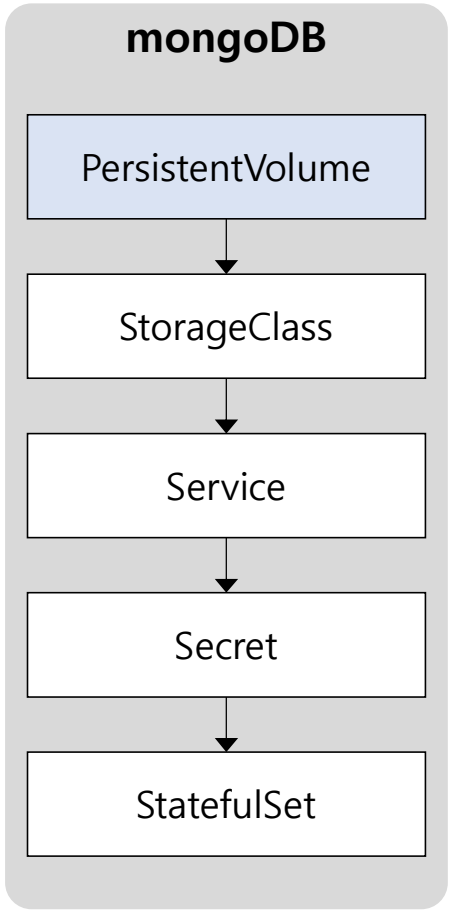
11 week

Sample Project (MongoDB)

mongoDB – setup



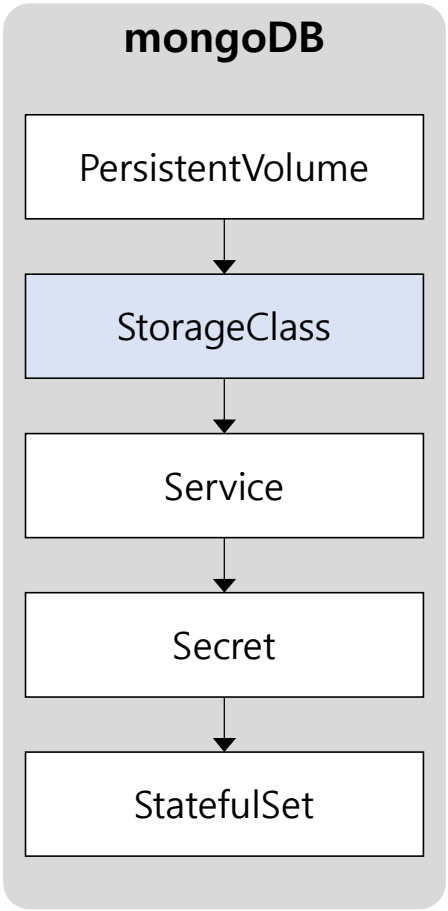

```
❯ kubectl create -f 01-persistentvolume.yaml
persistentvolume/pv-mongodb-1 created
persistentvolume/pv-mongodb-2 created
```

mongoDB에서 사용할 PV 미리 준비

뒤에서 mongoDB replica를 2개 만들 예정이기에 2개의 PV를 준비

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

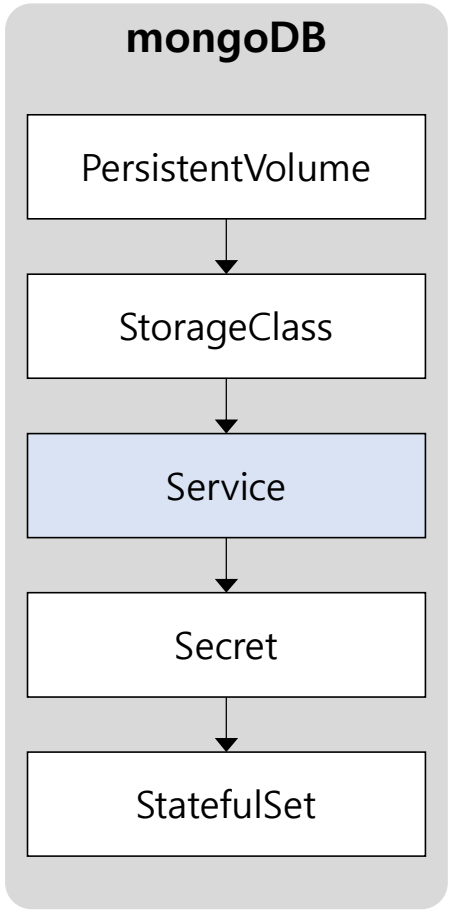
mongoDB – setup




```
> kubectl create -f 02-storageclass.yaml
storageclass.storage.k8s.io/mongodb-storage created
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

mongoDB – setup



03-service.yaml

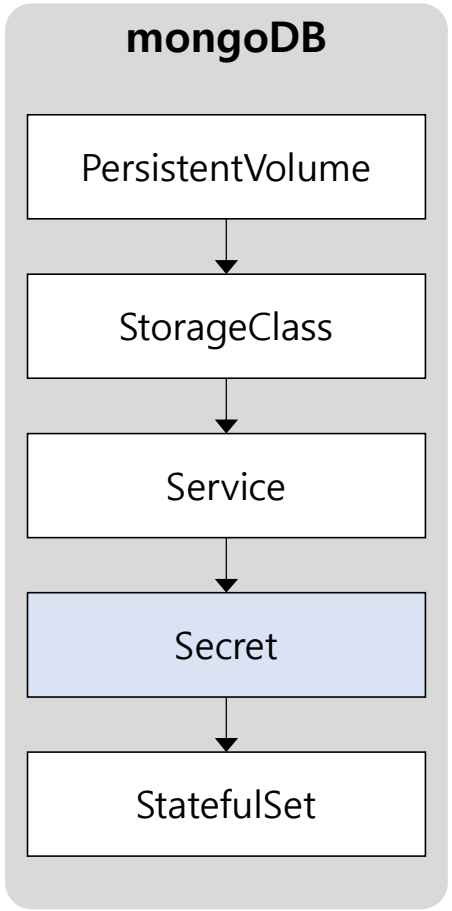
```
apiVersion: v1
kind: Service
metadata:
  name: mongodb-service
  labels:
    app: mongodb
    group: mongodb

spec:
  type: NodePort

  ports:
    - port: 27017
      targetPort: 27017
      protocol: TCP
      nodePort: 30270

  selector:
    app: mongodb
```

selector에 해당하는 Pod가 여러 개인 경우 어떻게 될까?

```
> kubectl create -f 03-service.yaml
service/mongodb-service created
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

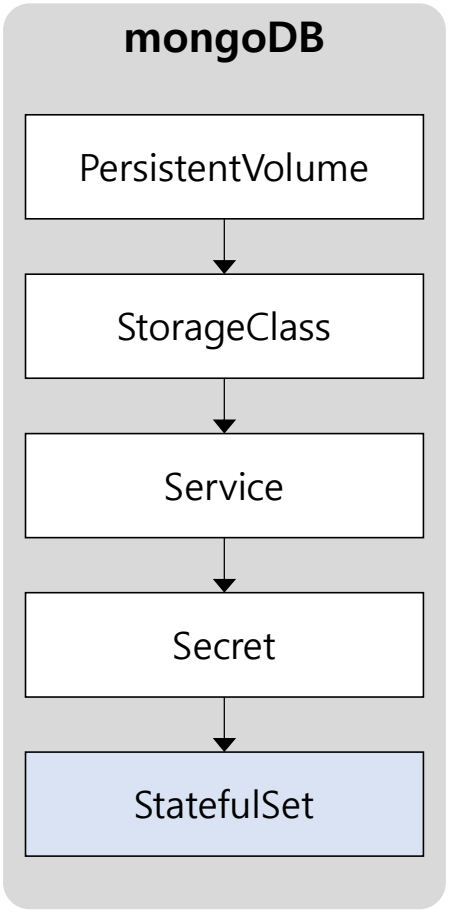
mongoDB – setup




```
❯ openssl rand -base64 741 > ./mongodb-key.txt

❯ kubectl create secret generic mongodb-key --from-file=internal-auth-mongodb-keyfile=./mongodb-key.txt
secret/mongodb-key created
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

mongoDB – setup




```
❯ kubectl create -f 04-statefulset.yaml
statefulset.apps/mongodb-statefulset created
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

Set Replica Set Status

- MongoDB의 Replica Set 상태 확인

```
❯ kubectl get pods
NAME                    READY   STATUS    RESTARTS   AGE
mongodb-statefulset-0   1/1     Running   0          14m
mongodb-statefulset-1   1/1     Running   0          14m

❯ kubectl exec -it mongodb-statefulset-0 -- bash

root@mongodb-statefulset-0:/# hostname -f
mongodb-statefulset-0.mongodb-service.default.svc.cluster.local

root@mongodb-statefulset-0:/# mongo
MongoDB shell version v4.2.14
connecting to: mongodb://127.0.0.1:27017/?compressors=disabled&gssapiServiceName=mongodb
Implicit session: session { "id" : UUID("92a54c87-98ab-4957-ad8d-25dbcdc0343e") }
MongoDB server version: 4.2.14
Welcome to the MongoDB shell.
For interactive help, type "help".
For more comprehensive documentation, see
        https://docs.mongodb.com/
Questions? Try the MongoDB Developer Community Forums
        https://community.mongodb.com
```

```
> rs.status();
{
        "ok" : 0,
        "errmsg" : "no replset config has been received",
        "code" : 94,
        "codeName" : "NotYetInitialized"
}
>
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

Set Replica

- 2개의 MongoDB에 대해서 Replica 설정

```
> rs.initiate({_id: "MainRepSet", version: 1, members: [
... {_id: 0, host: "mongodb-statefulset-0.mongodb-service.default.svc.cluster.local:27017"},
... {_id: 1, host: "mongodb-statefulset-1.mongodb-service.default.svc.cluster.local:27017"}
... ]});
{ "ok" : 1 }

MainRepSet:SECONDARY> rs.status();
{
        "set" : "MainRepSet",
        "date" : ISODate("2021-06-27T02:57:38.508Z"),
        "myState" : 1,
        "term" : NumberLong(1),
        "syncingTo" : "",
        "syncSourceHost" : "",
        "syncSourceId" : -1,
        "heartbeatIntervalMillis" : NumberLong(2000),
        "majorityVoteCount" : 2,
        "writeMajorityCount" : 2,
. . .
```

Replica 설정 후 다시 replica status를 확인하면
앞과는 다른 결과를 보여준다.

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

Create Account

- admin 계정 생성

```
MainRepSet:PRIMARY> db.getSiblingDB("admin").createUser({
... user : "whatwant",
... pwd  : “xxxx",
... roles: [ { role: "root", db: "admin" } ]
... });
Successfully added user: {
        "user" : "whatwant",
        "roles" : [
                {
                        "role" : "root",
                        "db" : "admin"
                }
        ]
}
```

※ 참고 : https://github.com/windowforsun/blog/blob/master/_posts/kubernetes/2021-04-04-kubernetes-practice-statefulset-mongodb.md

Python Sample

```
❯ pip install pymongo
```

sample-pymongo.py

```
import urllib
from pymongo import MongoClient

username = urllib.parse.quote_plus('whatwant')
password = urllib.parse.quote_plus('xxxx')

client = MongoClient('192.168.100.113', port=30270, username=username, password=password)

print(client.list_database_names())
```

NodePort 방식으로 생성된 Service를 통해 접속 가능

```
❯ python sample-mongodb.py
['admin', 'config', 'local']
```