



Course Overview



View Discussion

## Chapter 1: Authentication

### Homework 1.5: Enabling Mixed Authentication Mechanisms

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Here are the steps to set up a replica set with a mix of SCRAM-SHA-1, X.509, and keyfile based authentication enabled.

The first thing to do is to create a folder structure for our members.

```
$ mkdir -p ~/M310-HW-1.5/{r0,r1,r2}
```

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We can then generate a keyfile to share between the members.

```
$ cd ~/M310-HW-1.5
$ openssl rand -base64 755 > keyfile
$ chmod 400 keyfile
```

COPY

After our keyfile has been generated we can spin up three **mongod** instances.

```
$ mongod --port 31150 --sslMode allowSSL --keyFile keyfile --replSet
HW-1.5 \
    --sslCAFile ~/shared/certs/ca.pem --sslPEMKeyFile
~/shared/certs/server.pem \
    --dbpath r0 --logpath r0/mongo.log --auth --fork
$ mongod --port 31151 --sslMode allowSSL --keyFile keyfile --replSet
HW-1.5 \
    --sslCAFile ~/shared/certs/ca.pem --sslPEMKeyFile
~/shared/certs/server.pem \
    --dbpath r1 --logpath r1/mongo.log --auth --fork
$ mongod --port 31152 --sslMode allowSSL --keyFile keyfile --replSet
```

COPY

```
HW-1.5 \  
    --sslCAFile ~/shared/certs/ca.pem --sslPEMKeyFile  
~/shared/certs/server.pem \  
    --dbpath r2 --logpath r2/mongo.log --auth --fork
```

We can then connect to a member and initiate our replica set.

```
$ mongo --port 31150  
rs.initiate();
```

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After we've initiated our replica set we can go ahead and create a user for Will. We can then authenticate and add the other members.

```
use admin  
db.createUser({  
  user: 'will',  
  pwd: '$superAdmin',  
  roles: [{ role: 'root', db: 'admin' }]  
});  
db.auth('will', '$superAdmin');  
rs.add('database.m310.mongodb.university:31151');  
rs.add('database.m310.mongodb.university:31152');
```

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After adding all of our members to our replica set we inspect our **client.pem** certificate and then we can create a user respectively.

```
$ openssl x509 -in ~/shared/certs/client.pem -inform PEM -subject -  
nameopt RFC2253 -noout  
$ mongo --port 31150  
use admin  
db.auth('will', '$superAdmin');  
use $external  
db.runCommand({  
  createUser: 'C=US,ST=New York,L=New York  
City,O=MongoDB,OU=University2,CN=M310 Client',  
  roles: [{ role: 'userAdminAnyDatabase', db: 'admin' }],  
  writeConcern: { w: "majority" , wtimeout: 5000  
}});
```

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Proceed to next section