CSE 421 LAB 2
20301088
Tahsin Ashrafee Susmit

For Packet Size 128


```
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$ python3 examples/tutorial/first.py
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 128 bytes to 10.1.1.2 port 9
At time +2.00225s server received 128 bytes from 10.1.1.1 port 49153
At time +2.00225s server sent 128 bytes to 10.1.1.1 port 49153
At time +2.00451s client received 128 bytes from 10.1.1.2 port 9
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
Tx Bytes:  156
Rx Bytes:  156
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0022528
Throughput:  69.33333333333333
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
Tx Bytes:  156
Rx Bytes:  156
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0022528
Throughput:  69.33333333333333
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$
```

For Packet Size 256


```
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$ python3 examples/tutorial/first.py
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 256 bytes to 10.1.1.2 port 9
At time +2.00246s server received 256 bytes from 10.1.1.1 port 49153
At time +2.00246s server sent 256 bytes to 10.1.1.1 port 49153
At time +2.00492s client received 256 bytes from 10.1.1.2 port 9
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
Tx Bytes:  284
Rx Bytes:  284
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0024576
Throughput:  126.22222222222223
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
Tx Bytes:  284
Rx Bytes:  284
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0024576
Throughput:  126.22222222222223
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$
```

For Packet Size 512

```
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$ python3 examples/tutorial/first.py
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 512 bytes to 10.1.1.2 port 9
At time +2.00287s server received 512 bytes from 10.1.1.1 port 49153
At time +2.00287s server sent 512 bytes to 10.1.1.1 port 49153
At time +2.00573s client received 512 bytes from 10.1.1.2 port 9
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
Tx Bytes:  540
Rx Bytes:  540
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0028672
Throughput:  240.0
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
Tx Bytes:  540
Rx Bytes:  540
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0028672
Throughput:  240.0
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$
```
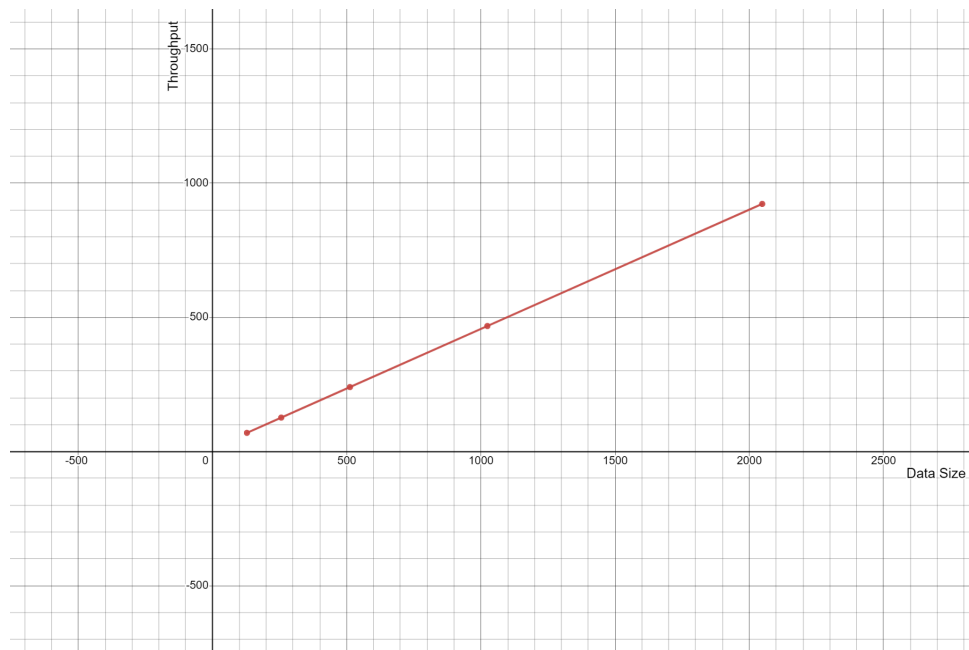
For Packet Size 1024

```
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$ python3 examples/tutorial/first.py
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 1024 bytes to 10.1.1.2 port 9
At time +2.00369s server received 1024 bytes from 10.1.1.1 port 49153
At time +2.00369s server sent 1024 bytes to 10.1.1.1 port 49153
At time +2.00737s client received 1024 bytes from 10.1.1.2 port 9
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
Tx Bytes:  1052
Rx Bytes:  1052
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0036864
Throughput:  467.55555555555554
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
Tx Bytes:  1052
Rx Bytes:  1052
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.0036864
Throughput:  467.55555555555554
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$
```

For Packet Size 2048

```
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$ python3 examples/tutorial/first.py
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:0 Does not have a mobility model. Use SetConstantPosition if it is stationary
AnimationInterface WARNING:Node:1 Does not have a mobility model. Use SetConstantPosition if it is stationary
At time +2s client sent 2048 bytes to 10.1.1.2 port 9
At time +2.00536s server received 2048 bytes from 10.1.1.1 port 49153
At time +2.00536s server sent 2048 bytes to 10.1.1.1 port 49153
At time +2.01072s client received 2048 bytes from 10.1.1.2 port 9
FlowID: 1 (UDP 10.1.1.1/49153 --> 10.1.1.2/9)
Tx Bytes:   2076
Rx Bytes:   2076
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.00536
Throughput:  922.6666666666666
FlowID: 2 (UDP 10.1.1.2/9 --> 10.1.1.1/49153)
Tx Bytes:   2076
Rx Bytes:   2076
Tx Packets:  1
Rx Packets:  1
Lost Packets:  0
Mean Delay:  0.00536
Throughput:  922.6666666666666
tahsinashrafee@Ubuntu:~/Downloads/ns-allinone-3.40/ns-3.40$
```

Plotting The Graph

We can see a positive linear relationship from the graph. With the increase in Data Size, the value of throughput increases linearly.