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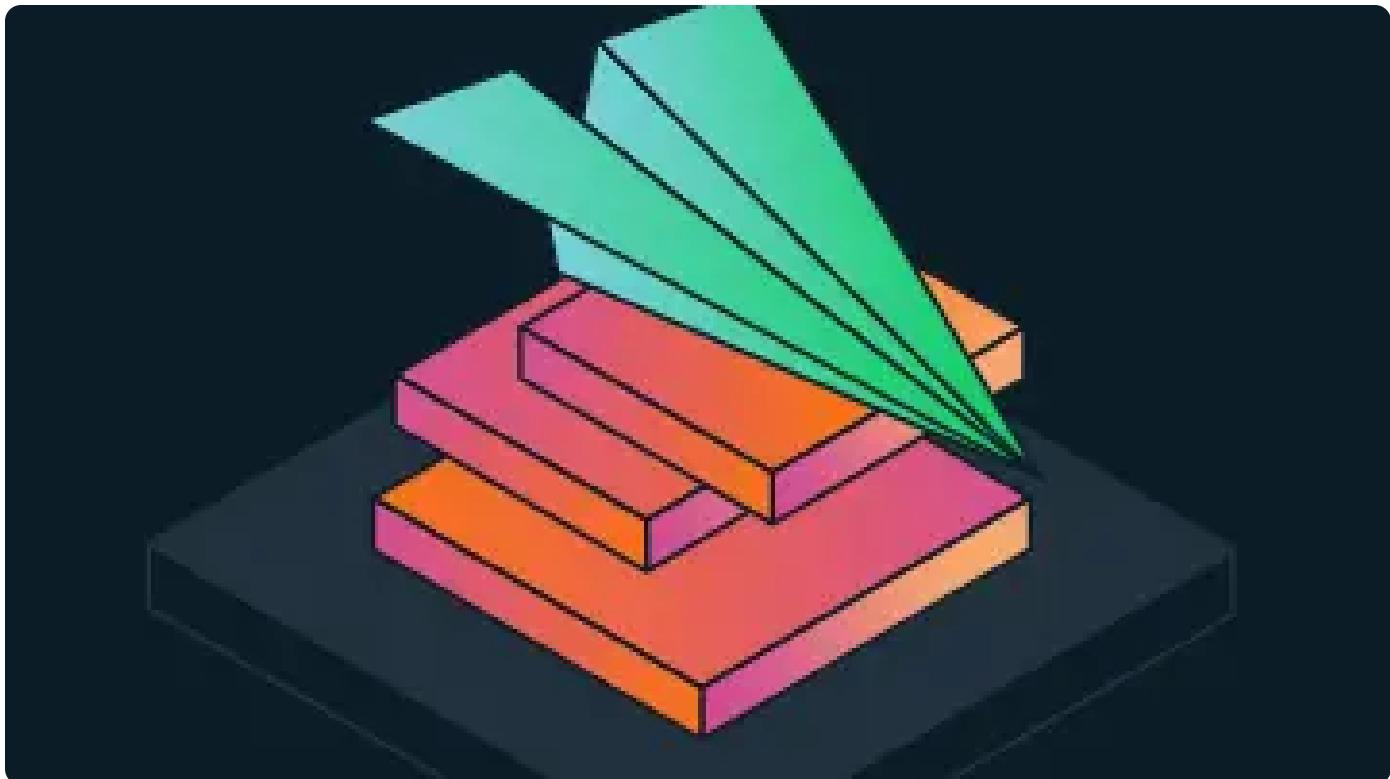
MongoDB Cheat Sheet



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5 min read • Published Jan 31, 2022 • Updated Sep 29, 2023

[MongoDB](#)



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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](#).

Updates

- September 2023: Updated for MongoDB 7.0.

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Connect via [mongosh](#)

```

1 mongosh # connects to mongodb://127.0.0.1:27017 by default
2 mongosh --host <host> --port <port> --authenticationDatabase admin -u <user> -p
3 mongosh "mongodb://<user>:<password>@192.168.1.1:27017"
4 mongosh "mongodb://192.168.1.1:27017"
5 mongosh "mongodb+srv://cluster-name.abcde.mongodb.net/<dbname>" --apiVersion 1

```

- [mongosh documentation.](#)

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Helpers

Show Databases

```

1 show dbs
2 db // prints the current database

```

Switch Database

```
1 use <database_name>
```

Show Collections

```
1 show collections
```

Run JavaScript File

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

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CRUD

Create

```

1 db.coll.insertOne({name: "Max"})
2 db.coll.insertMany([{name: "Max"}, {name:"Alex"}]) // ordered bulk insert
3 db.coll.insertMany([{name: "Max"}, {name:"Alex"}], {ordered: false}) // unorder
4 db.coll.insertOne({date: ISODate()})

```

```
5 db.coll.insertOne({name: "Max"}, {"writeConcern": {"w": "majority", "wtimeout":
```

Read

```

1 db.coll.findOne() // returns a single document
2 db.coll.find() // returns a cursor - show 20 results - "it" to display more
3 db.coll.find().pretty()
4 db.coll.find({name: "Max", age: 32}) // implicit logical "AND".
5 db.coll.find({date: ISODate("2020-09-25T13:57:17.180Z")})
6 db.coll.find({name: "Max", age: 32}).explain("executionStats") // or "queryPla
7 db.coll.distinct("name")
8
9 // Count
10 db.coll.countDocuments({age: 32}) // alias for an aggregation pipeline - accur
11 db.coll.estimatedDocumentCount() // estimation based on collection metadata
12
13 // Comparison
14 db.coll.find({"year": {$gt: 1970}})
15 db.coll.find({"year": {$gte: 1970}})
16 db.coll.find({"year": {$lt: 1970}})
17 db.coll.find({"year": {$lte: 1970}})
18 db.coll.find({"year": {$ne: 1970}})
19 db.coll.find({"year": {$in: [1958, 1959]}})
20 db.coll.find({"year": {$nin: [1958, 1959]}})
21
22 // Logical
23 db.coll.find({name:{$not: {$eq: "Max"}}})
24 db.coll.find({$or: [{"year" : 1958}, {"year" : 1959}]})
25 db.coll.find({$nor: [{price: 1.99}, {sale: true}]})
26 db.coll.find({
27   $and: [
28     {$or: [{qty: {$lt: 10}}, {qty :{$gt: 50}}]}, 
29     {$or: [{sale: true}, {price: {$lt: 5 }}]}]
30   ]
31 })
32
33 // Element
34 db.coll.find({name: {$exists: true}})
35 db.coll.find({"zipCode": {$type: 2}})
36 db.coll.find({"zipCode": {$type: "string"}})
37
38 // Aggregation Pipeline
39 db.coll.aggregate([
40   {$match: {status: "A"}},
41   {$group: {_id: "$cust_id", total: {$sum: "$amount"}}, },
42   {$sort: {total: -1}}
43 ])

```



```

44
45 // Text search with a "text" index
46 db.coll.find({$text: {$search: "cake"}}, {score: {$meta: "textScore"}}).sort({
47
48 // Regex
49 db.coll.find({name: /^Max/}) // regex: starts by letter "M"
50 db.coll.find({name: /Max$/i}) // regex case insensitive
51
52 // Array
53 db.coll.find({tags: {$all: ["Realm", "Charts"]}})
54 db.coll.find({field: {$size: 2}}) // impossible to index - prefer storing the
55 db.coll.find({results: {$elemMatch: {product: "xyz", score: {$gte: 8}}}})
56
57 // Projections
58 db.coll.find({"x": 1}, {"actors": 1}) // actors + _id
59 db.coll.find({"x": 1}, {"actors": 1, "_id": 0}) // actors
60 db.coll.find({"x": 1}, {"actors": 0, "summary": 0}) // all but "actors" and "s
61
62 // Sort, skip, limit
63 db.coll.find({}).sort({"year": 1, "rating": -1}).skip(10).limit(3)
64
65 // Read Concern
66 db.coll.find().readConcern("majority")

```

- [db.collection.find\(\)](#)
- [Query and Projection Operators](#)
- [BSON types](#)
- [Read Concern](#)

Update

```

1 db.coll.updateOne({"_id": 1}, {$set: {"year": 2016, name: "Max"}})
2 db.coll.updateOne({"_id": 1}, {$unset: {"year": 1}})
3 db.coll.updateOne({"_id": 1}, {$rename: {"year": "date"} })
4 db.coll.updateOne({"_id": 1}, {$inc: {"year": 5}})
5 db.coll.updateOne({"_id": 1}, {$mul: {price: NumberDecimal("1.25"), qty: 2}})
6 db.coll.updateOne({"_id": 1}, {$min: {"imdb": 5}})
7 db.coll.updateOne({"_id": 1}, {$max: {"imdb": 8}})
8 db.coll.updateOne({"_id": 1}, {$currentDate: {"lastModified": true}})
9 db.coll.updateOne({"_id": 1}, {$currentDate: {"lastModified": {$type: "timesta
10
11 // Array
12 db.coll.updateOne({"_id": 1}, {$push :{"array": 1}})}

```

```

13 db.coll.updateOne({"_id": 1}, {$pull :{"array": 1}})
14 db.coll.updateOne({"_id": 1}, {$addToSet :{"array": 2}})
15 db.coll.updateOne({"_id": 1}, {$pop: {"array": 1}}) // last element
16 db.coll.updateOne({"_id": 1}, {$pop: {"array": -1}}) // first element
17 db.coll.updateOne({"_id": 1}, {$pullAll: {"array" :[3, 4, 5]}})
18 db.coll.updateOne({"_id": 1}, {$push: {"scores": {$each: [90, 92]}}})
19 db.coll.updateOne({"_id": 2}, {$push: {"scores": {$each: [40, 60], $sort: 1}}})
20 db.coll.updateOne({"_id": 1, "grades": 80}, {$set: {"grades.$": 82}})
21 db.coll.updateMany({}, {$inc: {"grades.$[]": 10}})
22 db.coll.updateMany({}, {$set: {"grades.$[element)": 100}}, {multi: true, arrayFilters: [{"element": {$gt: 1}}]})
23
24 // FindOneAndUpdate
25 db.coll.findOneAndUpdate({"name": "Max"}, {$inc: {"points": 5}}, {returnNewDocument: true})
26
27 // Upsert
28 db.coll.updateOne({"_id": 1}, {$set: {item: "apple"}, $setOnInsert: {defaultQuantity: 100}})
29
30 // Replace
31 db.coll.replaceOne({"name": "Max"}, {"firstname": "Maxime", "surname": "Beugnet", "age": 30})
32
33 // Write concern
34 db.coll.updateMany({}, {$set: {"x": 1}}, {"writeConcern": {"w": "majority", "wtimeout": 10000}})

```

Delete

```

1 db.coll.deleteOne({name: "Max"})
2 db.coll.deleteMany({name: "Max"}, {"writeConcern": {"w": "majority", "wtimeout": 10000}})
3 db.coll.deleteMany({}) // WARNING! Deletes all the docs but not the collection
4 db.coll.findOneAndDelete({name: "Max"})

```

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Databases and Collections

Drop

```

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

```

Create Collection

```

1 // Create collection with a $jsonschema
2 db.createCollection("contacts", {
  ...
})

```

```

3   validator: {$jsonSchema: {
4     bsonType: "object",
5     required: ["phone"],
6     properties: {
7       phone: {
8         bsonType: "string",
9         description: "must be a string and is required"
10      },
11      email: {
12        bsonType: "string",
13        pattern: "@mongodb\\.com$",
14        description: "must be a string and match the regular expression pa
15      },
16      status: {
17        enum: [ "Unknown", "Incomplete" ],
18        description: "can only be one of the enum values"
19      }
20    }
21  }}
22 })

```

Other Collection Functions

```

1 db.coll.stats()
2 db.coll.storageSize()
3 db.coll.totalIndexSize()
4 db.coll.totalSize()
5 db.coll.validate({full: true})
6 db.coll.renameCollection("new_coll", true) // 2nd parameter to drop the target

```



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Indexes

List Indexes

```

1 db.coll.getIndexes()
2 db.coll.getIndexKeys()

```



Create Indexes

```

1 // Index Types
2 db.coll.createIndex({"name": 1})           // single field index
3 db.coll.createIndex({"name": 1, "date": 1}) // compound index

```



```

4 db.coll.createIndex({foo: "text", bar: "text"}) // text index
5 db.coll.createIndex({"$**": "text"})           // wildcard text index
6 db.coll.createIndex({"userMetadata.$**": 1})    // wildcard index
7 db.coll.createIndex({"loc": "2d"})              // 2d index
8 db.coll.createIndex({"loc": "2dsphere"})        // 2dsphere index
9 db.coll.createIndex({_id: "hashed"})           // hashed index
10
11 // Index Options
12 db.coll.createIndex({"lastModifiedDate": 1}, {expireAfterSeconds: 3600})
13 db.coll.createIndex({"name": 1}, {unique: true})
14 db.coll.createIndex({"name": 1}, {partialFilterExpression: {age: {$gt: 18}}})
15 db.coll.createIndex({"name": 1}, {collation: {locale: 'en', strength: 1}})
16 db.coll.createIndex({"name": 1 }, {sparse: true})

```

Drop Indexes

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



Hide/Unhide Indexes

```

1 db.coll.hideIndex("name_1")
2 db.coll.unhideIndex("name_1")

```



- [Indexes documentation](#)

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Handy commands

```

1 use admin
2 db.createUser({"user": "root", "pwd": passwordPrompt(), "roles": ["root"]})
3 db.dropUser("root")
4 db.auth("user", passwordPrompt())
5
6 use test
7 db.getSiblingDB("dbname")
8 db.currentOp()
9 db.killOp(123) // opid
10
11 db.fsyncLock()
12 db.fsyncUnlock()
13
14 db.getCollectionNames()

```



```

15 db.getCollectionInfos()
16 db.printCollectionStats()
17 db.stats()
18
19 db.getReplicationInfo()
20 db.printReplicationInfo()
21 db.hello()
22 db.hostInfo()
23
24 db.shutdownServer()
25 db.serverStatus()
26
27 db.getProfilingStatus()
28 db.setProfilingLevel(1, 200) // 0 == OFF, 1 == ON with slowms, 2 == ON
29
30 db.enableFreeMonitoring()
31 db.disableFreeMonitoring()
32 db.getFreeMonitoringStatus()
33
34 db.createView("viewName", "sourceColl", [{$project:{department: 1}}])

```

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Change Streams

```

1 watchCursor = db.coll.watch( [ { $match : { "operationType" : "insert" } } ] )
2
3 while (!watchCursor.isExhausted()){
4     if (watchCursor.hasNext()){
5         print(tojson(watchCursor.next()));
6     }
7 }

```

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Replica Set

```

1 rs.status()
2 rs.initiate({"_id": "RS1",
3     members: [
4         { _id: 0, host: "mongodb1.net:27017" },
5         { _id: 1, host: "mongodb2.net:27017" },
6         { _id: 2, host: "mongodb3.net:27017" }]
7 })
8 rs.add("mongodb4.net:27017")

```

```

9  rs.addArb("mongodb5.net:27017")
10 rs.remove("mongodb1.net:27017")
11 rs.conf()
12 rs.hello()
13 rs.printReplicationInfo()
14 rs.printSecondaryReplicationInfo()
15 rs.reconfig(config)
16 rs.reconfigForPSASet(memberIndex, config, { options } )
17 db.getMongo().setReadPref('secondaryPreferred')
18 rs.stepDown(20, 5) // (stepDownSecs, secondaryCatchUpPeriodSecs)

```

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Sharded Cluster

```

1  db.printShardingStatus()
2
3  sh.status()
4  sh.addShard("rs1/mongodb1.example.net:27017")
5  sh.shardCollection("mydb.coll", {zipcode: 1})
6
7  sh.moveChunk("mydb.coll", { zipcode: "53187" }, "shard0019")
8  sh.splitAt("mydb.coll", {x: 70})
9  sh.splitFind("mydb.coll", {x: 70})
10
11 sh.startBalancer()
12 sh.stopBalancer()
13 sh.disableBalancing("mydb.coll")
14 sh.enableBalancing("mydb.coll")
15 sh.getBalancerState()
16 sh.setBalancerState(true/false)
17 sh.isBalancerRunning()
18
19 sh.startAutoMerger()
20 sh.stopAutoMerger()
21 sh.enableAutoMerger()
22 sh.disableAutoMerger()
23
24 sh.updateZoneKeyRange("mydb.coll", {state: "NY", zip: MinKey }, { state: "NY",
25 sh.removeRangeFromZone("mydb.coll", {state: "NY", zip: MinKey }, { state: "NY"
26 sh.addShardToZone("shard0000", "NYC")
27 sh.removeShardFromZone("shard0000", "NYC")

```

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