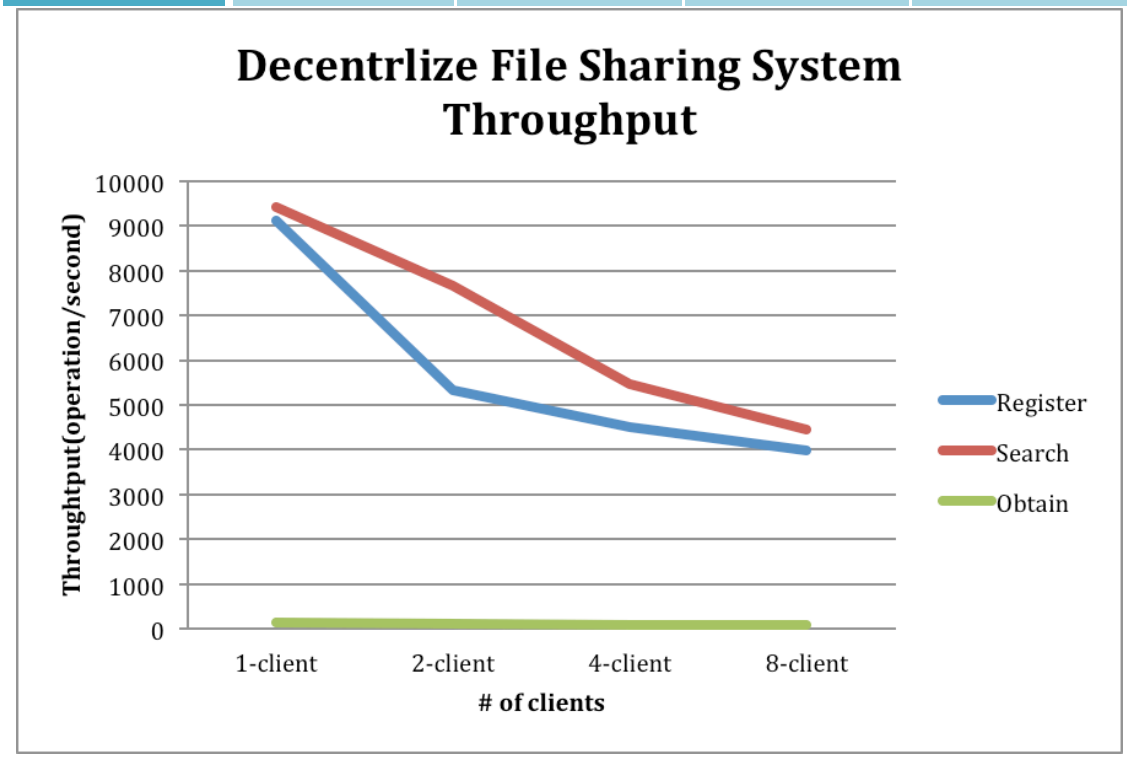
Performance Evaluation

Experiment Set:1

There are results provided for decentralize file sharing system. It includes operations- register(), search(), obtain() for 100k operation of 1KB file size in different number of clients and 8 servers.

Throughput : operation/second

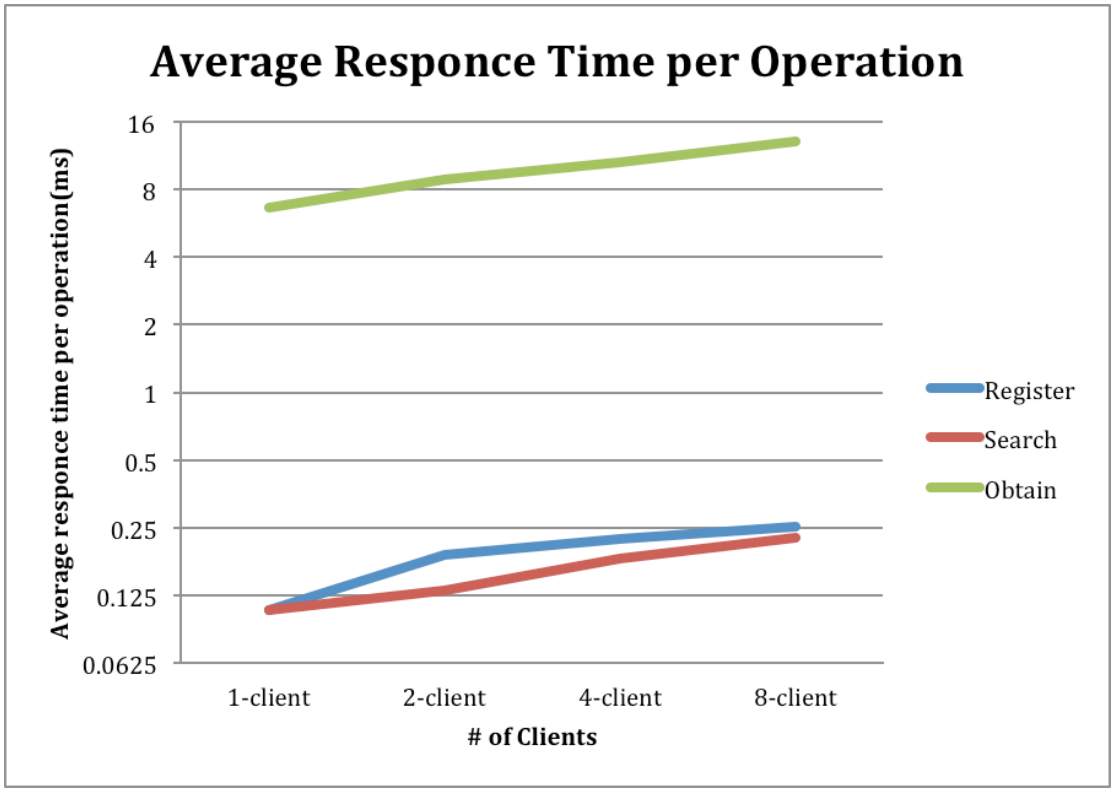
Operation	1-client	2-client	4-client	8-client
Register	9110.7	5319.1	4502.4	3983.4
Search	9416.1	7645.2	5470.4	4440.4
Obtain	151.37	113.52	94.44	76.47



Here throughpu of operation are decreasing when number of client increasing but decrement in throughput is not constant rate, rate of decrement is also decreasing. So, when number of clients increasing in decenralized system throughput will become constant at higher number of clients.

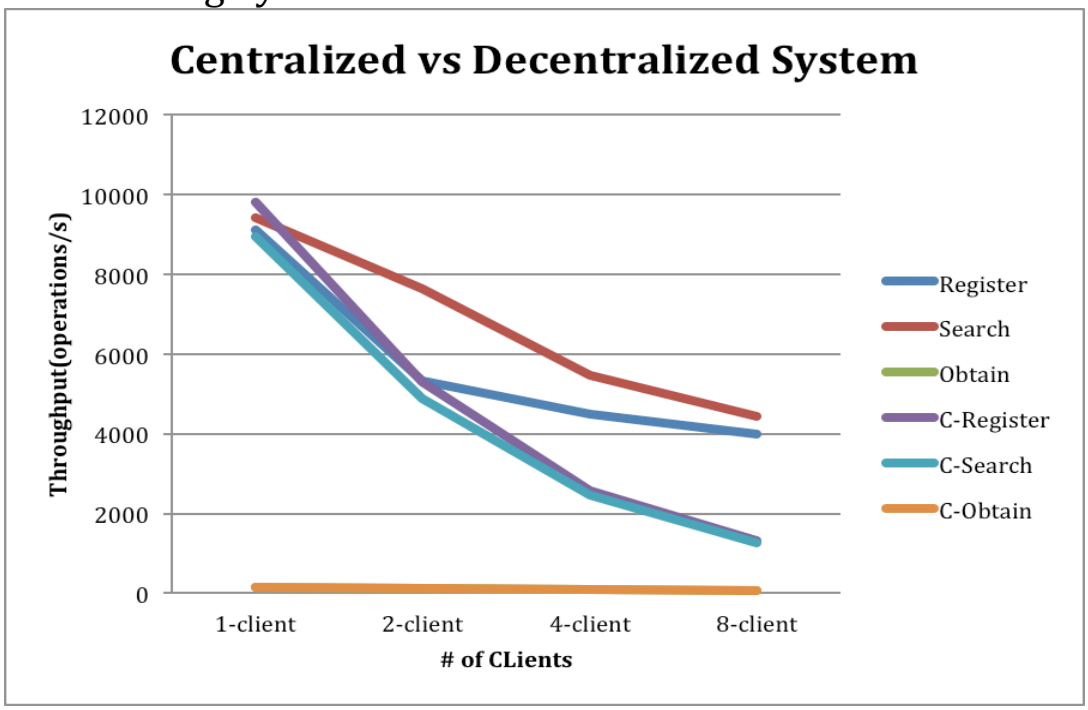
Average Response Time/Operation

Operation	1-client	2-client	4-client	8-client
Register	0.1067	0.1888	0.2220	0.2523
Search	0.1069	0.1308	0.1828	0.2252
Obtain	6.606	8.809	10.588	13.076



Average response time is opposite to throughput, it will increase when number of client increase but in decreasing rate.

Comparision of operations in Centralized and Decentralized File-Sharing System.

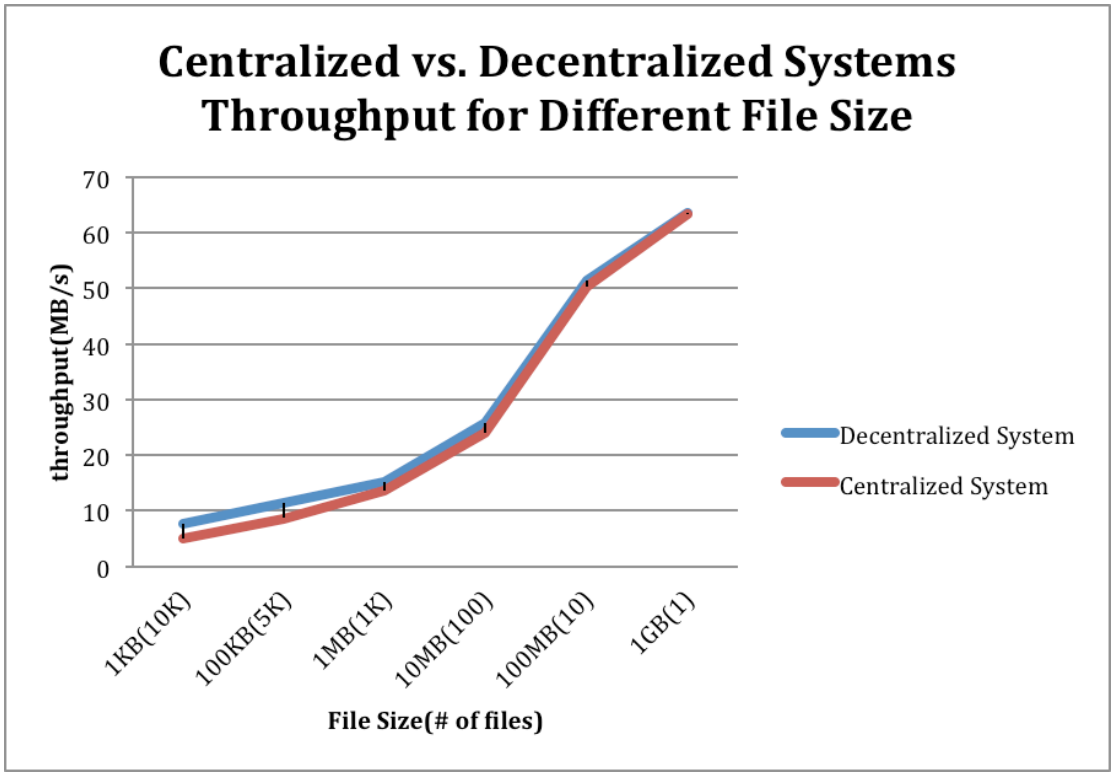


From above comparision between centralized vs decentrlized systems' throughput, we can say that for centralized system there is only on indexing server for all client, so when clients tries to register or search operation on system concurrently then it will process one only one indexing server and it will takes more time then decenralized system. As number of clients increases in centralized system, throughput also decrease as almost same rate, but in decentralize system it will decrease in decreasing rate.
Here we are performing this experiments in very smaller scale, so we can't see major defference in throughput of cenralized system vs Decentralized system.

Experiment Set:2

In this experiment we are ging to use different size of files -1KB, 100KB, 1MB, 10MB, 100MB, 1GB.

	Download Throughput	
File Size(Operations)	Decentralized System	Centralized System
1KB(10K)	7.647 MB/s	5.001 MB/s
100KB(5K)	11.459 MB/s	8.679 MB/s
1MB(1K)	15.083 MB/s	13.595 MB/s
10MB(100)	25.690 MB/s	24.076 MB/s
100MB(10)	51.398 MB/s	50.389 MB/s
1GB(1)	63.579 MB/s	63.391 MB/s



Here from above comparision between Centralized and Decentralized file sharing systems' throughput in MB/s for different file sizes, we can see that Decentralized system has higher throughput then centrlizes system when files are smaller size. Reson behind this difference is number of files(operations) in experiment. Because higher number of operations take more time in centralize system then Decentralized system. We have performed this on very smaller scale so there is minimul difference between cetralized and decenralized systems.

Amazon Aws : It is also working on amazon AWS m3.large instances.