

Intro to MongoDb

Varma Bhupatiraju

Today's Agenda

Agenda

Who am I?

What is MongoDB?

MongoDB vs SQL

How to install MongoDB?

How to interact with MongoDB?

Resources

Q & A

Who am I

Varma Bhupatiraju

15+ years of experience in software development in Los Angeles,
CA

Sr Software Programmer at Vimware Consulting

Manage team at Stellent Soft Pvt Ltd

Founder & Lead Instructor at Coding Sastra

What is MongoDb?

MongoDB (from “**humongous**”) is a

Scalable

High performance

Open source

Schema-free

Document-oriented

NoSQL database

MongoDb vs SQL

SQL (Relational)

database

table

row

MongoDB

database

collection

document

The main difference? SQL is relational while MongoDb is document-oriented

How to install MongoDB?

<https://www.mongodb.com/download-center#community>



How to install MongoDB?

The screenshot shows the MongoDB download center at <https://www.mongodb.com/download-center#community>. The page features a navigation bar with links for OCS, OPEN SOURCE, UNIVERSITY, SOLUTIONS, CLOUD, CUSTOMERS, RESOURCES, and ABOUT US. Below the navigation is a horizontal menu with options: Community Server (highlighted in green), Enterprise Server, Ops Manager, Compass, and Connector for B. A sidebar on the left displays the "Current Stable Release (3.2.11)" with links to Release Notes and Changelog, and download links for Windows, Linux, OSX, and Solaris. A dropdown menu for "Version:" lists "Windows Server 2008 R2 64-bit and later, with SSL support x64". At the bottom, a green button labeled "⬇ DOWNLOAD (msi)" is visible.

→ C https://www.mongodb.com/download-center#community

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mongoDB. | FOR GIANT IDEAS

SOLUTIONS CLOUD CUSTOMERS RESOURCES ABOUT US

Community Server Enterprise Server Ops Manager Compass Connector for B

Current Stable Release (3.2.11)

11/18/2016: [Release Notes](#) | [Changelog](#)

Download Source: [tgz](#) | [zip](#)

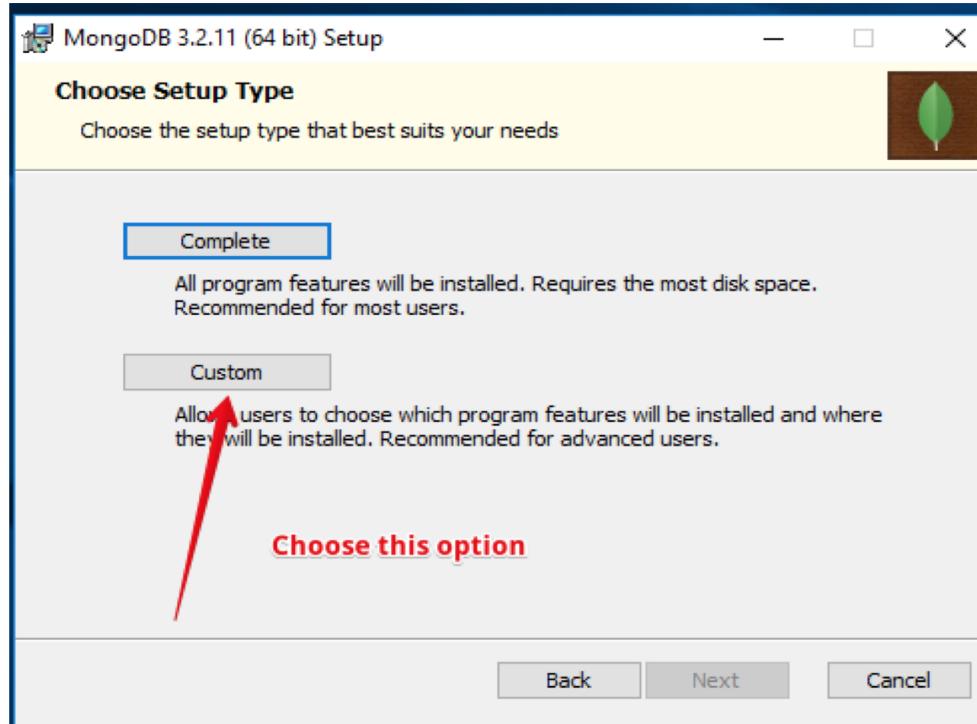
Version:

Windows Server 2008 R2 64-bit and later, with SSL support x64

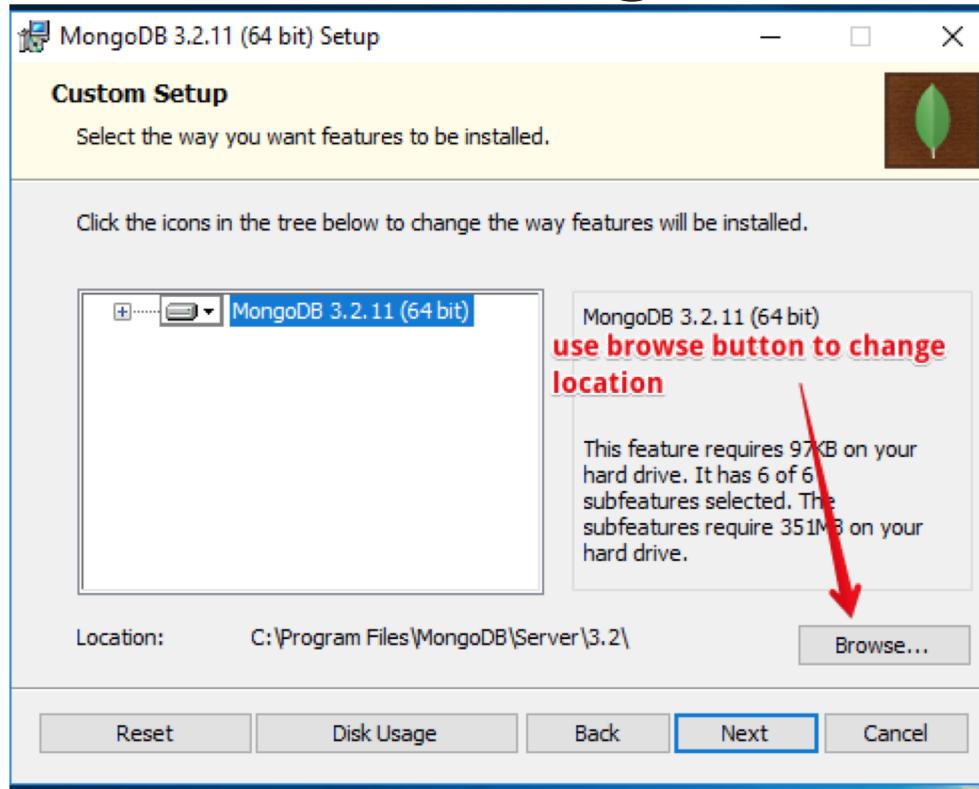
Installation Package:

⬇ DOWNLOAD (msi)

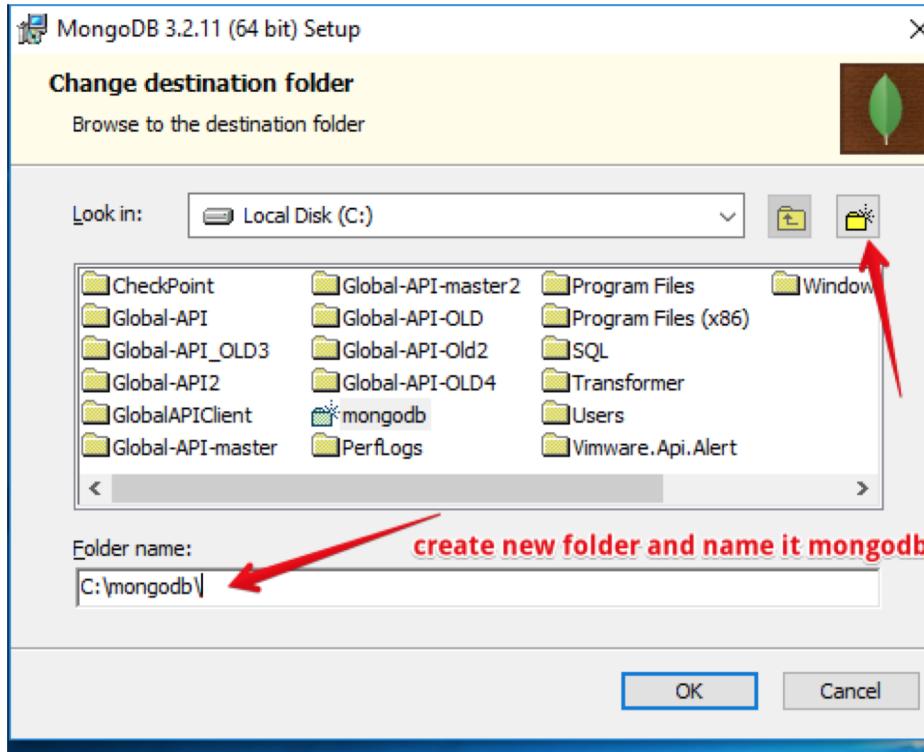
How to install MongoDB?



How to install MongoDB?

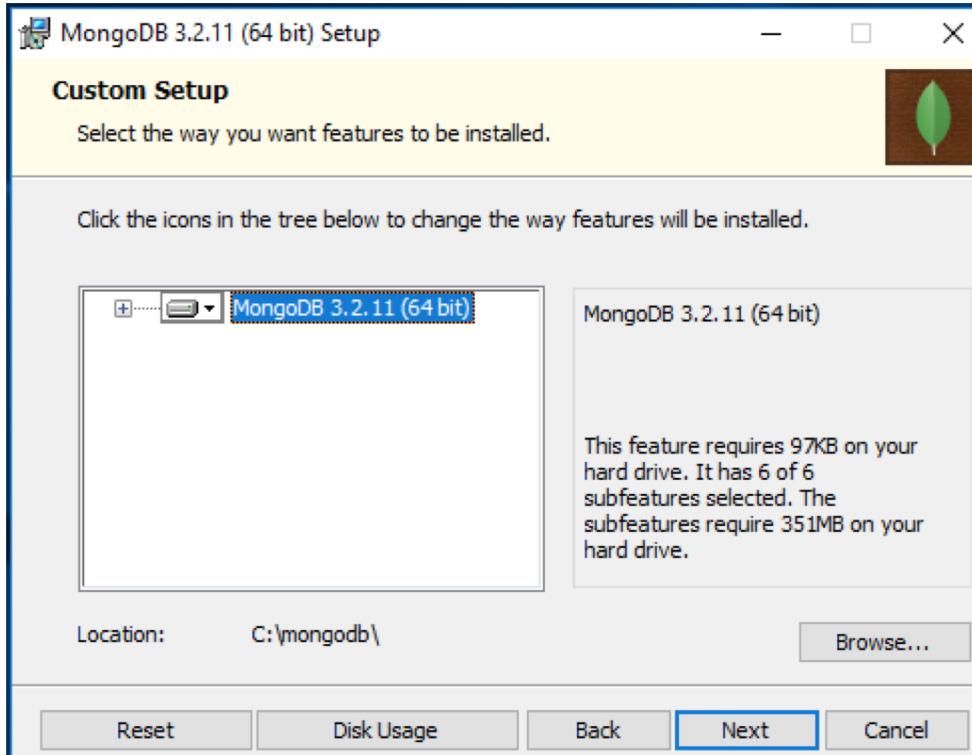


How to install MongoDB?

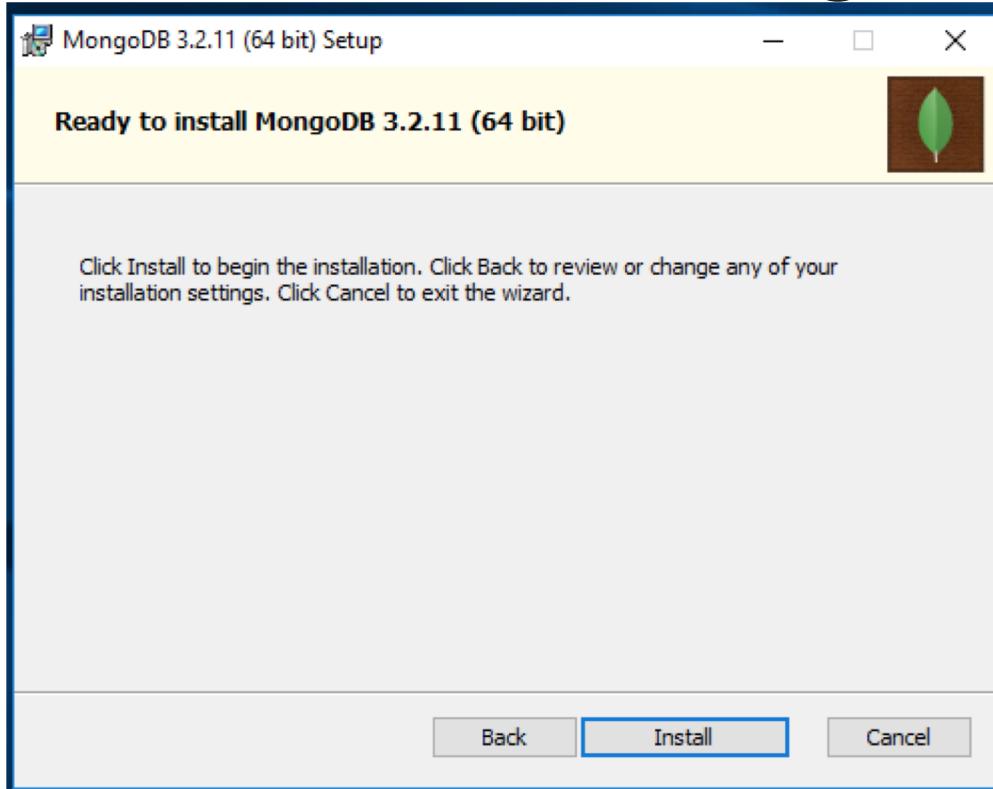




How to install MongoDB?

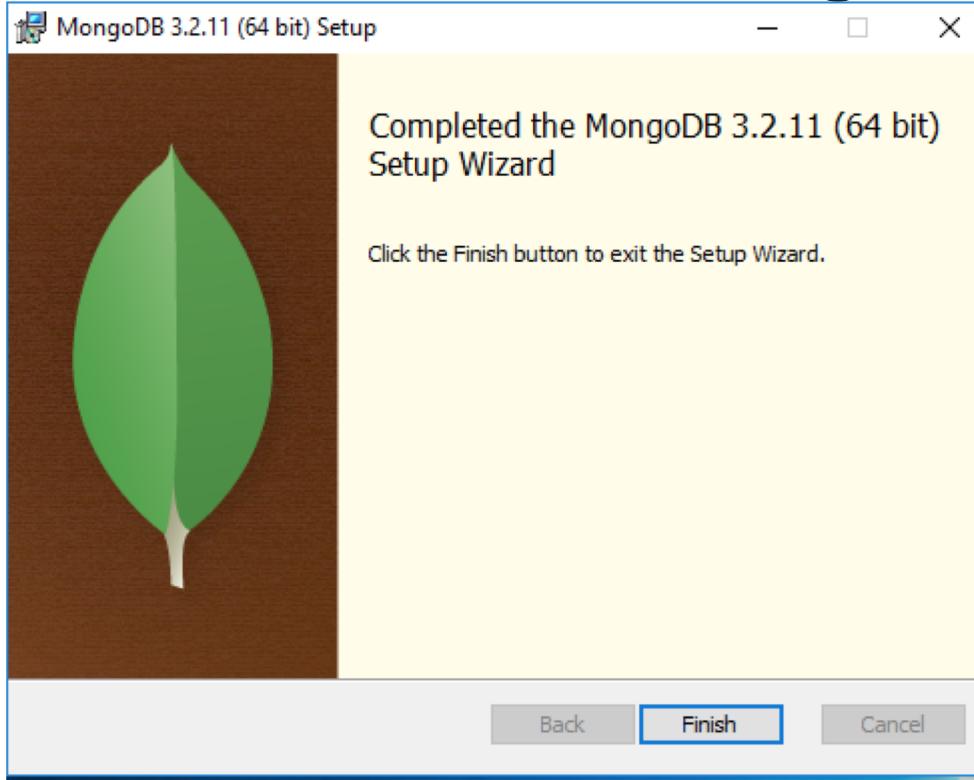


How to install MongoDB?

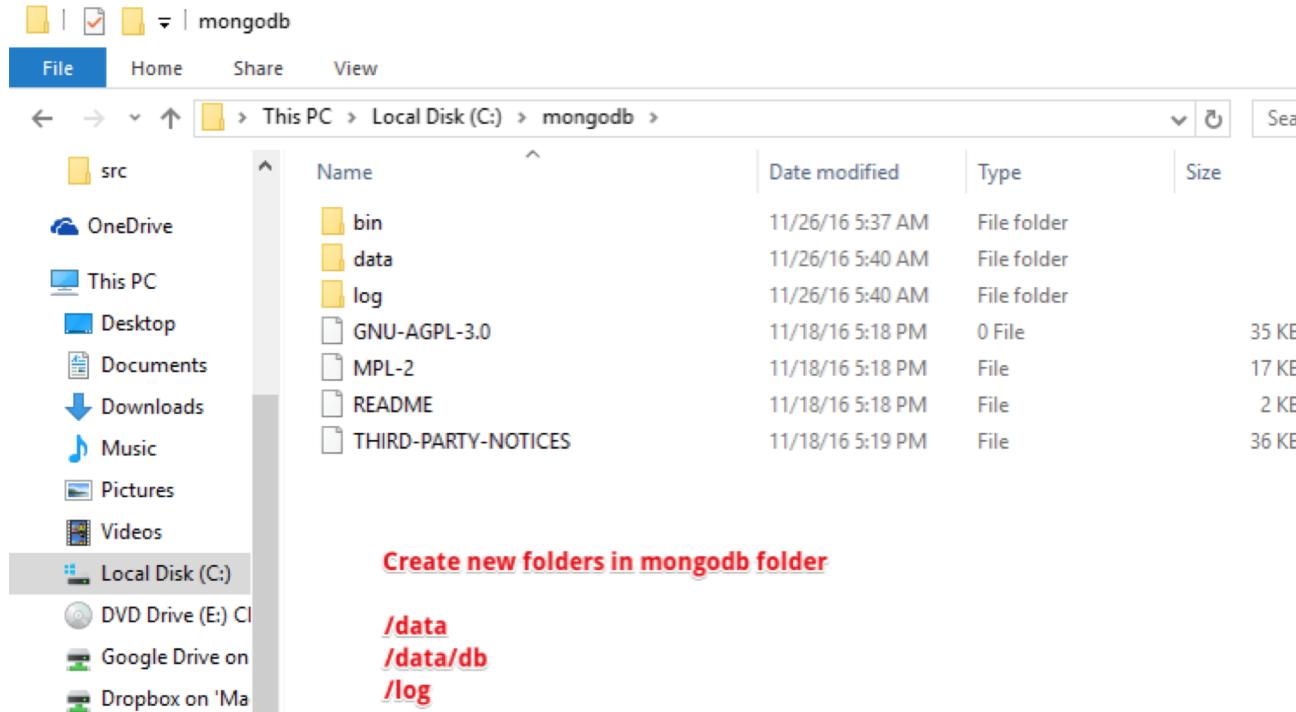




How to install MongoDB?



How to install MongoDB?





How to install MongoDB?

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd..

C:\Windows>cd..

C:\>cd mongodb

C:\mongodb>cd bin

C:\mongodb\bin>mongod --directoryperdb --dbpath c:\mongodb\data\db --logpath C:\mongodb\log\mongo.log --logappend --rest --install
2016-11-26T05:46:24.543+0530 I CONTROL  [main] ** WARNING: --rest is specified without --httpinterface,
2016-11-26T05:46:24.545+0530 I CONTROL  [main] **           enabling http interface

C:\mongodb\bin>
```



How to install MongoDB?

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>cd..

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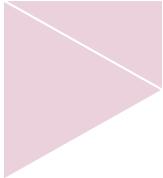
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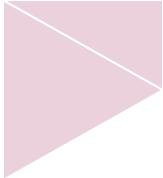
C:\mongodb\bin>net start MongoDB

The MongoDB service was started successfully.
```



How to install MongoDB?

```
C:\mongodb\bin>mongo
MongoDB shell version: 3.2.11
connecting to: test
Server has startup warnings:
2016-11-26T05:48:14.834+0530 I CONTROL  [main] ** WARNING: --rest is specified without --httpinterface,
2016-11-26T05:48:14.838+0530 I CONTROL  [main] **           enabling http interface
> show dbs
local  0.000GB
>
```



How to interact with MongoDB?

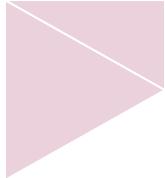
1. Mongo Shell
2. RoboMongo Third Party GUI tool



Using Mongo Shell

```
$ mongo
```

```
[Varmas-MBP:~ varmabhupatiraju$ mongo
MongoDB shell version: 3.2.1
connecting to: test
> █
```



Using Mongo Shell

Runs javascript

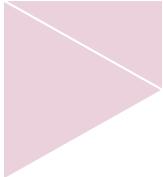
Run Administrative tasks

Run single adhoc command

Useful for

Administrative tasks

Batch Processing



Using MongoShell

You can run command to rotate log files every day new log file

```
Varmas-MacBook-Pro:~ varmabhupatiraju$ mongo localhost/admin --eval "db.runCommand({logRotate:1})"
MongoDB shell version: 3.2.1
[connecting to: localhost/admin
{ "ok" : 1 }
```

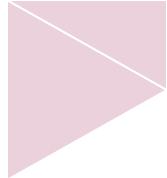


Using Mongo Shell

Switch to another database or create new database

```
> use codingsastra
```

```
Last login: Tue Nov 22 21:04:56 on console
Varmas-MBP:~ varmabhupatiraju$ mongo
MongoDB shell version: 3.2.1
connecting to: test
> use codingsastra
switched to db codingsastra
> █
```

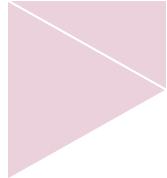


Using Mongo Shell

Create collection by creating new document in the collection

```
>db.students.insert({fname:"Varma",lname:"Bhupatiraju",degree:"MTech"});
```

```
[> db.students.insert({fname:"Varma", lname:"Bhupatiraju", degree:"MTech"})
WriteResult({ "nInserted" : 1 })
> ]
```



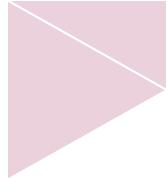
Using Mongo Shell

Create collection by creating new document in the collection

```
>db.students.insert({fname:"Basanth",lname:"Alluri",degree:"MTech  
",gender:"Male",age:22});
```

```
[> db.students.insert({fname:"Basanth",lname:"Alluri",degree:"MSc",gender:"Male",age:32});  
WriteResult({ "nInserted" : 1 })  
> ]
```

What did you observe from previous insert?

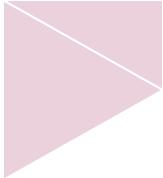


Using Mongo Shell

Find records in collection using find function

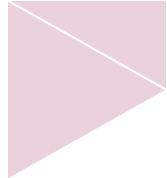
```
>db.students.find();
```

```
> db.students.find();
{ "_id" : ObjectId("583833dee6964b1e7addfd0a"), "fname" : "Varma", "lname" : "Bhupatiraju", "degree" : "MTech" }
{ "_id" : ObjectId("58383569e6964b1e7addfd0b"), "fname" : "Basanth", "lname" : "Alluri", "degree" : "MSc", "gender" : "Male",
 "age" : 32 }
> █
```



Using Mongo Shell

You can insert more than one record at a time by using
`db.students.insertMany({...},{...})`

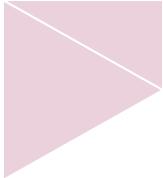


Using Mongo Shell

Find specific records in collection using find function with arguments

```
>db.students.find({fname:"Varma"});
```

```
[> db.students.find({fname:"Varma"});
{ "_id" : ObjectId("583833dee6964b1e7addfd0a"), "fname" : "Varma", "lname" : "Bhupatiraju", "degree" : "MTech" }
> ]
```

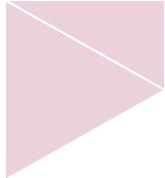


Using Mongo Shell

Return the Specified Fields and the `_id` Field Only

```
>db.students.find({}, {fname:1, lname:1});
```

```
[> db.students.find({}, {fname:1, lname:1});
{ "_id" : ObjectId("583833dee6964b1e7addfd0a"), "fname" : "Varma", "lname" : "Bhupatiraju" }
{ "_id" : ObjectId("58383569e6964b1e7addfd0b"), "fname" : "Basanth", "lname" : "Alluri" }
> ]
```

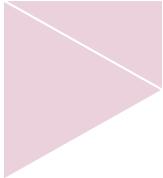


Using Mongo Shell

Return the Specified Fields without the `_id` Field

```
>db.students.find({}, {fname:1, lname:1, _id:0});
```

```
> db.students.find({}, {fname:1, lname:1, _id:0});
{ "fname" : "Varma", "lname" : "Bhupatiraju" }
{ "fname" : "Basanth", "lname" : "Alluri" }
> █
```



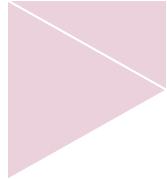
Using Mongo Shell

Update specific document to update fields

```
>db.students.updateOne({fname:"Varma"},{ $set: {"degree":"BTech"});
```

```
[> db.students.updateOne({fname:"Varma"},{ $set: {"degree":"BTech"}});
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> █
```

```
[> db.students.find({fname:"Varma"});
{ "_id" : ObjectId("583833dee6964b1e7addfd0a"), "fname" : "Varma", "lname" : "Bhupatiraju", "degree" : "BTech" }
> █
```



Using Mongo Shell

delete specific document

```
>db.students.remove({fname:"Varma"});
```

```
>db.students.deleteOne({fname:"Varma"}); //added in 3.2
```

Other delete methods available

```
>db.students.deleteMany({gender:"Male"}); //added in 3.2
```



Using RoboMongo

The screenshot shows the RoboMongo interface. On the left is a sidebar with a tree view of databases and collections:

- localhost (7)
 - System
 - codingsastr'a**
 - Collections (1)
 - students**
 - Functions
 - Users
 - jafarachat
 - jafraadmin
 - jafrachat
 - jafradmin
 - test



How to write application to get data from MongoDB?

MongoDb provided Client Drivers for several programming languages to connect to MongoDB.

1. Node.js

- 2.C#

- 3.Java

- 4.Many more..

More Features

Indexing

Indexes support the efficient execution of queries in MongoDB

```
db.students.createIndex( { lname: 1 }, {background: true} )
```

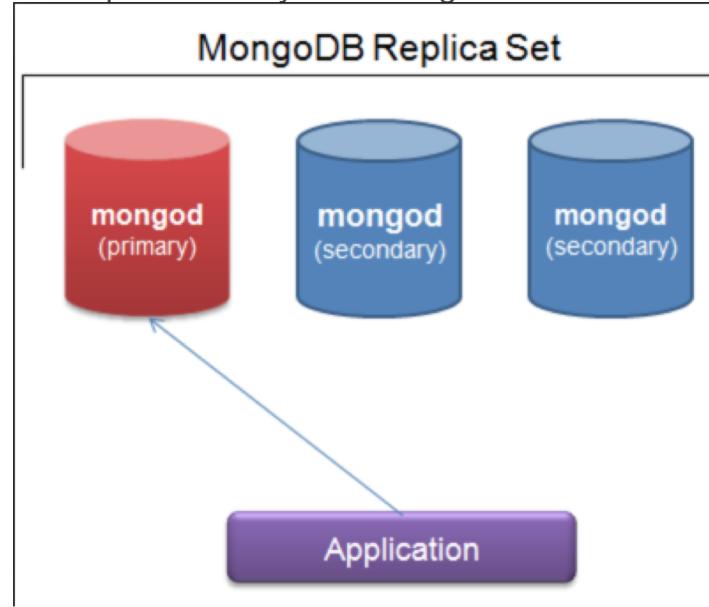
background operation so that the MongoDB database remains available during the index building operation

More Features

Indexing

Replication

Replication is the process of synchronizing data across multiple servers.



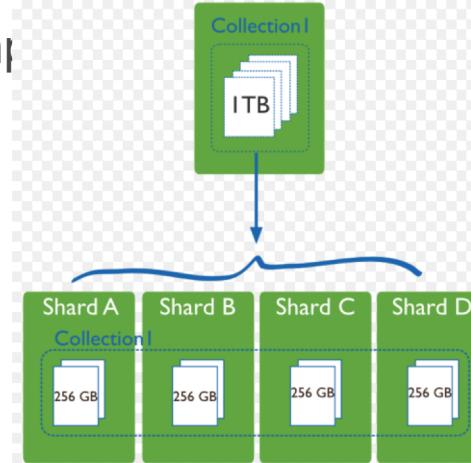
More Features

Indexing

Replication

Sharding

Sharding is a method for storing data across multiple machines. MongoDB uses sharding to support deployments with very large data sets and high throughput.



Resources

MongoDB documentation

<https://docs.mongodb.com/manual/>

MongoDB GUI Tool - Robomongo

<https://robomongo.org/>

Thank YOU

Questions?

Suggestions?

Feel free to reach me for any questions

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Twitter: varmab