

Assignment 4 Report

In this assignment, the actual MAC throughputs for 802.11g / ac_w2 / ax standards, at each of their minimum and maximum available data rates, for both UDP and TCP are required to calculate. The attached are screenshots of the assigned scenarios' results:

1. 802.11g, maximum data rete, UDP

```
-----Normal Result-----  
Throughput: 30.93 Mbps  
Time: 3879.73 seconds  
-----Best Result-----  
Throughput: 30.93 Mbps  
Time: 3879.73 seconds
```

2. 802.11g, maximum data rete, TCP

```
-----Normal Result-----  
Throughput: 21.43 Mbps  
Time: 5599.63 seconds  
-----Best Result-----  
Throughput: 21.43 Mbps  
Time: 5599.63 seconds
```

3. 802.11g, minimum data rete, UDP

```
-----Normal Result-----  
Throughput: 5.28 Mbps  
Time: 22727.27 seconds  
-----Best Result-----  
Throughput: 5.28 Mbps  
Time: 22727.27 seconds
```

4. 802.11g, minimum data rete, TCP

```
-----Normal Result-----  
Throughput: 4.62 Mbps  
Time: 25974.03 seconds  
-----Best Result-----  
Throughput: 4.62 Mbps  
Time: 25974.03 seconds
```

5. 802.11ac_w2, maximum data rete, UDP

```
-----Normal Result-----  
Throughput: 39.68 Mbps  
Time: 3024.19 seconds  
-----Best Result-----  
Throughput: 25.66 Mbps  
Time: 4676.54 seconds
```

6. 802.11ac_w2, maximum data rete, TCP

```
-----Normal Result-----  
Throughput: 24.69 Mbps  
Time: 4860.27 seconds  
-----Best Result-----  
Throughput: 12.83 Mbps  
Time: 9353.08 seconds
```

7. 802.11ac_w2, minimum data rete, UDP

```
-----Normal Result-----  
Throughput: 6.18 Mbps  
Time: 19417.48 seconds  
-----Best Result-----  
Throughput: 17.65 Mbps  
Time: 6798.87 seconds
```

8. 802.11ac_w2, minimum data rete, TCP

```
-----Normal Result-----  
Throughput: 5.3 Mbps  
Time: 22641.51 seconds  
-----Best Result-----  
Throughput: 10.36 Mbps  
Time: 11583.01 seconds
```

9. 802.11ax, maximum data rete, UDP

```
-----Normal Result-----  
Throughput: 40.27 Mbps  
Time: 2979.89 seconds  
-----Best Result-----  
Throughput: 23.64 Mbps  
Time: 5076.14 seconds
```

10. 802.11ax, maximum data rete, TCP

```
-----Normal Result-----  
Throughput: 23.33 Mbps  
Time: 5143.59 seconds  
-----Best Result-----  
Throughput: 11.82 Mbps  
Time: 10152.28 seconds
```

11. 802.11ax, minimum data rete, UDP

```

-----Normal Result-----
Throughput: 7.12 Mbps
Time: 16853.93 seconds
-----Best Result-----
Throughput: 23.02 Mbps
Time: 5212.86 seconds

```

12. 802.11ax, minimum data rete, TCP

```

-----Normal Result-----
Throughput: 5.93 Mbps
Time: 20236.09 seconds
-----Best Result-----
Throughput: 11.66 Mbps
Time: 10291.6 seconds

```

Standard	Case	Channel width(MHz)	Nss	Nbits	CRate	NChan	SDur(μsec)	Rate(Mbps)	MAC Throughput		Time to transfer data	
									UDP(Mbps)	TCP(Mbps)	UDP(seconds)	TCP(seconds)
802.11g	Normal - Min	20	1	1	1/2	48	4	6	5.28	4.62	22727	25974
	Normal - Max	20	1	6	3/4	48	4	54	30.93	21.43	3880	5600
	Best - Min	20	1	1	1/2	48	4	6	5.28	4.62	22727	25974
	Best - max	20	1	6	3/4	48	4	54	30.93	21.43	3880	5600
802.11ac_w2	Normal - Min	20	1	1	1/2	52	3.6	7.2	6.18	5.3	19417	22642
	Normal - Max	20	1	8	5/6	52	3.6	96.3	39.68	24.69	3024	4860
	Best - Min	160	8	1	1/2	52	3.6	57.6	17.65	10.36	6799	11583
	Best - max	160	8	8	5/6	468	3.6	6933.6	25.66	12.83	4677	9353
802.11ax	Normal - Min	20	1	1	1/2	234	13.6	8.6	7.12	5.93	16854	20236
	Normal - Max	20	1	10	5/6	234	13.6	143.4	40.27	23.33	2980	5144
	Best - Min	160	8	1	1/2	1960	13.6	576.5	23.02	11.66	5213	10292
	Best - max	160	8	10	5/6	1960	13.6	9607.8	23.64	11.82	5076	10152