlisten] git version: 79d9b3ab5ce20f51c272b4411202710a082d0317
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.1f 6 Jan 2014
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] allocator: tcmalloc
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] modules: none
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] build environment:
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] distmod: ubuntu1404
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] distarch: x86_64
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] target_arch: x86_64
2016-11-04T17:53:13.189+0100 I CONTROL [initandlisten] options: { net: { port: 27015 }, sharding: { clusterRole: "shardsvr" }, storage: { dbPath: "./mongo5" } }
2016-11-04T17:53:13.244+0100 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=5G,session_max=20000,eviction=(threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000),checkpoint=(wait=60,log_size=2GB),statistics_log=(wait=0),
2016-11-04T17:53:13.992+0100 I CONTROL [initandlisten]
```

//starting the config server:

> mkdir ./mongoconfig

> mongod --configsvr --dbpath ./mongoconfig --port 27016

```
omcscn@omcscn-Lenovo-G580:~/Desktop$ cd Desktop
omcscn@omcscn-Lenovo-G580:~/Desktop$ mongod --configsvr --dbpath ./mongoconfig --port 27016
2016-11-04T17:55:43.721+0100 I CONTROL [initandlisten] MongoDB starting : pid=11077 port=27016 dbpath=./mongoconfig master=1 64-bit host=omcscn-Lenovo-G580
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] db version v3.2.10
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] git version: 79d9b3ab5ce20f51c272b4411202710a082d0317
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.1f 6 Jan 2014
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] allocator: tcmalloc
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] modules: none
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] build environment:
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] distmod: ubuntu1404
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] distarch: x86_64
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] target_arch: x86_64
2016-11-04T17:55:43.722+0100 I CONTROL [initandlisten] options: { net: { port: 27016 }, sharding: { clusterRole: "configsvr" }, storage: { dbPath: "./mongoconfig" } }
2016-11-04T17:55:43.777+0100 I STORAGE [initandlisten] wiredtiger_open config: create,cache_size=5G,session_max=20000,eviction=(threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),
```

OUMOUSS EL MEHDI (D&K)

// starting mongos connected to the config

> mongos --configdb localhost:27016 --chunkSize 1 --port 27020

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
omcscn@omcscn-Lenovo-G580:~/Desktop$ mongos --configdb localhost:27016 --chunkSize 1
--port 27020
2016-11-04T17:59:07.473+0100 W SHARDING [main] Running a sharded cluster with fewer than 3 config servers should only be done for testing purposes and is not recommended for production.
2016-11-04T17:59:07.485+0100 I SHARDING [mongosMain] MongoS version 3.2.10 starting:
pid=11259 port=27020 64-bit host=omcscn-Lenovo-G580 (--help for usage)
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] db version v3.2.10
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] git version: 79d9b3ab5ce20f51c27
2b4411202t10a082d0317
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] OpenSSL version: OpenSSL 1.0.1f
6 Jan 2014
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] allocator: tcmalloc
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] modules: none
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] build environment:
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] distmod: ubuntu1404
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] distarch: x86_64
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] target_arch: x86_64
2016-11-04T17:59:07.485+0100 I CONTROL [mongosMain] options: { net: { port: 27020 },
sharding: { chunkSize: 1, configDB: "localhost:27016" } }
2016-11-04T17:59:07.485+0100 I SHARDING [mongosMain] Updating config server connection string to: localhost:27016
2016-11-04T17:59:07.490+0100 I SHARDING [LockPinger] creating distributed lock ping t
```

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
2016-11-04T17:55:45.473+0100 I NETWORK [initandlisten] waiting for connections on port 27016
2016-11-04T17:59:07.489+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:45
395 #1 (1 connection now open)
2016-11-04T17:59:07.491+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:45
396 #2 (2 connections now open)
2016-11-04T17:59:07.491+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:45
397 #3 (3 connections now open)
2016-11-04T17:59:07.492+0100 I COMMAND [conn1] CMD fsync: sync:1 lock:0
2016-11-04T17:59:07.821+0100 I COMMAND [conn2] update config.lockpings query: { _id: "omcscn
-Lenovo-G580:27020:1478278747:1684484030" } update: { $set: { ping: new Date(1478278747495) }
} keysExamined:0 docsExamined:0 nMatched:1 nModified:1 upsert:1 keyUpdates:0 writeConflicts:0 numYields:0 locks:{ Global: { acquireCount: { r: 4, w: 4 } }, Database: { acquireCount: { w: 3, W: 1 } }, Collection: { acquireCount: { w: 2 } }, Metadata: { acquireCount: { w: 2 } } }
325ms
2016-11-04T17:59:08.003+0100 I COMMAND [conn1] command admin.$cmd command: fsync { fsync: 1
} keyUpdates:0 writeConflicts:0 numYields:0 reslen:36 locks:{ Global: { acquireCount: { r: 3, W: 1 } } } protocol:op_command 510ms
2016-11-04T17:59:08.004+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:45
398 #4 (4 connections now open)
2016-11-04T17:59:08.164+0100 I COMMAND [conn1] insert config.locks ninserted:1 keyUpdates:0
writeConflicts:0 numYields:0 locks:{ Global: { acquireCount: { r: 4, w: 4 } }, Database: { acquireCount: { w: 3, W: 1 } }, Collection: { acquireCount: { w: 3 } }, Metadata: { acquireCount: { w: 2 } } }
```

localhost:27016

//talking to mongos to configure sharding :

> mongo localhost:27020/admin

```
omcscn@omcscn-Lenovo-G580: ~/Desktop
omcscn@omcscn-Lenovo-G580:~/Desktop$ cd Desktop/
omcscn@omcscn-Lenovo-G580:~/Desktop$ mongo localhost:27020/admin
MongoDB shell version: 3.2.10
connecting to: localhost:27020/admin
mongos>
```

client

OUMOUSS EL MEHDI (D&K)

```
omcsn@omcsn-Lenovo-G580: ~/Desktop
2016-11-04T18:04:30.812+0100 I NETWORK [mongosMain] connection accepted from 127.0.0.1:51237 #2 (1 connection now open)
2016-11-04T18:04:31.914+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cbf9f65379eeaa89b60b6
2016-11-04T18:04:31.916+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:04:37.848+0100 I SHARDING [LockPinger] cluster localhost:27016 pinged successfully at 2016-11-04T18:04:37.846+0100 by distributed lock pinger 'localhost:27016/omcsn-Lenovo-G580:27020:1478278747:1684484030', sleeping for 30000ms
2016-11-04T18:04:41.976+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cbfa965379eeaa89b60b7
2016-11-04T18:04:41.977+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:04:51.996+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cbfb365379eeaa89b60b8
2016-11-04T18:04:51.997+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:05:02.036+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cbfbe65379eeaa89b60b9
2016-11-04T18:05:02.038+0100 I SHARDING [Balancer] distributed lock 'balancer/omcsn-
```

```
> db.runCommand({addshard: "localhost:27014"})
{"shardAdded" : "shard0000", "ok": 1}
```

The screenshot shows three terminal windows side-by-side:

- Terminal 1:** Shows the configuration of a shard. It includes logs for shard creation and a connection attempt to shard0000.
- Terminal 2:** Shows the configuration of a config server. It includes logs for updating the config server connection string and a connection attempt to config srv.
- Terminal 3:** Shows the configuration of a client. It includes logs for connecting to the admin database and running a command to add shard0000.

mongos	shard svr 27014
client	config srv

```
> db.runCommand({addshard: "localhost:27015"})
```

OUMOUSS EL MEHDI (D&K)

```

2016-11-04T18:18:55.892+0100 I ASIO      [NetworkInterfaceASIO-ShardRegistry-0] Connecting to localhost:27015
2016-11-04T18:18:55.900+0100 I ASIO      [NetworkInterfaceASIO-ShardRegistry-0] Successfully connected to localhost:27015
2016-11-04T18:18:55.903+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cc3ff65379eaaa89b610e
2016-11-04T18:18:55.906+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:18:55.907+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cc3ff65379eaaa89b610f
2016-11-04T18:19:05.948+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:19:07.917+0100 I SHARDING [LockPinger] cluster localhost:27016 pinged successfully at 2016-11-04T18:19:07.915+0100 by distributed lock pinger 'localhost:27016/omcscn-Lenovo-G580:27020:1478278747:1684484030', sleeping for 30000ms
2016-11-04T18:18:55.894+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52612 #2 (2 connections now open)
2016-11-04T18:18:55.894+0100 I SHARDING [conn2] remote client 127.0.0.1:52612 initialized this host as shard shard0001
2016-11-04T18:18:55.894+0100 I SHARDING [ShardingState initialization] first cluster operation detected, adding sharding hook to enable verification and authentication to remote servers
2016-11-04T18:18:55.894+0100 I SHARDING [ShardingState initialization] Updating config server connection string to: localhost:27016
2016-11-04T18:18:55.898+0100 I SHARDING [LockPinger] creating distributed lock ping thread for localhost:27016 and process omcscn-Lenovo-G580:27015:1478279935:902001844 (sleeping for 30000ms)
2016-11-04T18:18:55.901+0100 I SHARDING [LockPinger] cluster localhost:27016 pinged successfully at 2016-11-04T18:18:55.900+0100 by distributed lock pinger 'localhost:27016/omcscn-Lenovo-G580:27020:1478278747:1684484030', sleeping for 30000ms

```

mongos	shard svr 27015
client	config srv

```
> db.runCommand({enablesharding: "test"})
{ "collectionsharded" : "test.cities", "ok" : 1 }
```

```

mongos2 14894369 112619.ipa
2016-11-04T18:18:55.894+0100 I NETWORK [initandlisten] connection accepted from 127.0.0.1:52612 #3 (3 connections now open)
2016-11-04T18:18:55.894+0100 I SHARDING [conn3] remote client 127.0.0.1:52612 initialized this host as shard shard0001
2016-11-04T18:18:55.894+0100 I SHARDING [ShardingState initialization] first cluster operation detected, adding sharding hook to enable verification and authentication to remote servers
2016-11-04T18:18:55.894+0100 I SHARDING [ShardingState initialization] Updating config server connection string to: localhost:27016
2016-11-04T18:18:55.898+0100 I SHARDING [LockPinger] creating distributed lock ping thread for localhost:27016 and process omcscn-Lenovo-G580:27015:1478279935:902001844 (sleeping for 30000ms)
2016-11-04T18:18:55.901+0100 I SHARDING [LockPinger] cluster localhost:27016 pinged successfully at 2016-11-04T18:18:55.900+0100 by distributed lock pinger 'localhost:27016/omcscn-Lenovo-G580:27020:1478278747:1684484030', sleeping for 30000ms

```

client	config srv
---------------	-------------------

```
> db.runCommand({shardcollection: "test.cities", key:{name:1}})
{"collectionsharded": "test.cities", "ok": 1}
```

```

mongos2 14894369 112619.ipa
2016-11-04T18:27:14.999+0100 I SHARDING [conn2] distributed lock 'test.cities/omcscn-Lenovo-G580:27020:1478278747:1684484030' unlocked.
2016-11-04T18:27:15.006+0100 I SHARDING [conn2] ChunkManager: time to load chunks for test.cities: 0ms sequenceNumber: 3 version: 1|0||581cc4f265379eaaa89b6143 based on: (empty)
2016-11-04T18:27:18.714+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' acquired for 'doing balance round', ts : 581cc4f665379eaaa89b6145
2016-11-04T18:27:18.716+0100 I ASIO      [NetworkInterfaceASIO-ShardRegistry-0] Connecting to localhost:27014
2016-11-04T18:27:18.717+0100 I ASIO      [NetworkInterfaceASIO-ShardRegistry-0] Successfully connected to localhost:27014
2016-11-04T18:27:18.721+0100 I SHARDING [Balancer] distributed lock 'balancer/omcscn-Lenovo-G580:27020:1478278747:1684484030' unlocked.

```

client	mongos
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