Project 3: Detect Containers Network Topology

By: Amanda Fernandez (6056762), Catherine Angelini, & Lalliet Vila-Rodriguez (5819754)

4.1 The video can be found at this link: Demo.mov

Amanda did the LKM tool, compiled the Docker Images and helped with the GUI tool, Lalliet worked on the GUI tool & Found the dockers to use, and Catherine was unable to assist in this project due to her health circumstances.

4.2 Docker Images used links:

- Docker 1: Storm
  https://hub.docker.com/_/storm
- Docker 2: Hadoop
  https://kiwenlau.com/2016/06/26/hadoop-cluster-docker-update-english/

Launching the containers :

Storm

```
docker run -d --restart always --name some-zookeeper zookeeper

docker run -d --restart always --name some-nimbus --link some-zookeeper:zookeeper
storm storm nimbus

docker run -d --restart always --name supervisor --link some-zookeeper:zookeeper
--link some-nimbus:nimbus storm storm supervisor
```

Hadoop

```
sudo docker pull kiwenlau/hadoop:1.0


Git                                                clone
https://github.com/kiwenlau/hadoop-cluster-docker

sudo docker network create --driver=bridge hadoop
```

Launching and Compiling LKM tool:

Type these commands to launch and compile the LKM tool

- Make
- Sudo insmod lkm.ko

To make sure the file is there

Lsmod

```
docker run -d -p 8080:8080 --restart always --name ui --link some-nimbus:nimbus
storm storm ui
```

To load the Storm UI

Navigate to localhost:8080

```
cd
hadoop-cluster-doc
ker
sudo
./start-container.
sh

In the root

./start-hadoop.sh


./run-wordc
ount.sh
```

Exit

- Cd ../

To load the Hadoop UI

Navigate to localhost:50070

To display IP'S

- Dmesg -t | grep 'NumPacks'

To send the Output into the file

- Dmesg -t | grep 'NumPacks' > file.csv

To visualize the file

- Gedit file.csv

Compiling the visualization tool:

Before launching the java file, you must edit the file location in the code so that it can read the output file and put it into the GUI.

Then run these commands in order to run GUI:

- Javac ReadingFromFile.java
- Java ReadingFromFile