CS550 Advanced Operating Systems
Programming Assignment 3

Evaluation
Experiment-2

Amazon Aws

submitted by:
Chiranjeevi Ankamreddy
A20359837

The assignment carries out Evaluation of the Decentralized Indexing server and Peer server on 10k operations run 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 **10k** 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 10k operations. And File Size is **100 kB.**

1. Register:

single node: The time taken to Register 10k Files on a single node at is 2066 **millisecs**.
Two ***nodes :*** The time taken to Register 10k Files on each of 2 nodes is :
node 1 3963millisecs
node 2 4252 millisecs
Average time taken by a node to Register 10k Files is : 3963+4252/2
= **4107 millisecs**

Four nodes : The time taken to Register 10k Files on each of four nodes is :
node 1 5571 millisecs
node 2 5591 millisecs
node 3- 4722 millisecs
node 4- 5791millisecs
Average time taken by a node to Register 10k Files is:5571+5591+4722+5791/4
=5418 **millisecs**

Eight nodes : The time taken to Register 10k Files on each of Eight nodes is :
node 1 6902 millisecs
node 2 6569 millisecs
node 3- 6703 millisecs
node 4 6069 millisecs
node 5 6489 millisecs
node 6- 6187millisecs
node 7 6255 millisecs
node 8 6894 millisecs
Average time taken by a node to Register 10k Files is:
6902+6569+6703+6069+6489+6187+6255+6894 /8= 6508.5 **millisecs**

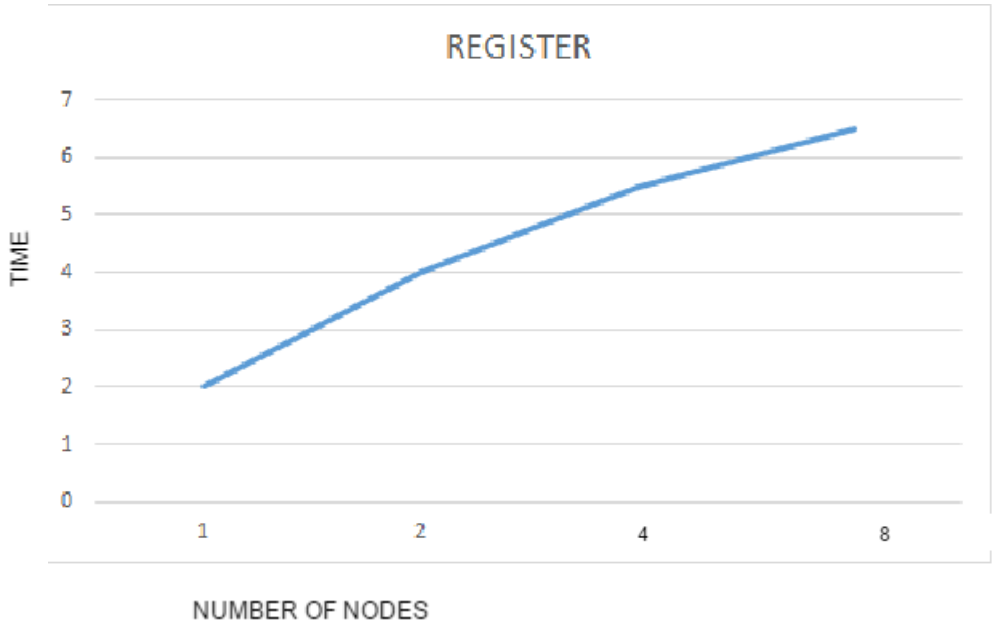
Average time taken for a single node per Register 10k Files : 2.066 secs

Average time taken for two concurrent nodes per Register 10k Files : 4.107 secs

Average time taken for four concurrent nodes per Register 10k Files : 5.418 secs
Average time taken for a eight concurrent nodes per Register 10k Files :6.5085 secs

PLOT FOR REGISTER :

Xaxis : nodes
YAxis : time (secs)



2. SEARCH :

single node: The time taken to Search 10k Files on a single node at is 1199**millisecs**.
Two ***nodes :*** time taken to Search 10k Files on each of 2 nodes is :

node 1 3036millisecs
node 2 3158 millisecs

Average time taken by a node to Search 10k Files is : 3036+3158/2
= **3097 millisecs**

Four nodes : Time taken to Search 10k Files on each of four nodes is :
node 1 5026millisecs
node 2 - 4216millisecs
node 3- 4385millisecs
node 4- 4531millisecs
Average time taken by a node to make Search 10k Files is
5026+4216+4385+4531/4= 4539.5 **millisecs**
Eight nodes : Time taken to Search 10k Files on each of Eight nodes is :
node 1 5348millisecs
node 2 4937 millisecs
node 3- 5145millisecs
node 4 4825millisecs
node 5 4756 millisecs
node 6- 5132millisecs
node 7 5248millisecs
node 8 5388 millisecs

Average time taken by a node to Search 10k Files is /8= **5097.6 millisecs**

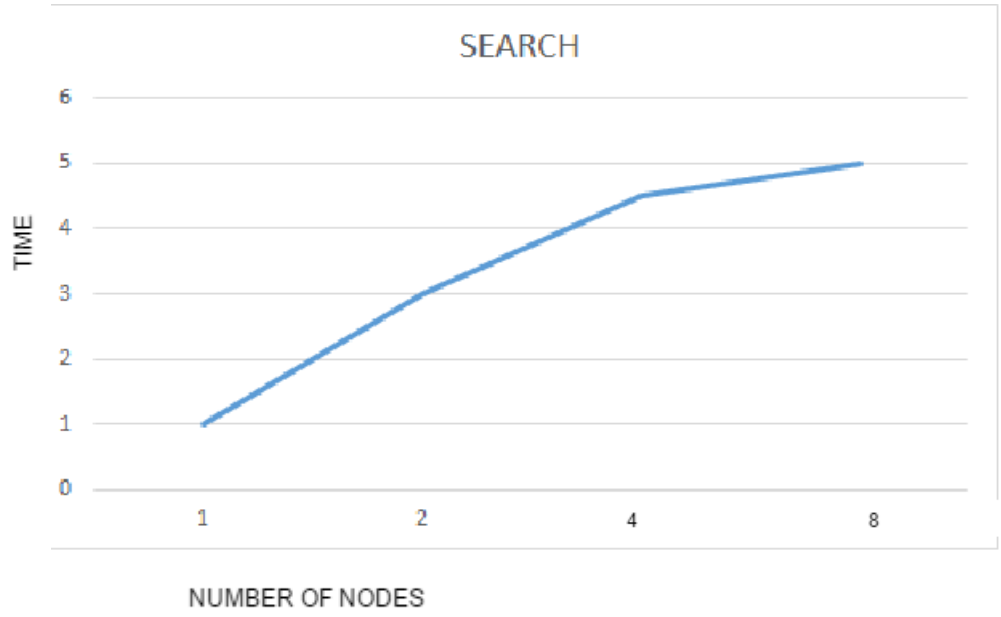
Average time taken for a single nodes per 10k Search Files : 1.199secs

Average time taken for two concurrent nodes per 10k Search Files : 3.0972 secs

Average time taken for four concurrent nodes per 10k Search Files : 4.5385secs

Average time taken for a eight concurrent nodes per 10k Search Files : 5.0966secs

PLOT FOR SEARCH:
Xaxis : nodes
Yaxis : time (secs)



3. Obtain:

single node: The time taken to obtain 10k Files at a single node at is **102 secs**.
two nodes : Time taken to obtain 10k Files at 2 nodes concurrently i.e., 20k files on both nodes is :
node 1 112 secs
node 2 134 secs
Average time taken by a node to obtain 10k Files is :112+124 /2
= **123 secs**

Four nodes : Time taken to obtain 10k Files on each of four nodes is :
node 1 148 secs
node 2 164 secs
node 3- 158 secs
node 4- 176 secs
Average time taken by a node to obtain 10k Files is : 148+164+158+176/4= 161 **secs**

Eight nodes : Time taken to obtain 10k Files on each of Eight nodes is :

node 1 163secs
node 2 179secs
node 3- 191 secs
node 4 182 secs
node 5 218 secs
node 6- 238 secs
node 7 224secs
node 8 212secs

Average time taken by a node to obtain 10k Files is **200.8secs**

Average time taken for a single node to obtain 10k Files : 102 secs

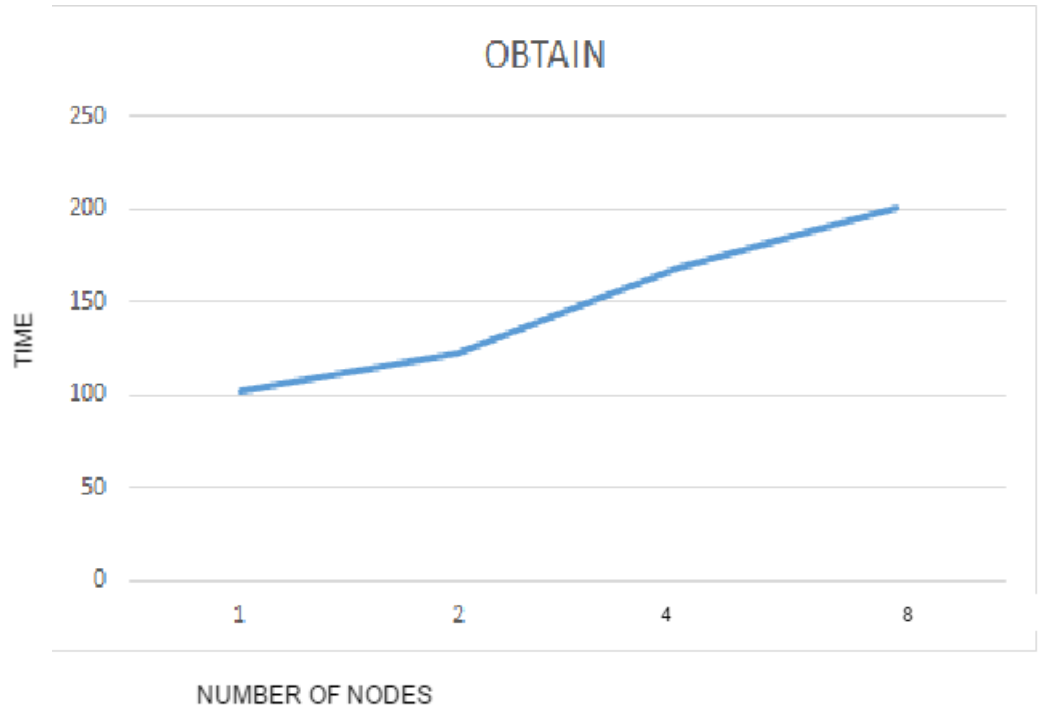
Average time taken for two concurrent nodes to obtain 10k Files : 123 secs

Average time taken for four concurrent nodes to obtain 10k Files : 161.5secs

Average time taken for a eight concurrent nodes to obtain 10k Files: 200.8 secs

PLOT FOR OBTAIN:

Xaxis : nodes
Yaxis : time(secs)



Conclusion:

Here,we have evaluated register,search and obtain the files of size 100Kb.and it runs on Amazon aws cloud over 10K files 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.