MongoDB

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MongoDB Cheat Sheet

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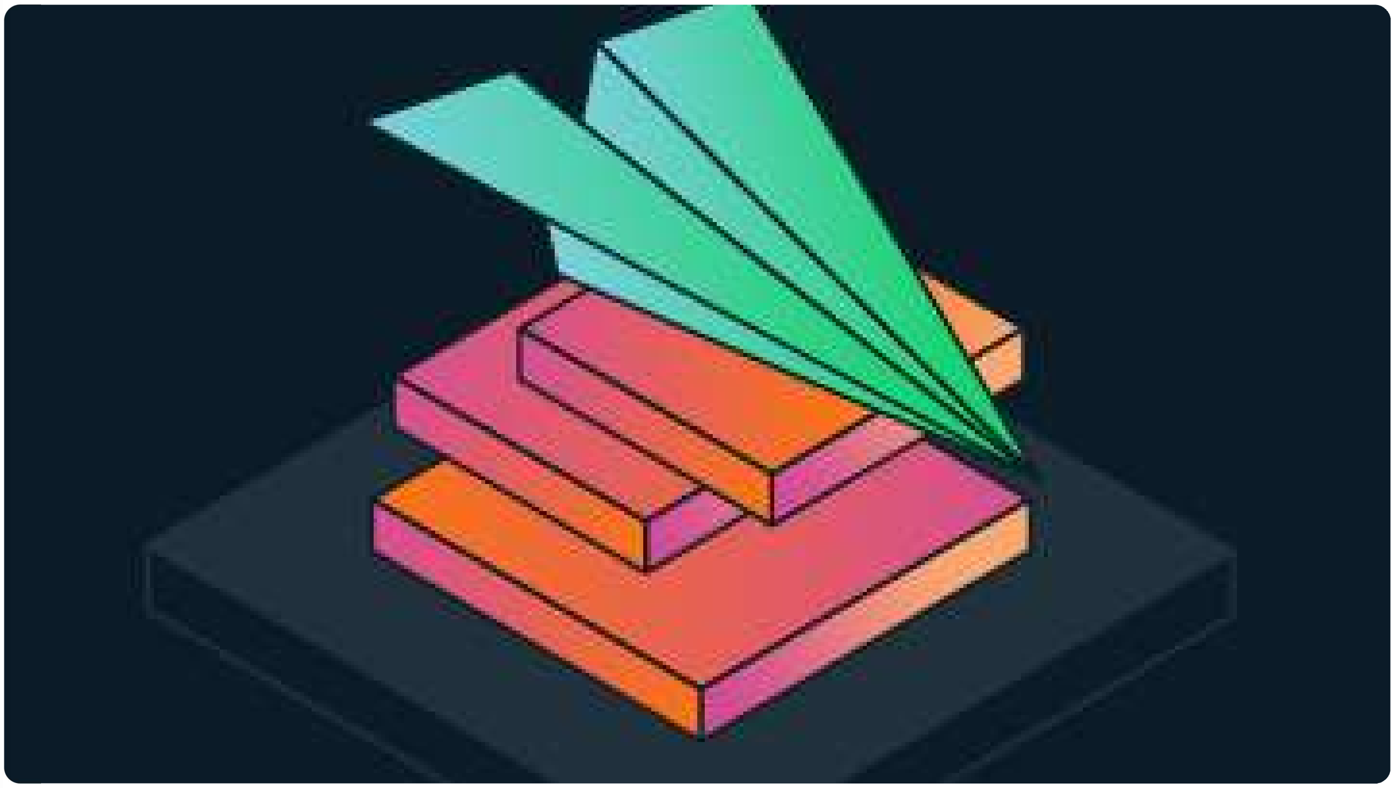

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First steps in the MongoDB World? This cheat sheet is filled with some handy tips, commands, and quick references to get you connected and CRUD'ing in no time!

- Get a free MongoDB cluster in MongoDB Atlas.
- Follow a course in MongoDB University.

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Connect MongoDB Shell

```
mongo # connects to mongodb://127.0.0.1:27017 by default
mongo --host <host> --port <port> -u <user> -p <pwd> # omit the password if you want a prompt
mongo "mongodb://192.168.1.1:27017"


mongo "mongodb+srv://cluster-name.abcde.mongodb.net/<dbname>" --username <username> # MongoDB Atlas
```

- More documentation about the MongoDB Shell.
- To connect with the new mongosh, just replace `mongo` by `mongosh`.

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Helpers

Show Databases

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```
show dbs
db // prints the current database
```

Switch Database

```
use <database_name>
```

Show Collections

```
show collections
```

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```
load("myScript.js")
```

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CRUD

Create

```
db.coll.insertOne({name: "Max"})
db.coll.insert([{name: "Max"}, {name:"Alex"}]) // ordered bulk insert
db.coll.insert([{name: "Max"}, {name:"Alex"}], {ordered: false}) // unordered bulk insert
db.coll.insert({date: ISODate()})
db.coll.insert({name: "Max"}, {"writeConcern": {"w":
```

Read

```
db.coll.findOne() // returns a single document
db.coll.find()    // returns a cursor - show 20 results - "it"
to display more
```

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```
db.coll.find({date: ISODate("2020-09-25T13:57:17.180Z")})
db.coll.find({name: "Max", age: 32}).explain("executionStats")
// or "queryPlanner" or "allPlansExecution"
db.coll.distinct("name")

// Count
db.coll.count({age: 32})          // estimation based on
collection metadata
db.coll.estimatedDocumentCount()  // estimation based on
collection metadata
db.coll.countDocuments({age: 32}) // alias for an aggregation
pipeline - accurate count

// Comparison
db.coll.find({"year": {$gt: 1970}})
db.coll.find({"year": {$gte: 1970}})
db.coll.find({"year": {$lt: 1970}})
```

- db.collection.find()
- Query and Projection Operators
- BSON types
- Read Concern

Update

```
db.coll.update({"_id": 1}, {"year": 2016}) // WARNING! Replaces
db.coll.update({"_id": 1}, {"year": 2016}) // WARNING! Replaces
the entire document
```

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```
db.coll.update({"_id": 1}, {$rename: {"year": "date"} })
db.coll.update({"_id": 1}, {$inc: {"year": 5}})
db.coll.update({"_id": 1}, {$mul: {price:
NumberDecimal("1.25"), qty: 2}})
db.coll.update({"_id": 1}, {$min: {"imdb": 5}})
db.coll.update({"_id": 1}, {$max: {"imdb": 8}})
db.coll.update({"_id": 1}, {$currentDate: {"lastModified":
true}})
db.coll.update({"_id": 1}, {$currentDate: {"lastModified":
{$type: "timestamp"}}})

// Array
db.coll.update({"_id": 1}, {$push :{"array": 1}})
db.coll.update({"_id": 1}, {$pull :{"array": 1}})
db.coll.update({"_id": 1}, {$addToSet :{"array": 2}})
db.coll.update({"_id": 1}, {$pop: {"array": 1}})  // last
element
db.coll.update({"_id": 1}, {$pop: {"array": -1}}) // first
```

Delete

```
db.coll.remove({name: "Max"})
db.coll.remove({name: "Max"}, {justOne: true})
db.coll.remove({}) // WARNING! Deletes all the docs but not the
collection itself and its index definitions
db.coll.remove({name: "Max"}, {"writeConcern": {"w":
"majority", "wtimeout": 5000}})
```

```
majority", wtimeout: 5000}})
db.coll.findOneAndDelete({"name": "Max"})
```

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Databases and Collections

Drop

```
db.coll.drop()    // removes the collection and its index definitions
db.dropDatabase() // double check that you are *NOT* on the PROD cluster... :-)
```

Create Collection

```
// Create collection with a $jsonschema
db.createCollection("contacts", {
   validator: {$jsonSchema: {
      bsonType: "object",
      required: ["phone"],
      properties: {
         phone: {
            bsonType: "string",
            description: "must be a string and is required"
         },
         email: {
            bsonType: "string",
            pattern: "@mongodb\.com$",
```

```
         },
         status: {
            enum: [ "Unknown", "Incomplete" ],
            description: "can only be one of the enum values"
         }
      }
```

Other Collection Functions

```
db.coll.stats()
db.coll.storageSize()
db.coll.totalIndexSize()
db.coll.totalSize()
db.coll.validate({full: true})
db.coll.renameCollection("new_coll", true) // 2nd parameter to drop the target collection if exists
```

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Indexes

List Indexes

```
db.coll.getIndexes()
db.coll.getIndexKeys()
```

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Create Indexes

```
// Index Types
db.coll.createIndex({"name": 1})                // single field index
db.coll.createIndex({"name": 1, "date": 1})     // compound index
db.coll.createIndex({foo: "text", bar: "text"}) // text index
db.coll.createIndex({"$**": "text"})            // wildcard text index
db.coll.createIndex({"userMetadata.$**": 1})    // wildcard index
db.coll.createIndex({"loc": "2d"})              // 2d index
db.coll.createIndex({"loc": "2dsphere"})        // 2dsphere index
db.coll.createIndex({"_id": "hashed"})          // hashed index


// Index Options
db.coll.createIndex({"lastModifiedDate": 1}, {expireAfterSeconds: 3600})      // TTL index
db.coll.createIndex({"name": 1}, {unique: true})
db.coll.createIndex({"name": 1}, {partialFilterExpression: {age: {$gt: 18}}}) // partial index
```

Drop Indexes

```
db.coll.dropIndex("name_1")
```

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Hide/Unhide Indexes

```
db.coll.hideIndex("name_1")
db.coll.unhideIndex("name_1")
```

- Indexes documentation

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Handy commands

```
use admin
db.createUser({"user": "root", "pwd": passwordPrompt(),
"roles": ["root"]})
db.dropUser("root")
db.auth( "user", passwordPrompt() )

```

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```
db.currentOp()
db.killOp(123) // opid

db.fsyncLock()
db.fsyncUnlock()

db.getCollectionNames()
db.getCollectionInfos()
db.printCollectionStats()
db.stats()

db.getReplicationInfo()
db.printReplicationInfo()
db.isMaster()
```

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Change Streams

```
watchCursor = db.coll.watch( [ { $match : {"operationType" :
"insert" } } ] )

while (!watchCursor.isExhausted()){
   if (watchCursor.hasNext()){
      print(tojson(watchCursor.next()));
   }
}
```

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```
rs.status()
rs.initiate({"_id": "replicaTest",
  members: [
    { _id: 0, host: "127.0.0.1:27017" },
    { _id: 1, host: "127.0.0.1:27018" },
    { _id: 2, host: "127.0.0.1:27019", arbiterOnly:true }]
})
rs.add("mongodbd1.example.net:27017")
rs.addArb("mongodbd2.example.net:27017")
rs.remove("mongodbd1.example.net:27017")
rs.conf()
rs.isMaster()
rs.printReplicationInfo()
rs.printSlaveReplicationInfo()
rs.reconfig(<valid_conf>)
rs.slaveOk()
rs.stepDown(20, 5) // (stepDownSecs, secondaryCatchUpPeriodSecs)
```

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Sharded Cluster

```
sh.status()
sh.addShard("rs1/mongodbd1.example.net:27017")
sh.shardCollection("mydb.coll", {zipcode: 1})
```

```
sh.splitAt("mydb.coll", {x: 70})
sh.splitFind("mydb.coll", {x: 70})
sh.disableAutoSplit()
sh.enableAutoSplit()

sh.startBalancer()
sh.stopBalancer()
sh.disableBalancing("mydb.coll")
sh.enableBalancing("mydb.coll")
sh.getBalancerState()
sh.setBalancerState(true/false)
sh.isBalancerRunning()

sh.addTagRange("mydb.coll", {state: "NY", zip: MinKey }, { state: "NY", zip: MaxKey }, "NY")
sh.removeTagRange("mydb.coll", {state: "NY", zip: MinKey }, { state: "NY", zip: MaxKey }, "NY")
```

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Wrap-up

I hope you liked my little but - hopefully - helpful cheat sheet. Of course, this list isn't exhaustive at all. There are a lot more commands but I'm sure you will find them in the MongoDB documentation.

If you feel like I forgot a critical command in this list, please send me a tweet and I will make sure to fix it.

Check out our free courses on MongoDB University if you are not too sure what some of the above commands are doing.

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If you have questions, please head to our developer community website where the MongoDB engineers and the MongoDB community will help you build your next big idea with MongoDB.

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