CS550 Advanced Operating Systems
Programming Assignment 3

Evaluation
Experiment-2

AMAZON AWS

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The assignment carries out Evaluation of the Decentralized Indexing server and Peer server on 100k operations runs on Amazon aws .

I've evaluated the time taken to **Register ,Search** operations on a Indexing server a single node ,two nodes ,four nodes and eight running concurrently over **100k** operations.
And Evaluated the time taken to **Obtain** Files on a Peer server a single node ,two nodes ,four nodes and eight running concurrently over 100k operations. And File Size is **1KB.**

1. Register:

single node: The time taken to Register 100k Files on a single node at is 38476 **millisecs**.
Two ***nodes :*** The time taken to Register 100k Files on each of 2 nodes is :
node 1 - 42982millisecs
node 2 - 39476millisecs
Average time taken by a node to Register 100k Files is : 42982+39476/2
= **41299millisecs**

Four nodes : The time taken to Register 100k Files on each of four nodes is :
node 1 - 36745 millisecs
node 2 - 39874 millisecs
node 3- 41759 millisecs
node 4- 44572millisecs
Average time taken by a node to Register 100k Files
is:36745+39874+41759+44572/4= 40737 **millisecs**
Eight nodes : The time taken to Register 100k Files on each of Eight nodes is :
node 1 - 41278 millisecs
node 2 - 45782 millisecs
node 3- 43571 millisecs
node 4 - 39451 millisecs
node 5 - 46716 millisecs
node 6- 48732 millisecs
node 7 - 45937 millisecs
node 8 - 43759 millisecs
Average time taken by a node to Register 100k Files
is:41278+45782+43571+39451+46716+48732+45937+43759 /8= **44385millisecs**

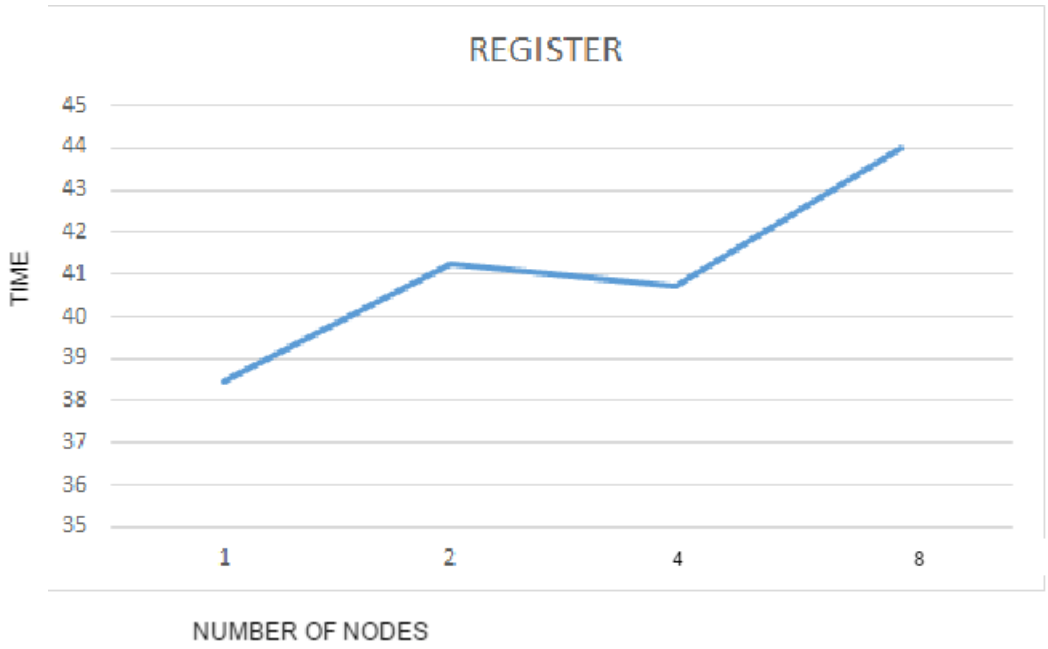
Average time taken for a single node per Register 100k Files : 38.476 secs

Average time taken for two concurrent nodes per Register 100k Files : 41.299 secs

Average time taken for four concurrent nodes per Register 100k Files : 40.737secs
Average time taken for a eight concurrent nodes per Register 100k Files : 44.385 secs

PLOT FOR REGISTER :

X-axis : nodes
Y-Axis : time (secs)



2. SEARCH :

single node: The time taken to Search 100k Files on a single node at is 18746 **millisecs**.
Two ***nodes :*** time taken to Search 100k Files on each of 2 nodes is :

node 1 - 16782 millisecs
node 2 - 20213 millisecs

Average time taken by a node to Search 100k Files is :16782+20213 /2
=18497.6 **millisecs**

Four nodes : Time taken to Search 100k Files on each of four nodes is :
node 1 - 19783 millisecs
node 2 -22458 millisecs
node 3- 20924millisecs
node 4- 24788 millisecs

Average time taken by a node to make Search 100k Files is
19783+22458+20924+24788/4= 21988 **millisecs**

Eight nodes : Time taken to Search 100k Files on each of Eight nodes is :
node 1 - 24785 millisecs
node 2 - 27456 millisecs
node 3- 22458 millisecs
node 4 - 23564millisecs
node 5 - 27853 millisecs
node 6- 28634millisecs
node 7 - 31245millisecs
node 8 - 28635millisecs

Average time taken by a node to Search 100k Files is
24785+27456+22458+23564+27853+28634+31245+28635/8= 268287
millisecs

Average time taken for a single nodes per 100k Search Files : 18.746secs

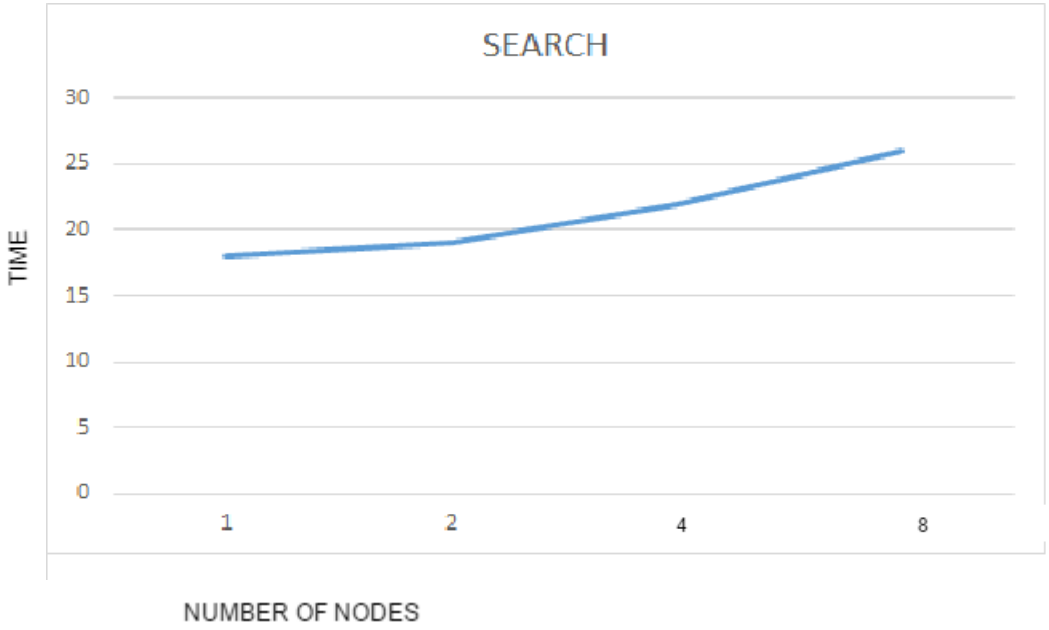
Average time taken for two concurrent nodes per 100k Search Files : 18.497 secs

Average time taken for four concurrent nodes per 100k Search Files : 21.988 secs

Average time taken for a eight concurrent nodes per 100k Search Files : 26.82secs

PLOT FOR SEARCH:
X-axis : nodes

Y-axis : time (secs)



3. Obtain:

single node: The time taken to obtain 100k Files at a single node at is **3954623millisecs**.
two nodes : Time taken to obtain 100k Files at 2 nodes concurrently i.e., 200k files on both nodes is :
node 1 - 3547821 millisecs
node 2 - 3854265 millisecs
Average time taken by a node to obtain 100k Files is 3547821+3854265 /2
= **3701043 millisecs**

Four nodes : Time taken to obtain 100k Files on each of four nodes is :
node 1 - 4126752 millisecs
node 2 - 4427863 millisecs
node 3- 4725368millisecs
node 4- 4359762 millisecs

Average time taken by a node to obtain 100k Files is
:4126752+4427836+47253654+4359762/4= 4409936 **millisecs**

Eight nodes : Time taken to obtain 100k Files on each of Eight nodes is :

node 1 - 4235762 millisecs
node 2 - 4687325 millisecs
node 3- 4968234 millisecs
node 4 - 5314762 millisecs
node 5 - 5129326millisecs
node 6- 4756284millisecs
node 7 - 5142542millisecs
node 8 - 5478562 millisecs

Average time taken by a node to obtain 100k Files for 8 nodes is =4934099 **millisecs**

Average time taken for a single node to obtain 100k Files : 3954millisecs

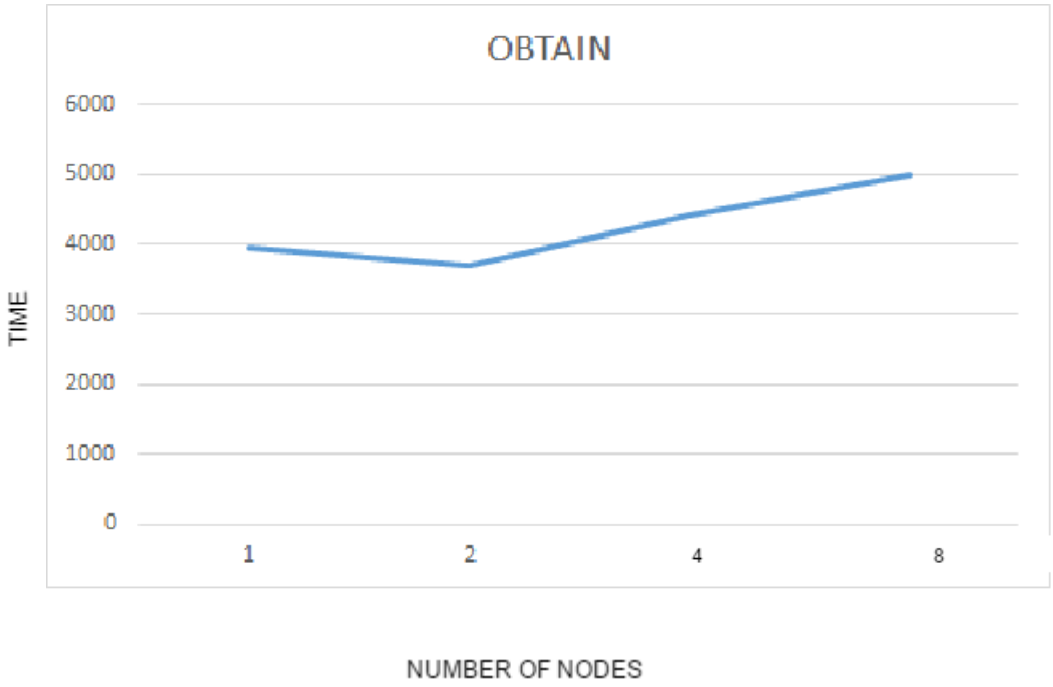
Average time taken for two concurrent nodes to obtain 100k Files : 3701 secs

Average time taken for four concurrent nodes to obtain 100k Files : 4409secs

Average time taken for a eight concurrent nodes to obtain 100k Files: 4934 millisecs

PLOT FOR OBTAIN:

X-axis : nodes
Y-axis : time(millisecs)



Conclusion:

Here,we have evaluated register, search and obtain the files of size 1kb.and it runs on Amazon aws cloud over 100k files operations on each server.As the number of nodes increases,time to register will increases in DIS, and search is increases initially because IN DHT, it runs on core uses maximum speed. And obtaining file is also uses maximum core speed.In DHT,all the server uses maximum efficiency.