MongoDB & NodeBB Backup [21.10.2022]

DOCUMENTATION - DAMLA GÖZÜK

1. Instantiate an EC2 server on AWS.

2. SSH into the server

3. Setup MongoDB

```
# Get the public GPG key
curl -fsSL https://www.mongodb.org/static/pgp/server-4.4.asc | sudo apt-key add -
# Add a source for finding mongodb using apt
echo "deb [ arch=amd64,arm64 ] https://repo.mongodb.org/apt/ubuntu focal/mongodb-org/4.4 multiverse" | sudo tee /etc/apt/sources.list.d/mon
# Update/Upgrade the system
sudo apt update && sudo apt upgrade
# Install
sudo apt install mongodb-org
# Start the service
sudo systemctl start mongod.service
# Test the service
sudo systemctl status mongod
# Enable service start in boot
sudo systemctl enable mongod
# Check version
mongod --version
## Output
#db version v4.4.17
#Build Info: {
#    "version": "4.4.17",
#    "gitVersion": "85de0cc83f4dc64dbbac7fe028a4866228c1b5d1",
#    "openSSLVersion": "OpenSSL 1.1.1f  31 Mar 2020",
#    "modules": [],
#    "allocator": "tcmalloc",
#    "environment": {
#        "distmod": "ubuntu2004",
#        "distarch": "x86_64",
#        "target_arch": "x86_64"
#    }
#}
```

4. Setup NodeBB

```
### Source: https://docs.nodebb.org/installing/os/ubuntu/
## Setup prerequisites
# Node.js
# Get preconfiguration
curl -sL https://deb.nodesource.com/setup_lts.x | sudo -E bash -
# Install
sudo apt install nodejs
# Verify installation
node -v
## Output
# v16.18.0
npm -v
## Output
# 8.19.2

## Configure MongoDB
# Enter mongo shell
mongo
# Switch to built-in admin database
use admin
# Create an admin user / password is 123456
db.createUser( { user: "admin", pwd: "<Enter a secure password>", \
```

```
    roles: [ { role: "root", db: "admin" } ] } )
# Create a database called nodebb and switch to this database
use nodebb
# Create user nodebb for database nodebb with appropriate privileges
db.createUser( { user: "nodebb", pwd: "<Enter a secure password>", \
    roles: [ { role: "readWrite", db: "nodebb" }, { role: "clusterMonitor", db: "admin" } ] } )
# Quit Mongo shell
quit()
# Enable database authorization in the MongoDB configuration
# file /etc/mongod.conf by appending the following lines:
# security:
#   authorization: enabled
# Restart service and verify admin mongo user can connect
sudo systemctl restart mongod
# mongo -u admin -p your_password --authenticationDatabase=admin
mongo nodebb -u nodebb -p 123456

## Installing NodeBB
sudo apt-get install -y git
git clone -b v2.x https://github.com/NodeBB/NodeBB.git nodebb
cd nodebb
./nodebb setup
#
./nodebb start

ubuntu@ip-172-31-22-39:~/nodebb$ ./nodebb setup
2022-10-19T20:00:56.153Z [2088] - info: NodeBB Setup Triggered via Command Line

Welcome to NodeBB v2.5.7!

This looks like a new installation, so you will have to answer a few questions about your environment before we can proceed.
Press enter to accept the default setting (shown in brackets).
URL used to access this NodeBB (http://localhost:4567)
Please enter a NodeBB secret (1a3ac6d5-2111-4a0a-936a-4e2ebadaf047)
Would you like to submit anonymous plugin usage to nbbpm? (yes)
Which database to use (mongo)
2022-10-19T20:01:00.745Z [2088] - info:
Now configuring mongo database:
MongoDB connection URI: (leave blank if you wish to specify host, port, username/password and database individually)
Format: mongodb://[username:password@]host1[:port1][,host2[:port2],...[,hostN[:portN]]][/[database][?options]]
Host IP or address of your MongoDB instance (127.0.0.1)
Host port of your MongoDB instance (27017)
MongoDB username nodebb
Password of your MongoDB database
MongoDB database name (nodebb)
2022-10-19T20:01:22.490Z [2088] - info: [database] Checking database indices.
2022-10-19T20:01:22.536Z [2088] - info: [database] Checking database indices done!
2022-10-19T20:01:23.581Z [2088] - verbose: [minifier] utilizing a maximum of 1 additional threads
Configuration Saved OK
Populating database with default configs, if not already set...
2022-10-19T20:01:23.612Z [2088] - warn: [cache-buster] could not read cache buster ENOENT: no such file or directory, open '/home/ubuntu/no
Enabling default theme: nodebb-theme-persona
No categories found, populating instance with default categories
2022-10-19T20:01:24.151Z [2088] - warn: No administrators have been detected, running initial user setup

Administrator username admin
Administrator email address gozuk@kth.se
# password is: admin123456
Password
Confirm Password
2022-10-19T20:02:39.373Z [2088] - verbose: [UserReset.cleanByUid] No tokens found for uid (1).
Creating welcome post!
Enabling default plugins
...

### At this point NodeBB is setup
...
2022-10-19T20:02:46.856Z [2088] - verbose: [meta/templates] Successfully compiled templates.
2022-10-19T20:02:46.856Z [2088] - info: [build]                 templates  build completed in 0.524sec
2022-10-19T20:02:46.857Z [2088] - info: [build]                 languages  build started
2022-10-19T20:02:48.600Z [2088] - info: [build]                 languages  build completed in 1.743sec
2022-10-19T20:02:48.600Z [2088] - info: [build] Bundling with Webpack.
312 assets
853 modules

WARNING in asset size limit: The following asset(s) exceed the recommended size limit (244 KiB).
This can impact web performance.
Assets:
  d9d9f5deccb1ee634fc7e944aa75df78.js (496 KiB)
  nodebb.min.js (354 KiB)
  admin.min.js (393 KiB)
```

```
  4793.5007eee79798949afd33.min.js (565 KiB)
  8522.22b22bcb046315ed2e2b.min.js (482 KiB)
  1083.a075d1e2d6de58a4d655.min.js (800 KiB)

WARNING in entrypoint size limit: The following entrypoint(s) combined asset size exceeds the recommended limit (244 KiB). This can impact 
Entrypoints:
  nodebb (354 KiB)
      nodebb.min.js
  admin (393 KiB)
      admin.min.js

webpack 5.74.0 compiled with 2 warnings in 7399 ms
2022-10-19T20:02:56.554Z [2088] - info: [build] Asset compilation successful. Completed in 16.625sec.

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

NodeBB Setup Completed. Run "./nodebb start" to manually start your NodeBB server.
```

5. Backup MongoDB (NodeBB) using `mongodump`

```
Used mongodb database is `nodebb`
# This will produce an archive of the Database called test.archive
mongodump --archive=test.archive --db=nodebb

#ubuntu@ip-172-31-22-39:~$ mongodump -d nodebb
#2022-10-19T20:56:28.875+0000 writing nodebb.objects to dump/nodebb/objects.bson
#2022-10-19T20:56:28.878+0000 done dumping nodebb.objects (592 documents)
#ubuntu@ip-172-31-22-39:~$ ls dump/nodebb/
#objects.bson  objects.metadata.json
```

6. Algorithm for Backing Up

```
# inside backup directory
cron: with period T
  run script

script:
  ssh <remote-server>
    mongodump
  scp <remote-server>
    fetch dump
  ssh <remote-server>
    remove dump
  if #dumps > 5 then
    delete oldest dump
  end
```

7. Scripts & Configuration for Backing Up

```
#!/bin/bash
SERVER_IP="54.82.198.169"
REMOTE_USER="ubuntu"
MONGODUMP_PATH="/usr/bin/mongodump"
BACKUPS_DIR="/home/ubuntu/dump/"
FILENAME_TIME=`date +"%Y%m%dT%H%M"`
NUMBER_OF_ALLOWED_BACKUPS=5

# SSH and create dump for nodebb database
ssh ubuntu@54.82.198.169 mongodump -d nodebb

# Create directory for the current backup
mkdir -p local-backups/$FILENAME_TIME

# Fetch
scp -pr ubuntu@54.82.198.169:/home/ubuntu/dump/home/student/Desktop/script/local-backups/$FILENAME_TIME

# Remove
ssh $REMOTE_USER@$SERVER_IP rm -rf $BACKUPS_DIR
### Check number of backups in the directory

NUMBER_OF_BACKUPS=`ls local-backups/ | wc -l`
```

```
# ls local-backups/ | wc -l
echo "============================================================="
echo "There are $NUMBER_OF_BACKUPS backups available in the local backup folder."
echo "============================================================="
# List all backup files
cd local-backups
ls
# Delete least recent if larger than 5 backups
if (($NUMBER_OF_BACKUPS > $NUMBER_OF_ALLOWED_BACKUPS));
then
        echo "============================================================="
        echo "New backup with name: $FILENAME_TIME is backup up."
        echo "There are more than $NUMBER_OF_ALLOWED_BACKUPS backups. Deleting least recent:"
        ls -t | tail -1
        rm -rf "$(ls -t | tail -1)"
        echo "...."
else
        echo "New backup with name: $FILENAME_TIME is backup up."
fi
```

8. With `cron`

```
### Run the script every minute
# * * * * *

# Edit cron via
crontab -e
* * * * * /home/student/Desktop/script/script.sh
```

9. Test

```
(base) root@dasak:while true; do sleep 60; ./script.sh ; done;
2022-10-19T22:11:48.250+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:11:48.253+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     3.8KB/s   00:00
objects.bson                                                  100%   96KB 100.5KB/s   00:00
=============================================================
There are 1 backups available in the local backup folder.
=============================================================
20221019T2311
New backup with name: 20221019T2311 is backup up.
2022-10-19T22:12:59.717+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:12:59.719+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     4.1KB/s   00:00
objects.bson                                                  100%   96KB 160.5KB/s   00:00
=============================================================
There are 2 backups available in the local backup folder.
=============================================================
20221019T2311  20221019T2312
New backup with name: 20221019T2312 is backup up.
2022-10-19T22:14:08.846+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:14:08.848+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     4.0KB/s   00:00
objects.bson                                                  100%   96KB 156.8KB/s   00:00
=============================================================
There are 3 backups available in the local backup folder.
=============================================================
20221019T2311  20221019T2312  20221019T2314
New backup with name: 20221019T2314 is backup up.
2022-10-19T22:15:18.716+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:15:18.719+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     3.8KB/s   00:00
objects.bson                                                  100%   96KB 157.6KB/s   00:00
=============================================================
There are 4 backups available in the local backup folder.
=============================================================
20221019T2311  20221019T2312  20221019T2314  20221019T2315
New backup with name: 20221019T2315 is backup up.
2022-10-19T22:16:30.934+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:16:30.937+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     2.0KB/s   00:00
objects.bson                                                  100%   96KB  64.3KB/s   00:01
=============================================================
There are 5 backups available in the local backup folder.
```

```
================================================================
20221019T2311  20221019T2312  20221019T2314  20221019T2315  20221019T2316
New backup with name: 20221019T2316 is backup up.
2022-10-19T22:17:45.511+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:17:45.514+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     3.9KB/s   00:00
objects.bson                                                  100%   96KB 102.7KB/s   00:00
================================================================
There are 6 backups available in the local backup folder.
================================================================
20221019T2311  20221019T2312  20221019T2314  20221019T2315  20221019T2316  20221019T2317
================================================================
New backup with name: 20221019T2317 is backup up.
There are more than 5 backups. Deleting least recent:
20221019T2311
....
2022-10-19T22:18:55.837+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:18:55.839+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     2.6KB/s   00:00
objects.bson                                                  100%   96KB  91.7KB/s   00:01
================================================================
There are 6 backups available in the local backup folder.
================================================================
20221019T2312  20221019T2314  20221019T2315  20221019T2316  20221019T2317  20221019T2318
================================================================
New backup with name: 20221019T2318 is backup up.
There are more than 5 backups. Deleting least recent:
20221019T2312
....
2022-10-19T22:20:07.245+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:20:07.248+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     4.1KB/s   00:00
objects.bson                                                  100%   96KB 135.1KB/s   00:00
================================================================
There are 6 backups available in the local backup folder.
================================================================
20221019T2314  20221019T2315  20221019T2316  20221019T2317  20221019T2318  20221019T2320
================================================================
New backup with name: 20221019T2320 is backup up.
There are more than 5 backups. Deleting least recent:
20221019T2314
....
2022-10-19T22:21:18.518+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:21:18.521+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     4.1KB/s   00:00
objects.bson                                                  100%   96KB  70.6KB/s   00:01
================================================================
There are 6 backups available in the local backup folder.
================================================================
20221019T2315  20221019T2316  20221019T2317  20221019T2318  20221019T2320  20221019T2321
================================================================
New backup with name: 20221019T2321 is backup up.
There are more than 5 backups. Deleting least recent:
20221019T2315
....
2022-10-19T22:22:30.082+0000  writing nodebb.objects to dump/nodebb/objects.bson
2022-10-19T22:22:30.085+0000  done dumping nodebb.objects (592 documents)
objects.metadata.json                                         100%  603     3.4KB/s   00:00
objects.bson                                                  100%   96KB 135.9KB/s   00:00
```

10. Attached script

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/ac200a0e-2111-4c91-984c-089f219367d4/script.sh

11. SSH Access

```
# Username: ubuntu
# Password: ubuntu123
# IP: 54.82.198.169
## copying my SSH public key into /home/ubuntu.ssh . To be able to run the script, without having to enter password.
# ssh-copy-id -i id_ed25519.pub ubuntu@54.82.198.169
# Enter the password
# Now I can login without password.
```

ISSUES

[ISSUE][FIXED]: Mongo Authorization Problems / Can’t Access nor Backup Database

```
ubuntu@ip-172-31-22-39:~/nodebb$ mongo -u "admin" -p "123456" --authenticationDatabase=admin
MongoDB shell version v4.4.17
connecting to: mongodb://127.0.0.1:27017/?authSource=admin&compressors=disabled&gssapiServiceName=mongodb
Error: couldn't connect to server 127.0.0.1:27017, connection attempt failed: SocketException: Error connecting to 127.0.0.1:27017 :: cause
connect@src/mongo/shell/mongo.js:374:17
@(connect):2:6
exception: connect failed
exiting with code 1
```

[FIX]: Disable Authorization - comment out security section at `/etc/mongod.conf`

[ISSUE][FIXED]: Cannot copy files to the AWS server - cannot find .sh file

[FIX]: Connecting to server as a root `“sudo su”`