CS550 Advanced Operating Systems

Programming Assignment 2

Manual

Files:

Peer.java

1. Peer class creates both client and server. At start config file is read to get port and hostname list. All connections are made at start and sockets are stored in list so that it can be accessed later.

2. Peer acting as server stores keys, return value for key and server delete key request concurrently.

TestPeer.java

1. TestPeer class is created for bulk request test of 100k put, 100k get, 100k delete requests. User input is removed instead loop is used to auto feed keys and values to server.

config.properties

config.properties holds list of ports and hostnames for all 8 nodes.

build.xml

build.xml is simple ant build file. It compiles java source files and has a clean target to delete class and output.txt file

output.txt

output.txt file has output of all major activities like put, get, delete requests etc.

Instructions to run program:

Here we are using static setup of 8 nodes. You need to perform following steps for all 8 nodes.

A. For running Peer:

1. Open terminal

2. Go to Lalit_Patil/Node<n> directory

eg. cd Lalit_Patil/Node1

3. Run command

'ant clean'

It will clear any class files, previous output.txt

4. Run command

'ant'

This will compile program

5. Run command

'java Peer'

this will run program.

Only after performing above steps for all 8 nodes continue further:

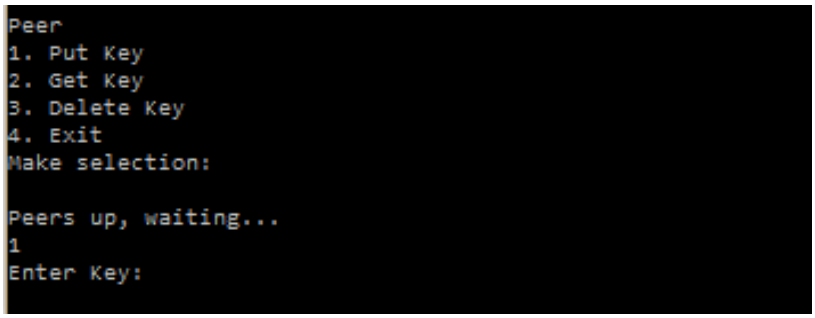
It will show message menu as:

```
Peer
1. Put Key
2. Get Key
3. Delete Key
4. Exit
Make selection:
```

Make selection by pressing corresponding number.

1. Put Key option:

When you select option ‘Put Key’ by pressing ‘1’ and then pressing enter, you will be prompted to input the key and value as shown below:



You enter key
eg. ‘A’
Pressing enter you will be prompted for value for this key.
Enter value.
eg ‘Apple’

Now you have key-value pair as “A-Apple”. It will be stored in DHT.

Now you will again be routed to Menu.

2. Get Key option:

Pressing ‘2’ will take you to similar prompt as put key to enter key that you want to search and press enter.

eg ‘A’

Now this should return value “Apple” as we added this key-value pair before.

If you enter key which is not available at DHT, it will return
“value: Not Found!”

3. Delete Key option:

Pressing ‘3’ will prompt you to enter key similarly to previous options

Enter key to delete the entry form DHT.
If Key is present, the operation will return “Deleted” else will return “Not Found!”
Now Get operation on that key will return “Not Found!”

Running test to evaluate response time of each operation:

B. For running TestPeer:

1. Open terminal

2. Go to CS550PA2/Node<n> directory

eg. cd CS550PA2/Node1

3. Run command

‘ant clean’

It will clear any class files, previous output.txt

4. Run command

‘ant’

This will compile test program.

5. Run command

‘java TestPeer’

this will run test program.

Only after performing above steps for all 8 nodes continue further:

It will show message menu as:

a. Make selection by pressing corresponding number.
b. It will run corresponding 100k operation.
c. It will return average response time for each operation.