

AWS Opensearch- Learning document

There are a number of steps to get started with AWS Opensearch (earlier known as Elasticsearch). These steps are as follows -

Step 1: Signup for AWS Account

- Signup with AWS to create a new account on it. Click [here](#) and hit on **Create an AWS Account** button at the top right corner.
- Provide all required information here that is needed and click on the **Continue** button.
- Next, provide the contact information and check the box by agreeing with terms and conditions and then click on **Create Account and Continue** button. Here, you can choose the account type, i.e., Professional or Personal. By default, it is Professional.
- In this step, you have to save your debit/credit card information such as card number, expiration date, billing address, etc. for Payment Information.

Step 2: Create an Amazon OS domain

An Amazon OS domain and Opensearch cluster are equal to each other. Once your AWS account is created, you are ready to create an Amazon Opensearch domain. In this step, we will create an Amazon OS domain named *books*. Following are the steps to up and run the Opensearch service domain. Following are the detailed steps to create an Amazon OS domain.

A. Define your domain

1. Login to your AWS account with your credentials.
2. To navigate on the Opensearch Service page, go to the ***Analytics*** section where click on ***Opensearch Service***.
3. Click on ***Create a new domain*** button and then choose **Development and testing**.
4. Here, you need to select the Opensearch version and your preferred Deployment type. Opensearch 7.4.0 is the latest version, and we are also this version.

B. Configure your domain

1. Enter the domain name (e.g., books) which you are going to create and choose the Instance type from the drop-down list.
2. Use default value for **Data nodes storage** and 1 in **number of instance**
3. We choose *small.Opensearch* in instance type, which is a free tier.
4. Just ignore the other fields and click on **Next** to move on Set up access page.

C. Set up access policy

1. To access this domain, we have to set up appropriate permission for it. Therefore, you have to set up access on this page.
2. For simplicity, we recommend you to select the public access domain. Although, you can restrict access to a VPC or an IAM role. A specific set of users can access your Opensearch cluster.
3. Leave the **Amazon Cognito Authentication** setting for now.
4. Under the Access policy, select a template for **Set the domain access policy** Choose *Allow open access to the domain* policy for this.
5. Ignore the encryption setting and leave it as default and click Next.

D. Review

The last step of domain creation is review. The review page shows all the settings at once before finalizing, which you have set up in previous steps.

1. Double-check your configuration and choose **Confirm**
2. A new domain (cluster) will take around 10-15 minutes to create and initialize. However, it can also take more time to initialize depending on the configuration.

Once all these steps are completed, you get a message that "**You have successfully created an Opensearch domain**". Your OS domain will start-up and running. You will see the domain status set to **Active** and cluster health to **green**.

Step 3: Uploading data for indexing

Now, the next step is to upload the data for indexing. Using the command-line interface or programming language, we can upload the data to Amazon OS Service domain. In this step, we will upload a small amount of test data.

A. Upload a single document via command line

Execute the below command on command line to upload a single document in Amazon OS domain.

1. `curl -XPUT -u master-user:master-user-password domain-endpoint/books/_doc/1`
2. `{`
3. `"book_name": "Know your Worth",`
4. `"author": ["NK Sondhi", "Vibha Malhotra"],`
5. `"publisher": "General Press",`
6. `"publishing_date": "February 2017",`
7. `"ISBN": "8180320235",`
8. `"length": "224 pages"`
9. `}`
10. `-H 'Content-Type: application/json'`

B. Upload a JSON file containing multiple documents

1. For this, we will create a JSON file named as *json*. Copy and paste the following content:

- `{ "index": { "_index": "books", "_id": "2" } }`
- `{ "book_name": "The End of Imagination", "author": "Arundhati Roy", "publisher": "Hay market Books", "publishing_date": "December 1998", "ISBN": "9781608466191", "length": "408 pages" }`
- `{ "index": { "_index": "books", "_id": "3" } }`
- `{ "book_name": "Power of Positive Thinking", "author": "Norman Vincent Peale", "publisher": "Prentice Hall", "publishing_date": "October 1952", "ISBN": "9780671635305", "length": "240 pages" }`

2. Now, run the below command to upload the json file to books domain.

```
curl XPOST -u master-user:master-user-password domain-endpoint/_bulk -data-binary @bulk_books.json -H 'Content-Type: application/json'
```

Step 4: Searching document in Amazon OS domain

Opensearch Search APIs help the user to search the document in Amazon Opensearch Service domain. Else, you can also use Kibana (data visualization tool) to search the document in domain. Searching operation is one of the most important event of Opensearch. It's a good idea to search

the data using a specific query string when there is a large amount of data. Using the below example, we'll look for the technical books inside the *books* domain.

A. To search document through the command line

Execute the below command on the command line to search the domain which you have created.

```
curl XGET -u master-user:master-user-password 'domain-  
endpoint/books/_search?q=technical&pretty=true'
```

B. To search document using the Kibana interface

- On the browser, navigate to Kibana plugin for your Amazon OS domain. On the Amazon OS console, you will get the Kibana endpoint on your domain dashboard. The URL format will be like -domain-endpoint/_plugin/kibana/
- Log in to the console using your master username and password.
- Here, it is must to configure atleast one index pattern to use the Kibana because these patterns are used by Kibana to identify which indices you want to analyze. As we have created *books* domain so, enter *books* for this tutorial and then choose **Create**.
- Now, you will see various document field such as book_name, author, publisher, etc. shown by the **Index Pattern** For now, choose **Discover** to search your data.
- Enter Mars in the search bar and press Enter. Note that when you search for phrase mars attacks, how the similarity score (_score) increases.

Step 5: Delete an Amazon OS domain

In step 2, we have created an Amazon OS domain named books. This domain is created only for test purposes. Now, we will delete it in this step. To delete an Amazon OS domain, follow the below steps:

1. Sign in into the Amazon Opensearch Service console using username and password.
2. In the navigation page, select books domain under **My domains**
3. Now, select **Action**, and then **Delete domain** inside it.
4. At last, check the Delete Domain checkbox and choose Delete.