

CS 474: Assignment 3

Remote Procedure Calls:

Due Date: Friday, November 6th, 2022

1. Goal:

- Develop a Remote Procedure Call suite of programs that enables a user to grep files remotely.
 - Grep command in Linux allows to search and list files that contain text matching search string.
 - More on grep command: <https://www.configserverfirewall.com/unix/unix-grep-command-examples/#:~:text=Unix%20grep%20Command%20Examples%20%E2%80%93%20How%20to%20Use,only%20the%20file%20name.%20...%20More%20items...%20>
- Develop a Remote Procedure Call suite of programs that enables a user to find list of file names matching specific criteria.
 - find command in Linux lists files that have name matching the search string
 - <https://alvinalexander.com/unix/edu/examples/find.shtml>

2. Tools to Setup:

1.1. To Install:

- `sudo apt-get install rpcgen`
- `sudo apt-get install rpcbind`

1.2. Monitor rpc port status

- `service rpcbind status`
- `sudo service rpcbind restart/start/stop`

1.3. Check RPC server and client status

- `rpcinfo -p 127.0.0.1` [check server status from client]
- `rpcinfo -p` [check client status]

3. How to do:

The base line code for the project has been shared in the OneDrive folder. You will have to make necessary changes to functions:

- Function `readdir_1_svc` in the file `dir_proc.c`
- Function `readdir_1` in the file `dir_clnt.c`

4. References:

1. RPC programming example: <https://users.cs.cf.ac.uk/Dave.Marshall/C/node34.html>

2. http://www2.phys.canterbury.ac.nz/dept/docs/manuals/unix/DEC_4.0e_Docs/HTML/AQ0R5BTE/DOCU_003.HTM
3. Understanding XDR: <https://www.ibm.com/docs/en/cics-ts/5.4?topic=facilities-xdr-routines>
4. Data formats for presentation layer used in RPCs:
<https://book.systemsapproach.org/data/presentation.html>