

MongoDB Crash Course

ComputeFest

Niv Dayan

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DASlab



**INSTITUTE FOR APPLIED
COMPUTATIONAL SCIENCE**
AT HARVARD UNIVERSITY



Installation

OS X: <https://www.youtube.com/watch?v=G--uGbOFF9E>

(you may need to add “sudo” as a prefix to every installation command)

Windows: https://www.youtube.com/watch?v=K_5mj3-_uJQ



Starting MongoDB

Commands to run are in blue

Start server. Open terminal window and run:

```
mkdir DB
```

```
mongod --dbpath DB
```

Start client. Open different terminal and run:

```
mongo
```



Looks like this:

Server window

Client window

```

Desktop — mongod --dbpath mongo/ — 90x33
WINL-02143:Desktop niv$ mongod --dbpath mongo/
2017-01-11T18:45:22.068-0500 I CONTROL [initandlisten] MongoDB starting : pid=8970 port=2
7017 dbpath=mongo/ 64-bit host=WINL-02143
2017-01-11T18:45:22.069-0500 I CONTROL [initandlisten] db version v3.2.10
2017-01-11T18:45:22.069-0500 I CONTROL [initandlisten] git version: 79d9b3ab5ce20f51c272b
4411202710a082d0317
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.2j 2
6 Sep 2016
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] allocator: system
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] modules: none
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] build environment:
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] distarch: x86_64
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] target_arch: x86_64
2017-01-11T18:45:22.070-0500 I CONTROL [initandlisten] options: { storage: { dbPath: "mon
go/" } }
2017-01-11T18:45:22.071-0500 I STORAGE [initandlisten] wiredtiger_open config: create,cac
he_size=4G,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_ti
me=100000),checkpoint=(wait=60,log_size=2GB),statistics_log=(wait=0),
2017-01-11T18:45:22.434-0500 I CONTROL [initandlisten]
2017-01-11T18:45:22.434-0500 I CONTROL [initandlisten] ** WARNING: soft rlimits too low.
Number of files is 256, should be at least 1000
2017-01-11T18:45:22.435-0500 I FTDC [initandlisten] Initializing full-time diagnostic
data capture with directory 'mongo/diagnostic.data'
2017-01-11T18:45:22.435-0500 I NETWORK [HostnameCanonicalizationWorker] Starting hostname
canonicalization worker
2017-01-11T18:45:22.441-0500 W NETWORK [HostnameCanonicalizationWorker] Failed to obtain
address information for hostname WINL-02143: nodename nor servname provided, or not known
2017-01-11T18:45:22.533-0500 I NETWORK [initandlisten] waiting for connections on port 27
017
2017-01-11T18:45:44.315-0500 I NETWORK [initandlisten] connection accepted from 127.0.0.1
:64714 #1 (1 connection now open)

```

```

niv — mongo — 89x33
Last login: Wed Jan 11 18:42:37 on ttys000
WINL-02143:~ niv$
WINL-02143:~ niv$
WINL-02143:~ niv$
WINL-02143:~ niv$ mongo
MongoDB shell version: 3.2.10
connecting to: test
Server has startup warnings:
2017-01-11T18:45:22.434-0500 I CONTROL [initandlisten]
2017-01-11T18:45:22.434-0500 I CONTROL [initandlisten] ** WARNING: soft rlimits too low.
[ Number of files is 256, should be at least 1000
]
> var customer = {name: "bob", balance: 100}
]
> - db.customers.insert(customer)
]
2017-01-11T18:46:24.073-0500 E QUERY [thread1] SyntaxError: illegal character @(shell)
[:1:0
]
]
> db.customers.insert(customer)
WriteResult({"nInserted" : 1 })
]
>
]

```



Create a Collection (in client)

Create a database entry

```
var customer = {name: "bob", balance: 100}  
db.customers.insert(customer)
```

We now have one collection of customers

```
show collections
```

In the collection, we have one customer

```
db.customers.find()
```



Pretty Printing

Print things nicely

```
db.customers.find().pretty()
```

Note that each document within a collection has a unique ID that is created automatically



Filtering

Create another customer

```
var customer2 = {name: "sara", balance: 200}  
db.customers.insert(customer2)
```

Again, list all customers:

```
db.customers.find().pretty()
```

List customers called Sara

```
db.customers.find({name: "sara"}).pretty()
```

List customers with balance greater than 150

```
db.customers.find( { balance: { $gt: 150 } } ).pretty()
```



Updating Documents

Give bob a surname

```
db.customers.update(  
    {name : "bob"}, {$set : {surname: "Dylan"}} )
```

Add 50 to Bob's account

```
db.customers.update({name : "bob"},  
    {$inc : {balance: 50}} )
```

Check outcome

```
db.customers.find().pretty()
```




Copying a Document

Create a copy of Bob

```
var cust = db.customers.findOne({name : "bob"})
```

Print the surname of the copy

```
cust["surname"]
```

Change the surname of the copy

```
cust["surname"] = "Marley"
```



Saving a Copy to the Database

Try to save the copy in the database (won't work)

```
db.customers.insert(cust)
```

Generate a new object ID

```
var o = ObjectId()
```

Assign the new ID to the copy

```
cust["_id"] = o
```

Now try to insert again

```
db.customers.insert(cust)
```



Aggregation

Find sum of all account balances

```
db.customers.aggregate([ { $group: {  
  _id: null, total: { $sum: "$balance" } } } ] )
```



Shut down server

Shut down the server and quit client

use admin

```
db.shutdownServer()
```

```
exit
```



Thanks!