Performance Result

Preparation

Start IndexServer and 3 Peers. (Peer1: port 1001, Perr2: port 1002, Peer3: port 1003.

Test lookup evaluation:

1. One Peer evaluation (the data is avg time)

Test / Loop time	1	2	3	4	Average
1000	0.366ms	0.380ms	0.349ms	0.368ms	0.365ms
2000	0.395ms	0.366ms	0.369ms	0.375ms	0.376ms

The loop time does not affect the lookup time.

2.

Loop time: 5000.

Test / Peer	1	2	3	4	Average
1	0.727ms	0.721ms	0.720ms	0.713ms	0.724ms
2	0.701ms	0.723ms	0.721ms	0.718ms	0.715ms

It's about 2 times long of One Peer evaluation.

3. Three Peer evaluation:

Loop time: 5000.

Test / Peer	1	2	3	4	Average
1	0.951ms	0.966ms	0.975ms	0.916ms	0.952ms
2	0.923ms	0.967ms	1.046ms	0.837ms	0.943ms
3	0.872ms	0.860ms	0.926ms	0.875ms	0.883ms

It's about 3 times long of One Peer evaluation.

Overall, the loop time does not affect the lookup time as they are in sequence.
More server will get higher lookup time, as they all occupy Index Server's source to run lookup().
It is about in linear relationship.

Download evaluation:

1. Download 10kB file e.txt:

Test / Loop time	1	2	3	4	Average
1000	9.612MB/s	10.463MB/s	10.924MB/s	9.590MB/s	10.147MB/s

2000	9.886MB/s	9.413MB/s	10.824MB/s	10.258Mb/s	10.095MB/s

The loop time does not affect the download speed.

2. Download 30Kb file o.txt:

Test / Loop time	1	2	3	4	Average
1000	28.327MB/s	29.723MB/s	27.234MB/s	29.343MB/s	28.656MB/s
2000	29.455MB/s	26.331MB/s	25.743MB/s	28.416Mb/s	27.486MB/s

Since the disk need lots of time to search a file, the larger file should has high size/time ration.

Overall, the loop time does not affect the download speed as they are in sequence.
Larger file has higher download speed.