

**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 1 operations.

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 1 operation.

And Evaluated the time taken to **Obtain** File on a Peer server a single node ,two nodes ,four nodes and eight running concurrently over 1 operations. And File Size is **1GB**.

### 1. Register:

**single node:** The time taken to Register 1 File on a single node at is 2 **millisecs**.

**Two nodes :** The time taken to Register 1 File on each of 2 nodes is :

node 1 - 2 millisecs

node 2 - 3 millisecs

Average time taken by a node to Register 1 File is :  $2+3 / 2$

= 2.5 **millisecs**

**Four nodes :** The time taken to Register 1 File on each of four nodes is :

node 1 - 1 millisecs

node 2 - 3 millisecs

node 3- 5 millisecs

node 4- 6 millisecs

Average time taken by a node to Register 1 File is: 3.9 **millisecs**

**Eight nodes :** The time taken to Register 1 File on each of Eight nodes is :

node 1 -2 millisecs

node 2 - 3 millisecs

node 3- 6 millisecs

node 4 - 7 millisecs

node 5 - 5 millisecs

node 6- 11 millisecs

node 7 - 12millisecs

node 8 - 9millisecs

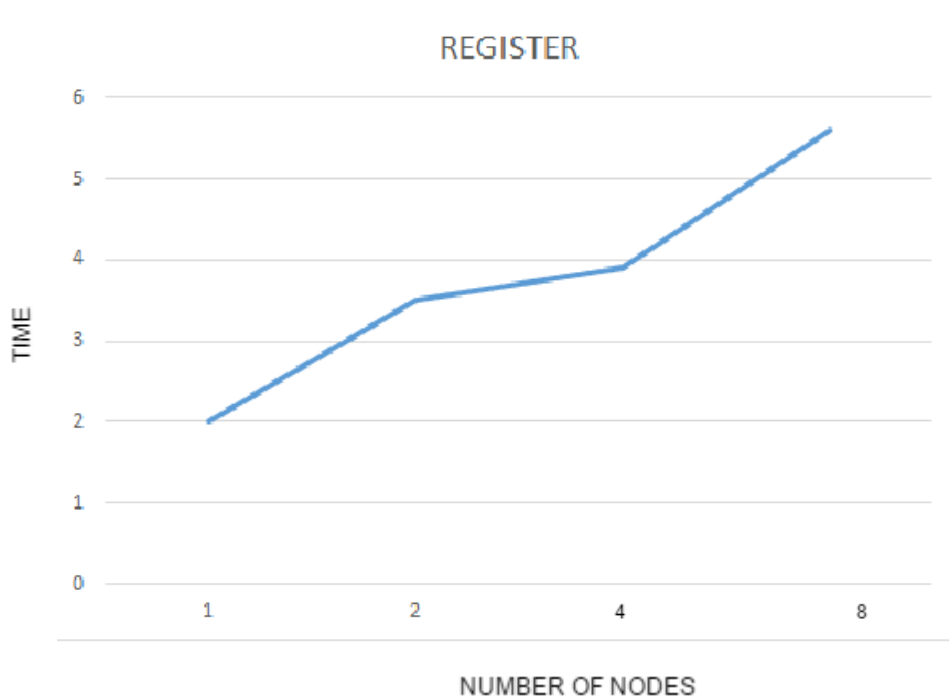
Average time taken by a node to Register 1 File is: 5.6 **millisecs**

Average time taken for a single node per Register 1 File	: 2 millisecs
Average time taken for two concurrent nodes per Register 1 File	: 2.5 millisecs
Average time taken for four concurrent nodes per Register 1 File	: 3.9 millisecs
Average time taken for a eight concurrent nodes per Register 1 File	: 5.6 millisecs

#### PLOT FOR REGISTER :

X-axis : nodes

Y-Axis : time (millisecs)



#### 2. SEARCH :

single node: The time taken to Search 1 File on a single node at is 20 millisecs.

Two nodes : time taken to Search 1 File on each of 2 nodes is :

node 1 - 24 millisecs  
node 2 - 28 millisecs

Average time taken by a node to Search 1 File is :

**=26 millisecs**

**Four nodes :** Time taken to Search 1 File on each of four nodes is :

node 1 - 24millisecs  
node 2 - 33millisecs  
node 3- 39millisecs  
node 4- 48 millisecs

Average time taken by a node to make Search 1 File is  $/4=$  **36millisecs**

**Eight nodes :** Time taken to Search 1 File on each of Eight nodes is :

node 1 - 22millisecs  
node 2 -38 millisecs  
node 3- 36 millisecs  
node 4 - 44millisecs  
node 5 - 42 millisecs  
node 6- 48 millisecs  
node 7 - 52 millisecs  
node 8 - 46millisecs

Average time taken by a node to Search 1 File is **41millisecs**

**Average time taken for a single nodes per 1 Search File : 20 millisecs**

**Average time taken for two concurrent nodes per 1 Search File : 26 millisecs**

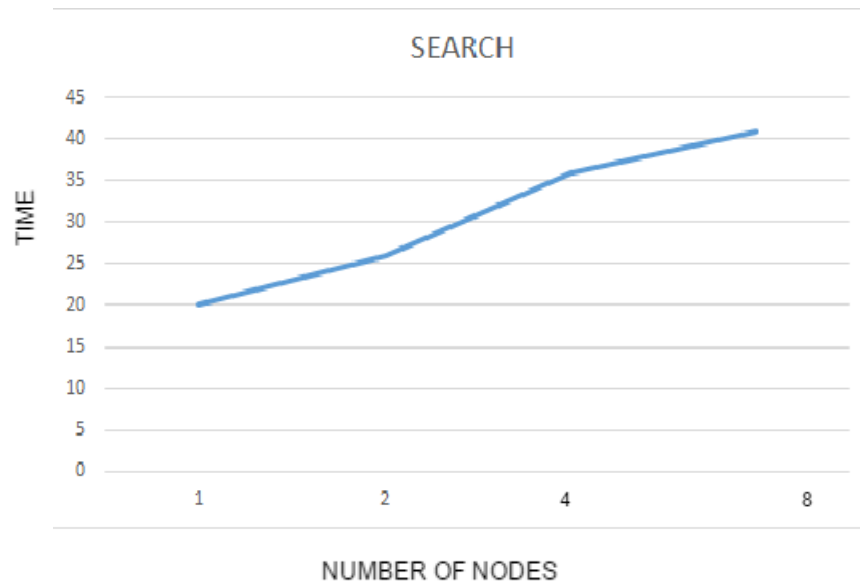
**Average time taken for four concurrent nodes per 1 Search File :36 millisecs**

**Average time taken for a eight concurrent nodes per 1 Search File : 41 millisecs**

**PLOT FOR SEARCH:**

**X-axis : nodes**

**Y-axis : time (millisecs)**



### 3. Obtain:

**single node:** The time taken to obtain 1 File at a single node at is **484 secs**.

**two nodes :** Time taken to obtain 1 File at 2 nodes concurrently i.e., 200k File on both nodes is :

node 1 - 426 secs

node 2 - 454secs

Average time taken by a node to obtain 1 File is :

**= 476secs**

**Four nodes :** Time taken to obtain 1 File on each of four nodes is :

node 1 - 510 secs

node 2 - 482 secs

node 3- 524secs

node 4- 449secs

Average time taken by a node to obtain 1 File is := **491.25 secs**

**Eight nodes** : Time taken to obtain 1 File on each of Eight nodes is :

node 1 -558 secs

node 2 - 424secs

node 3- 485 secs

node 4 - 524 secs

node 5 - 517 secs

node 6- 574 secs

node 7 - 503secs

node 8 -614 secs

Average time taken by a node to obtain 1 File is 524.8 secs

**Average time taken for a single node to obtain 1 File : 484 secs**

**Average time taken for two concurrent nodes to obtain 1 File :476 secs**

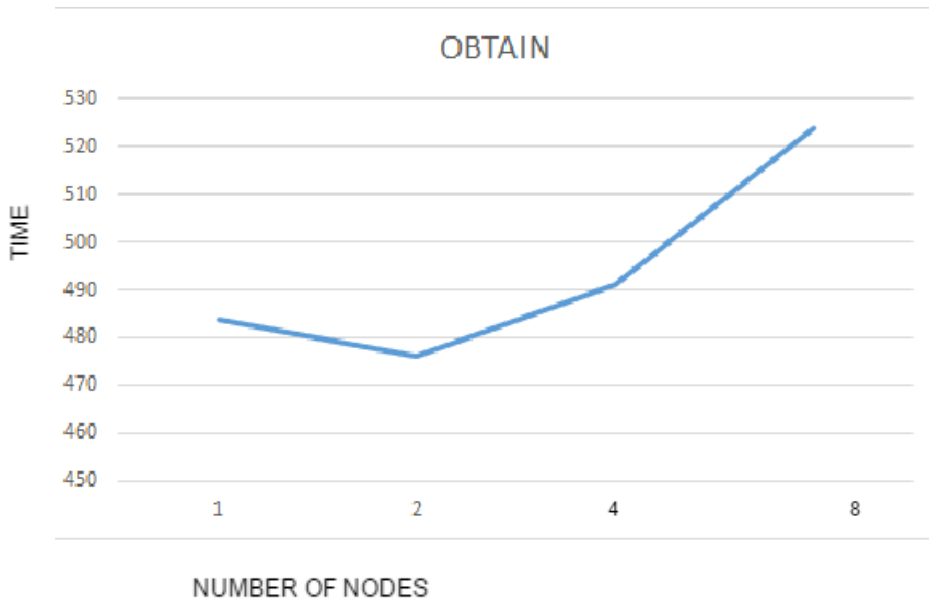
**Average time taken for four concurrent nodes to obtain 1 File : 491secs**

**Average time taken for a eight concurrent nodes to obtain 1 File: 524 secs**

**PLOT FOR OBTAIN:**

**X-axis : nodes**

**Y-axis : time(secs)**



### **Conclusion:**

Here, we have evaluated register, search and obtain the files of size 1GBb. and it runs on Amazon aws cloud over 1 file on each server. As the number of nodes increases, time to register will increase 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.