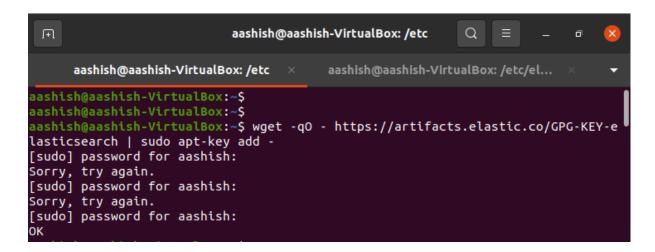
Α.

Create two linux servers, server1 => install and configure kibana and elasticsearch with basic username and password authentication server2 => install and configure metricbeat.

Answer:

To install **ElasticSearch**, we first need to install the public signing key using the following commands:

- wget -qO - https://artifacts.elastic.co/GPG-KEY-elasticsearch | sudo apt-key add -



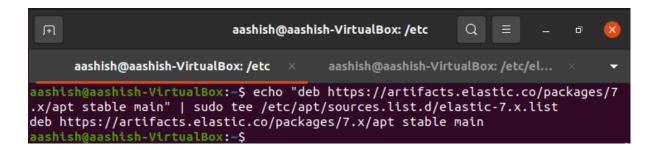
Next, we install apt-transport-https using the following command:

- sudo apt-get install apt-transport-https

```
Ŧ
                           aashish@aashish-VirtualBox: /etc
                                                           Q
      aashish@aashish-VirtualBox: /etc × aashish@aashish-VirtualBox: /etc/el...
aashish@aashish-VirtualBox:~$ sudo apt-get install apt-transport-https
Reading package lists... Done
Building dependency tree
Reading state information... Done
apt-transport-https is already the newest version (2.0.6).
The following packages were automatically installed and are no longer required:
 dctrl-tools dkms libdouble-conversion3 libgsoap-2.8.91
 liblzf1 libpcre2-16-0 libqt5core5a libqt5dbus5
 libqt5gui5 libqt5network5 libqt5opengl5
 libqt5printsupport5 libqt5svg5 libqt5widgets5
 libqt5x11extras5 libsdl1.2debian libvncserver1
 libxcb-xinerama0 libxcb-xinput0 qt5-gtk-platformtheme
  qttranslations5-l10n virtualbox-dkms
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
```

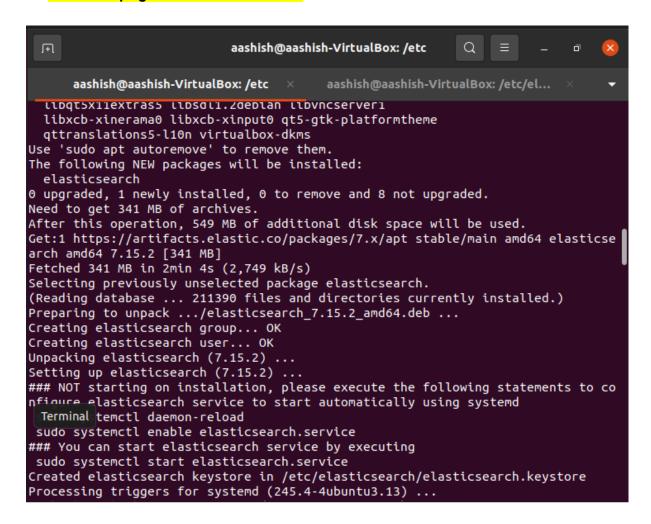
Next we save the repository definition using following command;

- echo "deb https://artifacts.elastic.co/packages/7.x/apt stable main" | sudo tee -a /etc/apt/sources.list.d/elastic-7.x.list



Then, we install the ElasticSearch after updating the apt using following command;

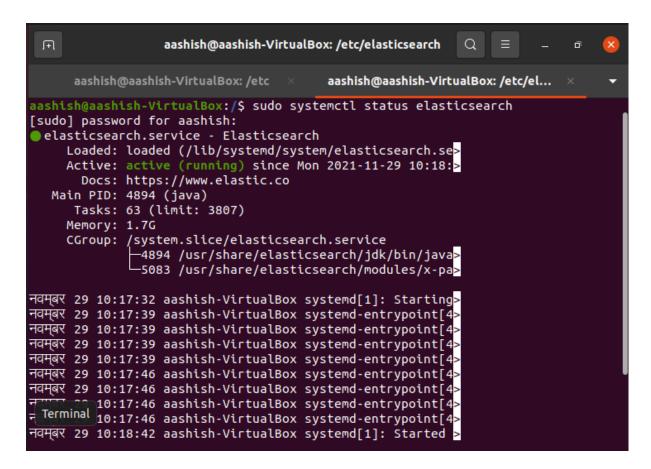
- sudo apt-get update
- sudo apt-get install elasticsearch



From the above figure, it is clear that elasticsearch has been installed successfully.

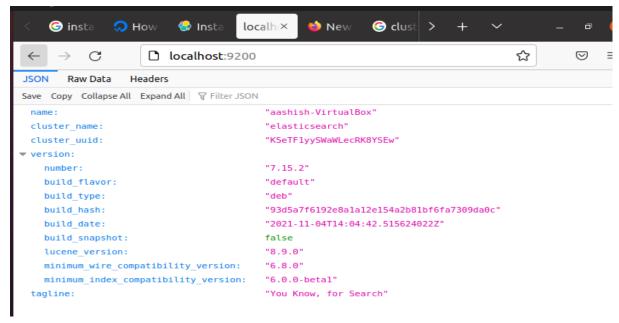
Now, to start, enable and verify the status of elasticsearch, we use following command;

- sudo systemctl start elasticsearch
- sudo systemctl enable elasticsearch
- sudo systemctl status elasticsearch



We can verify the Elastic search via browser also using the url;

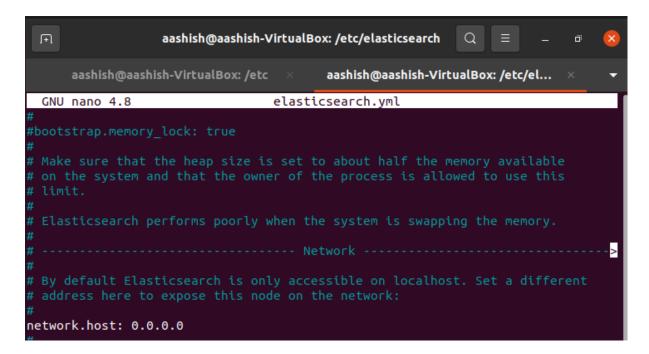
- http://localhost:9200



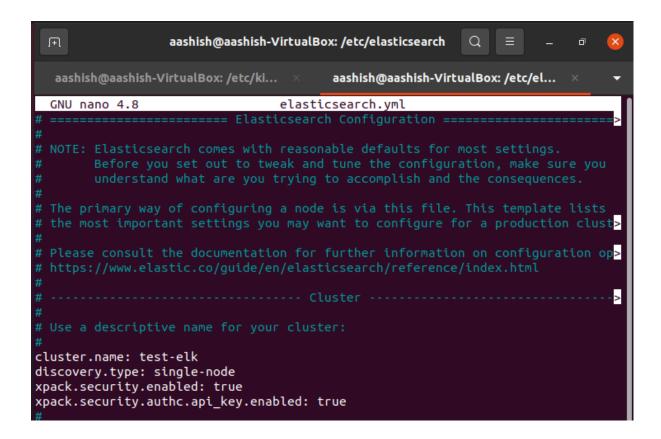
Next, we configure elasticsearch as follows;

- sudo nano /etc/elasticsearch/elasticsearch.yml

Then, we change the network host from localhost to 0.0.0.0 to allow all the hosts in **elasticsearch.yml** file.



Next, Security was enabled with minimal security as follows;



Then to setup the password for all system, we do following things;

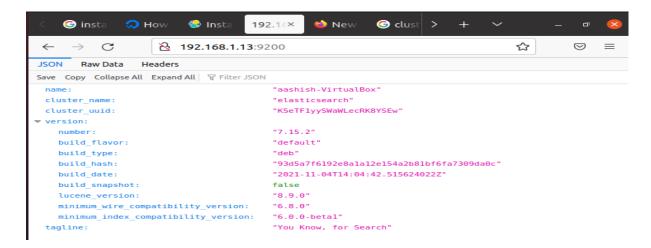
- sudo /usr/share/elasticsearch/bin/elasticsearch-setup-passwords interactive

```
aashish@aashish-VirtualBox: /etc/elasticsearch
                                                               Q
   aashish@aashish-VirtualBox: /etc/ki... ×
                                           aashish@aashish-VirtualBox: /etc/el...
aashish@aashish-VirtualBox:/etc/elasticsearch$ sudo /usr/share/elasticsearch/bi
n/elasticsearch-setup-passwords interactive
Initiating the setup of passwords for reserved users elastic,apm_system,kibana,
kibana_system,logstash_system,beats_system,remote_monitoring_user.
You will be prompted to enter passwords as the process progresses. Please confirm that you would like to continue [y/N]y
Enter password for [elastic]:
passwords must be at least [6] characters long
Try again.
Enter password for [elastic]:
Reenter password for [elastic]:
Enter password for [apm_system]:
Reenter password for [apm_system]:
Enter password for [kibana_system]:
Reenter password for [kibana_system]:
Enter password for [logstash_system]:
Reenter password for [logstash_system]:
Enter password for [beats_system]:
Reenter password for [beats_system]:
Enter password for [remote_monitoring_user]:
Reenter password for [remote_monitoring_user]:
Changed password for user [apm_system]
Changed password for user [kibana system]
Changed password for user [kibana]
Changed password for user [logstash system]
```

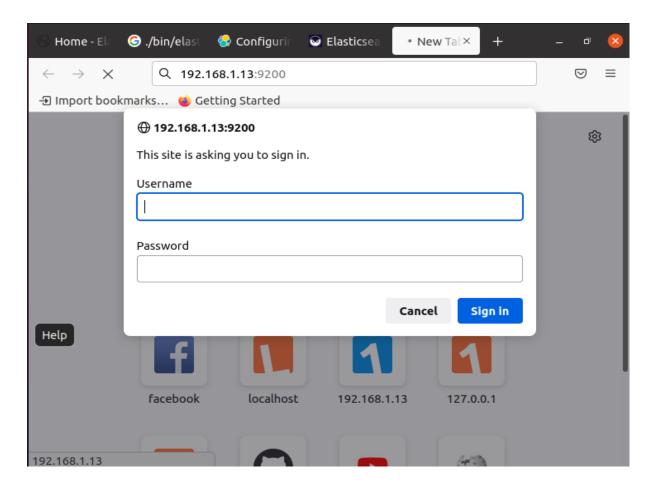
We save and exit. Then we restart the elasticsearch using command;

- sudo systemctl restart elasticsearch

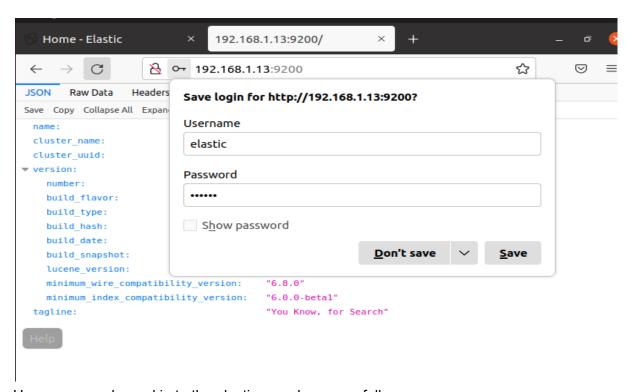
After configuring the elasticsearch, now we can easily access the elasticsearch using our host ip as follows;



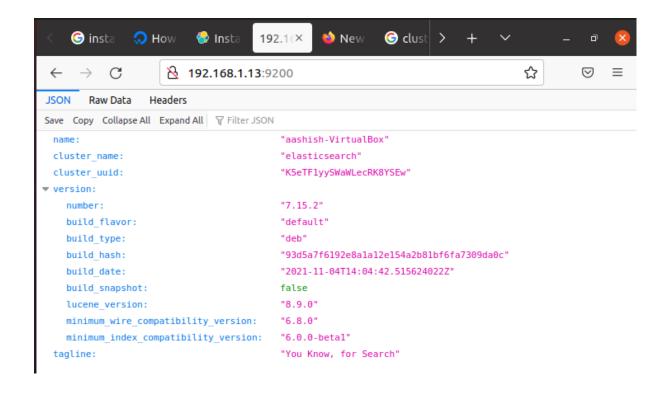
Now, to verify the security we browsing the url as follows;



We use username and password as follows to login to the elasticsearch.

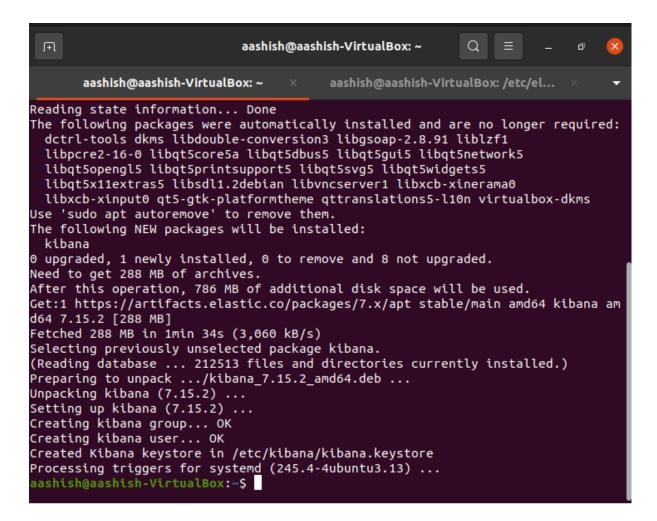


Hence, we are logged in to the elastic search successfully.



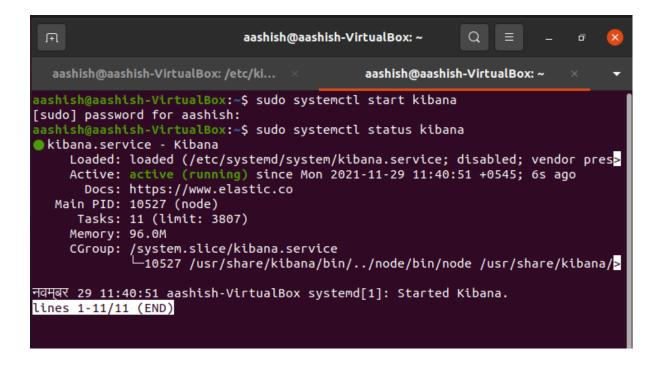
To install kibana, we need the public signing key, apt-transport-https package and save the repo definition. Since we have already done it for elastic search, we don't need to do it again. We can simply run the command;

- sudo apt-get update
- sudo apt-get install kibana



Next, we check start, enable and check the status of kibana using the following commands;

- sudo systemctl start kibana
- sudo systemctl enable kibana
- sudo systemctl status kibana



Next, we configure Kibana by editing the kibana.yml file as follows;

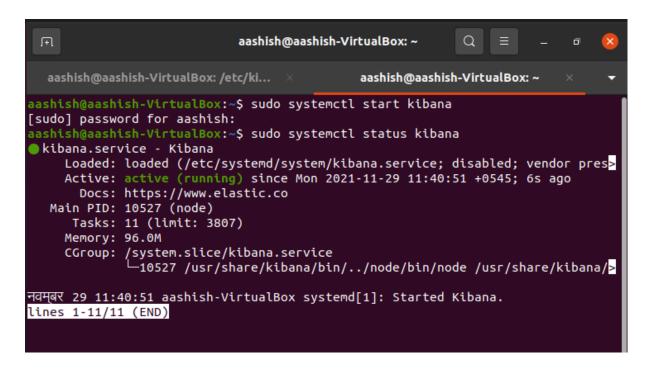
- sudo nano /etc/kibana/kibana.yml





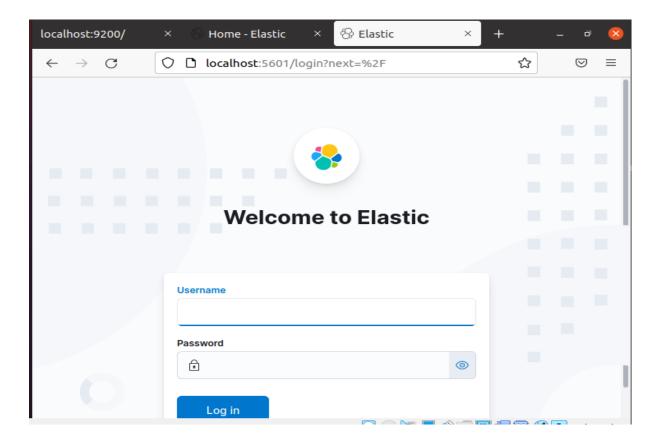
Then, we restart the kibana using;

- sudo systemctl restart kibana

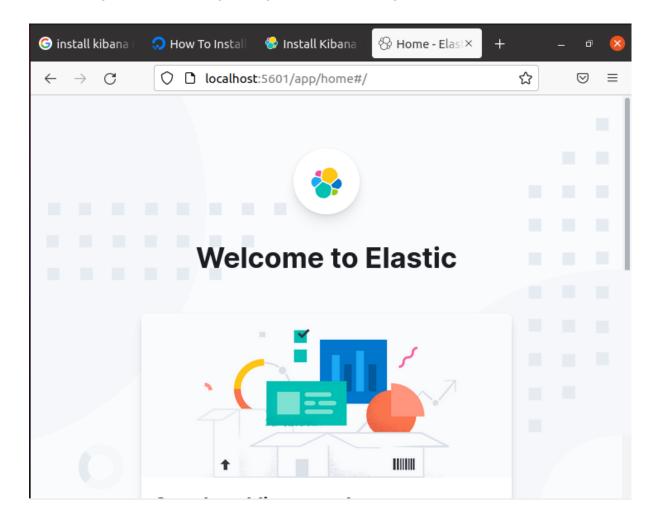


Then, we verify the Kibana via our web browser with url;

- http://192.168.1.13:5601 or,
- http://localhost:5601



Next, we login to Kibana using the login credentials and get started with Kibana as follows;



Next, we install **Metricbeat**.

We have another server or vm to install the metricbeat. To install metricbeat, we need the public signing key, apt-transport-https package and save the repo definition using the following commands on server2 as follows;

- wget -qO https://artifacts.elastic.co/GPG-KEY-elasticsearch | sudo apt-key
 add -
- sudo apt-get install apt-transport-https
- echo "deb https://artifacts.elastic.co/packages/7.x/apt stable main" | sudo tee -a /etc/apt/sources.list.d/elastic-7.x.list
- sudo apt update
- sudo apt install metricbeat

```
aashish@aashish-VirtualBox: /
                                                           Q
aashish@aashish-VirtualBox:/$ wget -q0 - https://artifacts.elastic.co/GPG-KEY-e
lasticsearch | sudo apt-key add -
aashish@aashish-VirtualBox:/$ echo "deb https://artifacts.elastic.co/packages/6
.x/apt stable main" | sudo tee -a /etc/apt/sources.list.d/elastic-6.x.list
deb https://artifacts.elastic.co/packages/6.x/apt stable main
aashish@aashish-VirtualBox:/$ sudo apt update
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:2 http://np.archive.ubuntu.com/ubuntu focal InRelease
Get:3 http://np.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 https://artifacts.elastic.co/packages/6.x/apt stable InRelease [7,123 B]
Get:5 http://np.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:6 https://artifacts.elastic.co/packages/6.x/apt stable/main amd64 Packages
[80.8 kB]
Get:7 https://artifacts.elastic.co/packages/6.x/apt stable/main i386 Packages [
72.6 kB]
Fetched 496 kB in 3s (147 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
aashish@aashish-VirtualBox:/$ sudo apt install metricbeat
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  metricbeat
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 20.5 MB of archives.
```

Metricbeat was installed successfully.

```
aashish@aashish-VirtualBox:~$ sudo apt install metricbeat
Reading package lists... Done
Building dependency tree
Reading state information... Done
metricbeat is already the newest version (7.15.2).
The following packages were automatically installed and are no longer required:
dctrl-tools dkms libdouble-conversion3 libgsoap-2.8.91 liblzf1
libpcre2-16-0 libqt5core5a libqt5dbus5 libqt5gui5 libqt5network5
libqt5opengl5 libqt5printsupport5 libqt5svg5 libqt5widgets5
libqt5x11extras5 libsd11.2debian libvncserver1 libxcb-xinerama0
libxcb-xinput0 qt5-gtk-platformtheme qttranslations5-l10n virtualbox-dkms
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

Then, metricbeat was started and enabled using the following command;

- sudo systemctl start metricbeat
- sudo systemctl enable metricbeat



We used sudo hostnamectl set-hostname server2 to change the hostname.

Next, we edit the **metricbeat.yml** file to configure metric beat as follows;

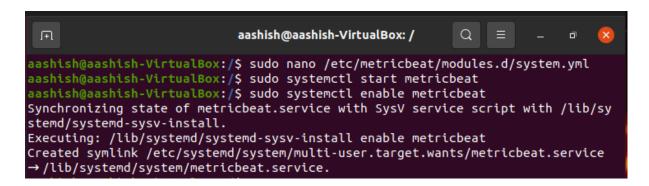
sudo nano /etc/metricbeat/metricbeat.yml

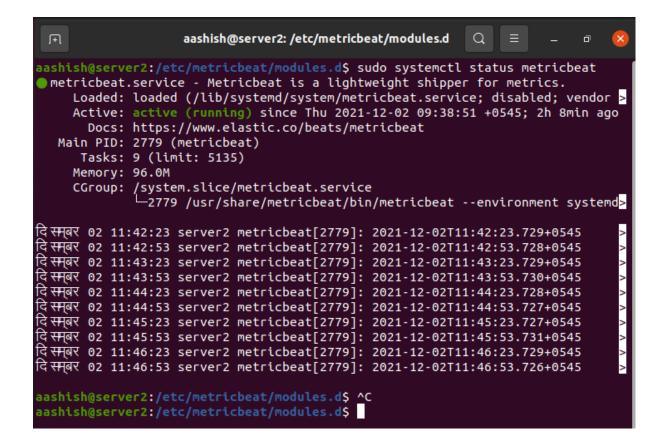
Then, we add metrics as follows;

```
Q
                         aashish@server2: /etc/metricbeat
 GNU nano 4.8
                                metricbeat.yml
                                                                  Modified
metricbeat.modules:
- module: system
 metricsets:
     - load
 enabled: true
 period: 10s
 index: "load-metrics"
metricbeat.modules:
· module: system
 metricsets:
    - fsstat
 enabled: true
 period: 10s
 index: "fsstat-metrics"
metricbeat.modules:
- module: system
 metricsets:
   - memory
 enabled: true
 period: 15s
 index: "memory-metrics"
  ------ Elasticsearch Output
```

We save and exit the file. Then we restart the metricbeat using command;

- sudo systemctl restart metricbeat
- sudo systemctl enable metricbeat
- sudo systemctl status metricbeat





Hence, metricbeat is also installed successfully on the server 2.