

# CentOS 7 – ELK Stack (Elasticsearch, Logstash & Kibana)

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## 1.) Overview

This document is provided as a user guide for the CentOS 7 – ELK stack product offering on the Azure Marketplace. Please reach out to [support@cloudimg.co.uk](mailto:support@cloudimg.co.uk) if any issues are encountered following this user guide for the chosen product offering.



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## 2.) Access & Security

Please update the security group of the target instance to allow the below ports and protocols for access and connectivity.

Protocol	Type	Port	Description
SSH	TCP	22	SSH connectivity
TCP	TCP	9200	Elasticsearch API calls over HTTP
TCP	TCP	5601	Kibana Dashboard

## 3.) System Requirements

The minimum system requirements for the chosen product offering can be found below

Minimum CPU	Minimum RAM	Required Disk Space
1	1 GB	20 GB

## 4.) Connecting to the Instance

Once launched in the Azure Virtual Machines Service, please connect to the instance via an SSH client using the **azureuser** with the key pair associated at launch. Once connected as the **azureuser**, you will be able to **sudo** to the **root** user by issuing the below command.

Switch to the root user

```
sudo su -
```

## 5.) On Startup

An OS package update script has been configured to run on boot to ensure the image is fully up to date at first use. You can disable this feature by removing the script from `/stage/scripts/` and deleting the entry in crontab for the root user.

Disable the OS update script from running on reboot

```
rm -f /stage/scripts/initial_boot_update.sh  
crontab -e
```



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```
#DELETE THE BELOW LINE. SAVE AND EXIT THE FILE.
@reboot /stage/scripts/initial_boot_update.sh
```

## 6.) Filesystem Configuration

Please see below for a screenshot of the server disk configuration and specific mount point mappings for software locations.

Filesystem	Size	Used	Avail	Use%	Mounted on
devtmpfs	1.9G	0	1.9G	0%	/dev
tmpfs	2.0G	0	2.0G	0%	/dev/shm
tmpfs	2.0G	8.5M	1.9G	1%	/run
tmpfs	2.0G	0	2.0G	0%	/sys/fs/cgroup
/dev/nvme0n1p2	38G	6.0G	30G	17%	/
/dev/nvme0n1p1	2.0G	121M	1.7G	7%	/boot
tmpfs	391M	0	391M	0%	/run/user/1002
/dev/nvme1n1	9.8G	80M	9.2G	1%	/var/lib/elasticsearch
tmpfs	391M	0	391M	0%	/run/user/0

Mount Point	Description
/boot	Operating System Kernel files
/var/lib/elasticsearch	Elasticsearch installation directory

## 7.) Server Components

Please see below for a list of installed server components and their respective installation paths. The below versions are subject to change on initial boot based on the initial\_boot\_update.sh script finding new versions of the software in the systems package repositories.

Component	Version	Software Home
Cloud-Init	19.4	/etc/cloud
Java	11	/bin/java
Elasticsearch	8.6.1	/var/lib/elasticsearch
Logstash	1.8.6	/etc/logstash



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Kibana	8.6.1	/etc/kibana
Azure CLI	2.53.1	/lib64/az

## 8.) Scripts and Log Files

The below table provides a breakdown of any scripts & log files created to enhance the useability of the chosen offering.

Script/Log	Path	Description
Initial_boot_update.sh	/stage/scripts	Update the Operating System with the latest updates available.
Initial_boot_update.log	/stage/scripts	Provides output for initial_boot_update.sh
elastic_password.log	/stage/scripts	Elastic user credentials
kibana_password.log	/stage/scripts	Kibana system user credentials

## 9.) Using System Components

Instructions can be found below for using each component of the server build mentioned in section 7 of this user guide document.

### Azure CLI

Using Azure CLI – as any OS user.

```
az
```

### Cloud-Init

Edit the /etc/cloud/cloud.cfg file to reflect your desired configuration. A link to the cloud-init official documentation can be found below for referencing best practise for your use case.

<https://cloudinit.readthedocs.io/en/latest/>

```
vi /etc/cloud/cloud.cfg
```



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## Java

Java has been preinstalled on the instance and the below command can be used to verify the version currently installed.

```
java -version
```

## Elasticsearch

The Elasticsearch service has been configured to start on boot. You can stop, start and check the status of the service via the below commands.

```
#START THE ELASTICSEARCH SERVICE
systemctl start elasticsearch

#STOP THE ELASTICSEARCH SERVICE
systemctl stop elasticsearch

#CHECK THE STATUS OF THE ELASTICSEARCH SERVICE
systemctl status elasticsearch
```

You can also run the below command once the service is running to ensure a successful startup of the service has taken place. Please run the below as the root user. Enter the password value highlighted in **RED** from the randomly generated value located in the /stage/scripts/elastic\_password.log file

```
curl --cacert /etc/elasticsearch/certs/http_ca.crt -u elastic http://localhost:9200
```

## EXAMPLE EXPECTED OUTPUT

```
Enter host password for user 'elastic': ENTER PASSWORD AT PROMPT
{
  "name" : "ip-172-31-89-117.ec2.internal",
```



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```
"cluster_name" : "elasticsearch",
"cluster_uuid" : "wdyXEmS-TEearSUr0MEhPA",
"version" : {
  "number" : "8.6.1",
  "build_flavor" : "default",
  "build_type" : "rpm",
  "build_hash" : "180c9830da956993e59e2cd70eb32b5e383ea42c",
  "build_date" : "2023-01-24T21:35:11.506992272Z",
  "build_snapshot" : false,
  "lucene_version" : "9.4.2",
  "minimum_wire_compatibility_version" : "7.17.0",
  "minimum_index_compatibility_version" : "7.0.0"
},
"tagline" : "You Know, for Search"
}
```

## Kibana

The Kibana service has been configured to start on boot. You can stop, start and check the status of the service via the below commands.

```
#START THE KIBANA SERVICE
systemctl start kibana

#STOP THE KIBANA SERVICE
systemctl stop kibana

#CHECK THE STATUS OF THE KIBANA SERVICE
systemctl status kibana
```

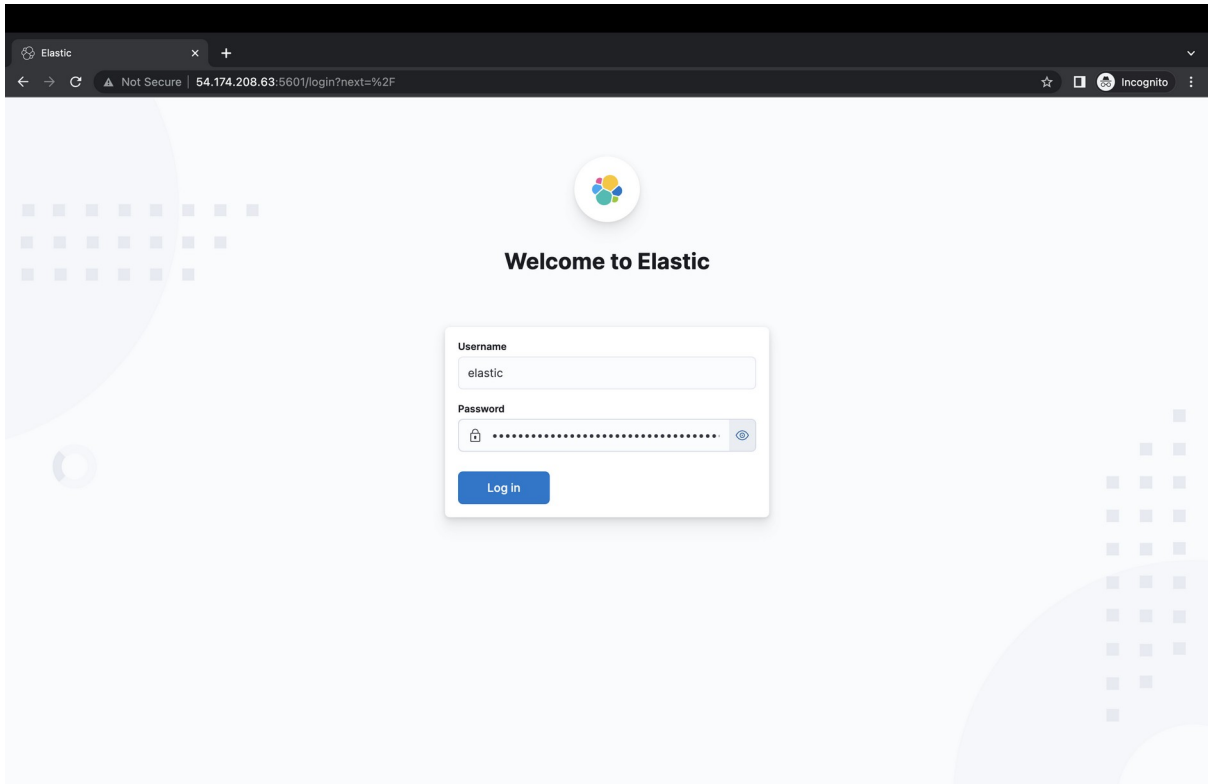
Once the service has been started, the Kibana dashboard will be available from the below URL. Please exchange the values between <> to match that of your instance.

<PUBLIC/PRIVATEIP>:5601



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Username = elastic

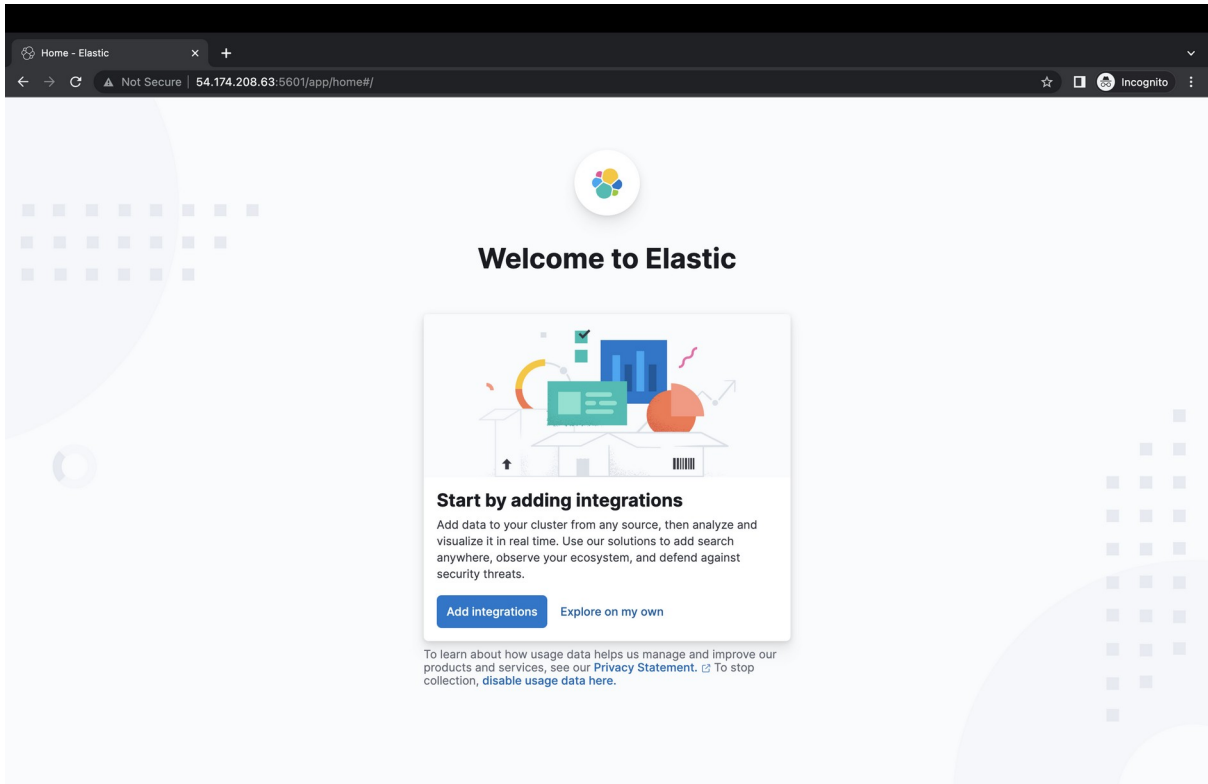
Password = REFER TO THE RANDOMLY GENERATED VALUE AVAILABNLE IN  
/stage/scripts/elastic\_password.log

Click Log In



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You may now use the ELK stack based on your requirements.



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