Internet Technology and Applications

# Analysis of DDoS attacks in SDN environments

Progress-1

## Creating Test Environment

1. Go to the folder mininet/custom:

   ```
   $ cd mininet/custom
   ```

2. Create a new python script for normal traffic generation:

   ```
   $ vim launchTraffic.py
   ```

3. Copy the contents of traffic.py and save the file.
4. Now create an attack file:

   ```
   $ vim launchAttack.py
   ```

5. Copy the contents of attack.py and save the file.

## Find the threshold for usual traffic

1. Enter the following command to run the pox controller:

   ```
   $ cd pox
   ```

   ```
   $ python ./pox.py forwarding.l3_editing
   ```

2. Now create a mininet topology by entering the following command in another terminal:

   ```
   $ sudo mn --switch ovsk --topo
   tree,depth=2,fanout=8
   --controller=remote,ip=127.0.0.1,port=6633
   ```

3. Now open xterm for an host by typing the following command:

   ```
   mininet>xterm h1 h2 h3 h64
   ```

4. In the xterm window of h1, run the following commands:

   ```
   $ cd mininet/custom
   ```

   ```
   $ python launchTraffic.py -s 2 -e 65
   ```

5. Now the pox controller generates a list of values for entropy. The least value obtained is the threshold entropy for normal traffic. To avoid false positives and negatives due to loss of a switch we choose an entropy value as 1.00 instead of 1.14. This implies 10% fault tolerance.