Exercise 13 - Introduction to Elasticsearch

Exercise 13.a - Install and Setup Elasticsearch

1. If you have homebrew, run:

```
brew install elasticsearch
```

2. Start the Elasticsearch Server

```
elasticsearch --config=/usr/local/opt/elasticsearch/config/elasticsearch.yml
```

3. After it has finished starting up, stop the Elasticsearch Server by pressing `Ctrl + C`

4. Change to the Elasticsearch directory

```
cd /usr/local/opt/elasticsearch/
```

5. Install the Couchbase Elasticsearch plugin

```
bin/plugin -install transport-couchbase -url \
http://packages.couchbase.com.s3.amazonaws.com/releases/elastic-search-adapter/2.0.0/elasticsearch-transport-couchb
ase-2.0.0.zip
```

6. Set the username and password for the plugin

```
echo "couchbase.password: password" >> config/elasticsearch.yml ; echo "couchbase.username: Administrator" >> confi
g/elasticsearch.yml
```

7. Install the ElasticSearch Head Plugin to provide a web interface to ElasticSearch.

```
bin/plugin -install mobz/elasticsearch-head
```

8. Start the Elasticsearch server

```
bin/elasticsearch
```

9. Verify the install by opening up the web interface http://localhost:9200/_plugin/head/

10. Create a New Index / Bucket in Elasticsearch by clicking "Indicies"

11. Click the "New Index" button

12. Use `example-site` for the Index Name, leave the other fields as the default.

13. Click the "OK" button

13.b - Create a New Couchbase Cluster Reference

Couchbase will replicate data to a remote Couchbase Cluster, in this case Elasticsearch is our remote Couchbase Cluster.

1. Go to the XDCR tab

2. Click "Create Cluster Reference"

3. Enter a name for the cluster reference i.e. "Elasticsearch"

4. Enter "127.0.0.1:9091" for the IP/hostname

5. Enter the **value** for `couchbase.username` (i.e. "Administrator") that provided earlier when setting up the plugin as the Username

6. Enter the **value** for `couchbase.password` (i.e. "password") that provided earlier when setting up the plugin as the Password

7. Click the "Save" button

13.c - Create a New Couchbase Replication

Couchbase will feed data to Elasticsearch through its built in Replication mechanism, XDCR. To Couchbase, Elasticsearch is nothing more than another replication of a bucket.

1. From the XDCR tab click "Create Replication"

2. Select the bucket from your initial setup i.e. "default"

3. Choose the cluster from the previous steps i.e. "Elasticsearch"

3. Enter in the name of the Elasticsearch Index / Bucket you provided in **13a. 12** i.e. "example-site"

4. Click "Advanced Settings" link

5. Change the XDCR Protocol to "Version 1"

6. Click the "Replicate" button

You should see the status of the replication as "Replicating". If you open up the Elasticsearch web interface http://localhost:9200/_plugin/head/ and refresh you should see the number of docs going up.

13.d - Calling Elasticsearch for Searching of Products

A search function is a necessary feature of every ecommerce website. We need to be able to search all of our products and this is something Elasticsearch does very well.

1. Open `exercise13/com/example/documents/SearchService.cfc` in your IDE

2. Modify the `getProductsBySearch` method to perform an HTTP Request to Elasticsearch.

```
http = new Http();
http.setUrl(elasticsearch_url);
http.setMethod("GET");
http.setTimeout(10);
http_result = http.send().getPrefix();
```

For your reference the data from the `getProductsBySearch` method is used in the following views:

- exercise13/com/example/documents/Product.cfc
- exercise13/view/search.cfm
- exercise13/view/includes/template.product.cfm