A) Step 1 - Installation of UNDP - AI Tool

1. Requirements prerequisite

- Ubuntu OS
- RAM - 32gb
- Docker - Docker Compose version v2.5.0
  - sudo snap install docker
- Git (to fetch the file from github source)
  - sudo apt-get install git-all
- Npm 6.14.4
  - sudo apt install npm
- Signed ssl certificates
  - (optional- recommended if tool is deployed in production env)

2. AI tool Setup

- The AI tool is created on the elasticsearch tech stack. Elastic search contains elastic and kibana.
- Install elasticsearch tool as docker containers. The **steps a,b and c** will guide you to install elastic search tool.
- Once the elastic and kibana tool is up and running follow the **step d** to setup the AItool on elasticsearch.

a)- Clone/download the required scripts of the AI_tool on your server.

*If you have a git installed, Run **git clone** cmd to copy the file from github and **cd** into the **AI_tool** folder.*

```
git clone https://github.com/rudreshpwc/AI_tool.git
cd AI_tool
```

b)- configure the .env file in the AI_tool folder. (Modify the red text to make necessary changes in .env file if required)

```
# Password for the 'elastic' user (at least 6 characters)
ELASTIC_PASSWORD=pass@123

# Password for the 'kibana_system' user (at least 6 characters)
KIBANA_PASSWORD=pass@123
```

```
# Version of Elastic products
STACK_VERSION=8.5.0

# Set the cluster name
CLUSTER_NAME=docker-cluster

# Set to 'basic'
LICENSE=basic

# Port to expose Elasticsearch HTTP API to the host
ES_PORT=9200

# Port to expose AI tool Kibana to the host
KIBANA_PORT=5601

# Increase or decrease based on the available host memory (in bytes)
MEM_LIMIT=1073741824
```

c)- run the “setup.sh” script to install the elasticsearch(elastic and kibana) via docker compose on the top of which the AI Tool will be configured.

```
sudo bash setup.sh
```

Note:- The script will install an elastic and kibana container running on port 9200 and 5601 respectively. It uses a self signed certificate. Please make sure your elastic and kibana is up and running and is healthy.

Alternatively follow the below guideline to install the elasticsearch in prod env and to configure required security to run it on Https.

https://www.elastic.co/guide/en/elasticsearch/reference/current/docker.html

https://www.elastic.co/guide/en/elasticsearch/reference/current/manually-configure-security.html

Once the elastic search is install.open the tool in the browser at ***http://localhost:5601*** *and enter credentials:-* ***username*** *:- elastic and* **password***:-* *pass@123 to login within the tool.*

d)- run the “aitoolsetup.sh” script to configure the AI tool.

```
sudo bash aitoolsetup.sh SourceUsername SourcePassword SourceIPAddress AiToolPassword undpServerName
```

For example

```
sudo bash aitoolsetup.sh elastic pass@123 52.157.179.122 elastic pass@123 51.124.247.200
```

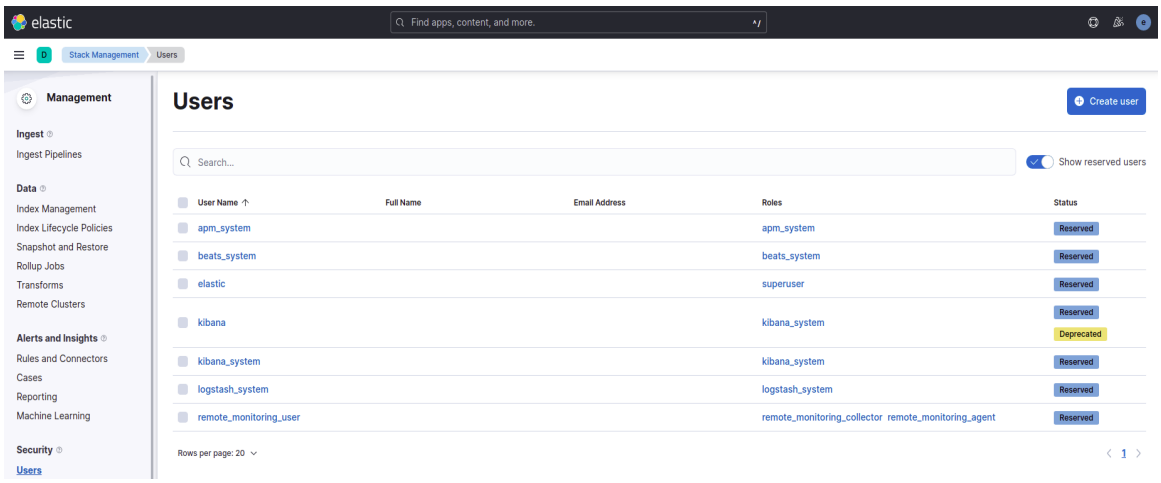
Note:- The script will migrate the tool data from source i.e `52.157.179.122` *to destination i.e* `undpServerName`*.*

B) Step 2:- Creation of user (as a viewer) within the UNDP AI Tool.

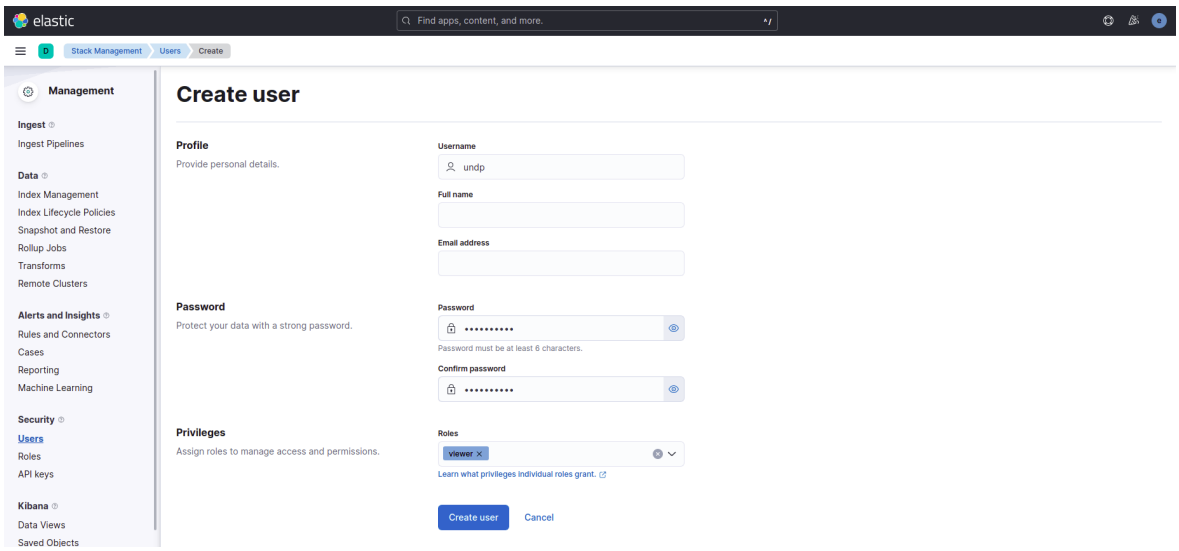
Refer:https://www.elastic.co/guide/en/elasticsearch/reference/7.4/get-started-users.html#get-started-users

Create UNDP users in the native realm.

1. *Log in to Kibana with the `elastic` built-in username and `pass@123` password.*
2. *Go to the Management / Security / Users page:*
    a. *Click on create user to add a new user*



3. *Enter the details to create a user.*
    a. *Apply setting as indicated in image below. Insert :- username,password and privileges as viewer and create the user.*



C) *Step 3:- Creation on nginx script to automatically login to the dashboard without authentication.*

(optional - only if you would like to bypass the authentication using the nginx proxy and to let the user access the tool without authentication).

Prerequisite:-

1. *Create a **user** for undp as a **viewer** in step2.*
2. *Copy **username** and **password***
3. *Install nginx*
4. *Create a nginx.conf file with below code at location **"etc/nginx/"**.*
5. *Add required ssl certificate(optional)*
6. *Create a basic authorization code for **username** and **password**.*
   Refer:-https://www.debugbear.com/basic-auth-header-generator
7. *Replace line 10 in the code below with above authorization code in nginx.conf .*
8. *Start the nginx server* sudo service nginx start

nginx.conf

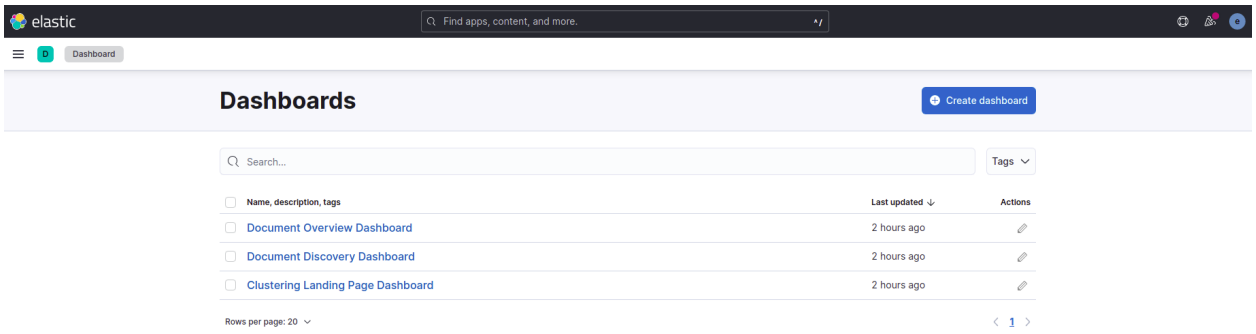
```
events {
  worker_connections  4096;  ## Default: 1024
}
http {
 server {
     listen 80;
     server_name localhost;

    location / {
         proxy_set_header Authorization "Basic dW5kcDp1bmRwMTIzQDc5NQ==";
         proxy_pass http://localhost:5601/;
    }
  }
}
```

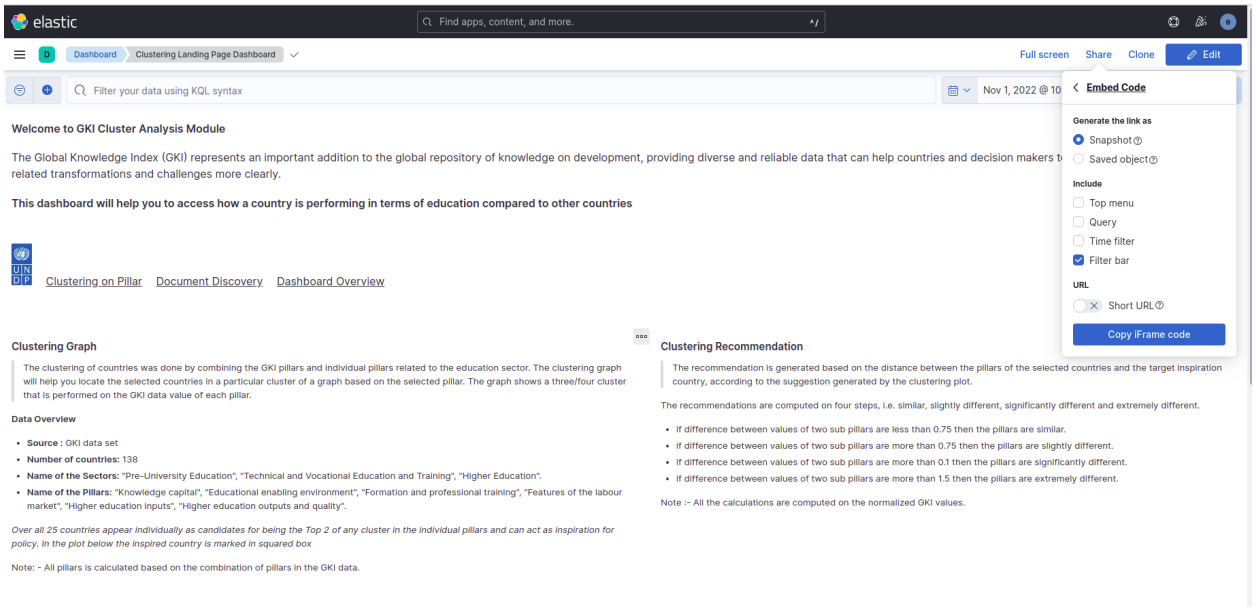
D) *Step 4:- Encode the AI Tool into the HTML code.*

***Refer:-**https://www.elastic.co/guide/en/kibana/current/reporting-getting-started.html#embed-code*

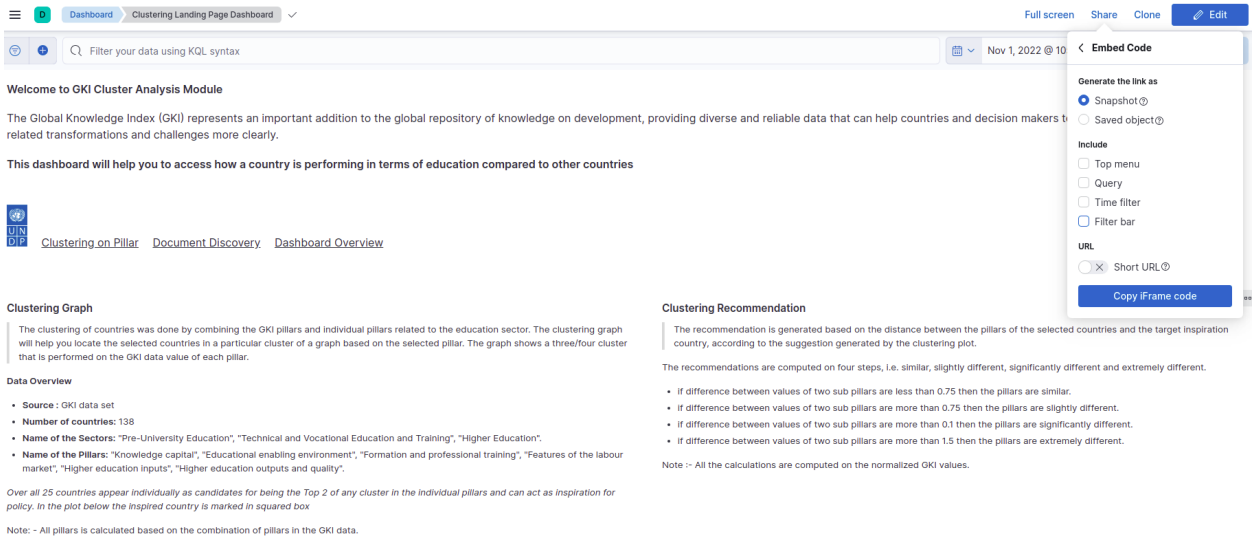
1. *Open the main menu, then open the dashboard or visualization to share.*



2. *Select "**Clustering Landing Page Dashboard**"*
3. *Click Share > Embed code.*



4. *Copy the iframe code to embed into html page:*
    - *select Snapshot.*
    - ***Exclude** the Filter bar*
    - *Copy the iframe code*



5. *Encode the iframe code into the HTML page of UNDP*

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="description" content="">
    <meta name="author" content="">
    <title>UNDP AI Tool</title>
    <!-- Bootstrap core CSS -->
    <link href="css/bootstrap.min.css" rel="stylesheet">
  </head>
  <body>
    <div class="navbar-wrapper">
          <h1>UNDP AI Tool</h1>
          <hr/>
    </div>
      <div class="row">
        <div class="col-xs-12 col-sm-12">
          <h2>Tool Description </h2>
        <p>This is an example of tool description <br>
          <p>This is UNDP's GKI education policy helper tool. The complementary Capacity
Assessment User's Guide provides UNDP and other education policy makers  with an overview
of UNDP's approach to Education  Development and Education Assessment.<br>
AI tool with 2 entry points for users.<br>
a) Integration of the GKI clustering analysis tool with the policy recommended DB tool:
Based on the results of GKI Clustering - Set of relevant keywords/queries generated for
selected country as suggestions to the user.<br> b) The AI based policy DB tool: the user
enters some keywords to find best policy inspirations based on needs/interests.
        </div>
      </div>
        <iframe
src="https://aitoolundp-f9csekc2byecfrbw.z01.azurefd.net/app/dashboards#/view/e0399d90-60d
b-11ed-9338-958c9eccd049?embed=true&_g=(filters:!(),refreshInterval:(pause:!t,value:0),tim
e:(from:'2022-04-28T09:20:28.039Z',to:now))&hide-filter-bar=true&anonymous=true"
height="1400" width="100%"></iframe>
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js"></script>
    <script>window.jQuery || document.write('<script
src="../../assets/js/vendor/jquery.min.js"><\/script>')</script>
    <script src="js/bootstrap.min.js"></script>
  </body>
</html>
```

Note:- Replace the aitoolundp-f9csekc2byecfrbw.z01.azurefd.net in line 31 with the server address of the kibana app.