MySql and Mongo

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1.Install latest version of MongoDB from apt-get repository
Ans.

```
chhavi@chhavi:~$ sudo su
root@chhavi:/home/chhavi# wget -qO - https://www.mongodb.org/static/pgp/server-4.2.asc | sudo apt-key add -
OK
root@chhavi:/home/chhavi# cat /etc/apt/sources.list.d/mongodb-org-4.2.list
deb [ arch=amd64,arm64 ] https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.2 multiverse
root@chhavi:/home/chhavi# sudo apt-get update
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]

Get:3 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]

Ign:4 http://dl.google.com/linux/chrome/deb stable InRelease

Hit:5 http://dl.google.com/linux/chrome/deb stable Release

Ign:7 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.2 InRelease

Hit:8 https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.2 Release

Get:10 http://packages.microsoft.com/repos/vscode stable InRelease [3,959 B]

Get:11 http://in.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
```

```
root@chhavi:/home/chhavi# apt-get install -y mongodb-org
Reading package lists... Done
Building dependency tree
Reading state information... Done
```

```
root@chhavi:/var/lib# systemctl status mongod
● mongod.service - MongoDB Database Server
   Loaded: loaded (/lib/systemd/system/mongod.service; disabled; vendor preset: enabled)
   Active: active (running) since Tue 2020-02-18 14:55:53 IST; 3s ago
     Docs: https://docs.mongodb.org/manual
 Main PID: 11852 (mongod)
   CGroup: /system.slice/mongod.service
           └─11852 /usr/bin/mongod --config /etc/mongod.conf
```

```
chhavi@chhavi:/var/lib/mongodb$ mongo
MongoDB shell version v4.2.3
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("56cd761c-e996-4297-b229-e527279b8264") }
MongoDB server version: 4.2.3
Server has startup warnings:
2020-02-18T14:55:53.574+0530 I  STORAGE  [initandlisten]
2020-02-18T14:55:53.574+0530 I  STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly r
ecommended with the WiredTiger storage engine
2020-02-18T14:55:53.574+0530 I  STORAGE  [initandlisten] **          See http://dochub.mongodb.org/core/pro
dnotes-filesystem
2020-02-18T14:55:54.063+0530 I  CONTROL  [initandlisten]
2020-02-18T14:55:54.063+0530 I  CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the
database.
2020-02-18T14:55:54.063+0530 I  CONTROL  [initandlisten] **          Read and write access to data and conf
iguration is unrestricted.
2020-02-18T14:55:54.063+0530 I  CONTROL  [initandlisten]
```

2.Create a database student

Ans.

```
> use student
switched to db student
> db
student
> show dbs
admin   0.000GB
config  0.000GB
```

3.Insert operation : 5 students data (Name, Contact, City, Roll No, Branch)

Ans.

```
> db.stu_details.insert([{Name:'Rohit',ContactNo:9856543210,City:'Bengaluru',RollNo:46,Branch:'CS'},{Name:'
Som',ContactNo:9566543210,City:'Kolata',RollNo:53,Branch:'CS'},{Name:'Sameer',ContactNo:9872343210,City:'Ne
w Delhi',RollNo:36,Branch:'Mech'}]);
BulkWriteResult({
        "writeErrors" : [ ],
        "writeConcernErrors" : [ ],
        "nInserted" : 3,
        "nUpserted" : 0,
        "nMatched" : 0,
        "nModified" : 0,
        "nRemoved" : 0,
        "upserted" : [ ]
})
> db.stu_details.insert({Name:'Richa',ContactNo:9877843210,City:'Mumbai',RollNo:76,Branch:'CS'})
WriteResult({ "nInserted" : 1 })
> db.mycol.find().pretty()
> db.stu_details.find().pretty()
{
        "_id" : ObjectId("5e49212ae36eea2b195298a1"),
        "Name" : "Raj",
        "ContactNo" : 9876543210,
        "City" : "Mumbai",
        "RollNo" : 56,
        "Branch" : "CS"
}
```

```
{
        "_id" : ObjectId("5e492203e36eea2b195298a2"),
        "Name" : "Rohit",
        "ContactNo" : 9856543210,
        "City" : "Bengaluru",
        "RollNo" : 46,
        "Branch" : "CS"
}
{
        "_id" : ObjectId("5e492203e36eea2b195298a3"),
        "Name" : "Som",
        "ContactNo" : 9566543210,
        "City" : "Kolata",
        "RollNo" : 53,
        "Branch" : "CS"
}
{
        "_id" : ObjectId("5e492203e36eea2b195298a4"),
        "Name" : "Sameer",
        "ContactNo" : 9872343210,
        "City" : "New Delhi",
        "RollNo" : 36,
        "Branch" : "Mech"
}
{
```

```
{
        "_id" : ObjectId("5e49221fe36eea2b195298a5"),
        "Name" : "Richa",
        "ContactNo" : 9877843210,
        "City" : "Mumbai",
        "RollNo" : 76,
        "Branch" : "CS"
}
>
```

4.Read operation : All the students belong to a particular city

Ans.

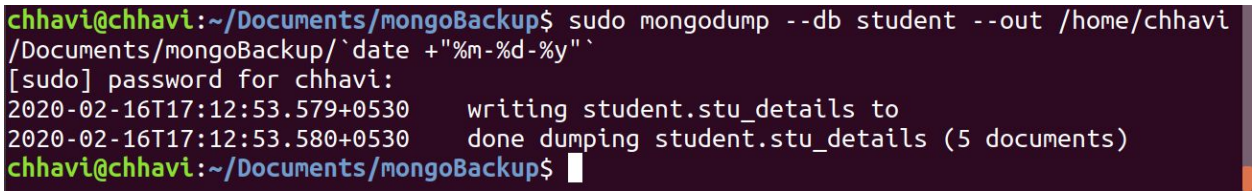
```
> db.stu_details.find({"City":"Mumbai"})
{ "_id" : ObjectId("5e49212ae36eea2b195298a1"), "Name" : "Raj", "ContactNo" : 9876543210, "City" : "Mumbai"
, "RollNo" : 56, "Branch" : "CS" }
{ "_id" : ObjectId("5e49221fe36eea2b195298a5"), "Name" : "Richa", "ContactNo" : 9877843210, "City" : "Mumba
i", "RollNo" : 76, "Branch" : "CS" }
> db.stu_details.find({"City":"Mumbai"}).pretty()
{
        "_id" : ObjectId("5e49212ae36eea2b195298a1"),
        "Name" : "Raj",
        "ContactNo" : 9876543210,
        "City" : "Mumbai",
        "RollNo" : 56,
        "Branch" : "CS"
}
{
        "_id" : ObjectId("5e49221fe36eea2b195298a5"),
        "Name" : "Richa",
        "ContactNo" : 9877843210,
        "City" : "Mumbai",
        "RollNo" : 76,
        "Branch" : "CS"
}
>
```

5.Update operation : Update the branch of all the students to CSE

Ans.

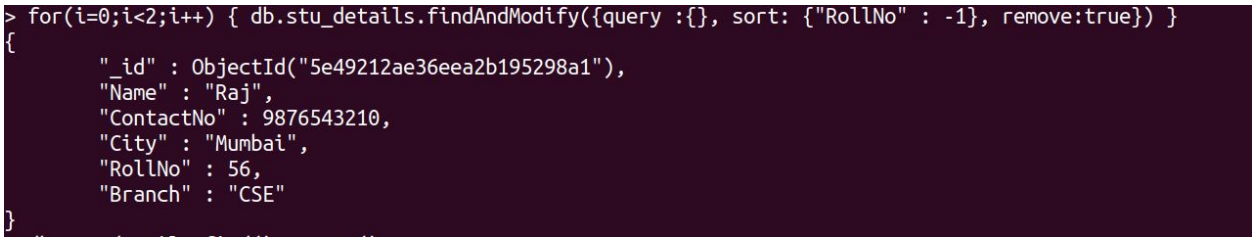
6.Take dump of the database

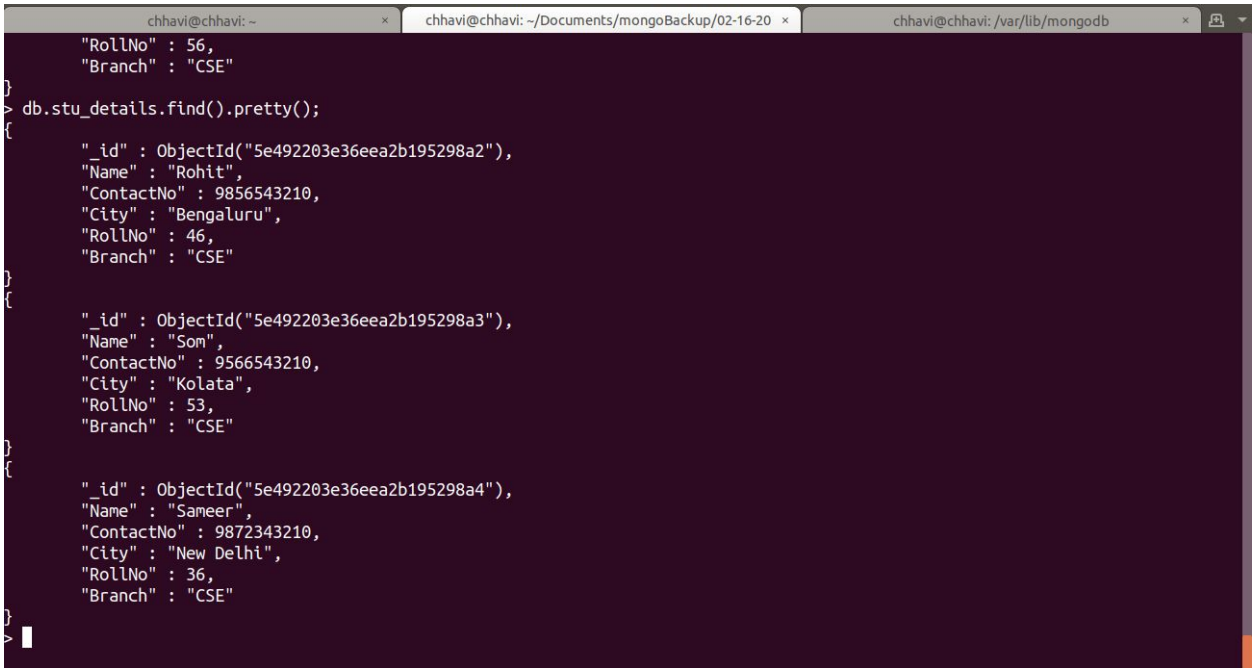
Ans.



7.Delete operation : Delete the record of last 2 students according to the roll number

Ans.





8.Drop the database

Ans.

```
> db.dropDatabase();
{ "dropped" : "student", "ok" : 1 }
> show dbs
admin   0.000GB
config  0.000GB
local   0.000GB
>
```

9.Restore the database again to have the full data

Ans.

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongorestore -d student /home/chhavi/Documents/mongoBackup/
02-16-20/student/
2020-02-18T15:22:17.821+0530    the --db and --collection args should only be used when restoring from a BS
ON file. Other uses are deprecated and will not exist in the future; use --nsInclude instead
2020-02-18T15:22:17.822+0530    building a list of collections to restore from /home/chhavi/Documents/mongo
Backup/02-16-20/student dir
2020-02-18T15:22:17.823+0530    reading metadata for student.stu_details from /home/chhavi/Documents/mongoB
ackup/02-16-20/student/stu_details.metadata.json
2020-02-18T15:22:17.953+0530    restoring student.stu_details from /home/chhavi/Documents/mongoBackup/02-16
-20/student/stu_details.bson
2020-02-18T15:22:17.957+0530    no indexes to restore
2020-02-18T15:22:17.957+0530    finished restoring student.stu_details (5 documents, 0 failures)
2020-02-18T15:22:17.957+0530    5 document(s) restored successfully. 0 document(s) failed to restore.
```

10.Enable authentication on the Mongo

Ans.

1.Start MongoDB without access control

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongod --port 27017 --dbpath /data/db1
2020-02-18T22:25:25.840+0530 I  CONTROL  [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 sp
ecify --sslDisabledProtocols 'none'
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] MongoDB starting : pid=28167 port=27017 dbpath=/da
ta/db1 64-bit host=chhavi
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] db version v4.2.3
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] git version: 6874650b362138df74be53d366bbefc321ea3
2d4
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] OpenSSL version: OpenSSL 1.1.1  11 Sep 2018
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] allocator: tcmalloc
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] modules: none
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] build environment:
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten]     distmod: ubuntu1804
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten]     distarch: x86_64
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten]     target_arch: x86_64
2020-02-18T22:25:25.842+0530 I  CONTROL  [initandlisten] options: { net: { port: 27017 }, storage: { dbPath
: "/data/db1" } }
2020-02-18T22:25:25.843+0530 I  STORAGE  [initandlisten] exception in initAndListen: NonExistentPath: Data
directory /data/db1 not found., terminating
2020-02-18T22:25:25.843+0530 I  NETWORK  [initandlisten] shutdown: going to close listening sockets...
2020-02-18T22:25:25.843+0530 I  -        [initandlisten] Stopping further Flow Control ticket acquisitions.
2020-02-18T22:25:25.843+0530 I  CONTROL  [initandlisten] now exiting
2020-02-18T22:25:25.843+0530 I  CONTROL  [initandlisten] shutting down with code:100
```

2.Connect to the instance

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongo --port 27017
MongoDB shell version v4.2.3
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("9a912a67-75c9-44ad-986a-da0d523f5e3f") }
MongoDB server version: 4.2.3
Server has startup warnings:
2020-02-18T22:32:03.857+0530 I  STORAGE  [initandlisten]
2020-02-18T22:32:03.857+0530 I  STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is s
iredTiger storage engine
2020-02-18T22:32:03.857+0530 I  STORAGE  [initandlisten] **          See http://dochub.mongodb.org/
2020-02-18T22:32:04.545+0530 I  CONTROL  [initandlisten]
2020-02-18T22:32:04.545+0530 I  CONTROL  [initandlisten] ** WARNING: Access control is not enabled
2020-02-18T22:32:04.545+0530 I  CONTROL  [initandlisten] **          Read and write access to data
cted.
2020-02-18T22:32:04.545+0530 I  CONTROL  [initandlisten]
---
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---

>
```

3.Create the user administrator.

```
> use admin
switched to db admin
> db.createUser(
... {user: "adminChhavi",
... pwd:"chhavi",
... roles: [ { role: "userAdminAnyDatabase", db: "admin" } ]
... }
... )
Successfully added user: {
        "user" : "adminChhavi",
        "roles" : [
                {
                        "role" : "userAdminAnyDatabase",
                        "db" : "admin"
                }
        ]
}
> exit
```

4.Re-start the MongoDB instance with access control

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongod --auth --port 27017 --dbpath /data/db1
2020-02-18T23:09:52.657+0530 I  CONTROL  [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledPr
otocols 'none'
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] MongoDB starting : pid=30758 port=27017 dbpath=/data/db1 64-bit host=ch
havi
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] db version v4.2.3
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] git version: 6874650b362138df74be53d366bbefc321ea32d4
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] OpenSSL version: OpenSSL 1.1.1  11 Sep 2018
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] allocator: tcmalloc
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] modules: none
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] build environment:
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten]     distmod: ubuntu1804
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten]     distarch: x86_64
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten]     target_arch: x86_64
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] options: { net: { port: 27017 }, security: { authorization: "enabled" }
, storage: { dbPath: "/data/db1" } }
2020-02-18T23:09:52.659+0530 I  STORAGE  [initandlisten] exception in initAndListen: NonExistentPath: Data directory /data/db1 n
ot found., terminating
2020-02-18T23:09:52.659+0530 I  NETWORK  [initandlisten] shutdown: going to close listening sockets...
2020-02-18T23:09:52.659+0530 I  -        [initandlisten] Stopping further Flow Control ticket acquisitions.
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] now exiting
2020-02-18T23:09:52.659+0530 I  CONTROL  [initandlisten] shutting down with code:100
```

5.Connect and authenticate as the user administrator

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongo --port 27017 -u "adminChhavi" -p "chhavi" --authenticationDatabase "admin"
MongoDB shell version v4.2.3
connecting to: mongodb://127.0.0.1:27017/?authSource=admin&compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("fe78e215-f7f9-4cfb-9afc-d181e5456dc3") }
MongoDB server version: 4.2.3
Server has startup warnings:
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten]
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the W
iredTiger storage engine
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten] **          See http://dochub.mongodb.org/core/prodnotes-filesystem
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten]
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the database.
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten] **          Read and write access to data and configuration is unrestri
cted.
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten]
---
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---

>
```

OR

5. Authenticating after connecting

```
chhavi@chhavi:~/Documents/mongoBackup/02-16-20$ mongo --port 27017
MongoDB shell version v4.2.3
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("b4940c4d-b277-41da-92ba-1b57a9e7d40a") }
MongoDB server version: 4.2.3
Server has startup warnings:
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten]
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly r
ecommended with the WiredTiger storage engine
2020-02-18T23:19:46.344+0530 I  STORAGE  [initandlisten] **          See http://dochub.mongodb.org/core/pro
dnotes-filesystem
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten]
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the
database.
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten] **          Read and write access to data and conf
iguration is unrestricted.
2020-02-18T23:19:47.003+0530 I  CONTROL  [initandlisten]
---
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).
```

```
Enable MongoDB's free cloud-based monitoring service, which will then receive and display
metrics about your deployment (disk utilization, CPU, operation statistics, etc).

The monitoring data will be available on a MongoDB website with a unique URL accessible to you
and anyone you share the URL with. MongoDB may use this information to make product
improvements and to suggest MongoDB products and deployment options to you.

To enable free monitoring, run the following command: db.enableFreeMonitoring()
To permanently disable this reminder, run the following command: db.disableFreeMonitoring()
---

> use admin
switched to db admin
> db.auth("adminChhavi", "chhavi" )
1
>
```

11.Install another version of MongoDB from source (Version 2.6.3) and run it on port 27009.

Ans.

Download a tar for 2.6.3 version of mongo.

Move it to /opt directory and extract it .

Next cd into bin/ in it .

```
chhavi@chhavi:/bin$ cd
chhavi@chhavi:~$ cd /opt/
chhavi@chhavi:/opt$ ls
google  lost+found  mongodb-linux-x86_64-2.6.3  mongodb-linux-x86_64-2.6.3.tgz
chhavi@chhavi:/opt$ cd mongodb-linux-x86_64-2.6.3/bin
chhavi@chhavi:/opt/mongodb-linux-x86_64-2.6.3/bin$ ls
```

Run mongo d by specifying a db path (create a dbpath)

```
chhavi@chhavi:/opt/mongodb-linux-x86_64-2.6.3/bin$ mkdir -p ~/data/db
chhavi@chhavi:/opt/mongodb-linux-x86_64-2.6.3/bin$ mongod --port 27009 --dbpath ~/data/db
2020-02-26T15:52:42.667+0530 I  CONTROL  [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] MongoDB starting : pid=16636 port=27009 dbpath=/home/chhavi/data/db 64-bit host=chhav
i
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] db version v4.2.3
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] git version: 6874650b362138df74be53d366bbefc321ea32d4
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] OpenSSL version: OpenSSL 1.1.1  11 Sep 2018
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] allocator: tcmalloc
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] modules: none
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] build environment:
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten]     distmod: ubuntu1804
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten]     distarch: x86_64
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten]     target_arch: x86_64
2020-02-26T15:52:42.669+0530 I  CONTROL  [initandlisten] options: { net: { port: 27009 }, storage: { dbPath: "/home/chhavi/data/db" } }
2020-02-26T15:52:42.669+0530 I  STORAGE  [initandlisten]
2020-02-26T15:52:42.669+0530 I  STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger stor
age engine
2020-02-26T15:52:42.669+0530 I  STORAGE  [initandlisten] **          See http://dochub.mongodb.org/core/prodnotes-filesystem
2020-02-26T15:52:42.670+0530 I  STORAGE  [initandlisten] wiredtiger_open config: create,cache_size=7365M,cache_overflow=(file_max=0M),session_
max=33000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=sn
appy),file_manager=(close_idle_time=100000,close_scan_interval=10,close_handle_minimum=250),statistics_log=(wait=0),verbose=[recovery_progress
```

Check if both the versions are running on different ports.

```
chhavi@chhavi:/var/lib$ sudo netstat -tunlp | grep mongod
tcp        0      0 127.0.0.1:27017         0.0.0.0:*               LISTEN      23538/mongod
tcp        0      0 127.0.0.1:27009         0.0.0.0:*               LISTEN      18173/mongod
chhavi@chhavi:/var/lib$
```

12.Create init service of Mongo installed later*

Ans.

Create a unit file to determine a systemd service in /lib/systemd/system/newmongo.service

```
File  Edit  View  Search  Terminal  Tabs  Help
chhavi@chhavi: /lib/systemd/system          chhavi@chhavi: ~/newmongodata/db
[Unit]
Description=New Mongo Service

[Service]
TYpe=Simple
ExecStart=/opt/mongodb-linux-x86_64-2.6.3/bin/mongod --port 27010 --dbpath /home
/chhavi/newmongodata/db

[Install]
WantedBy=multi-user.target
```

Set permission 644 of the file.

```
chhavi@chhavi:/lib/systemd/system$ sudo chmod 644 newmongo.service
```

Run sudo systemctl enable newmongo.service in order to create a symlink

```
chhavi@chhavi:/lib/systemd/system$ sudo systemctl enable newmongo.service
Created symlink /etc/systemd/system/multi-user.target.wants/newmongo.service → /
lib/systemd/system/newmongo.service.
chhavi@chhavi:/lib/systemd/system$
```

Then run and check the status of the service

```
File  Edit  View  Search  Terminal  Tabs  Help
chhavi@chhavi: /tmp          chhavi@chhavi: ~/newmongodata/db
chhavi@chhavi:/tmp$ sudo systemctl start newmongo.service
chhavi@chhavi:/tmp$ sudo systemctl status newmongo.service
● newmongo.service - New Mongo Service
   Loaded: loaded (/lib/systemd/system/newmongo.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2020-03-20 13:34:19 IST; 1min 6s ago
 Main PID: 31546 (mongod)
    Tasks: 10 (limit: 4915)
   CGroup: /system.slice/newmongo.service
           └─31546 /opt/mongodb-linux-x86_64-2.6.3/bin/mongod --port 27010 --dbpath /home/chhavi/newmongodata/db

Mar 20 13:34:53 chhavi mongod[31546]: 2020-03-20T13:34:53.373+0530 [initandlisten] preallocating a journal file /home/chhavi/newmongodata/db/j
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.446+0530 [FileAllocator] allocating new datafile /home/chhavi/newmongodata/db/local.
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.446+0530 [FileAllocator] creating directory /home/chhavi/newmongodata/db/_tmp
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.554+0530 [FileAllocator] done allocating datafile /home/chhavi/newmongodata/db/local
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.557+0530 [FileAllocator] allocating new datafile /home/chhavi/newmongodata/db/local.
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.614+0530 [FileAllocator] done allocating datafile /home/chhavi/newmongodata/db/local
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.617+0530 [initandlisten] build index on: local.startup_log properties: { v: 1, key:
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.617+0530 [initandlisten]         added index to empty collection
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.617+0530 [initandlisten] command local.$cmd command: create { create: "startup_log",
Mar 20 13:35:03 chhavi mongod[31546]: 2020-03-20T13:35:03.617+0530 [initandlisten] waiting for connections on port 27010
lines 1-18/18 (END)
```

MYSQL

1. Install latest version of MySQL from apt-get repository

Ans.

```
chhavi@chhavi:~$ sudo apt-get install mysql-server
[sudo] password for chhavi:
Reading package lists... Done
Building dependency tree
Reading state information... Done
mysql-server is already the newest version (5.7.29-0ubuntu0.18.04.1).
0 upgraded, 0 newly installed, 0 to remove and 78 not upgraded.
```

2. Create a database student

Ans.

```
mysql> create database student;
Query OK, 1 row affected (0.01 sec)
```

3. Insert operation : 5 students data (Name, Contact, City, Roll No, Branch)

Ans.

```
mysql> use student;
Database changed
mysql> create table stu_details(rollno int(5) primary key,
    -> name varchar(255) not null,
    -> city varchar(255),
    -> branch varchar(20),
    -> contact int(10));
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> desc stu_details;
+---------+-------------+------+-----+---------+-------+
| Field   | Type        | Null | Key | Default | Extra |
+---------+-------------+------+-----+---------+-------+
| rollno  | int(5)      | NO   | PRI | NULL    |       |
| name    | varchar(255)| NO   |     | NULL    |       |
| city    | varchar(255)| YES  |     | NULL    |       |
| branch  | varchar(20) | YES  |     | NULL    |       |
| contact | int(10)     | YES  |     | NULL    |       |
+---------+-------------+------+-----+---------+-------+
5 rows in set (0.02 sec)
```

```
mysql> insert into stu_details values(1,"chhavi","new delhi","cse","9650864580");
Query OK, 1 row affected (0.01 sec)

mysql> insert into stu_details values(2,"gargi","udaipur","finance","9797197046"),(3,"ravi","chennai","sale
s","9876543213"),(4,"simran","new delhi","it","987654543"),(5,"firoz","mumbai","finance","9867565656");
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from stu_details;
+--------+-------+----------+---------+------------+
| rollno | name  | city     | branch  | contact    |
+--------+-------+----------+---------+------------+
|      1 | chhavi | new delhi | cse     | 9650864580 |
|      2 | gargi  | udaipur   | finance | 9797197046 |
|      3 | ravi   | chennai   | sales   | 9876543213 |
|      4 | simran | new delhi | it      | 987654543  |
|      5 | firoz  | mumbai    | finance | 9867565656 |
+--------+-------+----------+---------+------------+
5 rows in set (0.00 sec)
```

4. Read operation : All the students belong to a particular city

Ans.

```
mysql> select * from stu_details where city="new delhi";
+--------+-------+----------+--------+------------+
| rollno | name  | city     | branch | contact    |
+--------+-------+----------+--------+------------+
|      1 | chhavi | new delhi | cse    | 9650864580 |
|      4 | simran | new delhi | it     | 987654543  |
+--------+-------+----------+--------+------------+
2 rows in set (0.00 sec)
```

5. Update operation : Update the branch of all the students to CSE

Ans.

```
mysql> update stu_details set branch="CSE";
Query OK, 5 rows affected (0.01 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from stu_details;
+--------+-------+----------+--------+------------+
| rollno | name  | city     | branch | contact    |
+--------+-------+----------+--------+------------+
|      1 | chhavi | new delhi | CSE    | 9650864580 |
|      2 | gargi  | udaipur   | CSE    | 9797197046 |
|      3 | ravi   | chennai   | CSE    | 9876543213 |
|      4 | simran | new delhi | CSE    | 987654543  |
|      5 | firoz  | mumbai    | CSE    | 9867565656 |
+--------+-------+----------+--------+------------+
5 rows in set (0.00 sec)

mysql>
```

6. Take dump of the database

Ans.

```
chhavi@chhavi:~/Documents$ sudo mysqldump  student  > /home/chhavi/Documents/sqlbackup/dump.sql
```

7. Delete operation : Delete the record of last 2 students according to the roll number

Ans.

```
mysql> delete from stu_details order by rollno desc limit 2;
Query OK, 2 rows affected (0.01 sec)

mysql> select * from stu_details;
+--------+--------+-----------+--------+------------+
| rollno | name   | city      | branch | contact    |
+--------+--------+-----------+--------+------------+
|      1 | chhavi | new delhi | CSE    | 9650864580 |
|      2 | gargi  | udaipur   | CSE    | 9797197046 |
|      3 | ravi   | chennai   | CSE    | 9876543213 |
+--------+--------+-----------+--------+------------+
3 rows in set (0.00 sec)

mysql>
```

8. Drop the database

Ans.

```
mysql> drop database student;
Query OK, 1 row affected (0.03 sec)
```

9. Restore the database again to have the full data

Ans.

```
mysql> create database student;
Query OK, 1 row affected (0.00 sec)

mysql> use student;
Database changed
```

```
chhavi@chhavi:~/Documents/sqlbackup$ sudo mysql student  < /home/chhavi/Documents/sql
backup/dump.sql
chhavi@chhavi:~/Documents/sqlbackup$
```

```
mysql> use student;
Database changed
mysql> show tables;
+------------------+
| Tables_in_student |
+------------------+
| stu_details      |
+------------------+
1 row in set (0.00 sec)

mysql> select * from stu_details;
+--------+--------+-----------+--------+------------+
| rollno | name   | city      | branch | contact    |
+--------+--------+-----------+--------+------------+
|      1 | chhavi | new delhi | CSE    | 9650864580 |
|      2 | gargi  | udaipur   | CSE    | 9797197046 |
|      3 | ravi   | chennai   | CSE    | 9876543213 |
|      4 | simran | new delhi | CSE    | 987654543  |
|      5 | firoz  | mumbai    | CSE    | 9867565656 |
+--------+--------+-----------+--------+------------+
5 rows in set (0.00 sec)

mysql>
```

10. Enable authentication on the MySQL

Ans.

```
mysql> CREATE USER 'new'@'localhost' IDENTIFIED BY 'pass';
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> grant select on student.*  to 'new'@'localhost';
Query OK, 0 rows affected (0.01 sec)
```

```
chhavi@chhavi:~$ mysql -u new -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 43
Server version: 5.7.29-0ubuntu0.18.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| student            |
+--------------------+
2 rows in set (0.00 sec)

mysql> use student;
Reading table information for completion of table and column names
```

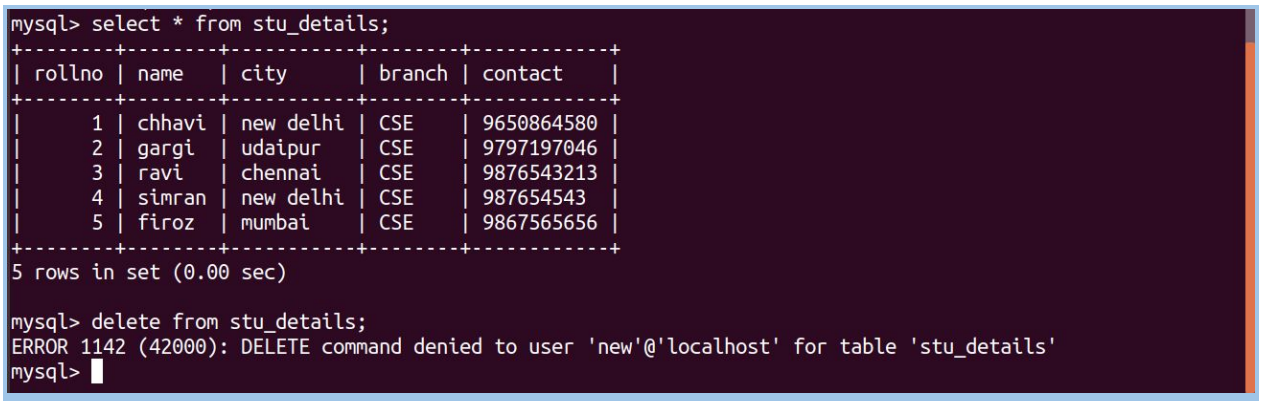

```
mysql> select * from stu_details;
+--------+--------+-----------+--------+------------+
| rollno | name   | city      | branch | contact    |
+--------+--------+-----------+--------+------------+
|      1 | chhavi | new delhi | CSE    | 9650864580 |
|      2 | gargi  | udaipur   | CSE    | 9797197046 |
|      3 | ravi   | chennai   | CSE    | 9876543213 |
|      4 | simran | new delhi | CSE    | 987654543  |
|      5 | firoz  | mumbai    | CSE    | 9867565656 |
+--------+--------+-----------+--------+------------+
5 rows in set (0.00 sec)

mysql> delete from stu_details;
ERROR 1142 (42000): DELETE command denied to user 'new'@'localhost' for table 'stu_details'
mysql>
```