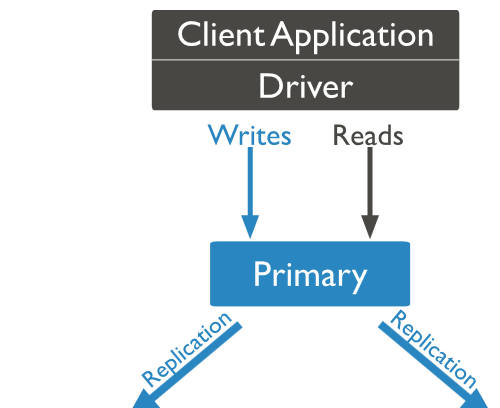
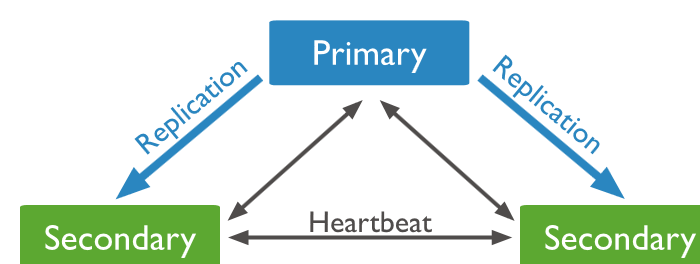
[Primary]

The primary is the only member in the replica set that receives write operations. MongoDB applies write operations on the primary and then records the operations on the primary’s oplog. Secondary members replicate this log and apply the operations to their data sets. 

[Secondaries]

A secondary maintains a copy of the primary’s data set. To replicate data, a secondary applies operations from the primary’s oplog to its own data set in an asynchronous process. A replica set can have one or more secondaries



[사전 요구사항]

Replica set은 항상 홀수개로 구성되어야한다.

각 멤버간 network connection 과 hostname 확인

[MONGODB설치]

**vi /etc/yum.repos.d/mongodb-org-3.4.repo**

[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

|  |  |
| --- | --- |
| 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 |

gpgk[root@centos-master ~]# **yum install mongodb-org**

Loaded plugins: fastestmirror

Loading mirror speeds from cached hostfile

\* base: ftp.kaist.ac.kr

\* extras: ftp.kaist.ac.kr

\* updates: ftp.kaist.ac.kr

Resolving Dependencies

--> Running transaction check

---> Package mongodb-org.x86\_64 0:3.4.9-1.el7 will be installed

--> Processing Dependency: mongodb-org-tools = 3.4.9 for package: mongodb-org-3. 4.9-1.el7.x86\_64

--> Processing Dependency: mongodb-org-shell = 3.4.9 for package: mongodb-org-3. 4.9-1.el7.x86\_64

--> Processing Dependency: mongodb-org-server = 3.4.9 for package: mongodb-org-3 .4.9-1.el7.x86\_64

--> Processing Dependency: mongodb-org-mongos = 3.4.9 for package: mongodb-org-3 .4.9-1.el7.x86\_64

--> Running transaction check

---> Package mongodb-org-mongos.x86\_64 0:3.4.9-1.el7 will be installed

---> Package mongodb-org-server.x86\_64 0:3.4.9-1.el7 will be installed

---> Package mongodb-org-shell.x86\_64 0:3.4.9-1.el7 will be installed

---> Package mongodb-org-tools.x86\_64 0:3.4.9-1.el7 will be installed

--> Finished Dependency Resolution

Dependencies Resolved

================================================================================

Package Arch Version Repository Size

================================================================================

Installing:

mongodb-org x86\_64 3.4.9-1.el7 mongodb-org-3.4 5.8 k

Installing for dependencies:

mongodb-org-mongos x86\_64 3.4.9-1.el7 mongodb-org-3.4 12 M

mongodb-org-server x86\_64 3.4.9-1.el7 mongodb-org-3.4 20 M

mongodb-org-shell x86\_64 3.4.9-1.el7 mongodb-org-3.4 11 M

mongodb-org-tools x86\_64 3.4.9-1.el7 mongodb-org-3.4 49 M

Transaction Summary

================================================================================

Install 1 Package (+4 Dependent packages)

Total download size: 91 M

Installed size: 258 M

Is this ok [y/d/N]: y

Downloading packages:

warning: /var/cache/yum/x86\_64/7/mongodb-org-3.4/packages/mongodb-org-3.4.9-1.el 7.x86\_64.rpm: Header V3 RSA/SHA1 Signature, key ID a15703c6: NOKEY

Public key for mongodb-org-3.4.9-1.el7.x86\_64.rpm is not installed

(1/5): mongodb-org-3.4.9-1.el7.x86\_64.rpm | 5.8 kB 00:00

(2/5): mongodb-org-mongos-3.4.9-1.el7.x86\_64.rpm | 12 MB 00:08

(3/5): mongodb-org-server-3.4.9-1.el7.x86\_64.rpm | 20 MB 00:12

(4/5): mongodb-org-shell-3.4.9-1.el7.x86\_64.rpm | 11 MB 00:08

(5/5): mongodb-org-tools-3.4.9-1.el7.x86\_64.rpm | 49 MB 00:29

--------------------------------------------------------------------------------

Total 2.2 MB/s | 91 MB 00:42

Retrieving key from https://www.mongodb.org/static/pgp/server-3.4.asc

Importing GPG key 0xA15703C6:

Userid : "MongoDB 3.4 Release Signing Key <packaging@mongodb.com>"

Fingerprint: 0c49 f373 0359 a145 1858 5931 bc71 1f9b a157 03c6

From : https://www.mongodb.org/static/pgp/server-3.4.asc

Is this ok [y/N]: y

Running transaction check

Running transaction test

Transaction test succeeded

Running transaction

Installing : mongodb-org-mongos-3.4.9-1.el7.x86\_64 1/5

Installing : mongodb-org-tools-3.4.9-1.el7.x86\_64 2/5

Installing : mongodb-org-shell-3.4.9-1.el7.x86\_64 3/5

Installing : mongodb-org-server-3.4.9-1.el7.x86\_64 4/5

Created symlink from /etc/systemd/system/multi-user.target.wants/mongod.service to /usr/lib/systemd/system/mongod.service.

Installing : mongodb-org-3.4.9-1.el7.x86\_64 5/5

Verifying : mongodb-org-server-3.4.9-1.el7.x86\_64 1/5

Verifying : mongodb-org-3.4.9-1.el7.x86\_64 2/5

Verifying : mongodb-org-shell-3.4.9-1.el7.x86\_64 3/5

Verifying : mongodb-org-tools-3.4.9-1.el7.x86\_64 4/5

Verifying : mongodb-org-mongos-3.4.9-1.el7.x86\_64 5/5

Installed:

mongodb-org.x86\_64 0:3.4.9-1.el7

Dependency Installed:

mongodb-org-mongos.x86\_64 0:3.4.9-1.el7

mongodb-org-server.x86\_64 0:3.4.9-1.el7

mongodb-org-shell.x86\_64 0:3.4.9-1.el7

mongodb-org-tools.x86\_64 0:3.4.9-1.el7

Complete!ey=https://www.mongodb.org/static/pgp/server-3.4.asc

[root@centos-master ~]# **setenforce 0**

[root@centos-master ~]# **getenforce**

Permissive

[root@centos-master ~]# **systemctl status firewalld.service**

● firewalld.service - firewalld - dynamic firewall daemon

Loaded: loaded (/usr/lib/systemd/system/firewalld.service; disabled; vendor preset: enabled)

Active: inactive (dead)

Docs: man:firewalld(1)

**vi /etc/mongod.conf**

systemLog:

destination: file

logAppend: true

**path: /var/log/mongodb/mongod.log**

# Where and how to store data.

storage:

**dbPath: /var/lib/mongo**

journal:

enabled: true

# engine:

# mmapv1:

# wiredTiger:

# how the process runs

processManagement:

fork: true # fork and run in background

**pidFilePath: /var/run/mongodb/mongod.pid # location of pidfile**

# network interfaces

net:

**port: 27017**

**bindIp: 127.0.0.1 # Listen to local interface only, comment to listen on all interfaces.**

**[root@centos-master mongo]# mongod --dbpath /var/lib/mongo --replSet rs0 -->모든node에서 master로 시행**

**mongod --slave --source <masterhostname><:<port>> --dbpath /var/lib/mongo --> slave역할로 수행시**

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] MongoDB starting : pid=2887 port=27017 dbpath=/var/lib/mongo 64-bit host=centos-m

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] db version v3.4.9

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] git version: 876ebee8c7dd0e2d992f36a848ff4dc50ee6603e

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.0.1e-fips 11 Feb 2013

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] allocator: tcmalloc

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] modules: none

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] build environment:

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] distmod: rhel70

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] distarch: x86\_64

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] target\_arch: x86\_64

2017-10-20T08:44:51.319-0400 I CONTROL [initandlisten] options: { replication: { replSet: "rs0" }, storage: { dbPath: "/var/lib/mongo" }

2017-10-20T08:44:51.397-0400 I - [initandlisten] Detected data files in /var/lib/mongo created by the 'wiredTiger' storage engine,the active storage engine to 'wiredTiger'.

2017-10-20T08:44:51.397-0400 I STORAGE [initandlisten] wiredtiger\_open config: create,cache\_size=256M,session\_max=20000,eviction=(threadads\_max=4),config\_base=false,statistics=(fast),log=(enabled=true,archive=true,path=journal,compressor=snappy),file\_manager=(close\_idle\_tiheckpoint=(wait=60,log\_size=2GB),statistics\_log=(wait=0),

**[root@centos-master ~]# mongo**

MongoDB shell version v3.4.9

connecting to: mongodb://127.0.0.1:27017

MongoDB server version: 3.4.9

Server has startup warnings:

**> rs.initiate()**

{

"info2" : "no configuration specified. Using a default configuration for the set",

"me" : "centos-master:27017",

"ok" : 1

}

rs0:SECONDARY>

**rs0:PRIMARY> rs.conf()**

{

"\_id" : "rs0",

"version" : 1,

"protocolVersion" : NumberLong(1),

"members" : [

{

"\_id" : 0,

"host" : "centos-master:27017",

"arbiterOnly" : false,

"buildIndexes" : true,

"hidden" : false,

"priority" : 1,

"tags" : {

},

"slaveDelay" : NumberLong(0),

"votes" : 1

}

],

"settings" : {

"chainingAllowed" : true,

"heartbeatIntervalMillis" : 2000,

"heartbeatTimeoutSecs" : 10,

"electionTimeoutMillis" : 10000,

"catchUpTimeoutMillis" : 60000,

"getLastErrorModes" : {

},

"getLastErrorDefaults" : {

"w" : 1,

"wtimeout" : 0

},

"replicaSetId" : ObjectId("59e9f080e158b467cc058040")

}

}

**rs0:PRIMARY> rs.add("centos-minion-1")**

{ "ok" : 1 }

rs0:PRIMARY> rs.status()

{

"set" : "rs0",

"date" : ISODate("2017-10-20T13:00:39.801Z"),

"myState" : 1,

"term" : NumberLong(1),

"heartbeatIntervalMillis" : NumberLong(2000),

"optimes" : {

"lastCommittedOpTime" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

},

"appliedOpTime" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

},

"durableOpTime" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

}

},

"members" : [

{

"\_id" : 0,

"name" : "centos-master:27017",

"health" : 1,

"state" : 1,

"stateStr" : "PRIMARY",

"uptime" : 948,

"optime" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2017-10-20T13:00:32Z"),

"electionTime" : Timestamp(1508503680, 2),

"electionDate" : ISODate("2017-10-20T12:48:00Z"),

"configVersion" : 2,

"self" : true

},

{

"\_id" : 1,

"name" : "centos-minion-1:27017",

"health" : 1,

"state" : 2,

"stateStr" : "SECONDARY",

"uptime" : 34,

"optime" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

},

"optimeDurable" : {

"ts" : Timestamp(1508504432, 1),

"t" : NumberLong(1)

},

"optimeDate" : ISODate("2017-10-20T13:00:32Z"),

"optimeDurableDate" : ISODate("2017-10-20T13:00:32Z"),

"lastHeartbeat" : ISODate("2017-10-20T13:00:39.115Z"),

"lastHeartbeatRecv" : ISODate("2017-10-20T13:00:37.666Z"),

"pingMs" : NumberLong(3),

"syncingTo" : "centos-master:27017",

"configVersion" : 2

}

],

"ok" : 1

}

**rs0:PRIMARY> rs.conf()**

{

"\_id" : "rs0",

"version" : 2,

"protocolVersion" : NumberLong(1),

"members" : [

{

"\_id" : 0,

"host" : "centos-master:27017",

"arbiterOnly" : false,

"buildIndexes" : true,

"hidden" : false,

"priority" : 1,

"tags" : {

},

"slaveDelay" : NumberLong(0),

"votes" : 1

},

{

"\_id" : 1,

"host" : "centos-minion-1:27017",

"arbiterOnly" : false,

"buildIndexes" : true,

"hidden" : false,

"priority" : 1,

"tags" : {

},

"slaveDelay" : NumberLong(0),

"votes" : 1

}

],

"settings" : {

"chainingAllowed" : true,

"heartbeatIntervalMillis" : 2000,

"heartbeatTimeoutSecs" : 10,

"electionTimeoutMillis" : 10000,

"catchUpTimeoutMillis" : 60000,

"getLastErrorModes" : {

},

"getLastErrorDefaults" : {

"w" : 1,

"wtimeout" : 0

},

"replicaSetId" : ObjectId("59e9f080e158b467cc058040")

}

}

**rs0:PRIMARY> rs.printReplicationInfo()**

configured oplog size: 990MB

log length start to end: 5034secs (1.4hrs)

oplog first event time: Fri Oct 20 2017 08:48:00 GMT-0400 (EDT)

oplog last event time: Fri Oct 20 2017 10:11:54 GMT-0400 (EDT)

now: Fri Oct 20 2017 10:11:59 GMT-0400 (EDT)

**rs0:PRIMARY> rs.printSlaveReplicationInfo()**

source: centos-minion-1:27017

syncedTo: Fri Oct 20 2017 10:11:54 GMT-0400 (EDT)

10 secs (0 hrs) behind the primary

**rs0:PRIMARY> db.test.insert({'message':'secondary'});**

WriteResult({ "nInserted" : 1 })

**rs0:SECONDARY> db.test.insert({'message':'secondary'}); --> slave는 write시 error**

WriteResult({ "writeError" : { "code" : 10107, "errmsg" : "not master" } })

**rs0:PRIMARY> db.test.find()**

{ "\_id" : ObjectId("59ea07a5e52a5e13380806c7"), "message" : "secondary" }

**rs0:SECONDARY> db.test.find()**

Error: error: {

"ok" : 0,

"errmsg" : "not master and slaveOk=false", --> slaveOk가 false여서 read error

"code" : 13435,

"codeName" : "NotMasterNoSlaveOk"

}

**rs0:SECONDARY> rs.slaveOk() --> slaveOk가 true여서 read 가능**

**rs0:SECONDARY> db.test.find()**

{ "\_id" : ObjectId("59ea07a5e52a5e13380806c7"), "message" : "secondary" }

