

CSC/ECE 573 – Internet Protocols Project #2

Abrar Kotbi
Palash Gupta

Overview

Peer-to-Peer with Centralized Index (P2P-CI) System for Downloading RFCs: In this project, we implemented a simple peer-to-peer (P2P) system with a centralized index (CI).

As per the project description, the server and client service the user based requests to transfer information between peers. Please view the below execution steps to proceed.

Execution Steps

1. From the root folder of Project 1, open terminal:
Run: **pip install -r requirements.txt**
2. From the same terminal start the server:
Run: **python server.py**
3. From another terminal:
Run: **python client.py #ClientIP**

For example,

Client 1 execution: python client.py 127.0.0.1

Client 2 execution: python client.py 127.0.0.2

... and so on.

4. Once the client is running, provide your input for the various available service requests. It is likely that you would be prompted to enter, GET, ADD, LOOKUP, LIST and EXIT.
5. Please enter the RFC number and title as shown in the below screenshot otherwise file does not exist issues may come up.

Saving of RFC has been done in the following way:

1-rfc0001.txt

2-rfc0001.txt

...

and so on.

The files have been saved in this format to manage the data structure efficiently using key, value maps.

```
Proj 1 — python client.py 127.0.0.1 — 81x24 Client 1
(base) liblnd@liblnd-41274 Proj 1 % python client.py 127.0.0.1
Connected to liblnd-41274 with port 7734
Client port 60625
Enter the function you want to perform: GET, LOOKUP, ADD, LIST, EXIT
ADD
Enter RFC number:
1
Enter RFC Title:
rfc0001
P2P-CI/1.0 200 OK
1
rfc0001
127.0.0.1
Enter the function you want to perform: GET, LOOKUP, ADD, LIST, EXIT

Proj 1 — python client.py 127.0.0.2 — 85x28 Client 2
(base) liblnd@liblnd-41274 Proj 1 % python client.py 127.0.0.2
Connected to liblnd-41274 with port 7734
Client port 60866
Enter the function you want to perform: GET, LOOKUP, ADD, LIST, EXIT
LIST
LIST ALL P2P-CI/1.0
Host: 127.0.0.2
Port: 60866
P2P-CI/1.0 200 OK
RFC 1 rfc0001 127.0.0.1 60625
Enter the function you want to perform: GET, LOOKUP, ADD, LIST, EXIT
LOOKUP
Enter RFC number:
1
Enter RFC Title:
rfc0001
LOOKUP 1 P2P-CI/1.0
Host: 127.0.0.2
Port: 60866
Title: rfc0001
P2P-CI/1.0 200 OK
1 rfc0001 127.0.0.1 60625
Enter the function you want to perform: GET, LOOKUP, ADD, LIST, EXIT

9+ PROBLEMS 30 OUTPUT DEBUG CONSOLE TERMINAL Server
(base) liblnd@liblnd-41274 Proj 1 % python server.py
Let's get this server rolling
A new connection has been established from ('192.168.1.231', 55993)
{}
A new connection has been established from ('192.168.1.231', 55994)
{}
ADD RFC 1 P2P-CI/1.0
HOST: 127.0.0.1
Port: 60625
Title: rfc0001
['ADD RFC 1 P2P-CI/1.0', 'HOST: 127.0.0.1', 'Port: 60625', 'Title: rfc0001']
P2P-CI/1.0 200 OK
1 rfc0001 127.0.0.1 60625
LIST ALL P2P-CI/1.0
Host: 127.0.0.2
Port: 60866
LOOKUP 1 P2P-CI/1.0
Host: 127.0.0.2
Port: 60866
Title: rfc0001
```

6. Make note that after making a GET request, the data would be made available in a new file which would have the filename as, **Downloaded#1.txt** where **#1** is the RFC number downloaded.