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- 1 step1
- 1.1 BDS
- 1.2 BDC

```
Start listening on port 8086...
New client: 5
Server received 7 bytes on fd 5
Server received 13 bytes on fd 5
Server received 14 bytes on fd 5
Server received 17 bytes on fd 5
Server received 19 bytes on fd 5
Server received 19 bytes on fd 5
R 14 14
Server received 19 bytes on fd 5
R 15 15
Server received 19 bytes on fd 5
R 18 19 5
Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
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Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
R 18 19 6
Server received 19 bytes on fd 5
R 18 10 6
Server received 19 bytes on fd 5
R 18 10 6
Server received 19 bytes on fd 5
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Server received 19 bytes on fd 5
R 18 10 6
Server received 19 bytes on fd 5
Server received 19 bytes on fd 5
Server received 19 bytes on fd 5
Server received 19 by
```

Figure 1: step1 result

figure 1 shows that BDS can response all kinds of command

- 2 step2
- 2.1 BDS
- 2.2 FS
- 2.3 FC

step 4 cover it

- 3 step 3
- 3.1 BDS
- 3.2 FS
- 3.3 FC

step 4 cover it

- 4 step4
- 4.1 BDS
- 4.2 FS
- 4.3 FC

```
| Server received 28 bytes on 65 | Server received 16 bytes on 67 | Server received 28 bytes on 65 | Server received 16 bytes on 67 | Server received 15 bytes on 67 | Server received 15 bytes on 67 | Server received 28 bytes on 68 | Server received 28 bytes on 68 | Server received 28 bytes on 68 | Server received 28 bytes on 69 | Server received 28 bytes on 69
```

Figure 2: step4 result

Figure 2 show that it can show all kinds of command while more than one clients(users). Here are some special commands explained:

ls -l: it will ls all the file and dir with its name size time(NULL) type(file or dir);

cd: my project can cd the absolute path like cd /dir/dir and other special path like . ..

file and dir protocol: there is three level file or direction:0 1 2. 0 means everyone can read or write it, 1 means only readable, 2 means neither is able.

no matter what level the file/dir has, super user(uid 0) and its onwer have all the permissions of it. each home direction for user is 2 level direction. for the project, i use 4 level code:disk operation superblock inode filesystem.