Experiment1

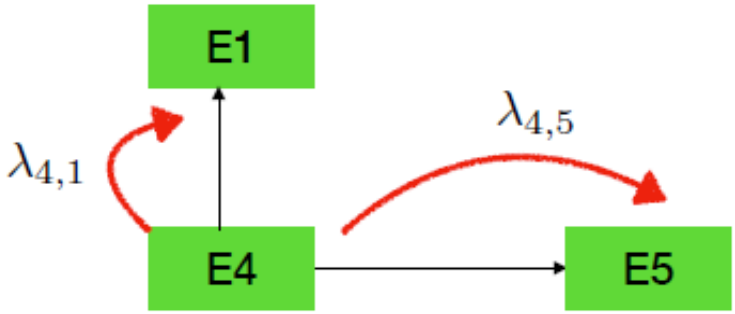
1. Find the cpu utilization of node E1 by sending packets from node E1 to E2

Run the socket function that PhooPhoo uses to send the cpu_uitilization information to SE at E1 and E2

Experiment2

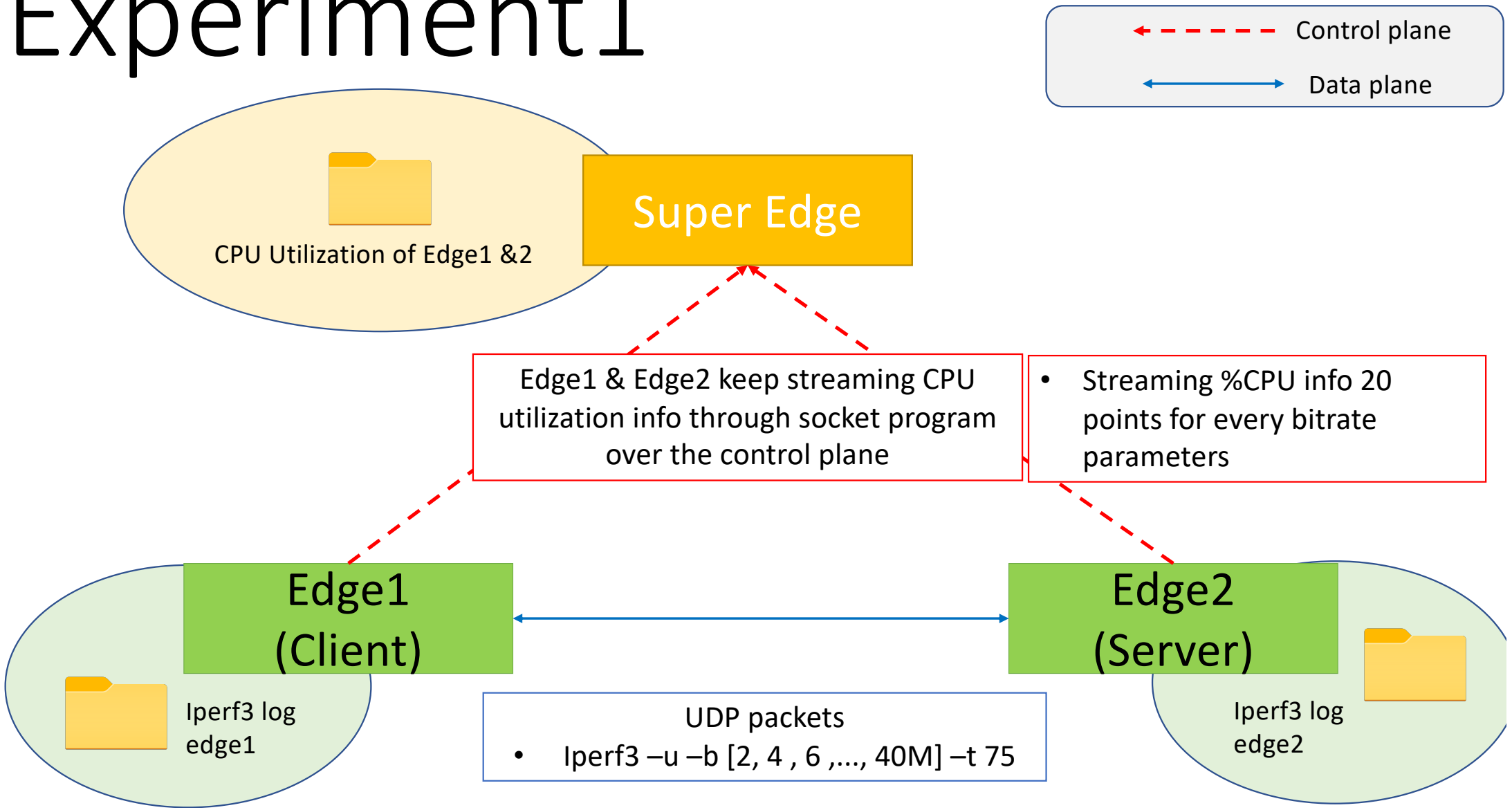
- Use iperf3 UDP

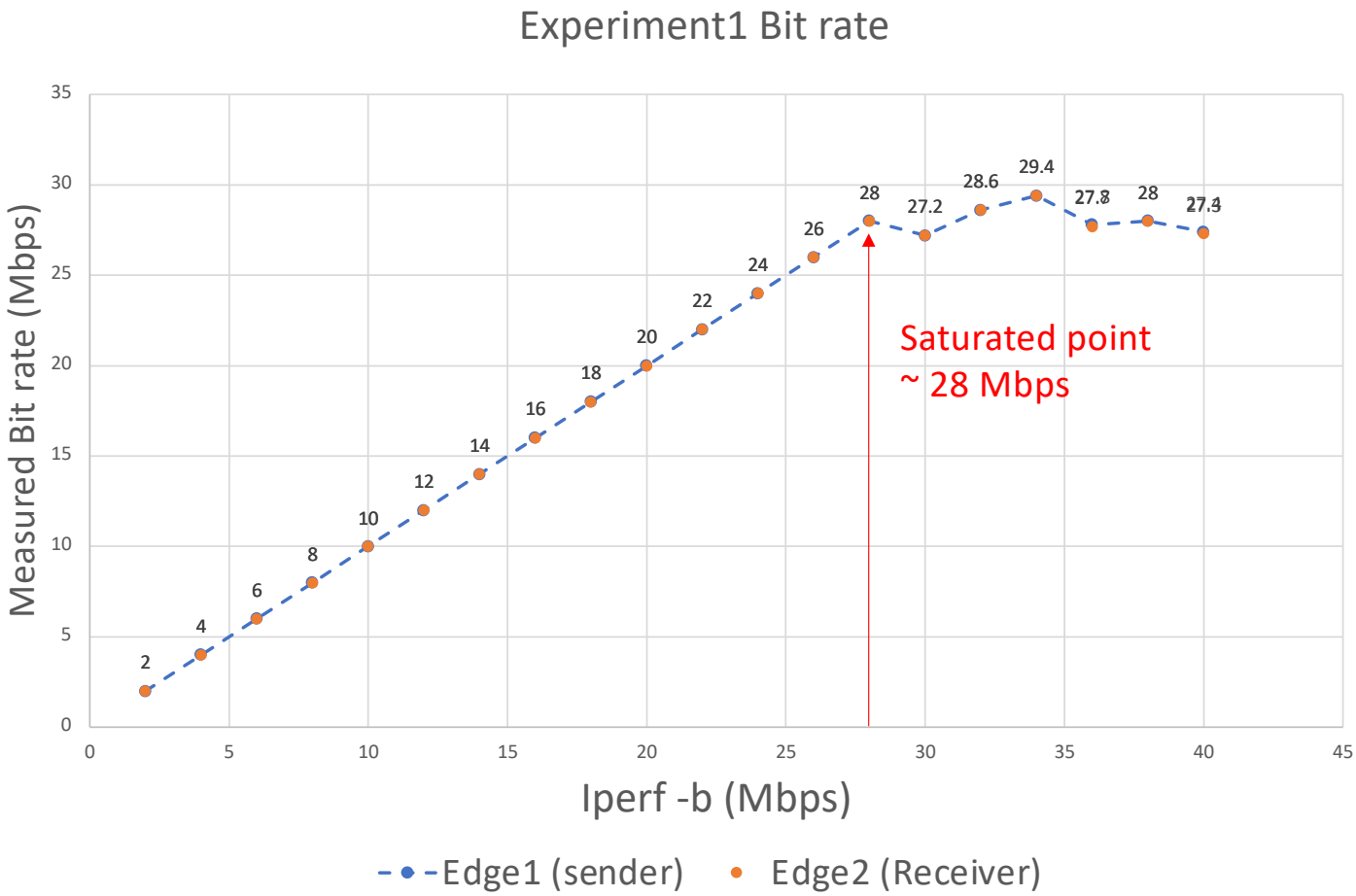
1. Find the maximum throughput by sending packets from node E4 to E1, while E4 forwards packet to E5.

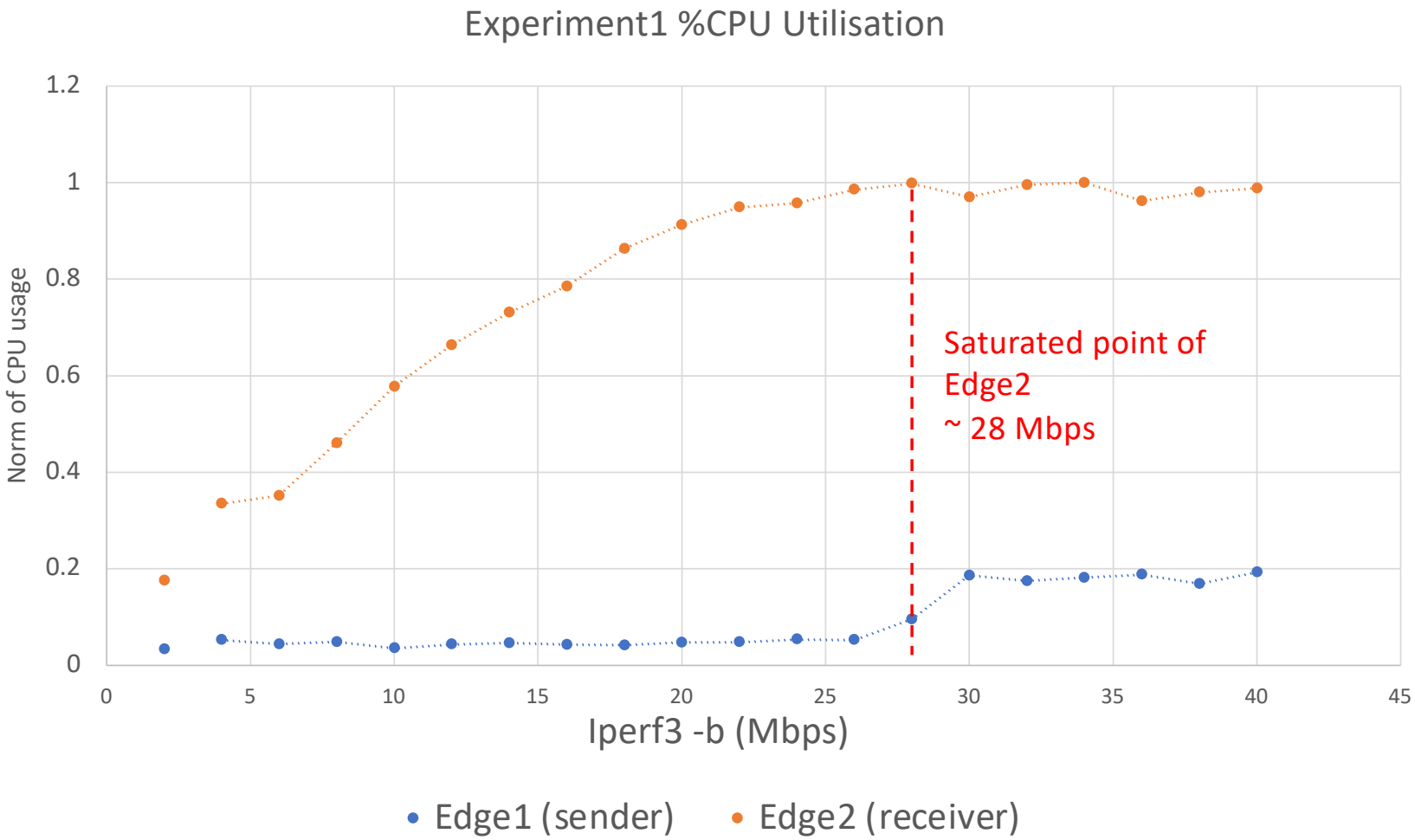


Run the socket function that PhooPhoo uses to send the cpu_uitilization information to SE at E1, E4, E5

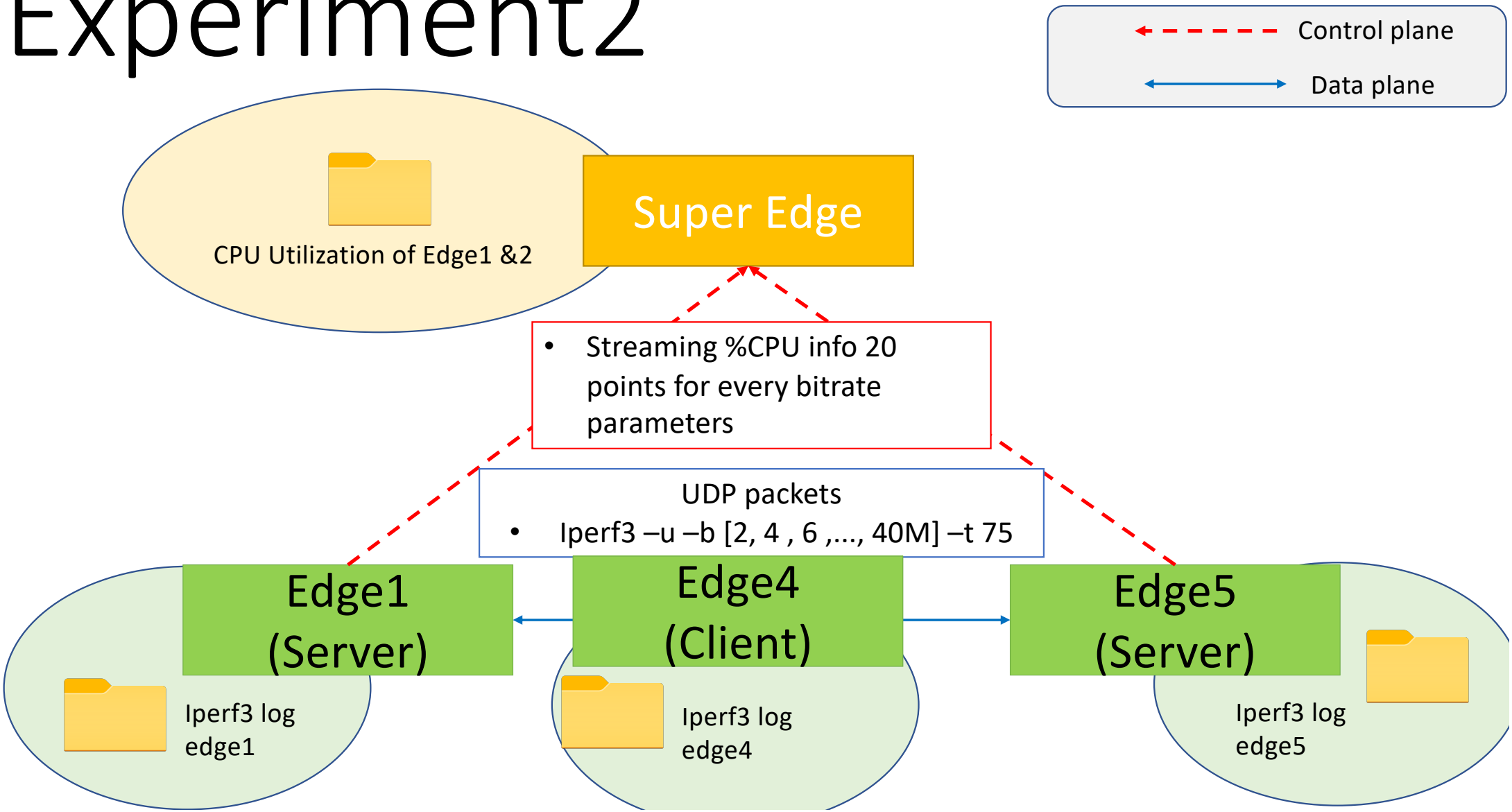
Experiment1

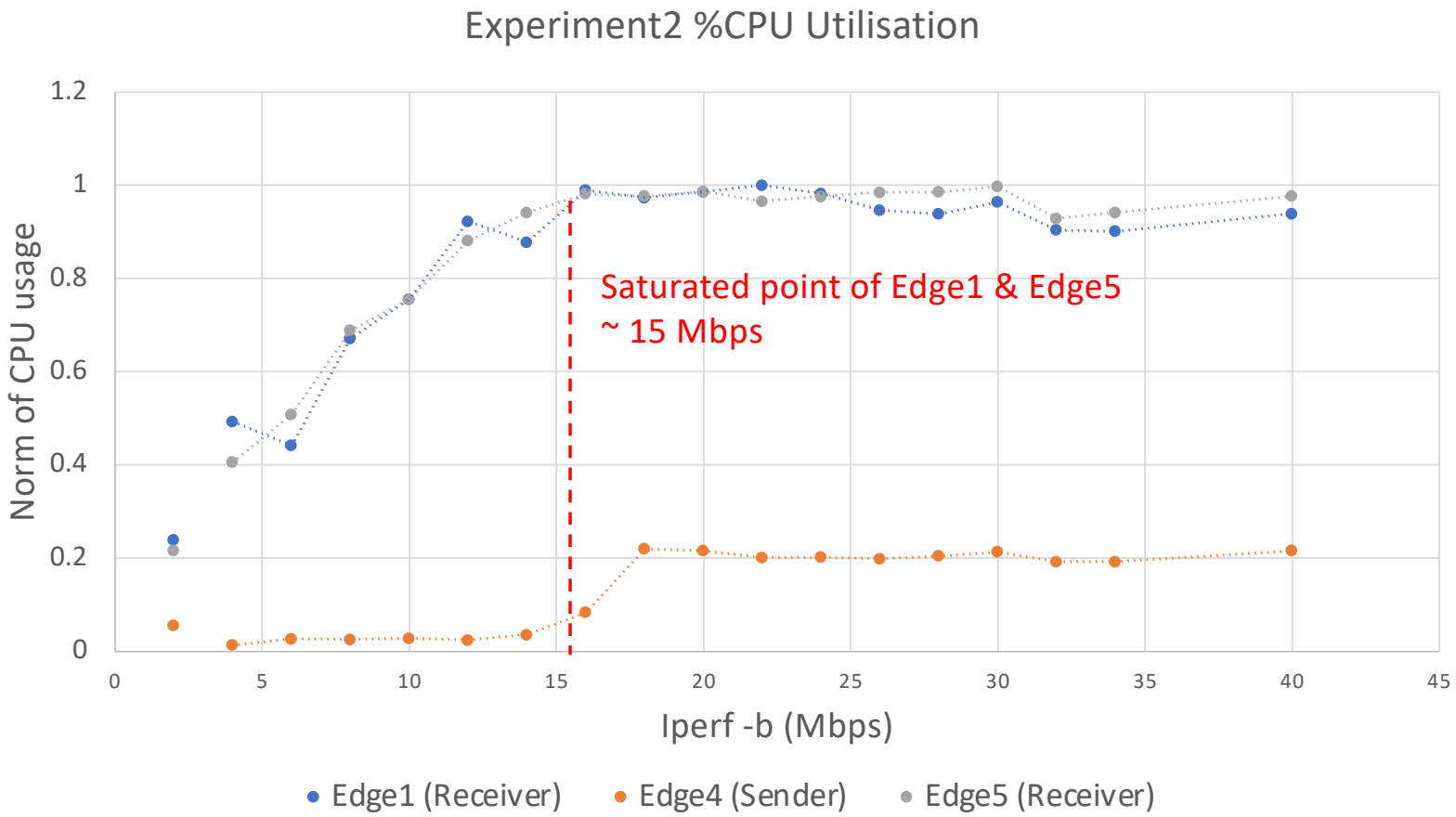


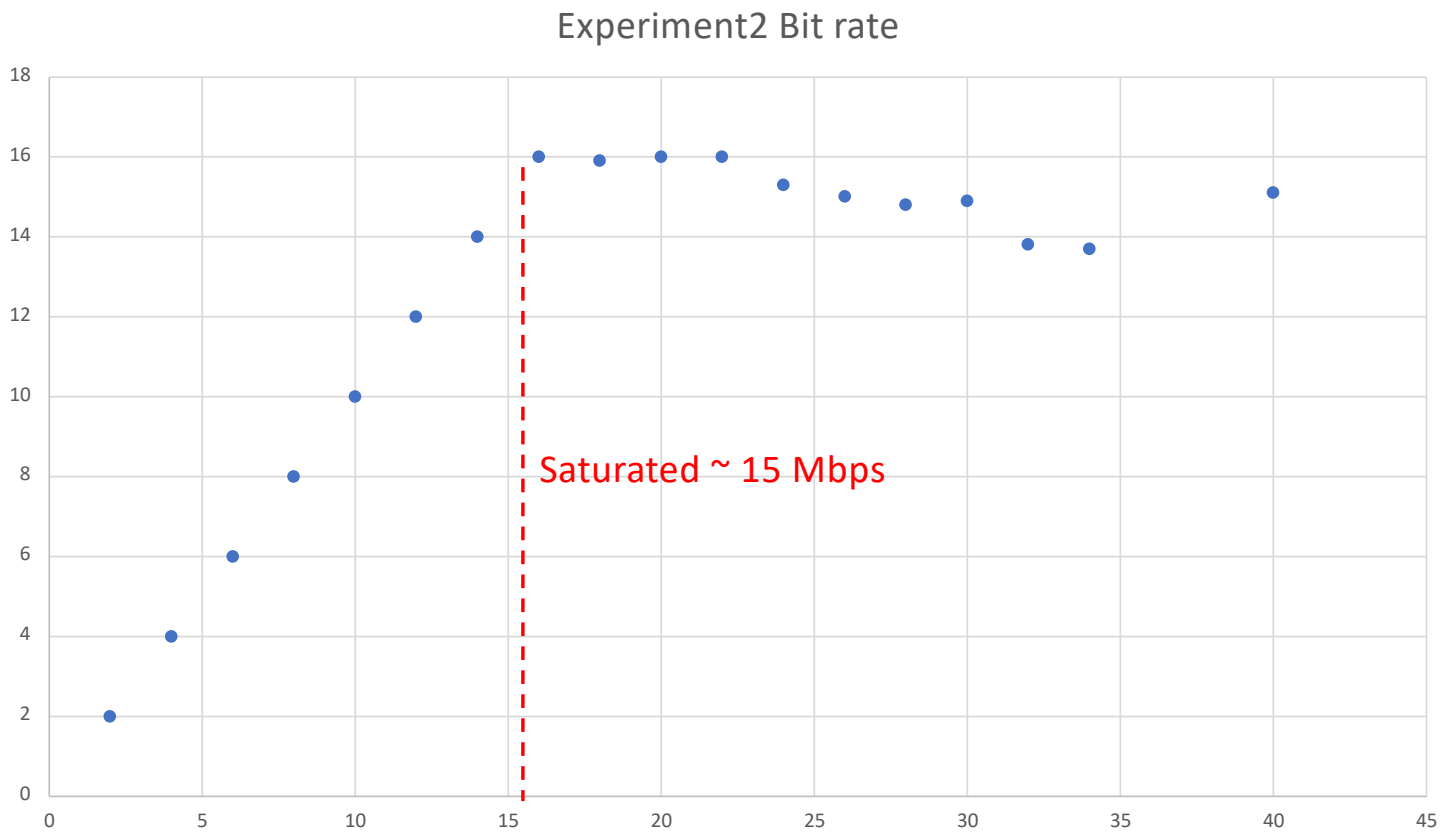

Experiment1 Bit rate
Measured Bit rate (Mbps)
Iperf -b (Mbps)
Saturated point
~ 28 Mbps
Edge1 (sender)
Edge2 (Receiver)
0
5
10
15
20
25
30
35
40
45
2
4
6
8
10
12
14
16
18
20
22
24
26
28
27.2
28.6
29.4
28


Experiment1 %CPU Utilisation
Norm of CPU usage
1.2
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
45
Iperf3 -b (Mbps)
Saturated point of
Edge2
~ 28 Mbps
Edge1 (sender)
Edge2 (receiver)

Experiment2

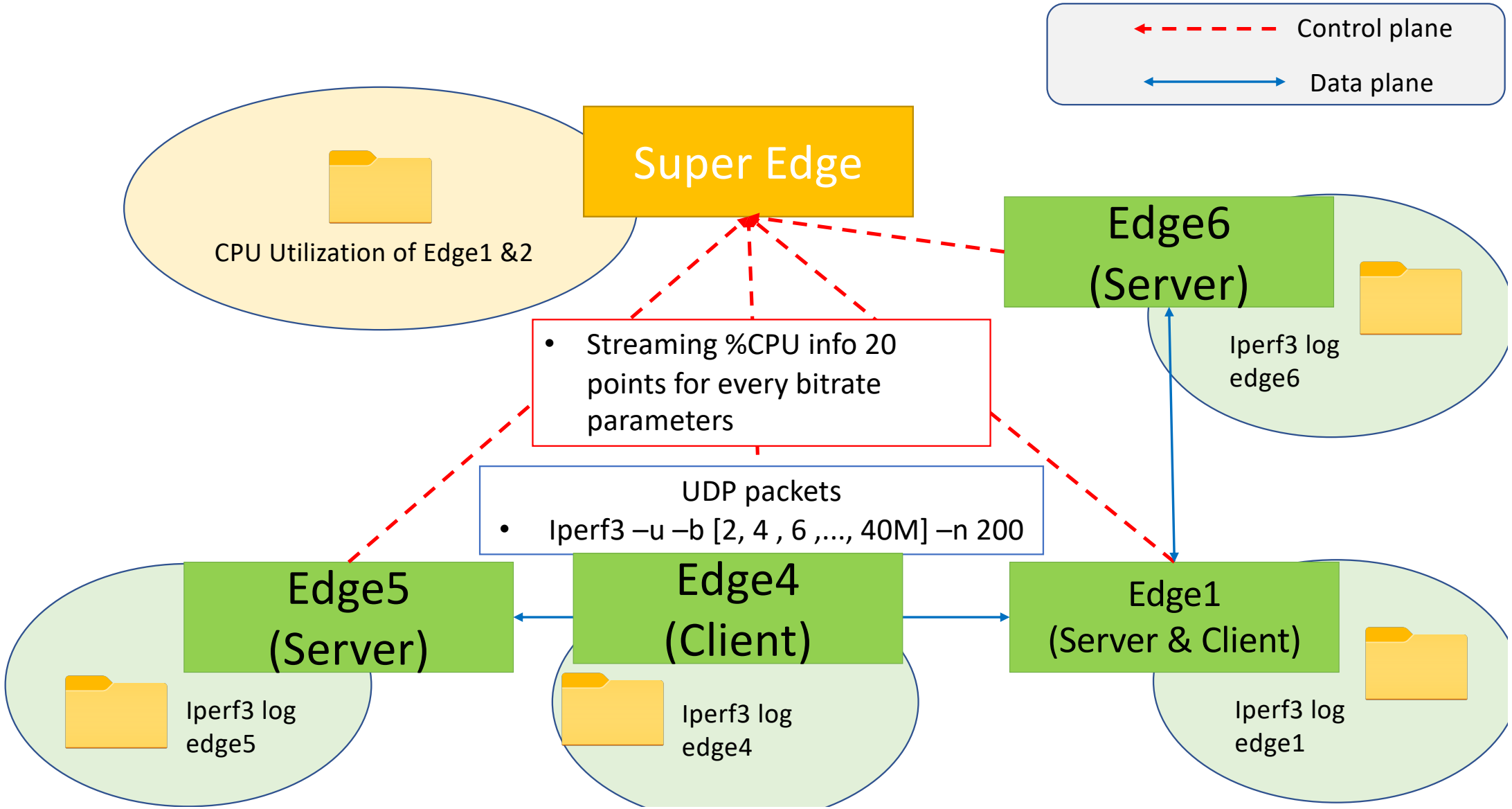


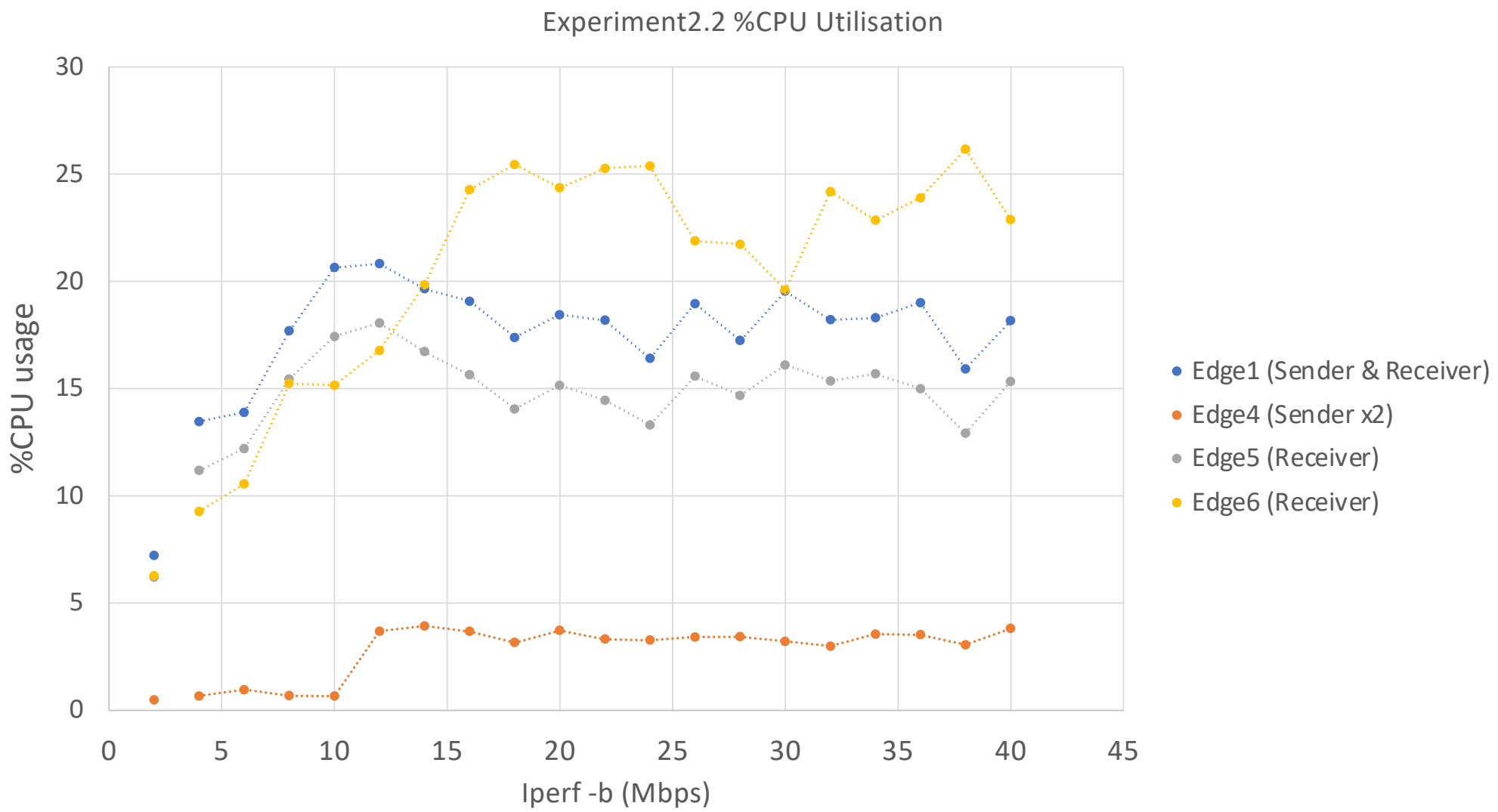

Experiment2 %CPU Utilisation
Norm of CPU usage
1.2
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30
35
40
45
Iperf -b (Mbps)
Saturated point of Edge1 & Edge5
~ 15 Mbps
Edge1 (Receiver)
Edge4 (Sender)
Edge5 (Receiver)

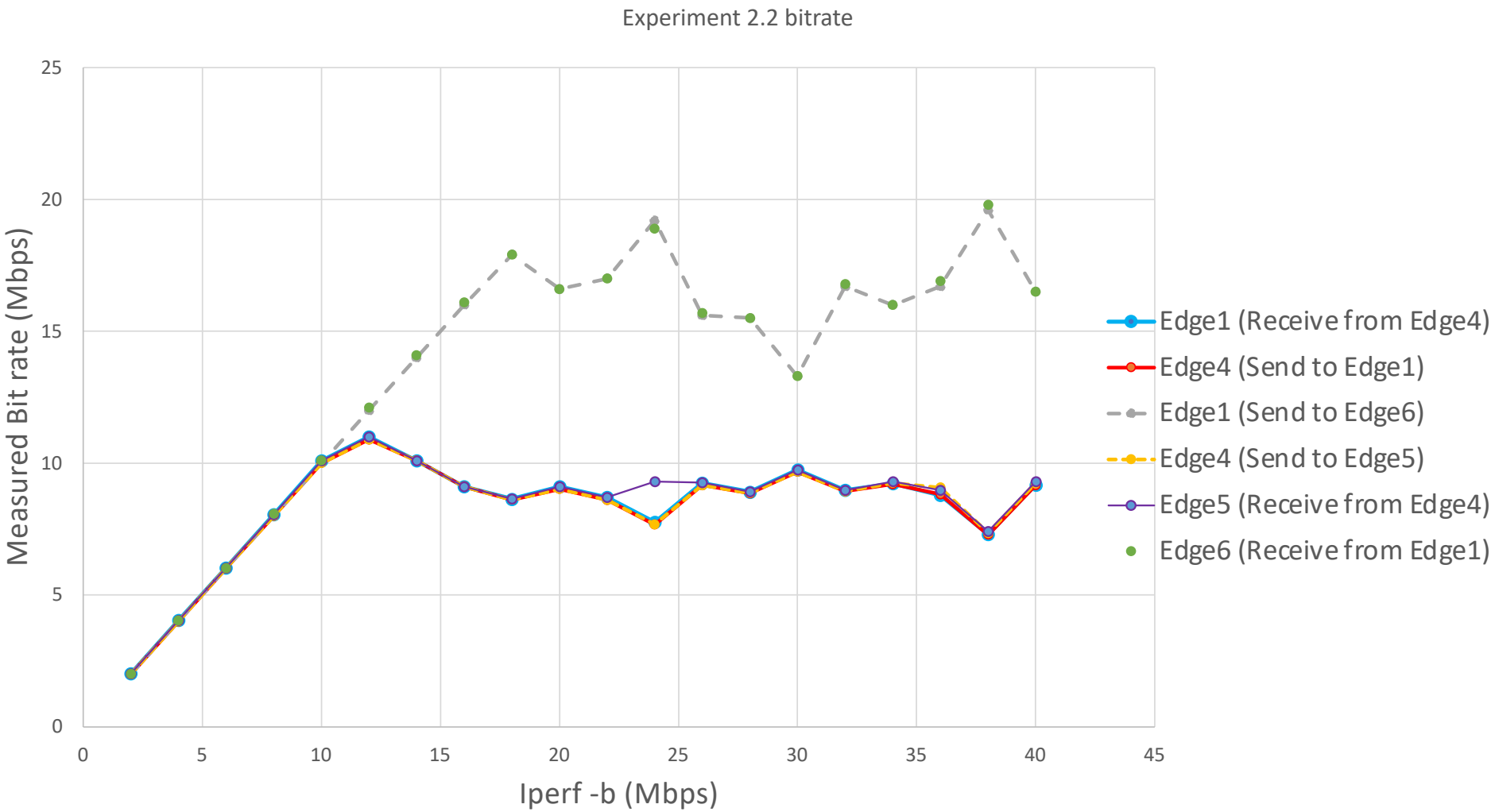


143 MBytes 16 Mbits/sec 16 Mbits/sec 0.000 ms 0/103590 (0%) sender

Suggested Experiment


Control plane
Data plane
Super Edge
CPU Utilization of Edge1 &2
Edge6
(Server)
Iperf3 log
edge6
• Streaming %CPU info 20 points for every bitrate parameters
UDP packets
• Iperf3 –u –b [2, 4 , 6 ,..., 40M] –n 200
Edge5
(Server)
Edge4
(Client)
Edge1
(Server & Client)
Iperf3 log
edge5
Iperf3 log
edge4
Iperf3 log
edge1


Experiment2.2 %CPU Utilisation
%CPU usage
Iperf -b (Mbps)
0
5
10
15
20
25
30
35
40
45
Edge1 (Sender & Receiver)
Edge4 (Sender x2)
Edge5 (Receiver)
Edge6 (Receiver)


Experiment 2.2 bitrate
Measured Bit rate (Mbps)
Iperf -b (Mbps)
0
5
10
15
20
25
30
35
40
45
Edge1 (Receive from Edge4)
Edge4 (Send to Edge1)
Edge1 (Send to Edge6)
Edge4 (Send to Edge5)
Edge5 (Receive from Edge4)
Edge6 (Receive from Edge1)