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test@teatd1:~$ iperf -s -u -p 6666 -i 1 -f M
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Server listening on UDP port 6666
Receiving 1470 byte datagrams
UDP buffer size: 0.28 MBytes (default)

[ 3] local 10.138.0.2 port 6666 connected with 10.154.0.2 port 43756
[ 4] local 10.138.0.2 port 6666 connected with 10.154.0.2 port 58245
[ 1] 0.0-1.0 sec 16 datagrams received out-of-order
[ 3] 0.0-1.0 sec 16 datagrams received out-of-order
[ 4] 0.0-1.0 sec 0.66 MBytes/sec 0.66 MBytes/sec 3.532 ms 82/ 558 (10%)
[SUM] 0.0-1.0 sec 0.66 MBytes/sec 0.66 MBytes/sec 3.532 ms 82/ 558 (10%)
[ 3] 1.0-2.0 sec 0.46 MBytes/sec 0.46 MBytes/sec 12,403 ms 0/ 331 (0%)
[ 4] 1.0-2.0 sec 0.46 MBytes/sec 0.46 MBytes/sec 3,718 ms 1/ 338 (0.3%)
[SUM] 1.0-2.0 sec 0.46 MBytes/sec 0.46 MBytes/sec 12,403 ms 0/ 331 (0%)
[ 3] 2.0-3.0 sec 0.93 MBytes/sec 0.93 MBytes/sec 5,282 ms 0/ 295 (0%)
[ 4] 2.0-3.0 sec 0.41 MBytes/sec 0.42 MBytes/sec 5,282 ms 0/ 295 (0%)
[SUM] 2.0-3.0 sec 0.93 MBytes/sec 0.93 MBytes/sec 5,282 ms 0/ 295 (0%)
[ 4] 3.0-4.0 sec 0.70 MBytes/sec 0.70 MBytes/sec 1,961 ms 0/ 582 (0%)
[ 3] 3.0-4.0 sec 0.70 MBytes/sec 0.70 MBytes/sec 1,854 ms 0/ 494 (0%)
[SUM] 3.0-4.0 sec 0.70 MBytes/sec 0.70 MBytes/sec 1,961 ms 0/ 582 (0%)
[ 3] 3.0-4.9 sec 0.49 MBytes/sec 1.44 MBytes/sec 2,979 ms 0/ 492 (0%)
[ 4] 3.0-4.9 sec 0.49 MBytes/sec 0.49 MBytes/sec 3,792 ms 0/ 584 (0%)
[SUM] 3.0-4.9 sec 0.49 MBytes/sec 1.44 MBytes/sec 2,979 ms 0/ 492 (0%)
[ 4] 4.0-5.9 sec 0.69 MBytes/sec 0.69 MBytes/sec 5,022 ms 0/ 493 (0%)
[ 3] 4.0-5.9 sec 0.69 MBytes/sec 0.69 MBytes/sec 5,022 ms 0/ 584 (0%)
[SUM] 4.0-5.9 sec 0.69 MBytes/sec 1.44 MBytes/sec 5,022 ms 0/ 493 (0%)
[ 4] 5.0-6.9 sec 0.69 MBytes/sec 0.69 MBytes/sec 5,022 ms 0/ 493 (0%)
[ 3] 5.0-6.9 sec 0.69 MBytes/sec 0.69 MBytes/sec 5,022 ms 0/ 584 (0%)
[SUM] 5.0-6.9 sec 0.69 MBytes/sec 1.44 MBytes/sec 5,022 ms 0/ 493 (0%)
[ 3] 6.0-7.0 sec 0.71 MBytes/sec 0.71 MBytes/sec 1,854 ms 0/ 583 (0%)
[ 4] 6.0-7.0 sec 0.71 MBytes/sec 0.71 MBytes/sec 1,854 ms 0/ 493 (0%)
[SUM] 6.0-7.0 sec 0.71 MBytes/sec 1.44 MBytes/sec 1,854 ms 0/ 583 (0%)
[ 3] 7.0-8.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 2,860 ms 0/ 492 (0%)
[ 4] 7.0-8.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 3,860 ms 0/ 584 (0%)
[SUM] 7.0-8.0 sec 0.69 MBytes/sec 1.44 MBytes/sec 2,860 ms 0/ 492 (0%)
[ 3] 8.0-9.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 5,047 ms 0/ 492 (0%)
[ 4] 8.0-9.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 3,857 ms 0/ 584 (0%)
[SUM] 8.0-9.0 sec 1.44 MBytes/sec 2,44 MBytes/sec 5,047 ms 0/ 492 (0%)
[ 3] 9.0-10.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 1,809 ms 0/ 493 (0%)
[ 4] 9.0-10.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 2,051 ms 0/ 583 (0%)
[SUM] 9.0-10.0 sec 0.69 MBytes/sec 1.44 MBytes/sec 1,809 ms 0/ 493 (0%)
[ 4] 10.0-11.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 3,115 ms 0/ 493 (0%)
[ 3] 10.0-11.0 sec 0.69 MBytes/sec 0.69 MBytes/sec 3,382 ms 0/ 584 (0%)
[SUM] 10.0-11.0 sec 0.69 MBytes/sec 1.44 MBytes/sec 3,115 ms 0/ 493 (0%)
[ 4] 10.0-11.0 sec 7.28 MBytes/sec 0.65 MBytes/sec 7,778 ms 82/ 5215 (1.6%)
[ 3] 10.0-11.0 sec 7.28 MBytes/sec 0.65 MBytes/sec 7,778 ms 82/ 5215 (1.6%)
[ 3] 0.0-11.1 sec 7.25 MBytes/sec 0.69 MBytes/sec 6,099 ms 11/ 5182 (0.21%)
[ 3] 0.0-11.1 sec 17 datagrams received out-of-order
[SUM] 0.0-11.1 sec 14.4 MBytes 1.38 MBytes/sec

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Fig. 27. US-West1-b UDP Parallel Transmission

For the US region, the speed is about 10 MB/S. And the UDP jitter is about 0.3ms for single transmission while 0.6ms for parallel.

To conclude, due to the slow start, the bandwidth of tcp will be increased and become stable in a few minutes after initializing the transmission. For the UDP transmission, it is a best-effort protocol so there is no increasing stage. All the factor which influence the speed is the UDP receiver buffer size and the network environment.

REFERENCES

- [1] Regions and Zones, Google Cloud Platform Document [Online]. Available: <https://cloud.google.com/compute/docs/regions-zones/>