## Downloading MongoDB Software

Download the MongoDB 2.6.7 binary (32-bit and 64-bit) for Linux from https://www.mongodb.org/downloads/

Downloading the Tar file(s):

cd /db/opt/

wget <http://downloads.mongodb.org/linux/mongodb-linux-x86_64-2.6.6.tgz>

## Checking the operating system BIT

Check if you are running the x86\_64 kernel on a x86\_64 platform

# uname -mi

x86\_64 x86\_64

## Memory Requirements

To check the size of physical memory, execute:

#grep MemTotal /proc/meminfo

To check the size of swap space, execute:

#grep SwapTotal /proc/meminfo

## Kernel Requirements

The following are the kernel requirements for MongoDB :

Linux kernel version 2.6.36 or later is needed.

|  |  |
| --- | --- |
| **Linux Distribution** | **Kernel Version** |
| CentOS 5.5 | 2.6.18-194.el5 |
| CentOS 5.6 | 2.6.18-238.el5 |
| CentOS 5.8 | 2.6.18-308.8.2.el5 |
| CentOS 6.1 | 2.6.32-131.0.15.el6.x86\_64 |
| RHEL 5.6 | 2.6.18-238 |
| RHEL 6.0 | 2.6.32-71 |
| Ubuntu 10.04.4 LTS | 2.6.32-38-server |
| Amazon Linux AMI release 2012.03 | 3.2.12-3.2.4.amzn1.x86\_64 |

# uname -r

3.10.0-123.el7.x86\_64

## File system Requirements

The following are the File system requirements for MongoDB :

IF you use the Ext4 file system, use at least version 2.6.23 of the Linux Kernel.

IF you use the XFS file system, use at least version 2.6.25 of the Linux Kernel.

MongoDB preallocates its database files before using them and often creates large files.

As such, you should use the Ext4 and XFS file systems.

|  |  |
| --- | --- |
| **Linux Distribution** | **Filesystem** |
| CentOS 5.5 | ext4, xfs |
| CentOS 5.6 | ext4, xfs |
| CentOS 5.8 | ext4, xfs |
| CentOS 6.1 | ext4, xfs |
| RHEL 5.6 | ext4 |
| RHEL 6.0 | xfs |
| Ubuntu 10.04.4 LTS | ext4, xfs |
| Amazon Linux AMI release 2012.03 | ext4 |

#df -T | awk '{print $1,$2,$NF}' | grep "^/dev"

/dev/sda5 ext4 /

/dev/sda1 ext4 /boot

/dev/sda2 ext4 /data

/dev/sda3 ext4 /srv

## Disk Space Requirements

Best practice is to have the following on separate partition for easy administration and performance

* + Operating system separately
  + Binary on separate partition
  + Data on separate partition
  + Journal files on separate partition
  + Backup on separate partition

## Package Requirements

#rpm -qa | egrep 'gcc-c++|glibc-devel|scons'

scons-2.3.3-1.noarch

glibc-devel-2.17-55.el7.x86\_64

gcc-c++-4.8.2-16.el7.x86\_64

## Creating Required Operating System Groups and Users

#groupadd mongodb

#useradd -c 'Mongodb software owner' -d /db/home/mongodb -g mongodb -s /bin/bash mongodb

## Check Resource Limits for the Mongodb Software Installation Users

#This section is optional

Provide control over various resources like the maximum allowable number of open file descriptors or the maximum number of processes available to a user.

To see all shell limits:

ulimit –a

cat /etc/security/limits.conf | grep -i mongodb

echo "mongodb soft nproc 16384" >> /etc/security/limits.conf

echo "mongodb hard nproc 16384" >> /etc/security/limits.conf

echo "mongodb soft nofile 65536" >> /etc/security/limits.conf

echo "mongodb hard nofile 65536" >> /etc/security/limits.conf

cat /etc/security/limits.conf | grep -i mongodb

## Creating Required Directories

cd /srv

mkdir -p db

cd /

ln -sf /srv/db/ db

mkdir -p /db/dumps/mongodb

mkdir -p /db/home/mongodb

mkdir -p /db/opt/mongodb

mkdir -p /db/mongodb

mkdir -p /db/mongodb/27017/

mkdir -p /db/mongodb/27017/logs

mkdir -p /db/mongodb/27017/data

mkdir -p /db/mongodb/27017/etc

mkdir -p /db/mongodb/27017/scripts

chown -R mongodb:mongodb /db/dumps/mongodb

chown -R mongodb:mongodb /db/home/mongodb

chown -R mongodb:mongodb /db/opt/mongodb

chown -R mongodb:mongodb /db/mongodb

chown -R mongodb:mongodb /db/

chown -R mongodb:mongodb /db/mongodb/27017/

chown -R mongodb:mongodb /db/mongodb/27017/logs

chown -R mongodb:mongodb /db/mongodb/27017/data

chown -R mongodb:mongodb /db/mongodb/27017/etc

chown -R mongodb:mongodb /db/mongodb/27017/scripts

chmod 775 -R /db

## Configuring the MongoDB User’s Environment

#.bash\_profile

# MONGODB Settings

TMP=/tmp; export TMP

TMPDIR=$TMP; export TMPDIR

MONGODB\_HOSTNAME=dbatest01.mindtree.com; export MONGODB\_HOSTNAME

MONGODB\_BASE=/db/opt; export MONGODB\_BASE

MONGODB\_HOME=$MONGODB\_BASE/mongodb; export MONGODB\_HOME

PATH=/usr/sbin:$PATH; export PATH

PATH=$MONGODB\_HOME/bin:$PATH; export PATH

LD\_LIBRARY\_PATH=$MONGODB\_HOME/lib:/lib:/usr/lib; export LD\_LIBRARY\_PATH

CLASSPATH=$MONGODB\_HOME/jlib:$MONGODB\_HOME/rdbms/jlib; export CLASSPATH

## Extracting the Binary

* + #Extracting precompiled .tar file

cd /db/opt/

wget http://downloads.mongodb.org/linux/mongodb-linux-x86\_64-2.6.6.tgz

tar -zxvf mongodb-linux-x86\_64-2.6.6.tgz

mv mongodb-linux-x86\_64-2.6.6 mongodb

## Installing MongoDB Database

precompiled generic .tar does not need any installation , We need to just start the MongoDB process with the extracted source

# cat /db/mongodb/27017/etc/mongod.conf

logpath = /db/mongodb/27017/logs/mongod.log

logappend = true

fork = true

dbpath = /db/mongodb/27017/data

directoryperdb=true

quiet=true

journal=true

pidfilepath = /db/mongodb/27017/etc/mongod.pid

port = 27017

maxConns = 350

auth=true

keyfile=/db/mongodb/27017/etc/keyfile

oplogSize=30720

## MongoDB Storage Layout

#/opt/local/pkg/mongodb/bin/mongo --port=27017

MongoDB shell version: 2.4.9

connecting to: 127.0.0.1:27017/test

#use admin;

switched to db admin

> db.auth('mongoadn','\*\*\*\*\*\*\*\*');

1

#ls -la /db/mongodb/27017/data/

total 52

drwx------ 12 mongodb mongodb 4096 Apr 25 2014 .

drwxr-xr-x 7 mongodb mongodb 4096 Feb 6 2014 ..

drwx------ 3 mongodb mongodb 4096 Feb 2 2014 admin

drwx------ 3 mongodb mongodb 4096 Feb 2 2014 dbutil

drwx------ 2 mongodb mongodb 4096 Jan 22 18:59 journal

drwx------ 3 mongodb mongodb 4096 Dec 1 08:18 Legacy

drwx------ 3 mongodb mongodb 4096 Feb 2 2014 local

-rwx------ 1 mongodb mongodb 6 Feb 4 2014 mongod.lock

drwx------ 3 mongodb mongodb 4096 Feb 28 2014 MongoPingDB

drwx------ 3 mongodb mongodb 4096 Feb 2 2014 Relationship

drwx------ 2 mongodb mongodb 4096 Jul 18 2014 rollback

drwx------ 2 mongodb mongodb 4096 Mar 13 2014 \_tmp

drwx------ 3 mongodb mongodb 4096 Jan 13 21:24 UserIdentity

#ls -la /db/mongodb/27017/data/Legacy

total 23009348

drwx------ 3 mongodb mongodb 4096 Dec 1 08:18 .

drwx------ 12 mongodb mongodb 4096 Apr 25 2014 ..

-rw------- 1 mongodb mongodb 67108864 Jan 23 01:49 Legacy.0

-rw------- 1 mongodb mongodb 134217728 Jan 23 01:57 Legacy.1

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:02 Legacy.10

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.11

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.12

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.13

-rw------- 1 mongodb mongodb 2146435072 Dec 1 08:18 Legacy.14

-rw------- 1 mongodb mongodb 268435456 Jan 23 01:51 Legacy.2

-rw------- 1 mongodb mongodb 536870912 Jan 23 02:03 Legacy.3

-rw------- 1 mongodb mongodb 1073741824 Jan 23 02:03 Legacy.4

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:02 Legacy.5

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.6

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.7

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:03 Legacy.8

-rw------- 1 mongodb mongodb 2146435072 Jan 23 02:01 Legacy.9

-rw------- 1 mongodb mongodb 16777216 Jan 23 02:03 Legacy.ns

drwx------ 2 mongodb mongodb 4096 Dec 1 08:18 \_tmp

#ls -la /db/mongodb/27017-IDS-Shard08/data/Relationship

total 8336424

drwx------ 3 mongodb mongodb 4096 Feb 2 2014 .

drwx------ 12 mongodb mongodb 4096 Apr 25 2014 ..

-rw------- 1 mongodb mongodb 67108864 Mar 10 2014 Relationship.0

-rw------- 1 mongodb mongodb 134217728 Mar 10 2014 Relationship.1

-rw------- 1 mongodb mongodb 268435456 Mar 10 2014 Relationship.2

-rw------- 1 mongodb mongodb 536870912 Jun 23 2014 Relationship.3

-rw------- 1 mongodb mongodb 1073741824 Jan 22 22:33 Relationship.4

-rw------- 1 mongodb mongodb 2146435072 Jan 22 23:20 Relationship.5

-rw------- 1 mongodb mongodb 2146435072 Jan 22 23:20 Relationship.6

-rw------- 1 mongodb mongodb 2146435072 Feb 2 2014 Relationship.7

-rw------- 1 mongodb mongodb 16777216 Jan 22 23:20 Relationship.ns

drwx------ 2 mongodb mongodb 4096 Feb 2 2014 \_tmp

ls -ltrh /db/mongodb/27017/data/Legacy

total 22G

-rw------- 1 mongodb mongodb 2.0G Dec 1 08:18 Legacy.14

drwx------ 2 mongodb mongodb 4.0K Dec 1 08:18 \_tmp

-rw------- 1 mongodb mongodb 64M Jan 23 01:49 Legacy.0

-rw------- 1 mongodb mongodb 128M Jan 23 01:57 Legacy.1

-rw------- 1 mongodb mongodb 256M Jan 23 02:06 Legacy.2

-rw------- 1 mongodb mongodb 512M Jan 23 02:14 Legacy.3

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:22 Legacy.10

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:23 Legacy.9

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:24 Legacy.5

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.7

-rw------- 1 mongodb mongodb 16M Jan 23 02:25 Legacy.ns

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.8

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.6

-rw------- 1 mongodb mongodb 1.0G Jan 23 02:25 Legacy.4

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.13

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.12

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:25 Legacy.11

mongodb:/home/mongodb

ls -ltrh /db/mongodb/27017-IDS-Shard08/data/Relationship/

total 8.0G

-rw------- 1 mongodb mongodb 2.0G Feb 2 2014 Relationship.7

drwx------ 2 mongodb mongodb 4.0K Feb 2 2014 \_tmp

-rw------- 1 mongodb mongodb 256M Mar 10 2014 Relationship.2

-rw------- 1 mongodb mongodb 128M Mar 10 2014 Relationship.1

-rw------- 1 mongodb mongodb 64M Mar 10 2014 Relationship.0

-rw------- 1 mongodb mongodb 512M Jun 23 2014 Relationship.3

-rw------- 1 mongodb mongodb 1.0G Jan 22 22:33 Relationship.4

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:13 Relationship.6

-rw------- 1 mongodb mongodb 16M Jan 23 02:13 Relationship.ns

-rw------- 1 mongodb mongodb 2.0G Jan 23 02:13 Relationship.5

mongodb:/home/mongodb

>

## Starting and Stopping Instances

#starting mongodb

-bash-4.2$ mongod -f /db/mongodb/27017/etc/mongod.conf    
about to fork child process, waiting until server is ready for connections.  
forked process: 14886  
child process started successfully, parent exiting

#Stopping mongodb

mongod --dbpath /path/to/your/db --shutdown  
mongo --eval "db.getSiblingDB('admin').shutdownServer()"  
mongo --eval "db.getSiblingDB('admin').shutdownServer()"  
mongo --eval "db.shutdownServer()" admin

#Shutting down using command prompt

use admin;  
db.auth('mgadmin','admin123');  
db.shutdownServer()

## Enabling Authentication & Setting the replica set:

#generating keyfile for authentication

Cd /db/mongodb/27017/etc/   
openssl rand -base64 753 > keyfile  
chown -R mongodb:mongodb keyfile   
chmod 600 keyfile

**#updating the mongodb config file to support authentication**

 vi /db/mongodb/27017/etc/mongod.conf

auth=true  
keyfile=/db/mongodb/27017/etc/keyfile

replSet=REPLICA1

oplogSize=10240

**#Restart the instance**

**#Create the admin user**

-bash-4.2$ mongo --port 27017  
MongoDB shell version: 2.6.6  
connecting to: [127.0.0.1:27017/test](http://127.0.0.1:27017/test)  
> show dbs;  
admin  (empty)  
local  0.078GB  
> use admin  
switched to db admin  
> db.createUser({user: "mgadmin", pwd: "\*\*\*\*\*\*\*", roles: ["root"]});  
Successfully added user: { "user" : "mgadmin", "roles" : [ "root" ] }  
>

# **Convert a Standalone to a Replica Set**

1. **Test Connections Between all Members**

All members of a [replica set](http://docs.mongodb.org/manual/reference/glossary/#term-replica-set) must be able to connect to every other member of the set to support replication.

**EXAMPLE:**

Given a replica set with three members running on three separate hosts:

m1.example.net

m2.example.net

m3.example.net

Test the connection from m1.example.net to the other hosts with the following operation set m1.example.net:

mongo --host m2.example.net --port 27017

mongo --host m3.example.net --port 27017

Test the connection from m2.example.net to the other two hosts with the following operation set from m2.example.net, as in:

mongo --host m1.example.net --port 27017

mongo --host m3.example.net --port 27017

You have now tested the connection between m2.example.net and m1.example.net in both directions.

Test the connection from m3.example.net to the other two hosts with the following operation set from the m3.example.net host, as in:

mongo --host m1.example.net --port 27017

mongo --host m2.example.net --port 27017

If any connection, in any direction fails, check your networking and firewall configuration and reconfigure your environment to allow these connections.

1. **Login to the instance which will be primary.**

* use admin;
* db.auth(‘mgadmin’,’admin123’);
* cfg = {\_id: "REPLICA1",

members: [

{\_id: 0, host: " m1.example.net:27017"},

{\_id: 1, host: " m2.example.net:27017"},

{\_id: 2, host: " m3.example.net:27017"},

]

* rs.initiate(cfg);

1. **Check the status of replication**

* use admin;
* db.auth(‘mgadmin’,’admin123’);
* rs.status();