

Experiment1

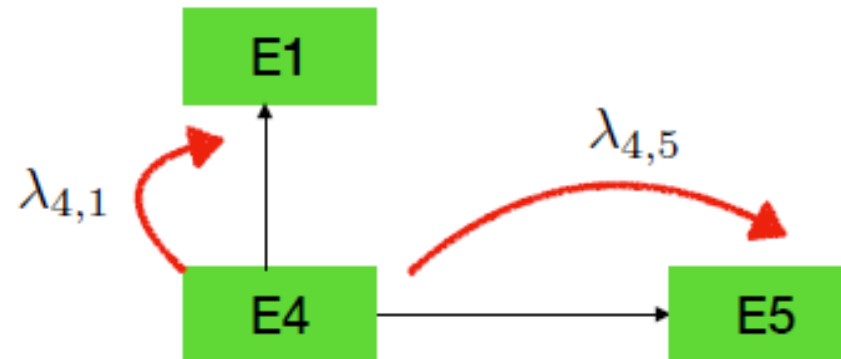
1. Find the cpu utilization of node E1 by sending packets from node E1 to E2



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

- Use iperf3 UDP

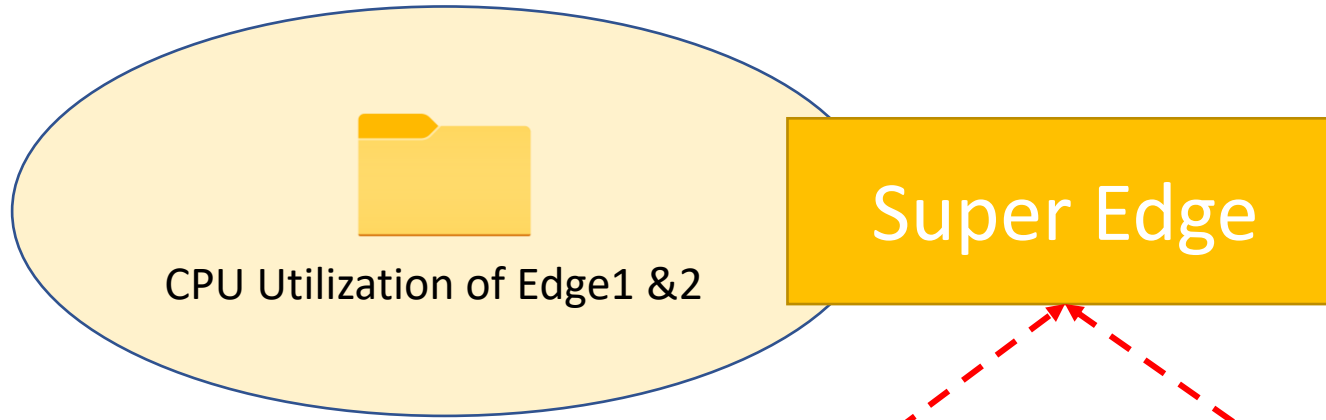
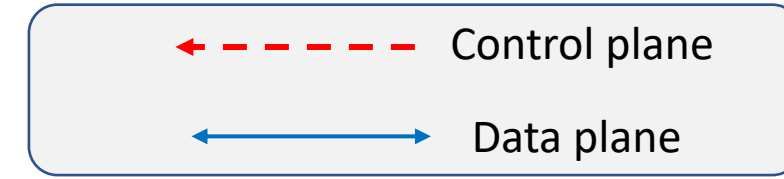
1. Find the maximum throughput by sending packets from node E4 to E1, while E4 forwards packet to E5.



Experiment2

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

Experiment1



Edge1 & Edge2 keep streaming CPU utilization info through socket program over the control plane

- Streaming %CPU info 20 points for every bitrate parameters

Edge1
(Client)

Edge2
(Server)

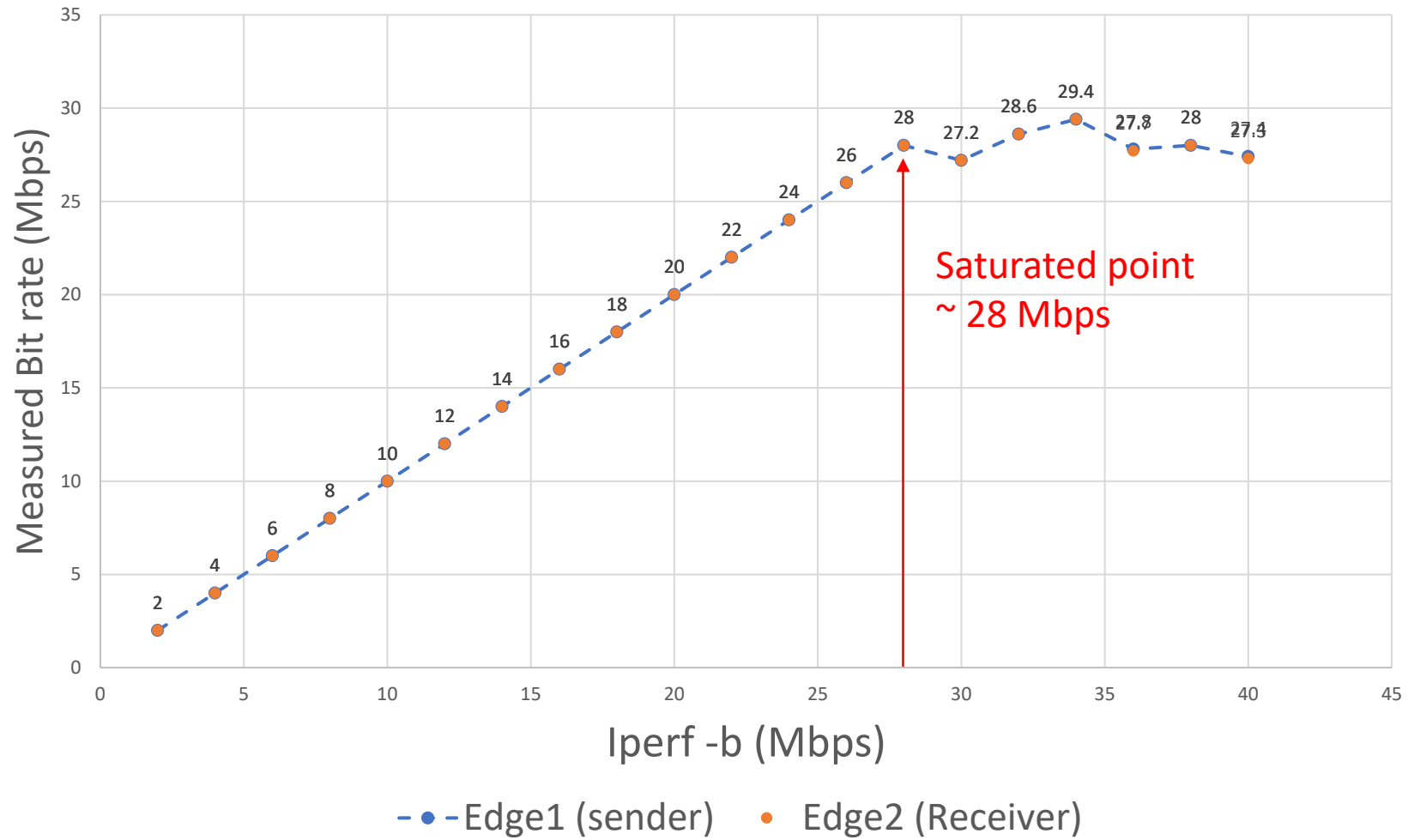
Iperf3 log
edge1

Iperf3 log
edge2

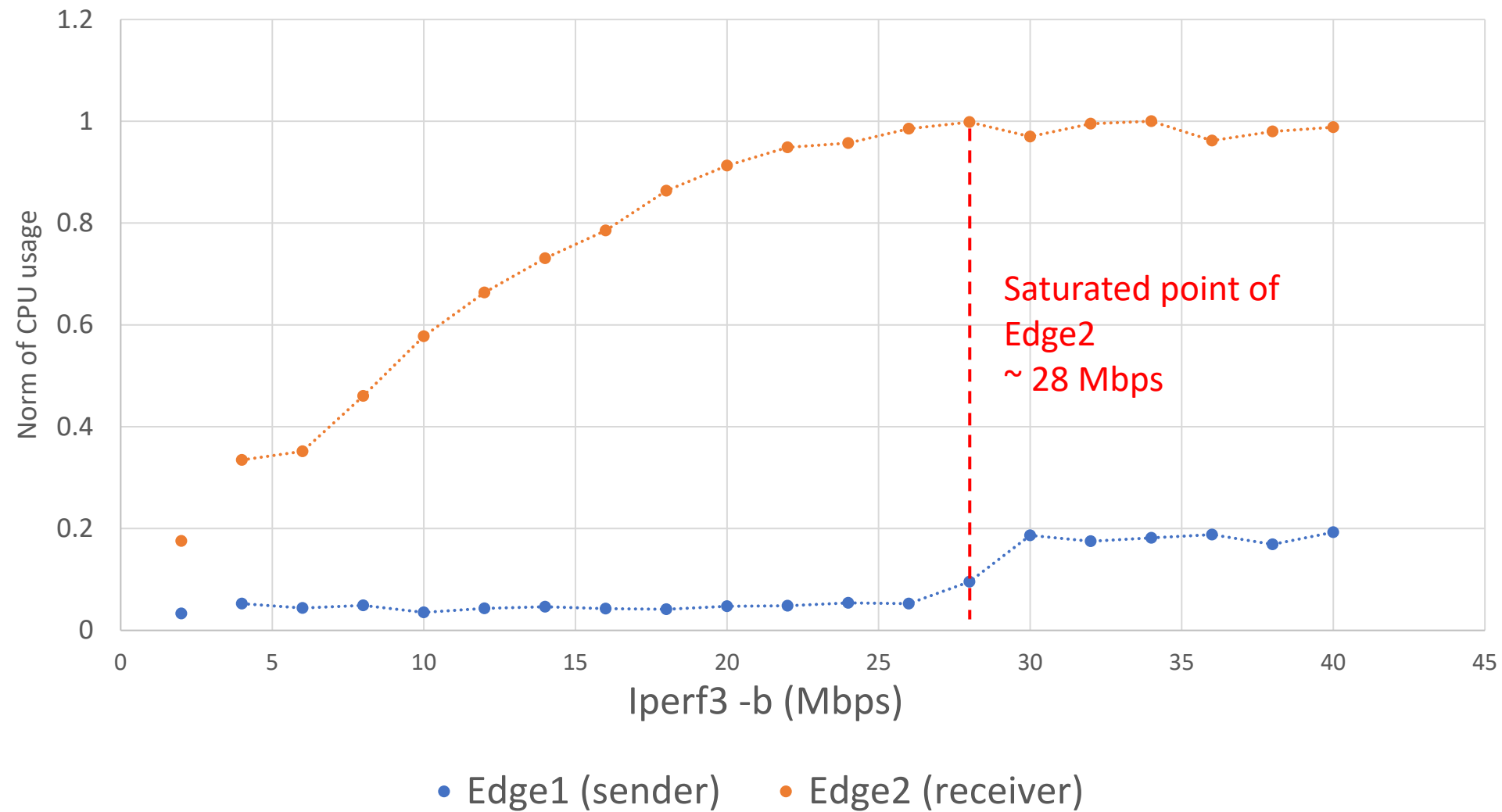
UDP packets

- Iperf3 -u -b [2, 4, 6, ..., 40M] -t 75

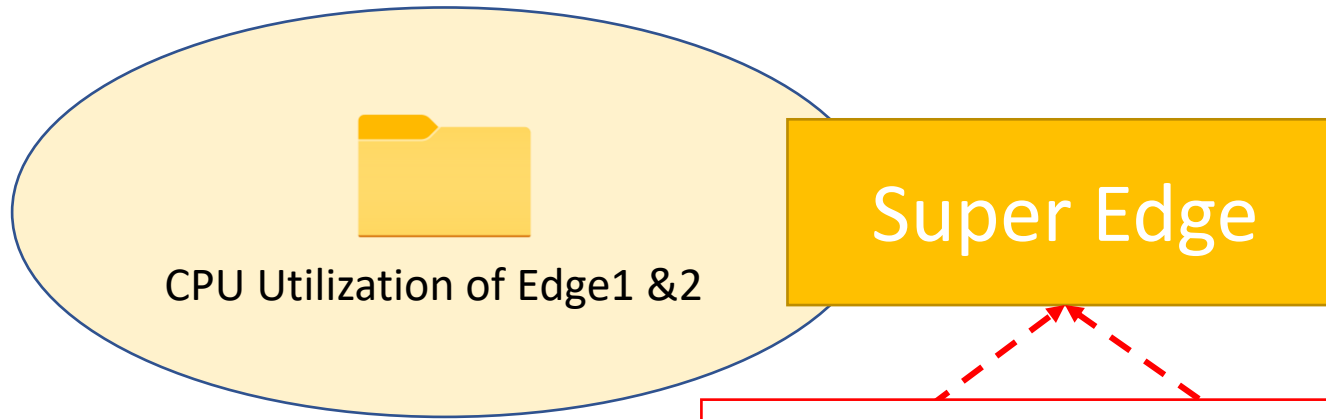
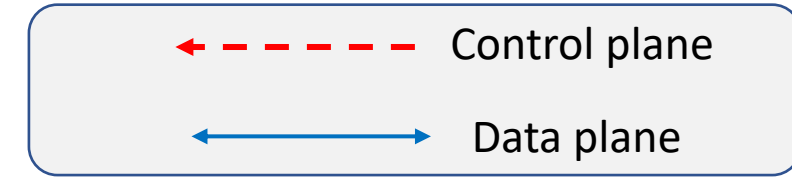
Experiment1 Bit rate



Experiment1 %CPU Utilisation



Experiment2



- Streaming %CPU info 20 points for every bitrate parameters

- UDP packets
- `Iperf3 -u -b [2, 4, 6, ..., 40M] -t 75`

Edge1
(Server)

Edge4
(Client)

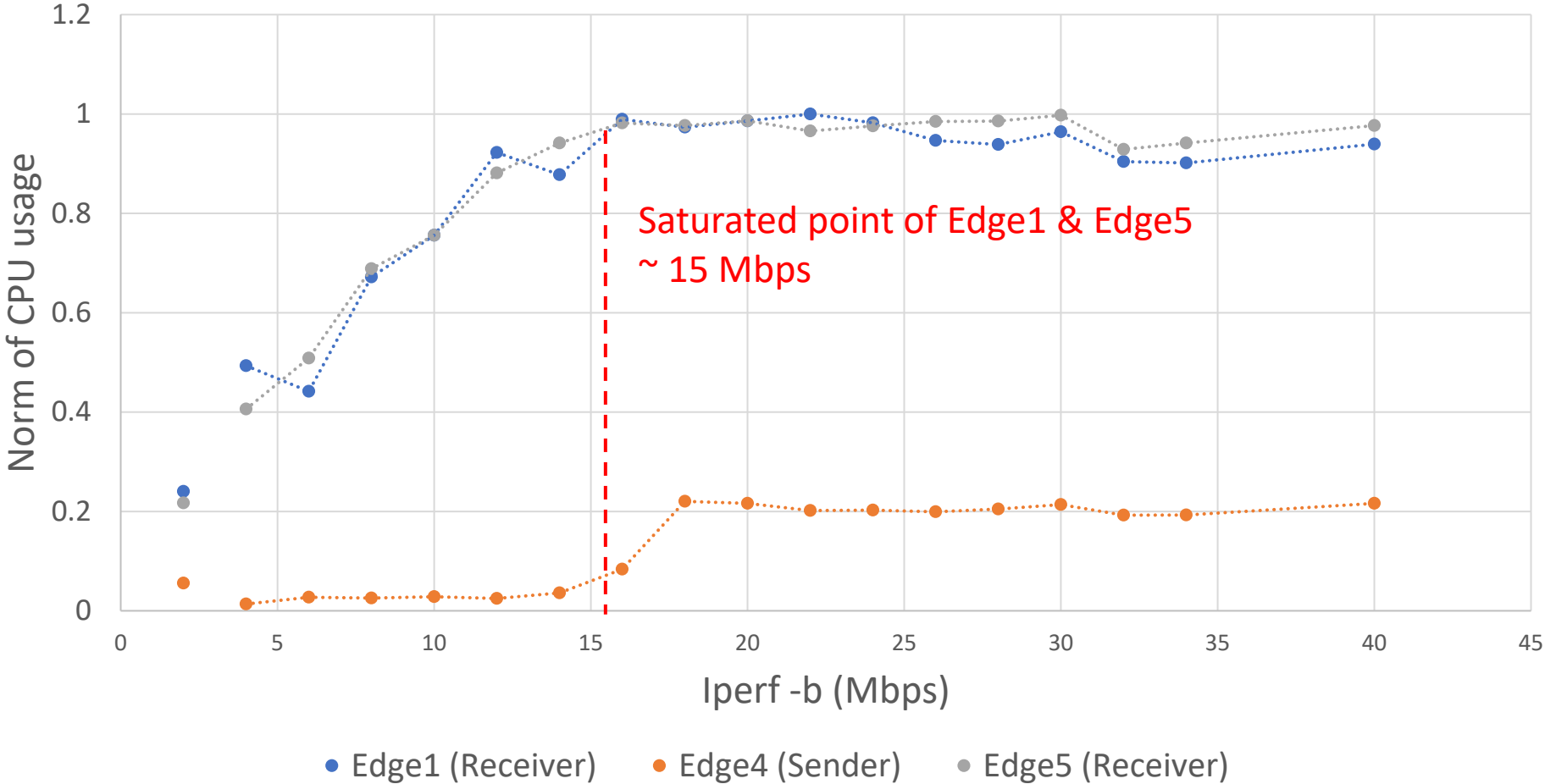
Edge5
(Server)

Iperf3 log
edge1

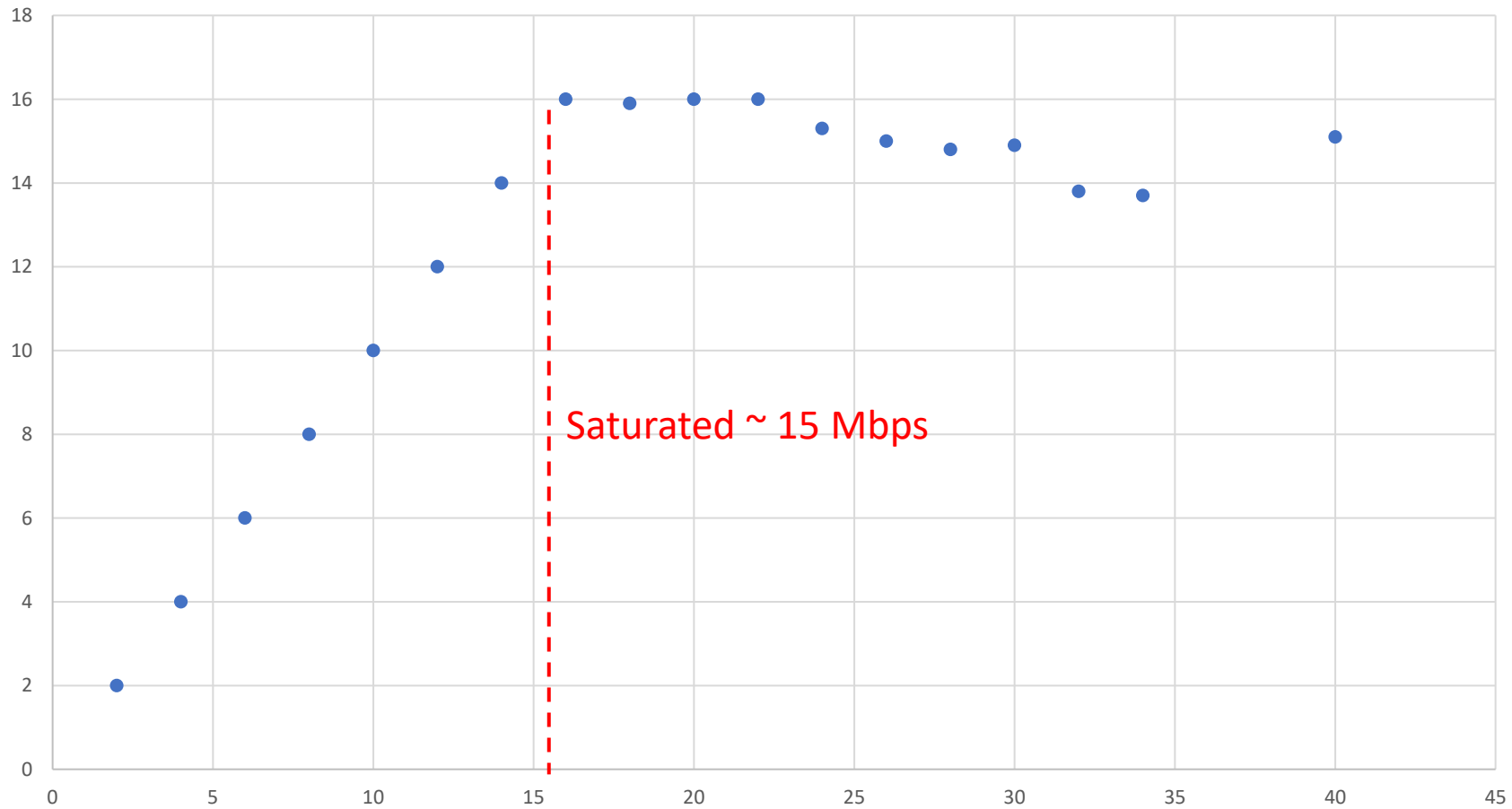
Iperf3 log
edge4

Iperf3 log
edge5

Experiment2 %CPU Utilisation

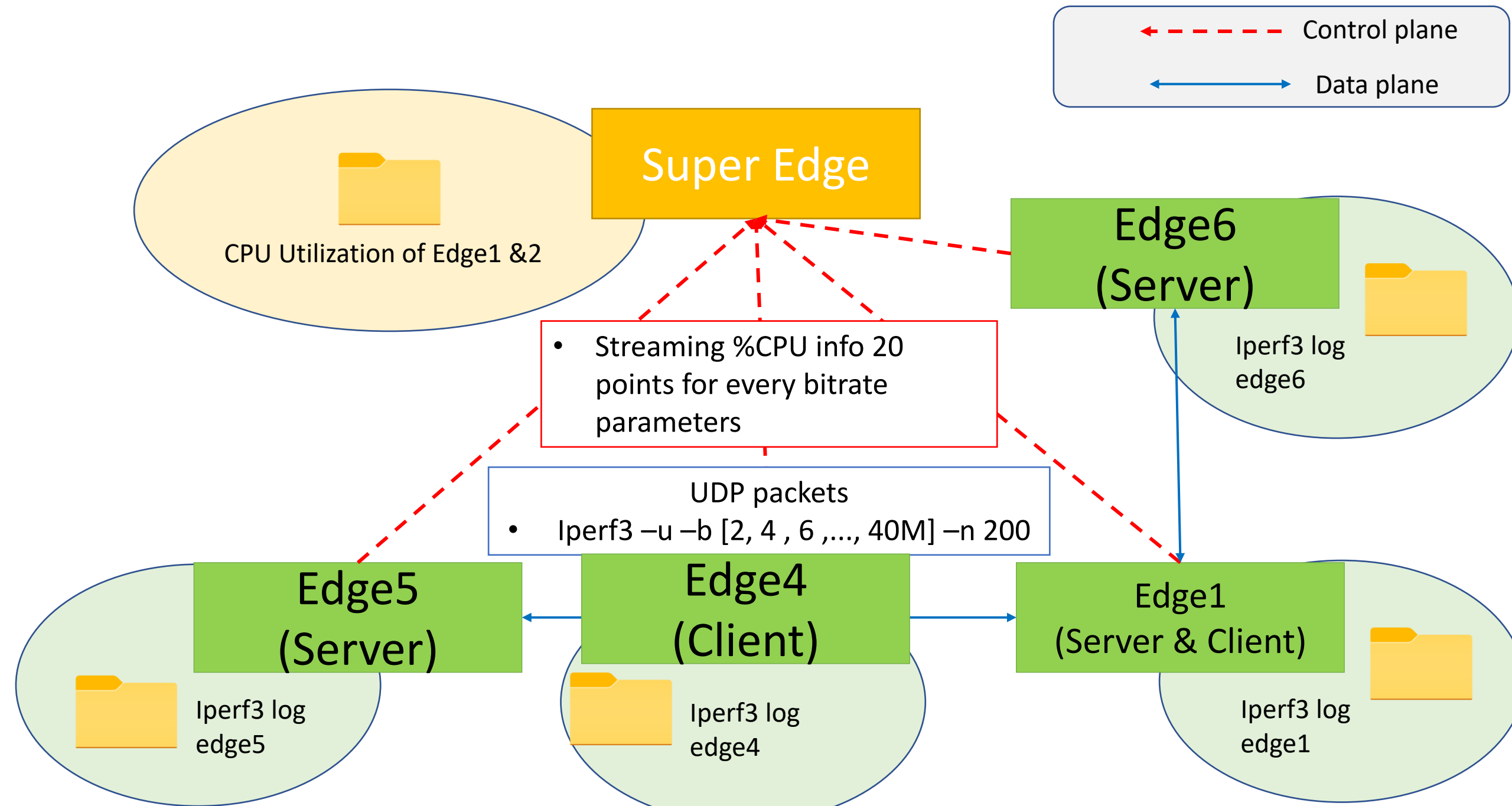


Experiment2 Bit rate

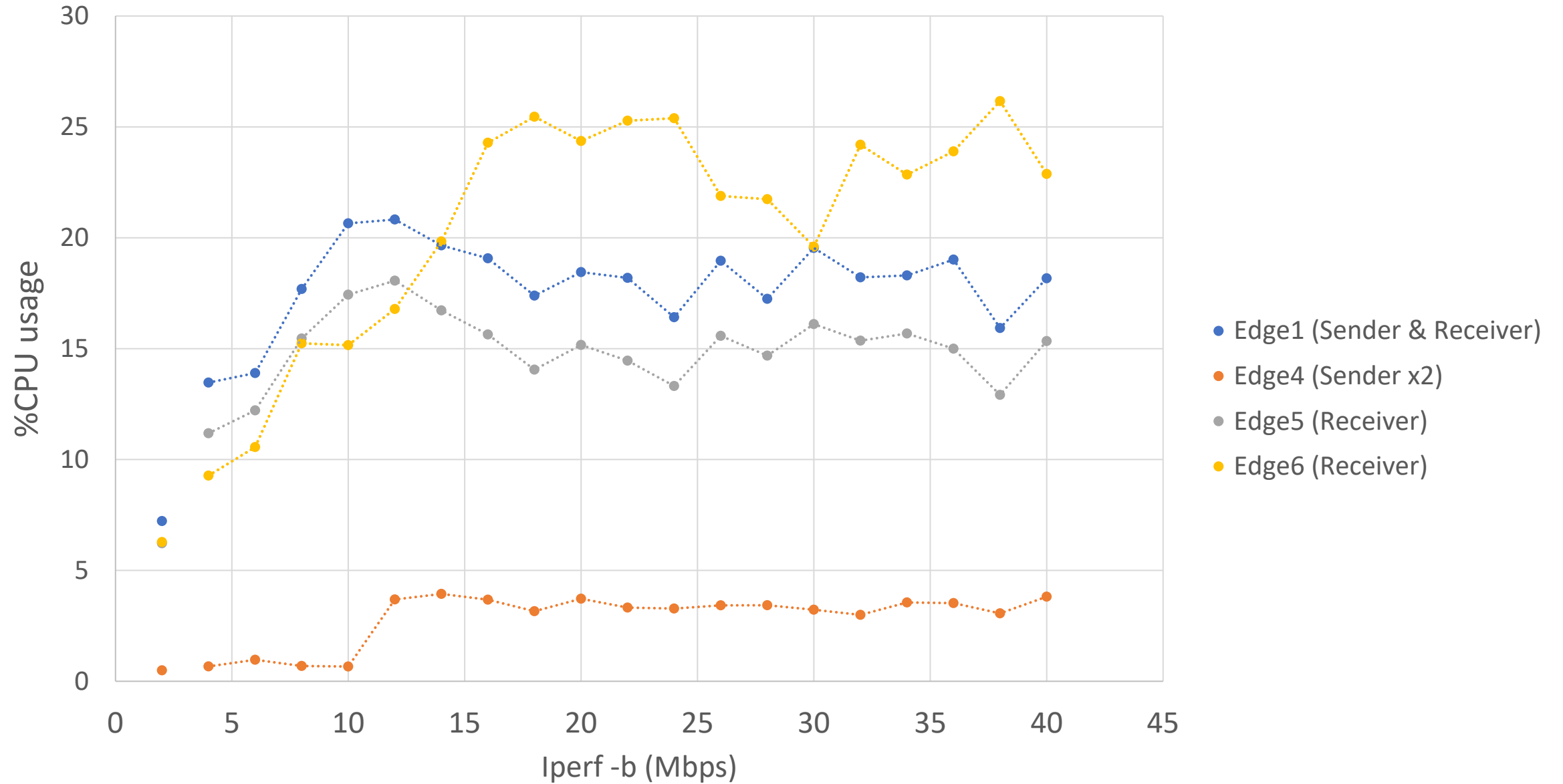


143 MBytes 16 Mbits/sec 16 Mbits/sec 0.000 ms 0/103590 (0%) sender

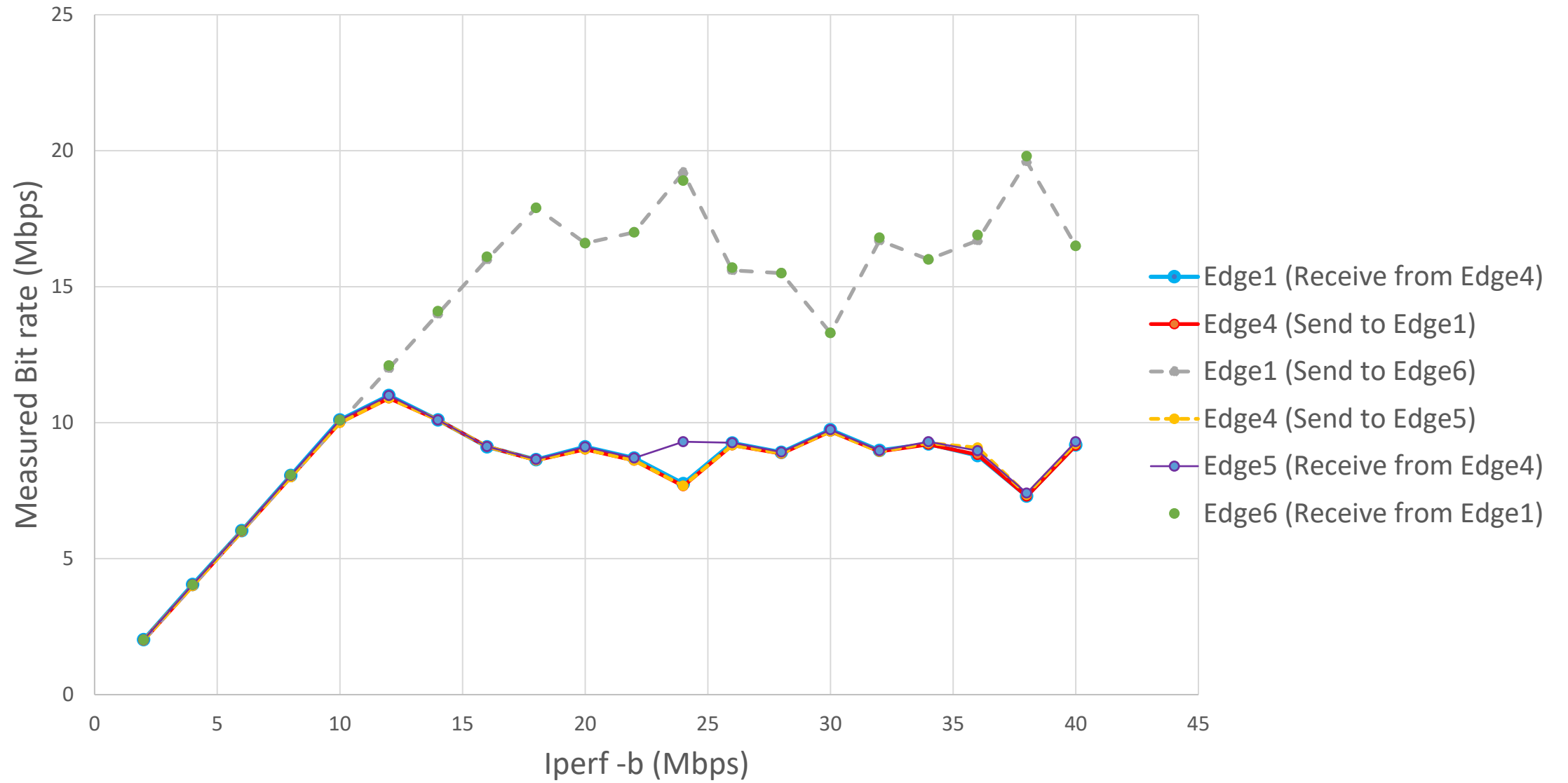
Suggested Experiment

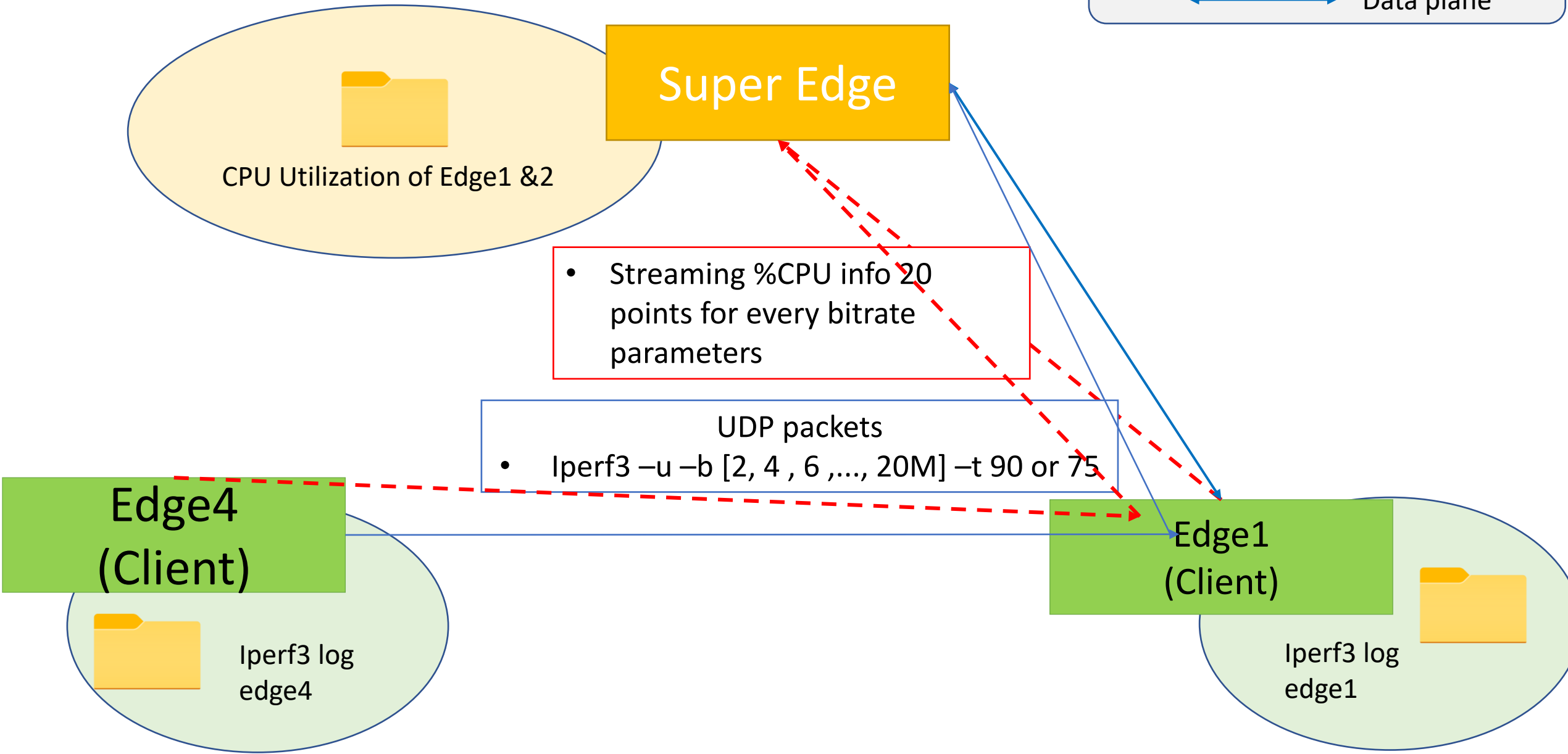


Experiment2.2 %CPU Utilisation

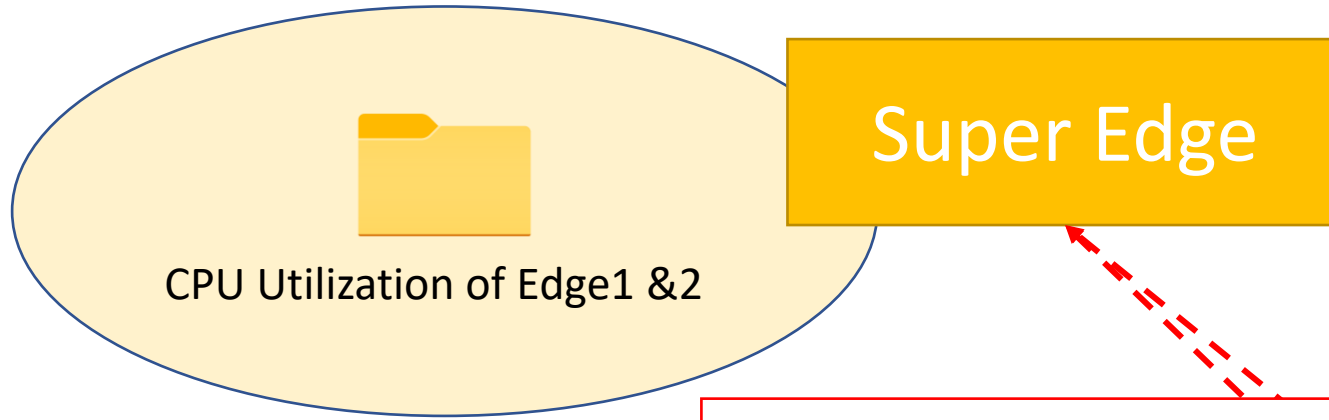
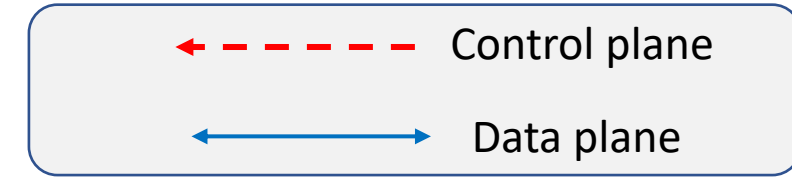


Experiment 2.2 bitrate





Sub Experiment 3.1: (Fixed Edge1 15Mbps)



- Streaming %CPU info 20 points for every bitrate parameters

Edge 4 UDP packets

- `Iperf -i 1 -u -b [2, 4, 6, ..., 20M] -t 90 or 75`

Edge4
(Client)



Iperf3 log
edge4

Edge1 UDP packets

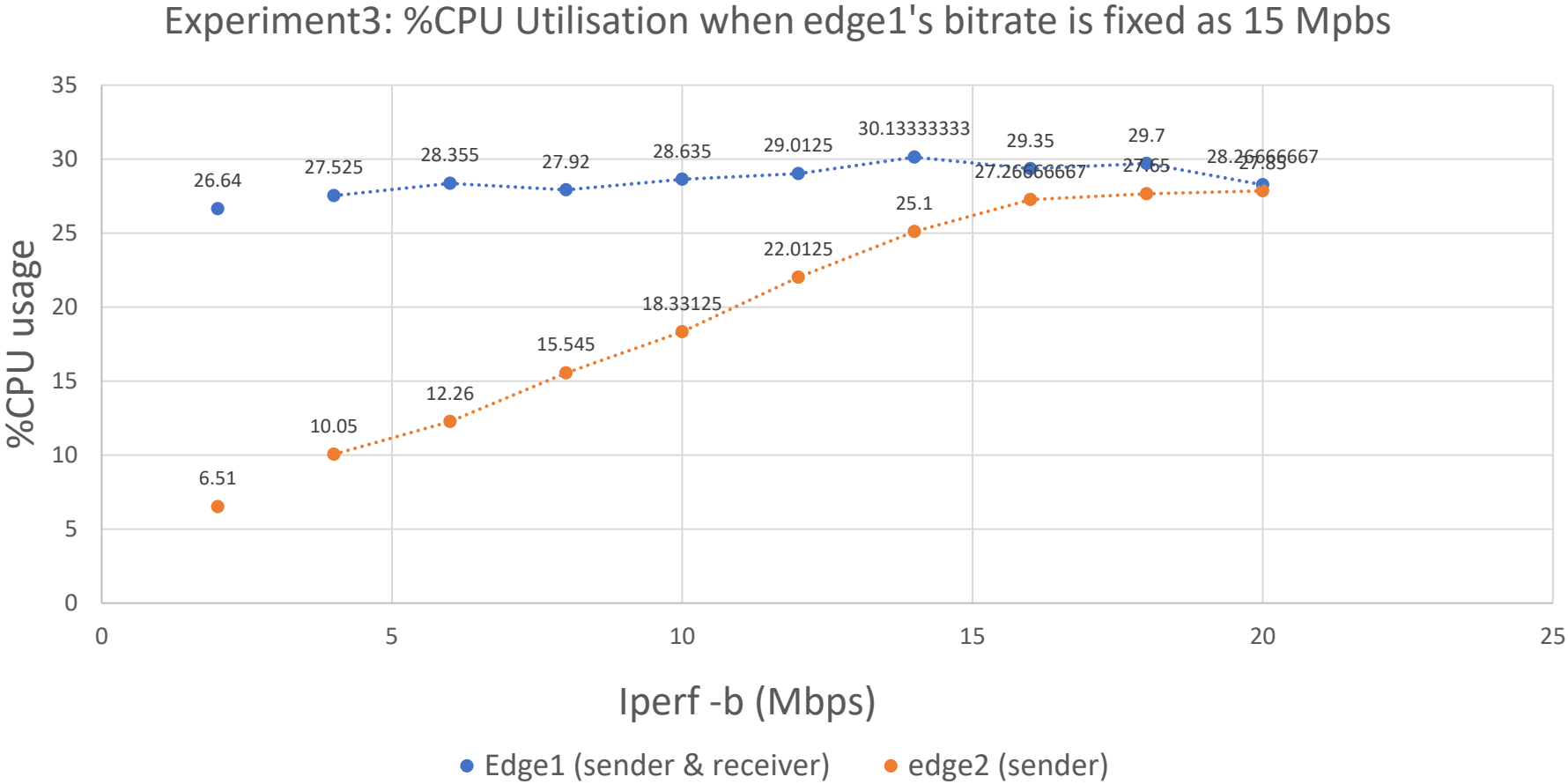
- `Iperf -i 1 -u -b 15M -t 90 or 75`

Edge1
(Client)

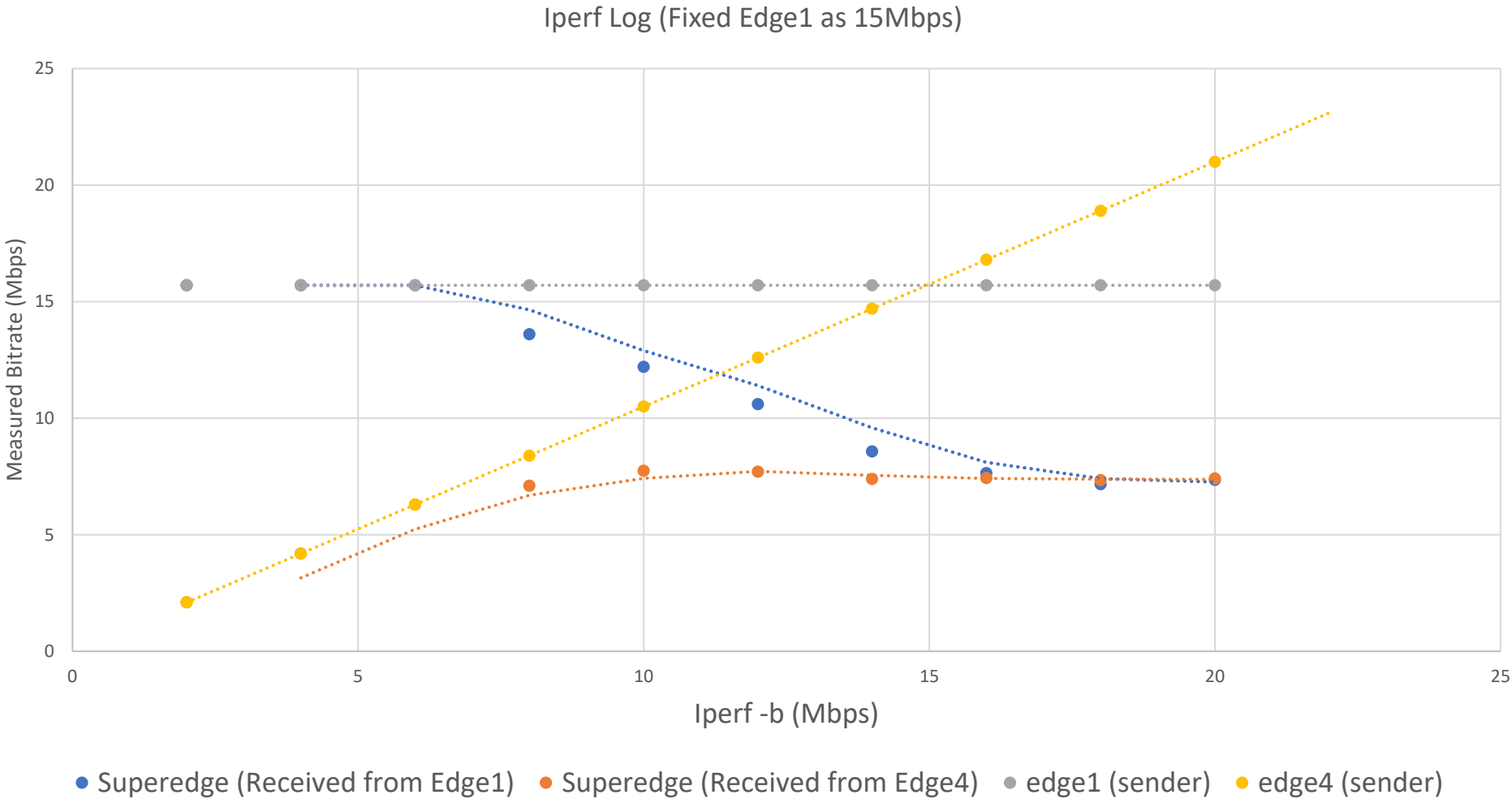


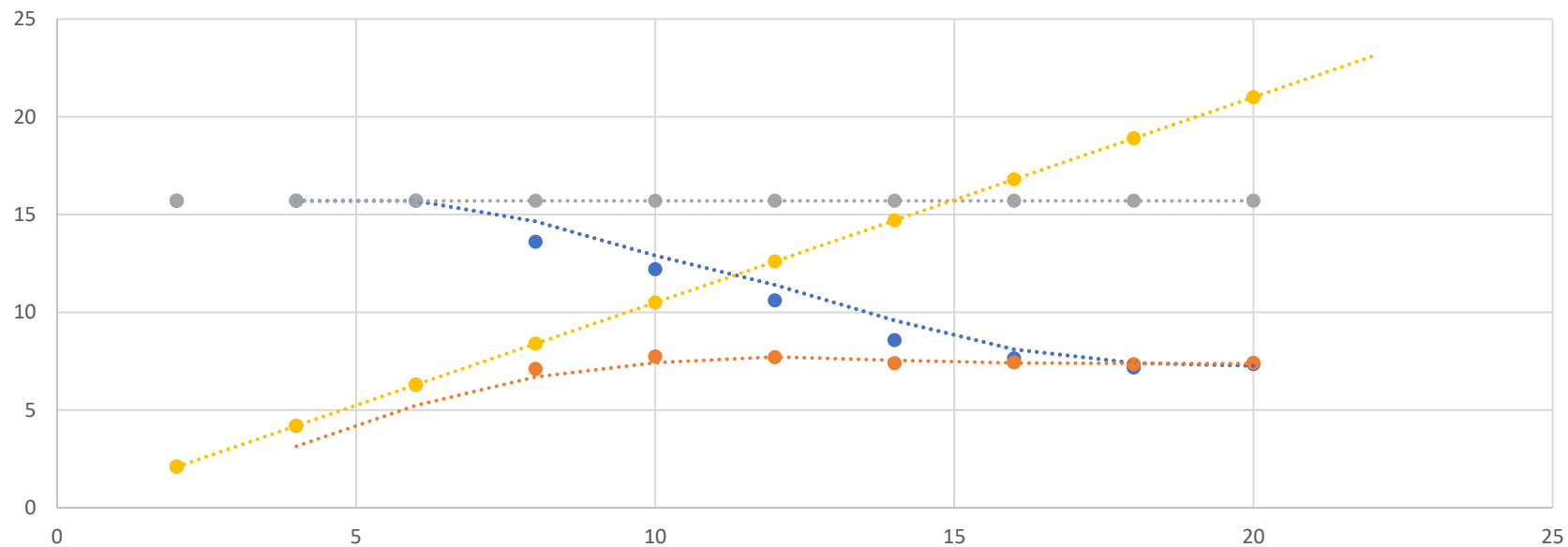
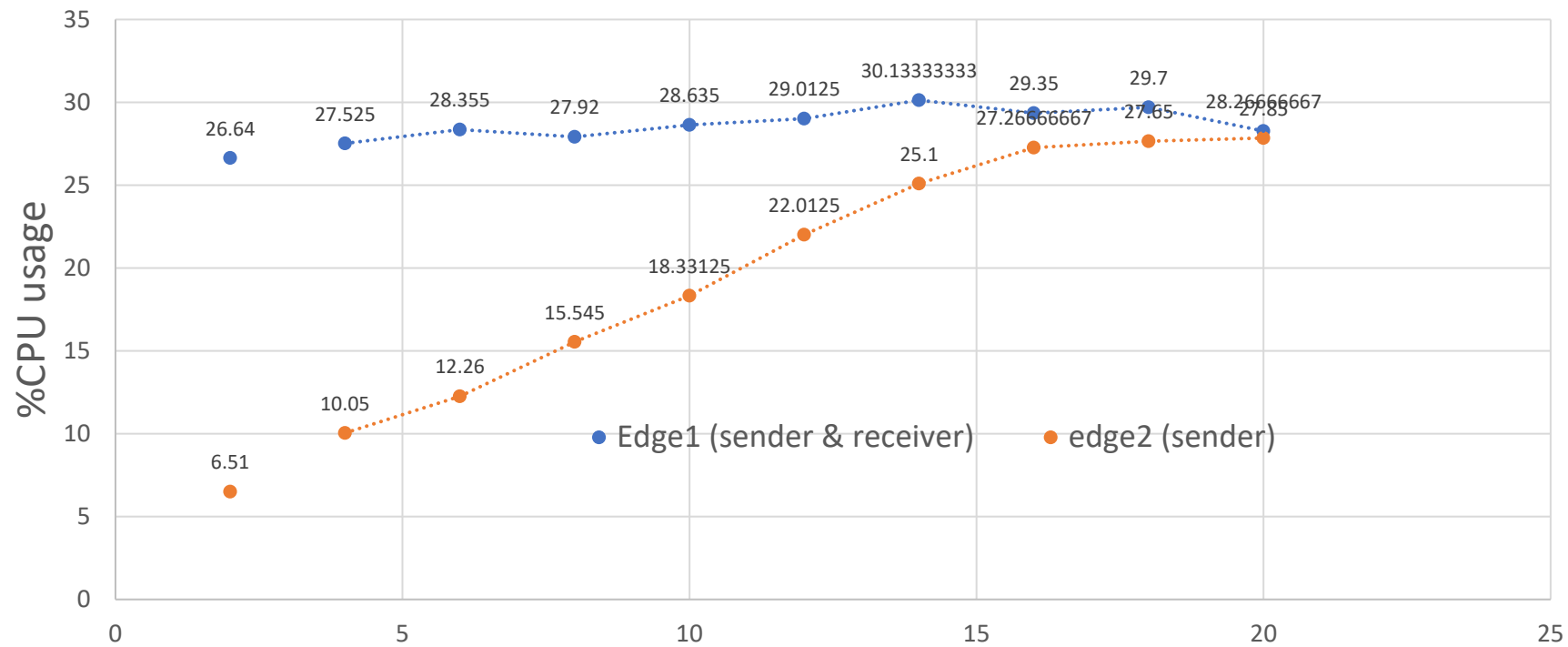
Iperf3 log
edge1

Sub Experiment 3.1: (Fixed Edge1 15Mbps)



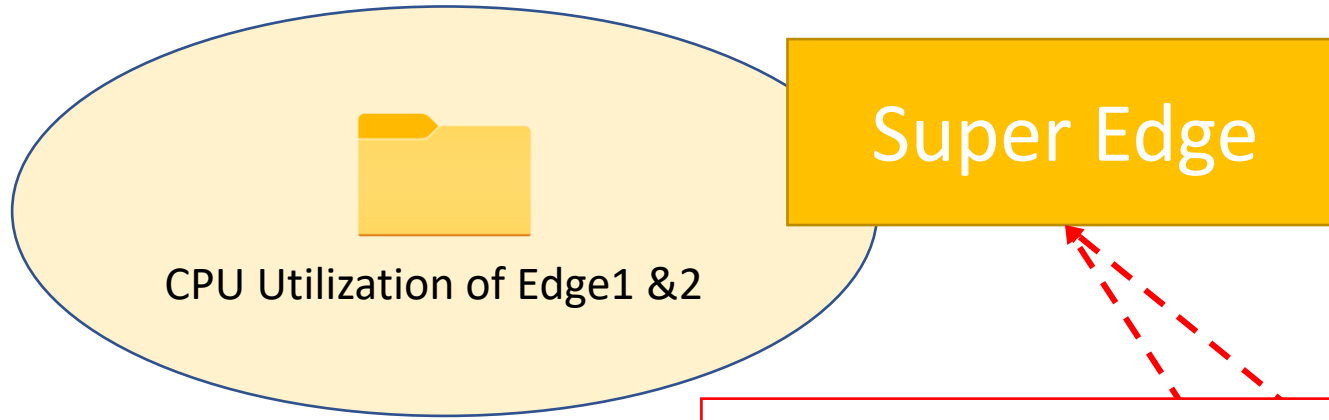
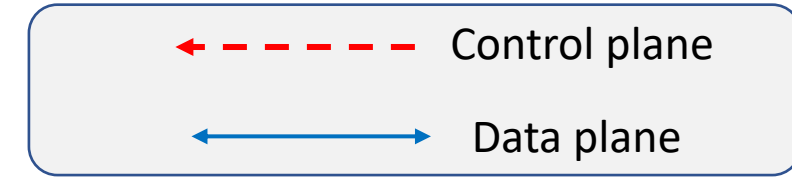
Sub Experiment 3.1: (Fixed Edge1 15Mbps)





● Supersedge (Received from Edge1) ● Supersedge (Received from Edge4)
● edge1 (sender) ● edge4 (sender)

Sub Experiment 3.2: (Fixed Edge4 15Mbps)



- Streaming %CPU info 20 points for every bitrate parameters

Edge4 UDP packets

- `lperf -i 1 -u -b 15M -t 90 or 75`

Edge 1 UDP packets

- `lperf -i 1 -u -b [2, 4, 6, ..., 20M] -t 90 or 75`

Edge4
(Client)



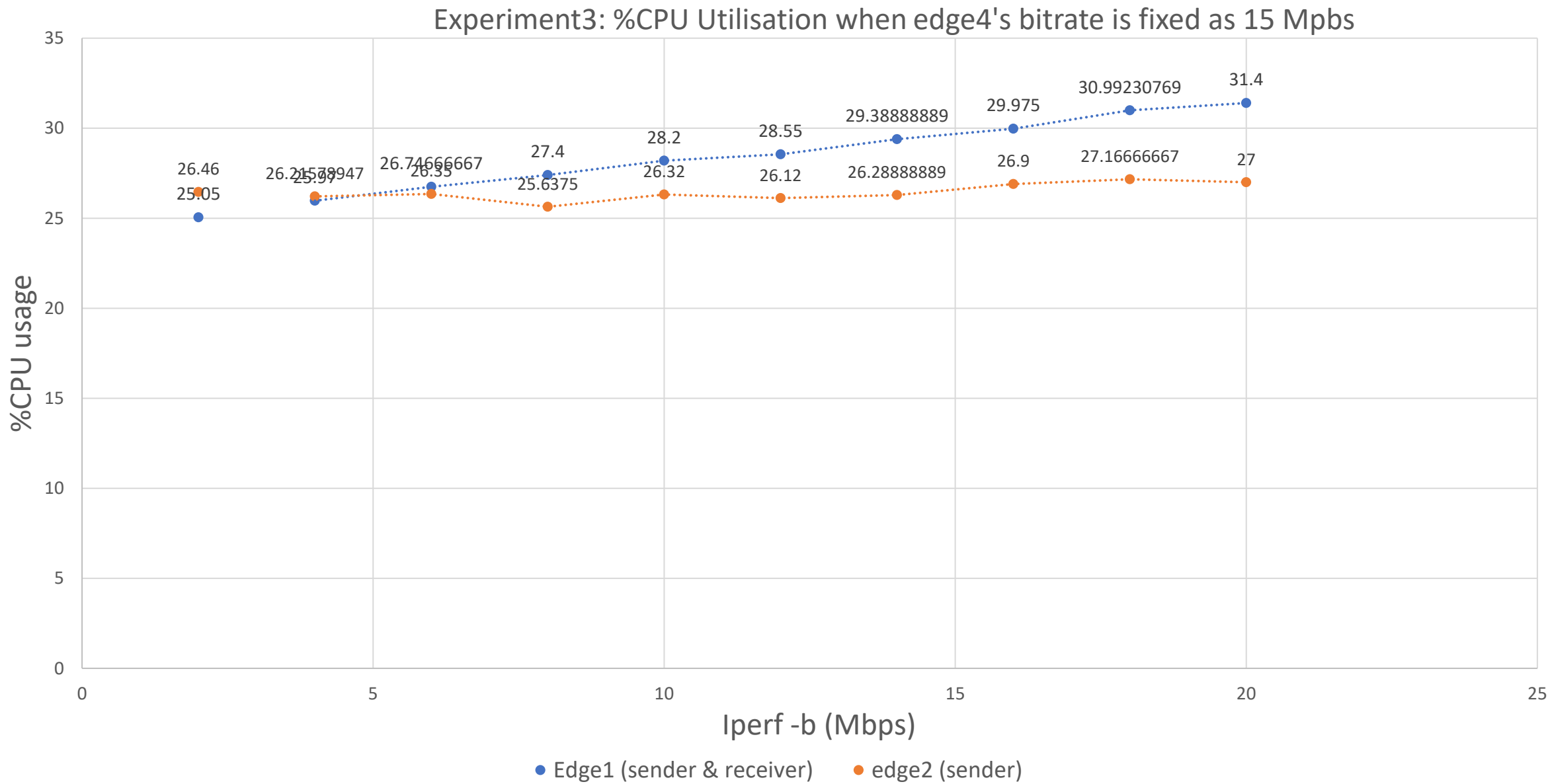
lperf3 log
edge4

Edge1
(Client)

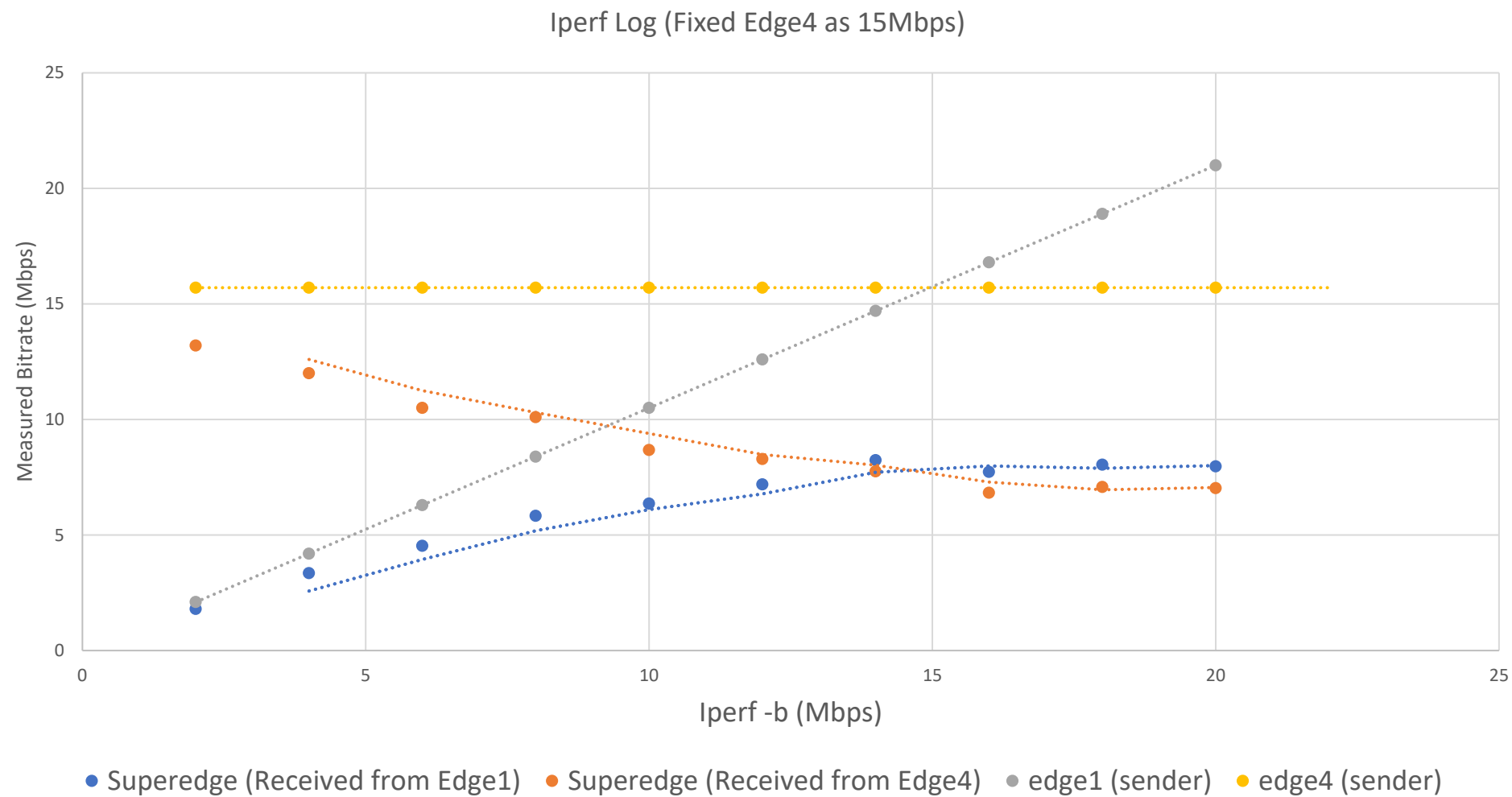


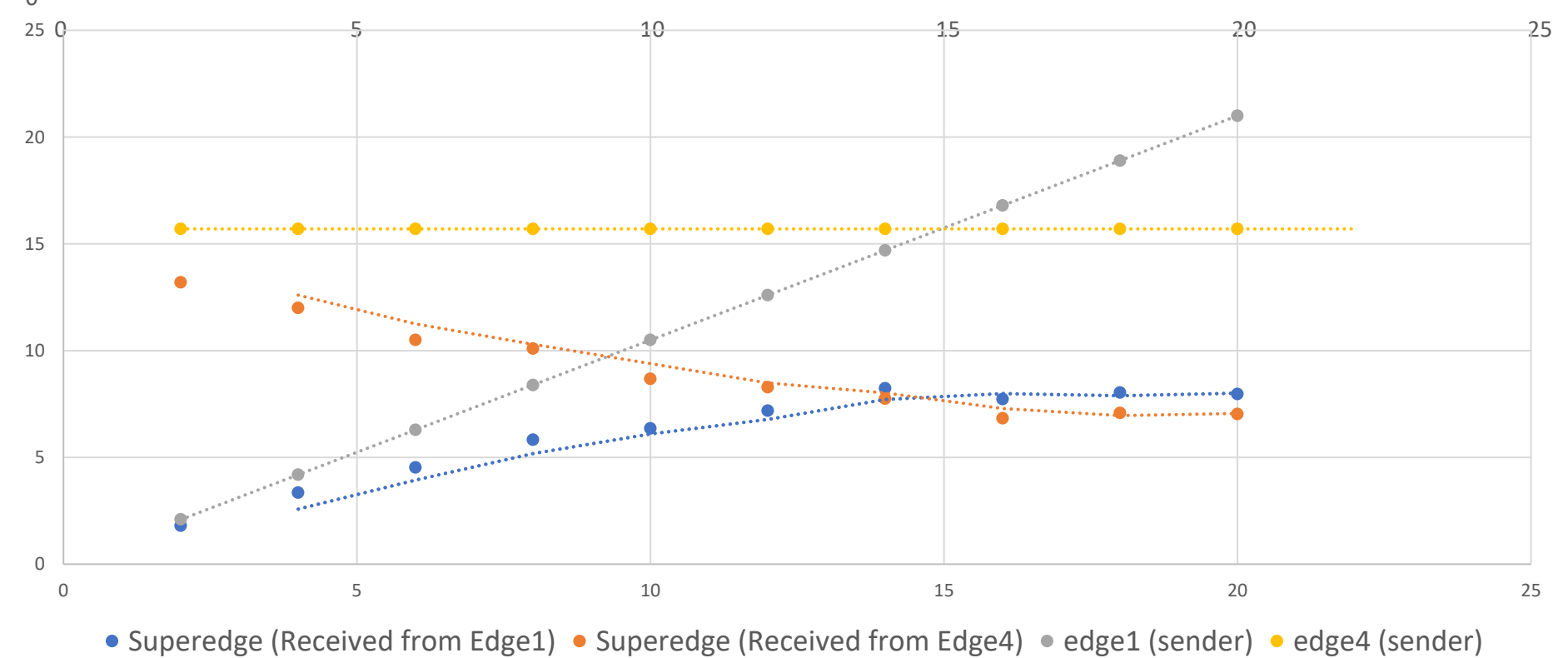
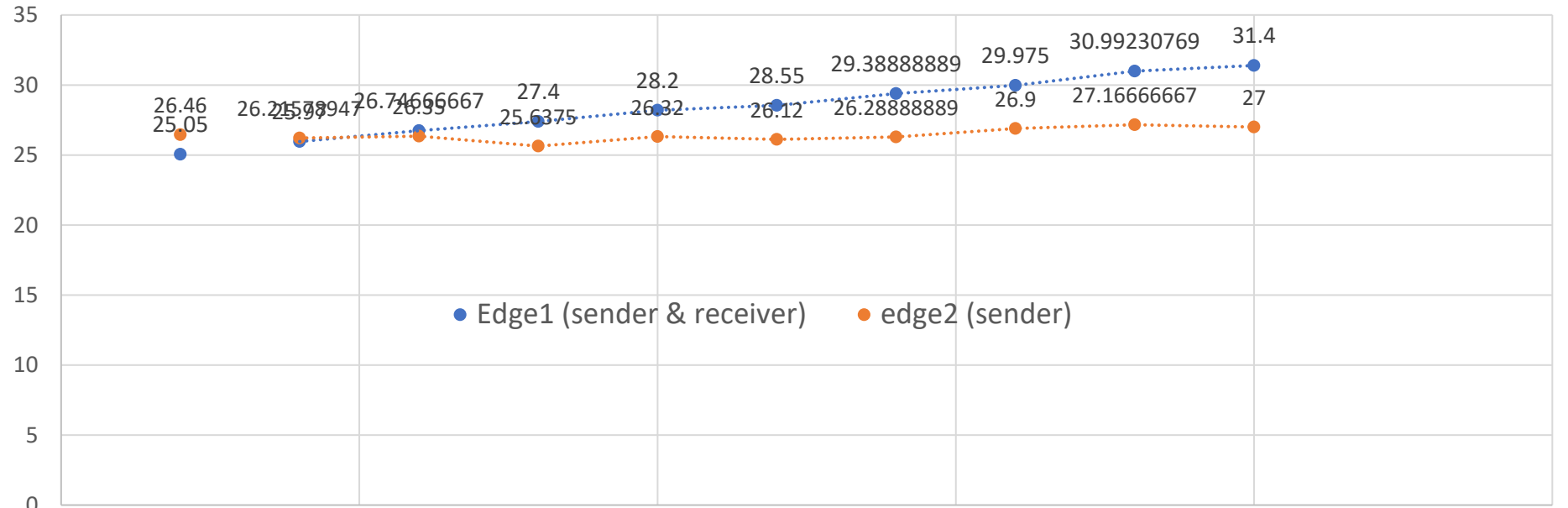
lperf3 log
edge1

Sub Experiment 3.2: (Fixed Edge4 15Mbps)



Sub Experiment 3.2: (Fixed Edge4 15Mbps)

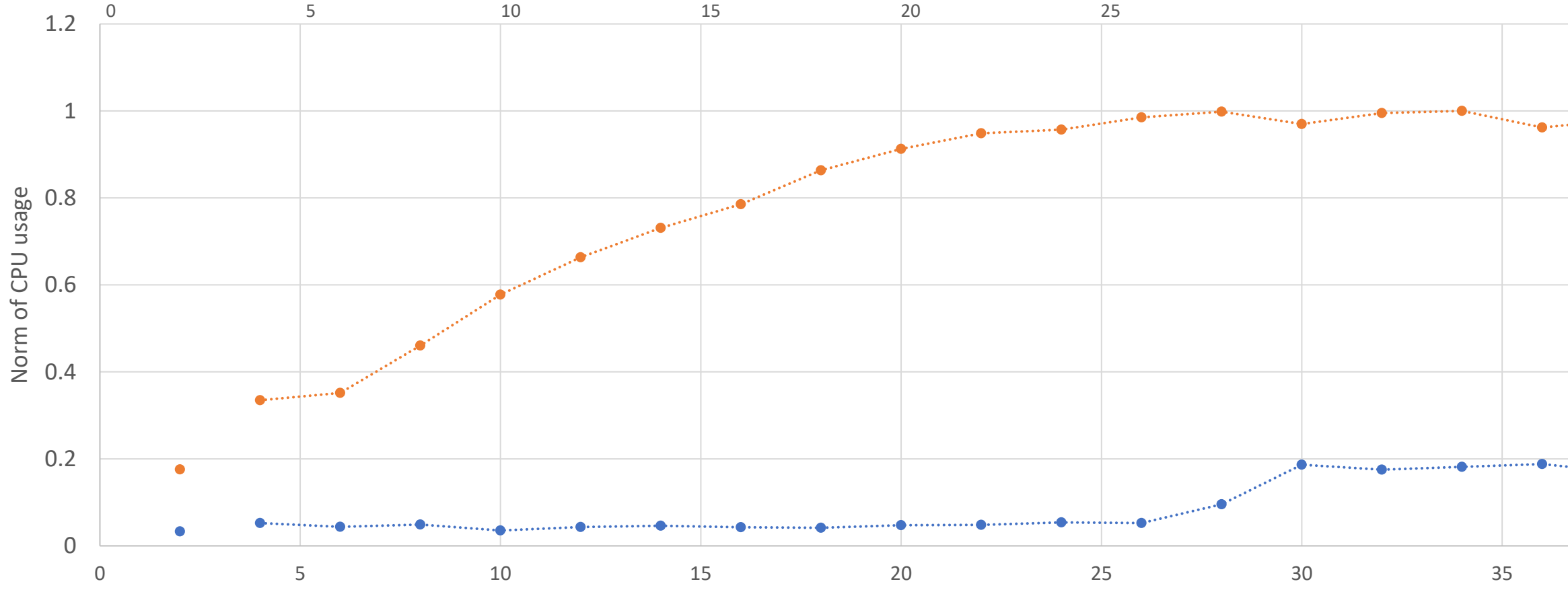
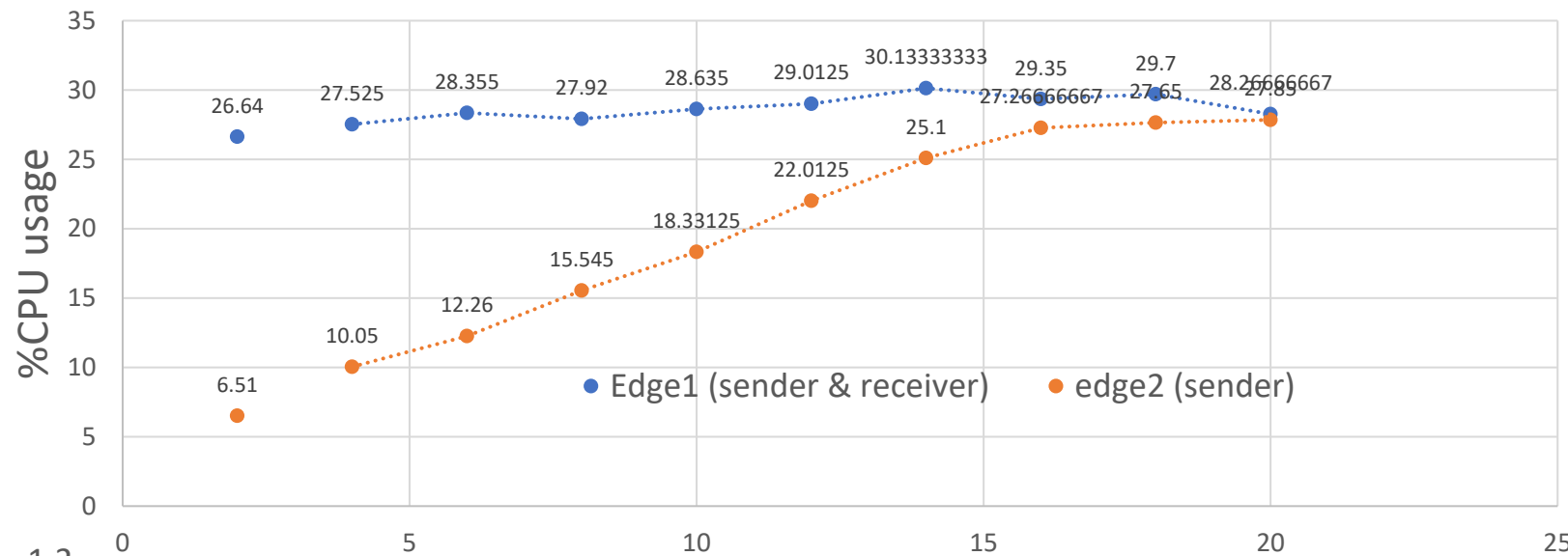




Compare
Result

Compare Result

%CPU
Experiment 3.1
vs
Experiment 1



Compare Result

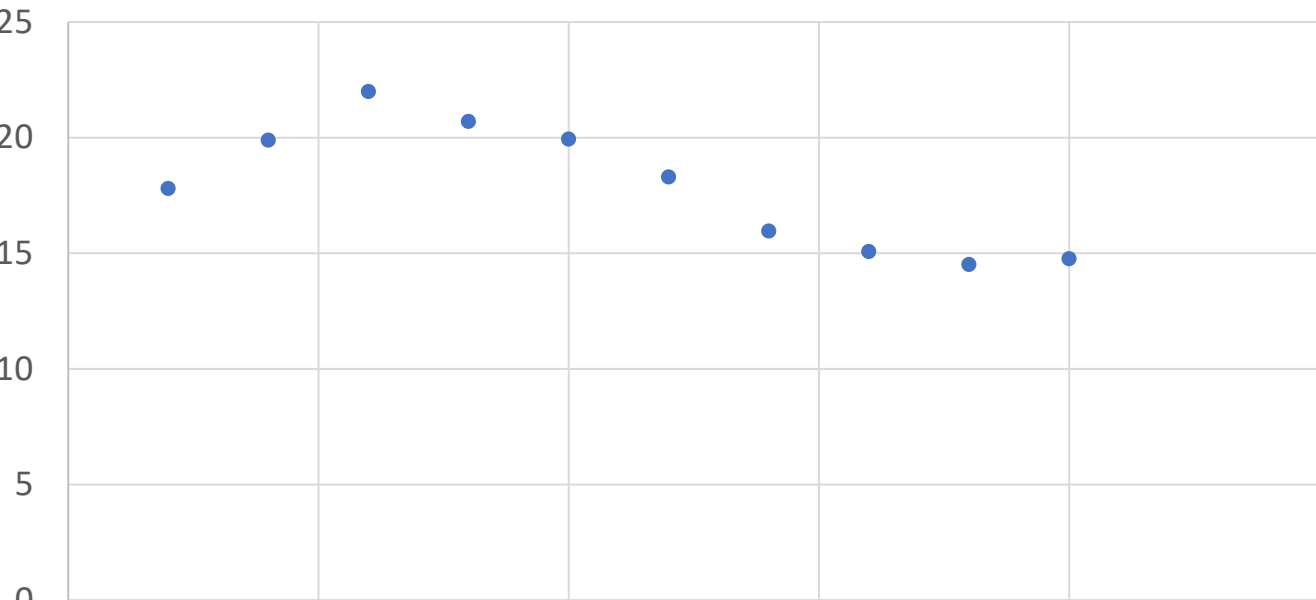
%CPU

Experiment 3.1

vs

Experiment 3.2

SUM Receiving bitrate2 4 6 8 10 12 14 16 18 20



SUM

