

EC441 final Ziwen Xie & Xinyu Liu

Question 1 : Mininet

Question 1.1

We created a python topology:

```
from mininet.link import Link,TCLink
from mininet.node import Node,Host,OVSSwitch,Controller
from mininet.net import Mininet,CLI
from mininet.log import setLogLevel
from mininet.topo import Topo
from mininet.topolib import TreeTopo

class MyTopo( Topo ):

    def build( self ):

        # Add hosts and switches
        h1 = self.addHost( 'h1',ip = '128.197.128.9' )
        h2 = self.addHost( 'h2',ip = '128.197.128.10' )

        s1 = self.addSwitch( 's1' )
        s2 = self.addSwitch( 's2' )
        #rightSwitch = self.addSwitch( 's4' )

        # Add links
        self.addLink( h1, s1, bw='1m')
        self.addLink( s1,s2, bw='1m')
        self.addLink( s2,h2, bw='1m')

        #net.get('h1').setIP('')

topos = { 'mytopo': ( lambda: MyTopo() ) }
```

After that we execute the command

```
sudo mn --custom topo.py --topo mytopo
```

to start a mininet session

Question 1.2

we started a xterm session

```
xterm h1 h2
```

Then, We first use HTTP to transmit the wordle.txt file

In the h1 node

we enter

```
python3 -m http.server 90&
```

to create a server

and then we make h2 as a client by

```
wget --output-document=/home/josie/wordle.txt 128.197.128.9
```

to get the file

In the report we can see that the speed is 1mb/s

for UDP we use the `iperf` to generate udp transmission in a 2 second time frame

for ICMP we `ping` h1 and h2

for ARP we broadcast

they all recorded in a PCAPNG file attached