

UTP Q4 2021 - December TAPE C QUOTE METRICS

Quarter	System Availability (1)	Peak Messages Per Second (thousands)	Capacity Messages Per Second (thousands)	Capacity vs Peak Ratio	Peak Messages Per 100 Milliseconds (thousands) (2)	Capacity Messages Per 100 Milliseconds (thousands)	Capacity vs Peak Ratio	Peak Messages Per 10 Milliseconds (thousands)	Peak Messages Per 1 Millisecond (thousands)	Peak Transactions Per Day (millions)	Capacity Transactions Per Day (millions)	Average Latency (µs)	Median Latency (µs)	10th Percentile Latency (µs)	90th Percentile Latency (µs)	99th Percentile Latency (µs)
1Q18	100.00%	266.4	2,809.8	10.5:1	72.3	283.1	3.9:1	n/a	n/a	412.3	5,461.5	16.7	16.5	15.4	18.2	22.2
2Q18	100.00%	317.6	2,809.8	8.8:1	68.5	283.1	4.1:1	n/a	n/a	279.8	5,461.5	16.8	16.6	15.5	18.2	22.7
3Q18	100.00%	295.6	2,809.8	9.5:1	70.7	283.1	4.0:1	n/a	n/a	205.3	5,461.5	16.8	16.5	15.4	18.0	22.4
4Q18	100.00%	297.6	3,075.9	10.3:1	83.7	308.4	3.7:1	n/a	n/a	476.1	5,461.5	16.9	16.6	15.5	18.6	23.8
1Q19	100.00%	372.3	3,075.9	8.3:1	81.6	308.4	3.8:1	20.4	3.4	321.5	5,461.5	17.0	16.6	15.5	18.6	24.5
2Q19	100.00%	338.9	3,075.9	9.1:1	75.6	308.4	4.1:1	20.0	3.4	301.2	5,461.5	16.9	16.5	15.4	18.4	23.3
3Q19	100.00%	361.9	3,075.9	8.5:1	74.5	308.4	4.1:1	19.5	3.3	314.9	5,461.5	16.9	16.5	15.4	18.4	22.9
4Q19	100.00%	356.1	3,075.9	8.6:1	97.2	310.8	3.2:1	18.8	3.3	264.5	5,461.5	16.8	16.5	15.5	18.4	22.7
1Q20	100.00%	324.7	3,075.9	9.5:1	95.8	310.8	3.2:1	20.5	3.4	614.8	5,461.5	16.8	16.5	15.4	18.4	22.9
2Q20	100.00%	334.3	3,075.9	9.2:1	87.9	310.8	3.5:1	17.8	3.4	570.3	5,461.5	15.0	14.5	13.5	16.2	20.1
3Q20	100.00%	322.4	3,490.0	10.8:1	90.6	1,290.0	14.2:1	16.1	3.5	534.9	16,777.8	13.2	13.0	12.0	14.6	18.0
Jul 2020	n/a	322.4	3,075.9	9.5:1	90.6	310.8	3.4:1	16.1	3.4	440.4	5,461.5	13.2	13.0	12.0	14.6	18.1
Aug 2020	n/a	214.3	3,490.0	16.3:1	72.9	1,290.0	17.7:1	15.1	3.4	342.8	16,777.8	13.1	13.0	11.9	14.5	17.7
Sep 2020	n/a	309.8	3,490.0	11.3:1	73.2	1,290.0	17.6:1	16.0	3.5	534.9	16,777.8	13.2	13.0	12.0	14.8	18.4
4Q20	100.00%	372.5	3,490.0	9.4:1	91.3	1,290.0	14.1:1	18.9	5.6	462.7	16,777.8	13.0	12.8	11.7	14.5	19.0
Oct 2020	n/a	344.3	3,490.0	10.1:1	91.3	1,290.0	14.1:1	17.0	3.4	433.9	16,777.8	13.0	12.7	11.7	14.5	19.1
Nov 2020	n/a	273.2	3,490.0	12.8:1	83.8	1,290.0	15.4:1	16.9	3.8	462.7	16,777.8	13.1	12.8	11.7	14.5	19.1
Dec 2020	n/a	372.5	3,490.0	9.4:1	82.2	1,290.0	15.7:1	18.9	5.6	384.8	16,777.8	13.0	12.8	11.7	14.4	18.8
1Q21	100.00%	493.2	3,490.0	7.1:1	101.3	1,290.0	12.7:1	18.2	4.4	884.0	16,777.8	13.1	12.8	11.7	14.5	18.6
Jan 2021	n/a	250.6	3,490.0	13.9:1	84.7	1,290.0	15.2:1	18.2	3.7	537.4	16,777.8	13.1	12.8	11.7	14.5	18.6
Feb 2021	n/a	334.7	3,490.0	10.4:1	85.2	1,290.0	15.1:1	16.7	3.8	760.7	16,777.8	13.1	12.8	11.7	14.5	18.4
Mar 2021	n/a	493.2	3,490.0	7.1:1	101.3	1,290.0	12.7:1	17.8	4.4	884.0	16,777.8	13.1	12.8	11.7	14.6	18.8
2Q21	100.00%	545.1	3,490.0	6.4:1	95.8	1,290.0	13.5:1	18.4	4.8	822.0	16,777.8	13.2	13.0	11.7	14.6	19.1
Apr 2021	n/a	322.8	3,490.0	10.8:1	95.8	1,290.0	13.5:1	18.3	4.4	727.6	16,777.8	13.1	13.0	11.7	14.6	19.1
May 2021	n/a	390.0	3,490.0	8.9:1	88.8	1,290.0	14.5:1	18.4	4.8	822.0	16,777.8	13.2	13.0	11.7	14.8	19.5
Jun 2021	n/a	545.1	3,490.0	6.4:1	95.1	1,290.0	13.6:1	18.4	4.8	649.9	16,777.8	13.2	13.0	11.7	14.7	19.1
3Q21	100.00%	484.6	3,490.0	7.2:1	105.8	1,290.0	12.2:1	22.1	5.0	778.0	16,777.8	13.1	12.8	11.7	14.6	18.8
Jul 2021	n/a	328.1	3,490.0	10.6:1	91.6	1,290.0	14.1:1	20.1	4.9	778.0	16,777.8	13.1	12.8	11.7	14.6	18.8
Aug 2021	n/a	383.0	3,490.0	9.1:1	93.0	1,290.0	13.9:1	22.1	5.0	691.2	16,777.8	13.1	12.8	11.7	14.5	18.4
Sep 2021	n/a	484.6	3,490.0	7.2:1	105.8	1,290.0	12.2:1	22.1	4.8	768.7	16,777.8	13.1	12.8	11.7	14.6	18.9
4Q21	100.00%	353.4	3,490.0	9.9:1	94.0	1,290.0	13.7:1	23.7	5.2	737.9	16,777.8	13.1	12.8	11.7	14.6	19.1
Oct 2021	n/a	318.0	3,490.0	11.0:1	94.0	1,290.0	13.7:1	23.6	5.0	737.9	16,777.8	13.1	12.8	11.7	14.6	19.1
Nov 2021	n/a	337.4	3,490.0	10.3:1	81.0	1,290.0	15.9:1	23.1	4.6	649.6	16,777.8	13.1	12.8	11.7	14.5	18.8
Dec 2021	n/a	353.4	3,490.0	9.9:1	89.8	1,290.0	14.4:1	23.7	5.2	713.7	16,777.8	13.1	12.8	11.7	14.6	19.3

(1) Beginning Q1 2016 measurement of System Availability is reflective of the entire environment and no longer by data service, on a quarterly basis in accordance with the SLA with the UTP committee. Service level guidelines remain: (A) 99.98% system availability; (B) 10 minute recovery time for full system failures; (C) Operations production support 24x6 in primary and secondary data center and test support provided on Saturdays.

(2) Beginning Q1 2014, capacity planning interval changed from 1-second to 100-milliseconds.

(3) Beginning Q1 2016, 10th and 99th percentile latency measurements have been included.

UTP Q4 2021 - December TAPE C TRADE METRICS

Quarter	System Availability (1)	Peak Messages Per Second (thousands)	Capacity Messages Per Second (thousands)	Capacity vs Peak Ratio	Peak Messages Per 100 Milliseconds (thousands) (2)	Capacity Messages Per 100 Milliseconds (thousands)	Capacity vs Peak Ratio	Peak Messages Per 10 Milliseconds (thousands)	Peak Messages Per 1 Millisecond (thousands)	Peak Transactions Per Day (millions)	Capacity Transactions Per Day (millions)	Average Latency (µs)	Median Latency (µs)	10th Percentile Latency (µs)	90th Percentile Latency (µs)	99th Percentile Latency (µs)
1Q18	100.00%	76.5	2,741.2	35.8:1	17.2	300.0	17.4:1	n/a	n/a	22.3	3,691.9	17.5	17.5	16.3	18.9	21.1
2Q18	100.00%	98.1	2,741.2	28.0:1	18.5	300.0	16.3:1	n/a	n/a	17.2	3,691.9	17.4	17.3	16.3	18.8	20.9
3Q18	100.00%	94.5	2,741.2	29.0:1	22.3	300.0	13.5:1	n/a	n/a	16.5	3,691.9	17.5	17.3	16.3	18.8	20.7
4Q18	100.00%	68.5	3,143.7	45.9:1	18.5	300.0	16.2:1	n/a	n/a	22.1	4,200.0	17.5	17.3	16.3	18.8	20.7
1Q19	100.00%	89.8	3,143.7	35.0:1	17.8	300.0	16.8:1	7.3	3.3	17.7	4,200.0	17.5	17.3	16.3	18.8	20.7
2Q19	100.00%	99.4	3,143.7	31.6:1	28.1	300.0	10.7:1	7.8	3.4	19.6	4,200.0	17.5	17.3	16.3	18.9	21.1
3Q19	100.00%	84.5	3,143.7	37.2:1	33.1	300.0	9.1:1	8.2	3.3	20.7	4,200.0	17.5	17.3	16.2	18.9	21.3
4Q19	100.00%	95.4	3,143.7	33.0:1	35.8	350.8	9.8:1	8.1	3.3	18.4	4,200.0	17.5	17.3	16.3	18.9	21.3
1Q20	100.00%	56.0	3,143.7	56.1:1	31.6	350.8	11.1:1	8.4	3.4	36.7	4,200.0	17.6	17.3	16.3	19.1	23.1
2Q20	100.00%	84.4	3,143.7	37.2:1	32.2	350.8	10.9:1	9.5	3.5	33.3	4,200.0	15.8	15.2	14.1	16.6	20.7
3Q20	100.00%	101.1	3,560.0	35.2:1	28.0	1,330.0	47.5:1	8.0	3.6	35.5	11,058.8	14.9	14.2	12.8	15.7	22.0
Jul 2020	n/a	57.8	3,143.7	54.4:1	28.0	350.8	12.5:1	7.6	3.3	31.5	4,200.0	14.5	14.2	13.0	15.5	20.1
Aug 2020	n/a	67.8	3,560.0	52.5:1	22.0	1,330.0	60.5:1	5.9	3.5	28.9	11,058.8	14.6	14.2	12.8	15.7	22.2
Sep 2020	n/a	101.1	3,560.0	35.2:1	22.4	1,330.0	59.3:1	8.0	3.6	35.5	11,058.8	15.7	14.1	12.8	15.7	23.8
4Q20	100.00%	95.2	3,560.0	37.4:1	28.0	1,330.0	47.4:1	9.9	3.9	38.8	11,058.8	15.0	13.9	12.7	15.5	23.6
Oct 2020	n/a	54.3	3,560.0	65.5:1	28.0	1,330.0	47.4:1	9.9	3.6	28.9	11,058.8	14.8	13.9	12.7	15.5	22.9
Nov 2020	n/a	73.2	3,560.0	48.7:1	26.8	1,330.0	49.7:1	9.7	3.8	38.8	11,058.8	14.5	13.9	12.7	15.4	23.7
Dec 2020	n/a	95.2	3,560.0	37.4:1	20.2	1,330.0	65.7:1	6.5	3.9	33.7	11,058.8	15.6	14.1	12.8	15.5	23.8
1Q21	100.00%	442.6	3,560.0	8.0:1	47.1	1,330.0	28.3:1	8.5	4.2	54.3	11,058.8	24.4	13.9	12.7	15.5	24.5
Jan 2021	n/a	442.6	3,560.0	8.0:1	47.1	1,330.0	28.3:1	8.5	4.0	54.3	11,058.8	44.6	13.9	12.7	15.4	24.5
Feb 2021	n/a	71.5	3,560.0	49.8:1	20.8	1,330.0	63.9:1	7.0	4.1	49.7	11,058.8	15.5	14.1	12.8	15.5	26.8
Mar 2021	n/a	113.5	3,560.0	31.4:1	37.6	1,330.0	35.4:1	6.9	4.2	54.1	11,058.8	15.0	14.1	12.8	15.5	22.7
2Q21	100.00%	144.6	3,560.0	24.6:1	26.2	1,330.0	50.8:1	7.2	4.7	39.6	11,058.8	14.8	14.1	12.8	15.5	22.7
Apr 2021	n/a	57.0	3,560.0	62.4:1	19.5	1,330.0	68.3:1	7.1	4.4	33.2	11,058.8	15.3	14.1	12.8	15.5	22.7
May 2021	n/a	92.5	3,560.0	38.5:1	23.2	1,330.0	57.4:1	7.2	4.7	39.6	11,058.8	14.5	14.1	12.8	15.5	22.1
Jun 2021	n/a	144.6	3,560.0	24.6:1	26.2	1,330.0	50.8:1	6.9	4.7	38.1	11,058.8	14.6	14.1	12.8	15.7	23.0
3Q21	100.00%	136.5	3,560.0	26.1:1	29.4	1,330.0	45.3:1	9.3	4.9	37.9	11,058.8	14.7	14.1	12.8	15.7	23.1
Jul 2021	n/a	62.3	3,560.0	57.2:1	21.2	1,330.0	62.8:1	8.6	4.8	35.2	11,058.8	14.4	14.1	12.8	15.7	22.9
Aug 2021	n/a	80.4	3,560.0	44.3:1	21.2	1,330.0	62.9:1	6.4	4.9	37.1	11,058.8	15.2	14.1	12.8	15.7	23.1
Sep 2021	n/a	136.5	3,560.0	26.1:1	29.4	1,330.0	45.3:1	9.3	4.7	37.9	11,058.8	14.5	14.1	12.8	15.7	23.3
4Q21	100.00%	156.4	3,560.0	22.8:1	26.7	1,330.0	49.8:1	13.5	5.1	47.2	11,058.8	18.6	14.1	12.7	15.5	23.6
Oct 2021	n/a	77.7	3,560.0	45.8:1	19.4	1,330.0	68.6:1	13.5	4.8	39.8	11,058.8	27.1	14.1	12.7	15.7	23.6
Nov 2021	n/a	112.5	3,560.0	31.6:1	21.7	1,330.0	61.2:1	8.1	4.5	44.8	11,058.8	14.5	13.9	12.7	15.5	24.3
Dec 2021	n/a	156.4	3,560.0	22.8:1	26.7	1,330.0	49.8:1	6.8	5.1	47.2	11,058.8	14.5	14.1	12.7	15.5	23.0

(1) Beginning Q1 2016 measurement of System Availability is reflective of the entire environment and no longer by data service, on a quarterly basis in accordance with the SLA with the UTP committee. Service level guidelines remain: (A) 99.98% system availability; (B) 10 minute recovery time for full system failures; (C) Operations production support 24x6 in primary and secondary data center and test support provided on Saturdays.

(2) Beginning Q1 2014, capacity planning interval changed from 1-second to 100-milliseconds.

(3) Beginning Q1 2016, 10th and 99th percentile latency measurements have been included.