2020

Project Report

myfork

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In this project we are implementing a function of myfork() which semantically works exactly as a UNIX fork() function; however, it runs the parent process on the same machine while the child process is remotely running on the other machine.

To Implement this function:

First, I connected the two machines in the virtual machine with a NAT network so that the first machine has the IP of 10.0.2.15 and the second machine is 10.0.2.5 using the command *ifconfig*

I used CRIU library which its functions which are check, dump, and restore. I also used SSH library which connects the other machine with the local IP. In addition, I used a TCP connection. With the help of the previously mentioned libraries, I used CRIU library which makes a checkpoint and prepare the child process to dump the parent process using the command:

```
Sudo criu dump --shell-job -D /home/img -t pid
```

and then I use the SSH library to access the other machine and send the dump files using the command:

```
Sudo -r img eman@10.0.2.5: /home/eman
```

Then I call the server on the other machine with the specified arguments of the port and IP of the other machine to make the restore function from the files of the dumped process. Then it restores the child process using this command:

```
sudo criu restore --shell-job -D /home/eman/img -o restore
```