1. Windows

1)MongoDB Download Center(https://www.mongodb.com/download-center?jmp=nav#community)

2)Installation Manual : https://docs.mongodb.com/manual/tutorial/install-mongodb-on-windows/

3)Requirements

-MongoDB Community Edition requires Windows Server 2008 R2, Windows Vista, or later.

-The .msi installer includes all other software dependencies and will automatically upgrade any older version of MongoDB installed using an .msi file.

4)Get MongoDB Community Edition

-MongoDB for Windows 64-bit

-Runs only on Windows Server 2008 R2, Windows 7 64-bit, and newer versions of Windows.

-To find which version of Windows you are running, enter the following commands in the Command Prompt or Powershell:

--wmic os get caption

--wmic os get osarchitecture

```
C:\Users\Instructor>wmic os get caption
Caption
Microsoft Windows 10 Enterprise Evaluation

C:\Users\Instructor>wmic os get osarchitecture
OSArchitecture
64-bit
```

-Download MongoDB for Windows.

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

--mongodb-win32-x86_64-2008plus-ssl-3.4.4-signed.msi

5)Install MongoDB Community Edition

-C:\Program Files\MongoDB\Server\3.4\

-Component Sets

--Server : mongod.exe

--Router : mongos.exe

--Client : mongo.exe

--MonitoringTools : mongostat.exe, mongotop.exe

--ImportExportTools : mongodump.exe, mongorestore.exe, mongoexport.exe, mongoimport.exe

--MiscellaneousTools : bsondump.exe, mongofiles.exe, mongooplog.exe, mongoperf.exe

6)Configuration

-Register Windows System variables

--%PATH% = ...;C:\Program Files\MongoDB\Server\3.4\bin;

--SET PATH

Path=...C:\Program Files\MongoDB\Server\3.4\bin;

-Start MongoDB

--To start MongoDB, run mongod.exe. For example, from the Command Prompt:

>mondod.exe

2017-05-09T09:06:57.173+0900 I CONTROL [initandlisten] MongoDB starting : pid=6992 port=27017 dbpath=C:\data\db\ 64-bit host=Academy

2017-05-09T09:06:57.176+0900 I CONTROL [initandlisten] targetMinOS: Windows 7/Windows Server 2008 R2

```
2017-05-09T09:06:57.177+0900 I CONTROL  [initandlisten] db version v3.4.4
2017-05-09T09:06:57.177+0900 I CONTROL  [initandlisten] git version:
888390515874a9debd1b6c5d36559ca86b44babd
2017-05-09T09:06:57.178+0900 I CONTROL  [initandlisten] OpenSSL version:
OpenSSL1.0.1u-fips  22 Sep 2016
2017-05-09T09:06:57.178+0900 I CONTROL  [initandlisten] allocator: tcmalloc
2017-05-09T09:06:57.178+0900 I CONTROL  [initandlisten] modules: none
2017-05-09T09:06:57.179+0900 I CONTROL  [initandlisten] build environment:
2017-05-09T09:06:57.179+0900 I CONTROL  [initandlisten]     distmod:
2008plus-ssl
2017-05-09T09:06:57.180+0900 I CONTROL  [initandlisten]     distarch: x86_64
2017-05-09T09:06:57.181+0900 I CONTROL  [initandlisten]     target_arch: x86_64
2017-05-09T09:06:57.182+0900 I CONTROL  [initandlisten] options: {}
2017-05-09T09:06:57.188+0900 I STORAGE  [initandlisten] exception in
initAndListen: 29 Data directory C:\data\db\ not found., terminating
2017-05-09T09:06:57.193+0900 I NETWORK  [initandlisten] shutdown: going to
close listening sockets...
2017-05-09T09:06:57.199+0900 I NETWORK  [initandlisten] shutdown: going to
flush diaglog...
2017-05-09T09:06:57.204+0900 I CONTROL  [initandlisten] now exiting
2017-05-09T09:06:57.209+0900 I CONTROL  [initandlisten] shutting down with
code: 100
>

-Set up the MongoDB environment
  --MongoDB requires a data directory to store all data.
  --MongoDB's default data directory path is the absolute path \data\db on the drive
  from which you start MongoDB.
  --Create this folder by running the following command in a Command Prompt:
     md \data\db
  --You can specify an alternate path for data files using the --dbpath option to
  mongod.exe,
     for example:
     "C:\Program Files\MongoDB\Server\3.4\bin\mongod.exe" --dbpath
     d:\test\mongodb\data
  --If your path includes spaces, enclose the entire path in double quotes, for example:
     "C:\Program Files\MongoDB\Server\3.4\bin\mongod.exe" --dbpath
     "d:\test\mongo db data"

  In Command Administrator Prompt,
  C:\Program Files\MongoDB>md .\data\db

  C:\Program Files\MongoDB>mongod --dbpath .\data\db
  2017-05-09T09:41:36.843+0900 I CONTROL  [initandlisten] MongoDB starting :
  pid=8892 port=27017 dbpath=.\data\db 64-bit host=Academy
  2017-05-09T09:41:36.845+0900 I CONTROL  [initandlisten] targetMinOS:
  Windows 7/Windows Server 2008 R2
  2017-05-09T09:41:36.845+0900 I CONTROL  [initandlisten] db version v3.4.4
  2017-05-09T09:41:36.846+0900 I CONTROL  [initandlisten] git version:
  888390515874a9debd1b6c5d36559ca86b44babd
  2017-05-09T09:41:36.846+0900 I CONTROL  [initandlisten] OpenSSL version:
  OpenSSL 1.0.1u-fips  22 Sep 2016
  2017-05-09T09:41:36.846+0900 I CONTROL  [initandlisten] allocator: tcmalloc
  2017-05-09T09:41:36.847+0900 I CONTROL  [initandlisten] modules: none
  2017-05-09T09:41:36.847+0900 I CONTROL  [initandlisten] build environment:
  2017-05-09T09:41:36.847+0900 I CONTROL  [initandlisten]     distmod:
  2008plus-ssl
  2017-05-09T09:41:36.848+0900 I CONTROL  [initandlisten]     distarch: x86_64
  2017-05-09T09:41:36.848+0900 I CONTROL  [initandlisten]     target_arch: x86_64
  2017-05-09T09:41:36.849+0900 I CONTROL  [initandlisten] options: { storage: {
```

dbPath: ".\data\db" } }
2017-05-09T09:41:36.854+0900 I STORAGE [initandlisten] wiredtiger_open config:create,cache_size=3547M,session_max=20000,eviction=(threads_min=4,threads_max=4),config_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file_manager=(close_idle_time=100000),checkpoint=(wait=60,log_size=2GB),statistics_log=(wait=0),
2017-05-09T09:41:37.030+0900 I CONTROL [initandlisten]
2017-05-09T09:41:37.030+0900 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2017-05-09T09:41:37.032+0900 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.
2017-05-09T09:41:37.033+0900 I CONTROL [initandlisten]
2017-05-09T09:41:38.849+0900 I FTDC [initandlisten] Initializing full-time diagnostic data capture with directory './data/db/diagnostic.data'
2017-05-09T09:41:38.891+0900 I INDEX [initandlisten] build index on: admin.system.version properties: { v: 2, key: { version: 1 }, name: "incompatible_with_version_32", ns: "admin.system.version" }
2017-05-09T09:41:38.892+0900 I INDEX [initandlisten] building index using bulk method; build may temporarily use up to 500 megabytes of RAM
2017-05-09T09:41:38.901+0900 I INDEX [initandlisten] build index done. scanned 0 total records. 0 secs
2017-05-09T09:41:38.904+0900 I COMMAND [initandlisten] setting featureCompatibilityVersion to 3.4
2017-05-09T09:41:38.906+0900 I NETWORK [thread1] waiting for connections on port 27017

In the [Windows Firewall has blocked some features of this app],
Click [Allow access] button

7)Connect to MongoDB
-To connect to MongoDB through the mongo.exe shell, open another Command Prompt.

-In Command Prompt,
C:\Users\Instructor>mongo
MongoDB shell version v3.4.4
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.4.4
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
http://docs.mongodb.org/
Questions? Try the support group
http://groups.google.com/group/mongodb-user
Server has startup warnings:
2017-05-09T09:41:37.030+0900 I CONTROL [initandlisten]
2017-05-09T09:41:37.030+0900 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.
2017-05-09T09:41:37.032+0900 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.
2017-05-09T09:41:37.033+0900 I CONTROL [initandlisten]
>

In Command Administrator Prompt,
2017-05-09T09:44:53.631+0900 I NETWORK [thread1] connection accepted from 127.0.0.1:50293 #1 (1 connection now open)
2017-05-09T09:44:53.633+0900 I NETWORK [conn1] received client metadata from 127.0.0.1:50293 conn1: { application: { name: "MongoDB Shell" }, driver: { name: "MongoDB Internal Client", version: "3.4.4" }, os: { type: "Windows", name: "Microsoft Windows 8", architecture: "x86_64", version: "6.2 (build 9200)"

```
        } }

    8)Connecting using Configuration File
      -mongodb를 실행시 --dbpath등의 옵션을 사용하여 접속하는 방법이 있다.
      -하지만, 별도의 환경설정 파일을 저장하고, 이 실행파일을 Mongodb 실행시 전달하여 간단하게
      실행하는 것도 가능하다.
      -Configuration File : mongod.conf
            systemLog:
               destination: file
               path: "C:/Program Files/MongoDB/data/log/mongod.log"
               logAppend: true
            storage:
               journal:
                     enabled: true
               dbPath : "C:/Program Files/MongoDB/data/db"
            net:
                bindIp: 127.0.0.1
                port: 27017
            setParameter:
                enableLocalhostAuthBypass: false

            C:\Program Files\MongoDB\data>md log
            C:\Program Files\MongoDB>mongod --config mongod.conf

    9)Configure a Windows Service for MongoDB Community Edition
      -Install the MongoDB service by starting mongod.exe with the --install option and the
      -config option to specify the previously created configuration file.
      -Open an Administrator command prompt.
        "C:\Program Files\MongoDB\Server\3.4\bin\mongod.exe" --config "C:\Program
        Files\MongoDB\Server\mongod.conf" --install

      -Start the MongoDB service.
        net start MongoDB

      -Stop or remove the MongoDB service as needed.
        net stop MongoDB

      -To remove the MongoDB service use the following command:
        "C:\Program Files\MongoDB\Server\3.4\bin\mongod.exe" --remove


2. Ubuntu
    1)MongoDB only provides packages for 64-bit LTS (long-term support) Ubuntu releases.
      -12.04 LTS (precise), 14.04 LTS (trusty), 16.04 LTS (xenial), and so on.
      -Commercial support is no longer provided for MongoDB on 32-bit platforms (Linux
      and Windows).
      -Linux DEB packages are also no longer available.
      -However, binary archives are still available.

    2)packages:
      -mongodb-org : A metapackage that will automatically install the four component
      packages listed below.
      -mongodb-org-server : Contains the mongod daemon and associated configuration
      and init scripts.
      -mongodb-org-mongos  : Contains the mongos daemon.
      -mongodb-org-shell : Contains the mongo shell.
      -mongodb-org-tools : Contains the following MongoDB tools: mongoimport
      bsondump, mongodump, mongoexport, mongofiles, mongooplog, mongoperf,
      mongorestore, mongostat, and mongotop.
```

3)Install MongoDB Community Edition

-Import the public key used by the package management system.

$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 0C49F3730359A14518585931BC711F9BA15703C6

-Create a list file for MongoDB.

$ echo "deb [arch=amd64,arm64] http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.4 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-3.4.list

deb [arch=amd64,arm64] http://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/3.4 multiverse

-Reload local package database.

$ sudo apt-get update

-Install the MongoDB packages.

$ sudo apt-get install -y mongodb-org

4)Run MongoDB Community Edition

-The MongoDB instance stores its data files in /var/lib/mongodb and its log files in /var/log/mongodb by default, and runs using the mongodb user account.

-You can specify alternate log and data file directories in /etc/mongod.conf.

-Start MongoDB.

$ sudo service mongod start

-Verify that MongoDB has started successfully

--Where <port> is the port configured in /etc/mongod.conf, 27017 by default.

[initandlisten] waiting for connections on port <port>

-Stop MongoDB.

$ sudo service mongod stop

-Restart MongoDB.

$ sudo service mongod restart

5)Connect to MongoDB

```
$ mongo
MongoDB shell version v3.4.4
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.4.4
Server has startup warnings:
2017-05-10T17:01:24.631+0900 I STORAGE  [initandlisten]
2017-05-10T17:01:24.631+0900 I STORAGE  [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine
2017-05-10T17:01:24.631+0900 I STORAGE  [initandlisten] **          See http://dochub.mongodb.org/core/prodnotes-filesystem
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten]
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the database.
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten] **          Read and write access to data and configuration is unrestricted.
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten]
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten]
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten] ** WARNING: /sys/kernel/mm/transparent_hugepage/enabled is 'always'.
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten] **        We suggest setting it to 'never'
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten]
2017-05-10T17:01:24.796+0900 I CONTROL  [initandlisten] ** WARNING:
```

/sys/kernel/mm/transparent_hugepage/defrag is 'always'.
2017-05-10T17:01:24.796+0900 I CONTROL [initandlisten] ** We suggest setting it to 'never'
2017-05-10T17:01:24.796+0900 I CONTROL [initandlisten]
>

6)Uninstall MongoDB Community Edition
-Stop MongoDB.
$ sudo service mongod stop
-Remove Packages.
$ sudo apt-get purge mongodb-org*
-Remove Data Directories.
$ sudo rm -r /var/log/mongodb
$ sudo rm -r /var/lib/mongodb

3. CentOS
1)Commercial support is no longer provided for MongoDB on 32-bit platforms (Linux and Windows).
2)Linux RPM packages are also no longer available.
3)However, binary archives are still available.
4)packages:
-mongodb-org : A metapackage that will automatically install the four component packages listed below.
-mongodb-org-server : Contains the mongod daemon and associated configuration and init scripts.
-mongodb-org-mongos : Contains the mongos daemon.
-mongodb-org-shell : Contains the mongo shell.
-mongodb-org-tools : Contains the following MongoDB tools: mongoimport bsondump, mongodump, mongoexport, mongofiles, mongooplog, mongoperf, mongorestore, mongostat, and mongotop.

5)The default /etc/mongod.conf configuration file supplied by the packages have bind_ip set to 127.0.0.1 by default.
6)Install MongoDB Community Edition
-Configure the package management system (yum).
--Create a /etc/yum.repos.d/mongodb-org-3.4.repo file so that you can install MongoDB directly, using yum.
--Changed in version 3.0: MongoDB Linux packages are in a new repository beginning with 3.0.
--For the latest stable release of MongoDB
[mongodb-org-3.4]
name=MongoDB Repository

baseurl=https://repo.mongodb.org/yum/redhat/$releasever/mongodb-org/3.4/x86_64/
gpgcheck=1
enabled=1
gpgkey=https://www.mongodb.org/static/pgp/server-3.4.asc

-Install the MongoDB packages and associated tools.
--To install the latest stable version of MongoDB, issue the following command:
yum install -y mongodb-org

7)Run MongoDB Community Edition
-Configure SELinux
--If you are using SELinux, you must configure SELinux to allow MongoDB to start on Red Hat Linux-based systems (Red Hat Enterprise Linux or CentOS Linux).
--To configure SELinux, administrators have three options:
---If SELinux is in enforcing mode, enable access to the relevant ports that

the MongoDB deployment will use (e.g. 27017).
For default settings, this can be accomplished by running
semanage port -a -t mongod_port_t -p tcp 27017
---Disable SELinux by setting the SELINUX setting to disabled in /etc/selinux/config.
SELINUX=disabled
You must reboot the system for the changes to take effect.
---Set SELinux to permissive mode in /etc/selinux/config by setting the SELINUX setting to permissive.
SELINUX=permissive
You must reboot the system for the changes to take effect.
--Alternatively, you can choose not to install the SELinux packages when you are installing your Linux operating system, or choose to remove the relevant packages. This option is the most invasive and is not recommended

8)Data Directories and Permissions
-The MongoDB instance stores its data files in /var/lib/mongo and its log files in /var/log/mongodb by default, and runs using the mongod user account.
-You can specify alternate log and data file directories in /etc/mongod.conf.
-See systemLog.path and storage.dbPath for additional information.
-If you change the user that runs the MongoDB process, you must modify the access control rights to the /var/lib/mongo and /var/log/mongodb directories to give this user access to these directories.

9)Start MongoDB.
service mongod start

-Verify that MongoDB has started successfully
--You can verify that the mongod process has started successfully by checking the contents of the log file at /var/log/mongodb/mongod.log for a line reading
--[initandlisten] waiting for connections on port <port>
--where <port> is the port configured in /etc/mongod.conf, 27017 by default.

10)You can optionally ensure that MongoDB will start following a system reboot by issuing the following command:
chkconfig mongod on
11)Stop MongoDB.
service mongod stop
12)Restart MongoDB.
service mongod restart
-You can follow the state of the process for errors or important messages by watching the output in the /var/log/mongodb/mongod.log file.
13)Begin using MongoDB.

14)Uninstall MongoDB Community Edition
-To completely remove MongoDB from a system, you must remove the MongoDB applications themselves, the configuration files, and any directories containing data and logs.
-Stop MongoDB.
service mongod stop
-Remove Packages.
yum erase $(rpm -qa | grep mongodb-org)
-Remove Data Directories.
rm -r /var/log/mongodb
rm -r /var/lib/mongo

4. 연결 후 테스트
1)help
> help

```
        db.help()                    help on db methods
        db.mycoll.help()             help on collection methods
        sh.help()                    sharding helpers
        rs.help()                    replica set helpers
        help admin                   administrative help
        help connect                 connecting to a db help
        help keys                    key shortcuts
        help misc                    misc things to know
        help mr                      mapreduce

        show dbs                     show database names
        show collections             show collections in current database
        show users                   show users in current database
        show profile                 show most recent system.profile entries with time >= 1ms
        show logs                    show the accessible logger names
        show log [name]              prints out the last segment of log in memory, 'global' is
        default
        use <db_name>                set current database
        db.foo.find()                list objects in collection foo
        db.foo.find( { a : 1 } )     list objects in foo where a == 1
        it                           result of the last line evaluated; use to further iterate
        DBQuery.shellBatchSize = x   set default number of items to display on shell
        exit                         quit the mongo shell
        >
```

2)사용가능한 DB보기

```
        > show dbs
        admin   0.000GB
        local   0.000GB
```

3)db.help()를 사용하여 데이타베이스에 사용할 수 있는 명령어 보기

```
        > db.help()
        DB methods:
            db.adminCommand(nameOrDocument) - switches to 'admin' db, and runs
            command [ just calls db.runCommand(...) ]
            db.auth(username, password)
            db.cloneDatabase(fromhost)
            db.commandHelp(name) returns the help for the command
            db.copyDatabase(fromdb, todb, fromhost)
            db.createCollection(name, { size : ..., capped : ..., max : ... } )
            db.createView(name, viewOn, [ { $operator: {...}}, ... ], { viewOptions } )
            db.createUser(userDocument)
            db.currentOp() displays currently executing operations in the db
            db.dropDatabase()
            db.eval() - deprecated
            db.fsyncLock() flush data to disk and lock server for backups
            db.fsyncUnlock() unlocks server following a db.fsyncLock()
            db.getCollection(cname) same as db['cname'] or db.cname
            db.getCollectionInfos([filter]) - returns a list that contains the names and
            options of the db's collections
            db.getCollectionNames()
            db.getLastError() - just returns the err msg string
            db.getLastErrorObj() - return full status object
            db.getLogComponents()
            db.getMongo() get the server connection object
            db.getMongo().setSlaveOk() allow queries on a replication slave server
            db.getName()
            db.getPrevError()
            db.getProfilingLevel() - deprecated
```

```
        db.getProfilingStatus() - returns if profiling is on and slow threshold
        db.getReplicationInfo()
        db.getSiblingDB(name) get the db at the same server as this one
        db.getWriteConcern() - returns the write concern used for any operations on
        this db, inherited from server object if set
        db.hostInfo() get details about the server's host
        db.isMaster() check replica primary status
        db.killOp(opid) kills the current operation in the db
        db.listCommands() lists all the db commands
        db.loadServerScripts() loads all the scripts in db.system.js
        db.logout()
        db.printCollectionStats()
        db.printReplicationInfo()
        db.printShardingStatus()
        db.printSlaveReplicationInfo()
        db.dropUser(username)
        db.repairDatabase()
        db.resetError()
        db.runCommand(cmdObj) run a database command.  if cmdObj is a string, turns
        it into { cmdObj : 1 }
        db.serverStatus()
        db.setLogLevel(level,<component>)
        db.setProfilingLevel(level,<slowms>) 0=off 1=slow 2=all
        db.setWriteConcern( <write concern doc> ) - sets the write concern for writes to
        the db
        db.unsetWriteConcern( <write concern doc> ) - unsets the write concern for
        writes to the db
        db.setVerboseShell(flag) display extra information in shell output
        db.shutdownServer()
        db.stats()
        db.version() current version of the server
    >

4)test 데이타베이스 사용하기
    > use test
    switched to db test

    >show dbs
    admin   0.000GB
    local     0.000GB

    >db.test.save({a:1})
    writeResult({"nInserted" :1})

    >show dbs
    admin 0.000GB
    local   0.000GB
    test    0.000GB

    >db.stats()
    {
            "db" : "test",
            "collections" : 1,
            "views" : 0,
            "objects" : 1,
            "avgObjSize" : 33,
            "dataSize" : 33,
            "storageSize" : 16384,
            "numExtents" : 0,
            "indexes" : 1,
```

```
        "indexSize" : 16384,
        "ok" : 1
    }
```

5)mongoDB 종료하기

```
> db.shutdownServer()
shutdown command only works with the admin database; try 'use admin'
> use admin
switched to db admin
> db.shutdownServer()
server should be down...
2017-05-10T17:17:28.641+0900 I NETWORK  [thread1] trying reconnect to
127.0.0.1:27017 (127.0.0.1) failed
2017-05-10T17:17:28.641+0900 W NETWORK  [thread1] Failed to connect to
127.0.0.1:27017, in(checking socket for error after poll), reason: Connection refused
2017-05-10T17:17:28.641+0900 I NETWORK  [thread1] reconnect
127.0.0.1:27017 (127.0.0.1) failed failed
>
```

5. Connect to MongoDB remotely

1)MongoDB는 기본적으로 127.0.0.1 즉 로컬에서만 접속가능하도록 설정되어 있다.

2)개발하다보면, 다른 서버에서도 MongoDB에 접속해서 데이터 입력, 수정, 삭제, 받아오기 등을 처리해야 한다.

3)/etc/mongod.conf 파일을 수정한다.

```
$ sudo vi /etc/mongod.conf
```

4)아래와 같이 기본설정은 bind_ip에 로컬이 들어가 있다.

```
bind_ip = 127.0.0.1
```

5)0.0.0.0 으로 변경하면, 다른 어느 곳에서나 접속이 가능하도록 변경된다.

```
bind_ip = 0.0.0.0
```

6)보안이나, 다른 이유로 특정 ip만 허용하고자 하려면 아래와 같이 설정하면 된다.

```
bind_ip = 127.0.0.1, 192.168.56.5(자기 머신 IP)
```

7)아이피 주소 사이에 콤마로 구분하면 된다.

8)서비스 재시작

```
$ sudo service mongod restart
```

9)OS의 Firewall에서 27017 포트를 열어줘야

10)Windows Client에서 연결하기

```
C:\Users\Instructor>mongo 192.168.56.5:27017
MongoDB shell version v3.4.4
connecting to: 192.168.56.5:27017
MongoDB server version: 3.4.4
Server has startup warnings:
2017-05-11T23:20:47.425+0900 I STORAGE  [initandlisten]
2017-05-11T23:20:47.425+0900 I STORAGE  [initandlisten] ** WARNING: Using the
XF
S filesystem is strongly recommended with the WiredTiger storage engine
2017-05-11T23:20:47.425+0900 I STORAGE  [initandlisten] **        See http://d
ochub.mongodb.org/core/prodnotes-filesystem
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten]
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] ** WARNING: Access
contr
ol is not enabled for the database.
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] **        Read and wri
te access to data and configuration is unrestricted.
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten]
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten]
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] ** WARNING:
/sys/kernel/
mm/transparent_hugepage/enabled is 'always'.
2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] **      We suggest set
```

```
        ting it to 'never'
        2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten]
        2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] ** WARNING:
        /sys/kernel/
        mm/transparent_hugepage/defrag is 'always'.
        2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten] **       We suggest set
        ting it to 'never'
        2017-05-11T23:20:48.836+0900 I CONTROL  [initandlisten]
        >
```

6. MongoDB Tools
   1)Robomongo
      -https://robomongo.org/download
      -http://taylor-som.tistory.com/22
      -File Menu > Connect
      -In MongoDB Connections, Create click
      -In Connection Settings, Type : Direct Connection
      -Name : Ubuntu Server MongoDB
      -Address : 192.168.56.5 : 27017
      -Check [Perform authentication]
      -Database : test, User name : instructor, Password : javamongodb

   2)Mongs
      -Mongs is a web-based data browser for MongoDB.
      -https://github.com/whit537/mongs
      -http://whit537.org/mongs/