

Programming Assignment 1

NAPSTER PEER TO PEER SHARING SYSTEM

CS550 – Advanced Operating System

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Output:

On Machine 1, CentralIndexServer is running and starts listening for incoming connections from the Peers.



On Machine 2, Peer1 is run and is allowed to register the files with the CentralIndexServer



On Machine 3, Peer2 is run and is allowed to register the files with the CentralIndexServer

```

root@kali:~/P2P-File-Sharing/Peer2Peer# cat
root@kali:~/P2P-File-Sharing/Peer2Peer# ./test
compiling...
[[peer]] Compiling a source file to /home/kali/P2P-File-Sharing/Peer2Peer/test
run
[[peer]]
[[peer]] 1----- Register Peer to Peer File Sharing-----1
[[peer]]
[[peer]] For CentralIndexserver IP:
[[peer]] 192.168.56.1
[[peer]]
[[peer]] Choose the operation to perform from the following list:
[[peer]]
[[peer]] 1) Register the file on centralindexserver
[[peer]] 2) Search/lookup for the file
[[peer]] 3) Download the file from the peers on the network
[[peer]] 4) Exit the Register Peer to Peer File Sharing
[[peer]]
1
[[peer]] Enter the Peer ID (A digit) along with the file you want to register with a space amongst the two
1 56
[[peer]]
[[peer]] 192.168.56.1 Connected with CentralIndexserver on port 2991
[[peer]]
[[peer]] 192.168.56.1 Registered Successfully
[[peer]]
[[peer]] 1) Register the file on CentralIndexserver
[[peer]] 2) Search/lookup for the file
[[peer]] 3) Download the file from the peers on the network
[[peer]] 4) Exit the Register Peer to Peer File Sharing
[[peer]]

```

On Machine 4, Peer3 is run and is allowed to register the files with the CentralIndexServer

```

C:\Users\Bart\Documents>cd C:\Program Files\NetWitness\Tools\Nessus
C:\Program Files\NetWitness\Tools\Nessus>. /home/stalkias/Desktop/Pear3/but3d.net
compilar
[stark] Compiling 2 source file to ./home/stalkias/Desktop/Pear3/dest

run:
[stark]
[stark] |-----Register Pear to Peer File Sharing-----|
[stark]
[stark] Run InitialIndoServer IP-
[stark] 190.168.56.1
[stark]
[stark] Choose the operation to perform from the following list:
[stark]
[stark] 1) Register the File as CentralIndoServer
[stark]
[stark] 2) Search/lookup for the File
[stark]
[stark] 3) Download the file from the Peers on the network
[stark]
[stark] 4) Exit the Register Pear to Peer File Sharing
[stark]
[stark]
[stark] Enter the num 30 (x digit) along with the File you want to register with a space amongst the two
[stark] 24.164
[stark]
[stark] 190.168.56.1 Connected with InitialIndoServer on port 2881
[stark]
[stark] 190.168.56.1 Registered successfully
[stark]
[stark] 1) Register the File as CentralIndoServer
[stark]
[stark] 2) Search/lookup for the File
[stark]
[stark] 3) Download the file from the Peers on the network
[stark]
[stark] 4) Exit the Register Pear to Peer File Sharing

```

CentralIndexServer registers the Peer ID and the filename of Peer1, Peer2 & Peer3



```
Signal - CentralIndexServer (net)
-----Register Peer to Peer File Sharing System-----

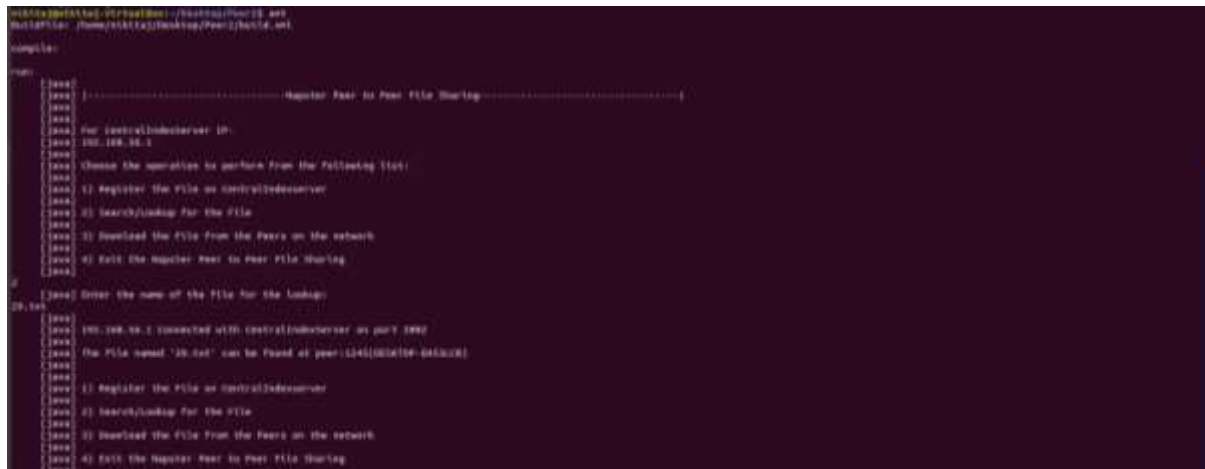
Starting the Indexing Server
Indexing Server started successfully and is ready for incoming connections.

CENTRALINDEXSERVER is waiting a connection for Registering the File at CentralIndexServer
1230 15:04
File registered at CentralIndexServer

CENTRALINDEXSERVER is waiting a connection for Registering the File at CentralIndexServer
1240 15:05
File registered at CentralIndexServer

CENTRALINDEXSERVER is waiting a connection for Registering the File at CentralIndexServer
1240 15:05
File registered at CentralIndexServer
```

On Machine3, Peer2 is run and it issues a Search Request for the file which was registered by Peer3. The Search result is returned with the Peer ID of the peer and the IP Address of the Peer which contains the file.



```
main@[ip:172.17.0.1] /opt/peer2$ java -jar Peer2.jar
Main File: /home/attila/Workshop/Peer2/bcfile.txt
compile:
run:
[peer] -----Register Peer to Peer File Sharing-----
[peer]
[peer] For CentralIndexServer IP:
[peer] 192.168.55.1
[peer]
[peer] Choose the operation to perform from the following list:
[peer] 1) Register the File at CentralIndexServer
[peer] 2) Search/lookup for the File
[peer] 3) Download the File from the Peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
[peer]
[peer] Enter the name of the File for the lookup:
29.54s
[peer] 192.168.55.1 connected with CentralIndexServer as port 3492
[peer]
[peer] The File named 'bcfile.txt' can be found at peer:1241(ORATOR-DARKEN)
[peer]
[peer]
[peer] 1) Register the File at CentralIndexServer
[peer] 2) Search/lookup for the File
[peer] 3) Download the File from the Peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
```

On Machine2, Peer1 is run and it issues a Search Request for the file which was registered by Peer2. The Search result is returned with the Peer ID of the peer and the IP Address of the Peer which contains the file.

```
ml@kali:~/VirtualBox/centos/peer1$ cat
HostIPFile: /home/ml/kali/Desktop/Peer1/HostIP.txt
comp11a:
run:
[peer]
[peer] -----Register Peer to Peer File Sharing-----[peer]
[peer]
[peer] for centralIndexserver IP:
[peer] 192.168.56.1
[peer]
[peer] Choose the operation to perform from the following list:
[peer] 1) Register the file as centralIndexserver
[peer] 2) Search/lookup for the file
[peer] 3) Download the file from the peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
[peer]
[peer] [peer] Enter the name of the file for the lookup:
18.txt
[peer]
[peer] 192.168.56.1 Connected with centralIndexserver on port 3880
[peer]
[peer] The file named "18.txt" can be found at peer:1240102478-2023.08
[peer]
[peer]
[peer] 1) Register the file as centralIndexserver
[peer] 2) Search/lookup for the file
[peer] 3) Download the file from the peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
```

On Machine4, Peer3 is run and it issues a Search Request for the file which was registered by Peer2. The Search result is returned with the Peer ID of the peer and the IPAddress of the Peer which contains the file.

```
ml@kali:~/VirtualBox/centos/peer3$ cat
HostIPFile: /home/ml/kali/Desktop/Peer3/HostIP.txt
comp11a:
[peer] compiling 3 source file to /home/ml/kali/Desktop/Peer3/Peer3
run:
[peer]
[peer] -----Register Peer to Peer File Sharing-----[peer]
[peer]
[peer] for centralIndexserver IP:
[peer] 192.168.56.1
[peer]
[peer] Choose the operation to perform from the following list:
[peer] 1) Register the file as centralIndexserver
[peer] 2) Search/lookup for the file
[peer] 3) Download the file from the peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
[peer]
[peer] [peer] Enter the name of the file for the lookup:
18.txt
[peer]
[peer] 192.168.56.1 Connected with centralIndexserver on port 3880
[peer]
[peer] The file named "18.txt" can be found at peer:1240102478-2023.08
[peer]
[peer]
[peer] 1) Register the file as centralIndexserver
[peer] 2) Search/lookup for the file
[peer] 3) Download the file from the peers on the network
[peer] 4) Exit the Register Peer to Peer File Sharing
[peer]
```

On Machine4, Peer3 is run and it issues a Download Request for the file which was registered by Peer2 and Peer3 downloads the file from Peer1.

```
[java] 1) Register the file on CentralIndexServer
[java] 2) Search/lookup for the file
[java] 3) Download the file from the peers on the network
[java] 4) Tell the Regulator Peer to Peer File Sharing
[java]
1
[java] Enter Peer ID:
1000
[java] Enter IP Address of the Peer where the file exists:
10.0.2.15 193.228.228.0 10.0.1.255
[java] Enter the name of the file to be downloaded:
10.txt
[java] 10.0.2.15 is making a connection for downloading the file
[java]
[java] 10.0.2.15 has now been downloaded on this peer
[java]
[java] 1) Register the file on CentralIndexServer
[java] 2) Search/lookup for the file
[java] 3) Download the file from the peers on the network
[java] 4) Tell the Regulator Peer to Peer File Sharing
[java]
```

Screenshot for the Search Result returned from the CentralIndexServer for the file searched on the peers.

