MongoDB

Problem Statement:01

- Create a separate database for the config server.

- Start the monody instance in configuration mode. Suppose if we have a server named Server D which would be our configuration server, we would need to run the server as a configuration server.

- Start the mongos instance by specifying the configuration server.

- From the mongo shell connect to the mongo's instance.

- Issue the commands If you have Server A and Server B which needs to be added to the cluster.

- Enable sharding for the database. So if we need to shard the Employeedb database, issue the command to enable sharding on the database.

- Enable sharding for the collection. So if we need to shard the Employee collection, issue the command.

Step 1: Create a Separate Database for the Config Server

1. Config Server Database: MongoDB uses a dedicated database for the config server (config database) to store metadata for the sharded cluster.
2. Start the Config Server (Server D):
3. mongod --configsvr --replSet configReplSet --dbpath /data/configdb --port 27019
    - --configsvr: Specifies that this instance is a config server.
    - --replSet configReplSet: Sets up a replica set named configReplSet for the config server.
    - --dbpath: Path to store the data.
    - --port: Port for the config server (27019 by default).

Step 2: Initiate the Config Server Replica Set

1. Connect to the config server:
2. mongo --port 27019
3. Initiate the replica set:
4. rs.initiate({
5. _id: "configReplSet",
6. configsvr: true,
7. members: [
8. { _id: 0, host: "localhost:27019" }
9.]
10. })

Step 3: Start mongos Instance

mongos acts as the query router for the sharded cluster.

1. Start the mongos instance and specify the config server:
2. mongos --configdb configReplSet/localhost:27019 --port 27017
    - --configdb: Points to the config server replica set.
    - --port: Specifies the port for the mongos instance (27017 by default).

Step 4: Connect to the mongos Instance

1. From the shell, connect to mongos:
2. mongo --port 27017

Step 5: Add Server A and Server B as Shards

Assume you have Server A and Server B running as mongod instances on ports 27018 and 27020.

1. Add Server A:
2. sh.addShard("localhost:27018")
3. Add Server B:
4. sh.addShard("localhost:27020")

Step 6: Enable Sharding for the Database

If you want to shard the Employeedb database:

1. Enable sharding for the Employeedb database:
2. sh.enableSharding("Employeedb")

Step 7: Shard the Employee Collection

You must choose a shard key for the Employee collection.

1. Shard the Employee collection on the empId field:
2. sh.shardCollection("Employeedb.Employee", { empId: 1 })

Summary of Commands:

mongod --configsvr --replSet configReplSet --dbpath /data/configdb --port 27019
mongos --configdb configReplSet/localhost:27019 --port 27017
mongo --port 27017

Mongo Shell Commands:

```
sh.addShard("localhost:27018")
sh.addShard("localhost:27020")
sh.enableSharding("Employeedb")
sh.shardCollection("Employeedb.Employee", { empId: 1 })
```