

Manual

Running the program:

1. Go to project root (Assignment 3) using Terminal.
2. You can type **"ls"** command to list the files and check whether you are in the correct directory.
3. Type **"make clean"** to delete old compiled .class files.
4. Type **"make"** to compile all project files.
5. Type **"make run"** to run De-Centralized File System program.
6. Type **"make run_test"** to run De-Centralized File System test program. (It is used for performance evaluation)

The document below explains how to use the program, what are the different input the program asks for.

Distributed Hash Table (Peer):

You can run the program by using the makefile command **"make run"**. Make sure that you have compiled the program using command **"make"** before running the program. The program internally loads the static configuration file and runs two sub-programs (threads) called Peer Client and Peer Server. Peer Client connects to another Peer Server using port 20000 and the Peer Server works on port 20000.

The IP addresses of the peer in the network has to be mentioned in the NODES parameter in the configuration file. Separate each IP address by comma (,). The location where the files are stored which will be shared by the peer has to be mentioned in the FILES_LOCATION parameter in the configuration file. If you want to use the replication feature, then define the IP addresses of the nodes who will be storing the replication data in the REPLICATION_NODES parameter in the configuration file. Separate each IP address by comma (,). Also, mention the location where the replicated files will be stored in the REPLICATION_LOCATION parameter in the configuration file.

Let's run the Peer program step-by-step: (Lines marked in **RED** are console output.)

make run

******* PEER CLIENT STARTED *******

******* PEER SERVER STARTED *******

What do you want to do?

- 1.Register a file with the peers.**
- 2.Search for a file.**
- 3.Un-register a file with the peers.**
- 4.Print log of this peer.**
- 5.Exit.**

Enter choice and press ENTER:

Enter the respective number choice (1 – 5) of whatever task you want to do. Explanation for each option is as below:

1 = Register a file which you want to share with other peers in the network. Remember that the file must be present in the directory you specified in the parameter FILES_LOCATION in the configuration file.

2 = Lookup or Search a particular file and check whether it is present (shared by a peer) in the network or not. If present it gives you an option to download or print the contents of the file.

3 = Unregister/stop sharing a file that you have shared with other peers. You can unregister only one file at a time.

4 = Use this option if you want to check your peer's server log which contains log of file download requests and other requests.

5 = Exit/Terminate the program.

If you select option 1:

Enter name of the file with extension (Example: data.txt) you want to put in file sharing system:

Enter the name of the file which you want register for file sharing purpose with other peers. Remember that the file must be present in the directory you specified in the parameter FILES_LOCATION in the configuration file. If the file is not present, it will give you an error saying that file is not present in that directory. If the file is already registered in the network, then it will inform you that a file with that name is already registered and whether you want to overwrite that.

If you select option 2:

Enter name of the file you want to look for:

Enter the full name with extension of the file which you would like to look for in the network. For example, **beach.txt** OR **data comm.pdf**

If the file is found, the client asks you if you want to download the file. If it is a text file then it gives you an option to download or print the contents of the text file. If the file is not found in the network, then it will inform you saying file not found.

If the file is found, the program provides you an option to download the file like –

Do you want to download this file?(Y/N):

You can enter Y (Yes) or N (No). If Y, then the file is downloaded and it gets stored in the downloads folder located in the folder where you are running the program.

If the file is a text file, the program provides you the option to download or print the first 1000 characters of the file like -

Do you want to download (D) or print this file (P)? Enter (D/P):

Enter D to just download the file and P to download the file as well as print the first 1000 characters of the text file.

If you select option 3:

The files (if any) which you have registered in the network will be unregistered and those files will be no longer available to other peers for download. Remember that you can unregister only one file at a time.

Enter the name of the file you want remove from file sharing system:

Enter the name of the file with extension. It asks you to confirm whether you want to remove this file from the file sharing system or not.

If you select option 4:

This option prints the log of the server part of the peer if available. Generally, the Peer server logs various messages while transferring files to other peers as requested by them and also the register and search requests served by the peer.

If you select option 5:

This option will close/terminate the application normally. You'll be no longer connected in the file transfer network. If a replication server is defined, then you can get the list of files you have stored after you have exit and returned back. If no replication server is defined, then the file list maintained by the peer is lost.