XII. Admin Processes with Jobs

Relevant Documentation

- Twelve-Factor App: XII. Admin Processes
- Jobs

Lesson Reference

Switch to the source code directory:

```
cd ~/content-designing-applications-for-kubernetes
```

Optional: If you want to start with a clean slate, check out the start tag for this lesson. However, you could lose any local changes you have made if you do this:

```
git reset --hard HEAD

git checkout XII-admin-processes-start -f
```

Edit the source code for the admin process:

```
vi src/jobs/deDeuplicateJob.js
```

Locate the block of code that begins with `// Setup MongoDb backing database`.

Change the code to make the database connection configurable:

```javascript
// Setup MongoDb backing database
const MongoClient = require('mongodb').MongoClient
// MongoDB credentials
const username = encodeURIComponent(process.env.MONGODB_USER || "uloe_user");
const password = encodeURIComponent(process.env.MONGODB_PASSWORD || "ILoveTheList");
// MongoDB connection info
const mongoPort = process.env.MONGODB_PORT || 27017;
const mongoHost = process.env.MONGODB_HOST || 'localhost';
// MongoDB connection string
const mongoURI = `mongodb://${username}:${password}@${mongoHost}:${mongoPort}/uloe`;
const mongoURISanitized = `mongodb://${username}:****@${mongoHost}:${mongoPort}/uloe`;
console.log("MongoDB connection string %s", mongoURISanitized);
const client = new MongoClient(mongoURI);
```

Edit the Dockerfile to include the admin job code in the server image:

```
vi Dockerfile
```

Add the following line after the other `COPY` directives for the `server` image:

```
...

COPY --from=build /usr/src/app/src/jobs .
```

Build and push the server image:

```
docker build -t <Your Docker Hub username>/uloe-server:0.0.5 --target server .

docker push <Your Docker Hub username>/uloe-server:0.0.5
```

Create a Kubernetes Job to run the admin job:

```
vi de-duplicate-job.yml
```

Supply your Docker Hub username in the image tag:

```
apiVersion: batch/v1
kind: Job
metadata:
  name: de-duplicate
spec:
  template:
    spec:
      containers:
      - name: uloe-server
        image: <Your Docker Hub username>/uloe-server:0.0.5
        command: ["node", "deDeuplicateJob.js"]
        env:
        - name: MONGODB_HOST
          valueFrom:
            configMapKeyRef:
              name: uloe-config
              key: mongodb.host
        - name: MONGODB_PORT
          valueFrom:
            configMapKeyRef:
              name: uloe-config
              key: mongodb.port
        - name: MONGODB_USER
          valueFrom:
            secretKeyRef:
              name: uloe-secure-config
              key: mongodb.username
        - name: MONGODB_PASSWORD
          valueFrom:
            secretKeyRef:
              name: uloe-secure-config
              key: mongodb.password
      restartPolicy: Never
  backoffLimit: 4
```

Run the Job:

```
kubectl apply -f de-duplicate-job.yml -n production
```

Check the Job status:

```
kubectl get jobs -n production
```

Get the name of the Job Pod:

```
kubectl get pods -n production
```

Use the Pod name to view the logs for the Job Pod:

```
kubectl logs <Pod name> -n production
```