

# Create a highly available and secure three node MongoDB replica set

## Summary:

List of high level tasks done by the script:

1. Create key-pair for ssh access to ec2 machines
2. Create security group to control inbound and outbound connections
  - a. Configure security group inbound and outbound rules
3. Create 3 ec2 instances
  - a. Attach and EBS of size 10GiB of type gp2 to each of 3 ec2 instances
4. Wait until all 3 ec2 instances are in running state
5. SSH access the first 2 ec2 instances and do the following:
  - a. Set hostname as the public dns name of ec2
  - b. Install mongodb
  - c. Setup secure and SSL mongodb connections (X)
  - d. Configure mongodb (mongod.conf) and restart mongod
6. SSH into the 3rd ec2 instance and do the following: (This will be the primary node of replica set)
  - a. Repeat the steps in 5.
  - b. Add admin auth to this primary mongodb instance (X)
  - c. Initiate replica set
  - d. Check and log status of replica set
7. Setup Monitoring for the mongodb (X)

(X) -> Not done due to lack of time

## Why is this a highly available MongoDB setup?

This is a highly available MongoDB setup because there are 3 copies of data stored in all 3 nodes, consisting of one Primary node and 2 Secondary nodes which replicates the primary node asynchronously.

All the read and write operations are done to the primary node, whereas secondary nodes can be used for read operations as required.

If the primary node fails, then one of the secondary nodes detects this and starts an election, and one of the secondary nodes becomes the new primary node.

It is important to setup each member of replica set in different datacenters and regions to make this setup most efficient in terms of availability.

Since there are multiple replicas of db and the data availability is not affected in case a node is down. That is why this is a highly available mongodb setup.

### **Why is this a secure MongoDB setup?**

All mongodb instances are configured to accept requests from only each other and the db clients. All the mongodb needs authentication for access. SSL Encryption.