***Installation of docker-desktop and integrating it with open-search with docker-compose.yml***

Install Docker desktop first

Then

***Docker-compose.yml***

This Docker Compose configuration defines a multi-node OpenSearch cluster setup along with OpenSearch Dashboards for visualization. Let's break down the significance of this code for Docker:

Services Configuration:

* opensearch-node1 & opensearch-node2:
* These services define two nodes of the OpenSearch cluster.
* Each node runs an OpenSearch container with specific configurations like cluster name, node name, seed hosts for discovery, memory settings, and port mappings.
* They share a common Docker network (`opensearch-net`) for communication.
* opensearch-dashboards.
* This service sets up OpenSearch Dashboards for visualizing data stored in the OpenSearch cluster.
* It runs a container with port mappings for web access and environment variables to specify the OpenSearch nodes it will query.

*Volumes & Networks:*

- Volumes:

- Volumes `opensearch-data1` and `opensearch-data2` are created to persist data for each OpenSearch node.

- These volumes are mounted to the respective containers to store data persistently.

- Networks:

- The `opensearch-net` network is created to allow all containers to communicate with each other.

- It ensures seamless interaction between the OpenSearch nodes and OpenSearch Dashboards.

This configuration encapsulates a robust and scalable OpenSearch cluster setup with visualization capabilities through OpenSearch Dashboards, making it easier to manage, scale, and maintain the infrastructure using Docker.

***.env File***

The `.env` file is a simple text file that contains key-value pairs of environment variables and their corresponding values. In this case, the `.env` file contains the following:

OPENSEARCH\_INITIAL\_ADMIN\_PASSWORD=abc420ABC@

This file is used to set the `OPENSEARCH\_INITIAL\_ADMIN\_PASSWORD` environment variable, which is then referenced in the Docker Compose configuration file.

In the Docker Compose configuration, the `OPENSEARCH\_INITIAL\_ADMIN\_PASSWORD` environment variable is used to set the initial admin password for OpenSearch. This is a required variable for OpenSearch 2.12 and later versions.

By using a `.env` file, you can keep sensitive information like passwords separate from the main configuration file. This enhances security and helps to avoid accidentally committing sensitive data to version control systems.

To use the `.env` file, you should place it in the same directory as the Docker Compose configuration file. When running Docker Compose, it will automatically load the environment variables from the `.env` file, making them available to the services defined in the configuration file.