

## Analysis of Message Queues (PEX4a)

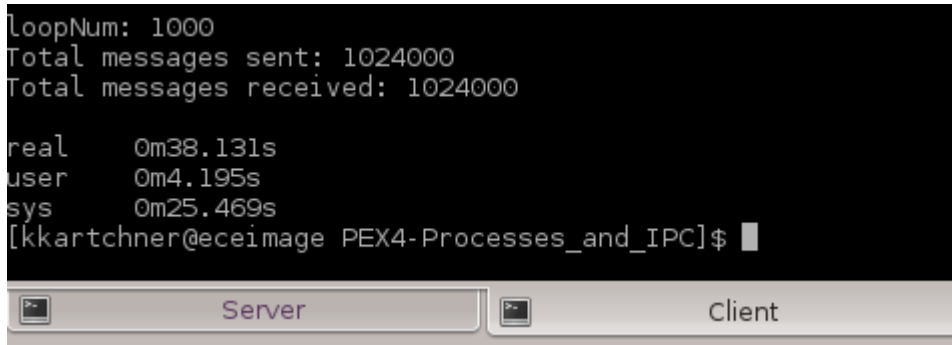
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As seen in the tables below, the system time for Phase 2 is faster than Phase 1 for every value of loopNum. This is most likely because of Phase 2 utilizing the fork() method to create another process to help with handling the queues. There is not a huge difference in this example, but using multiple processes can help speed up the performance of a program.

### Phase 1 - Client

```
loopNum: 1000
Total messages sent: 1024000
Total messages received: 1024000

real    0m38.131s
user    0m4.195s
sys     0m25.469s
[kkartchner@eceimage PEX4-Processes_and_IPC]$
```

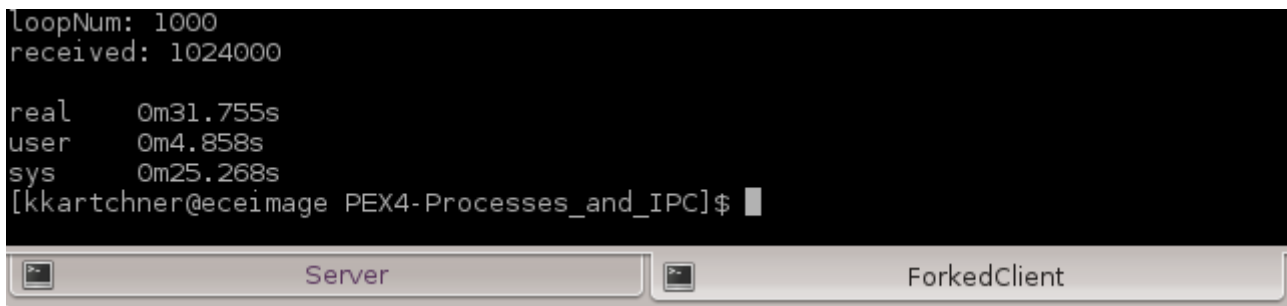


LoopNum	System Time
1	0m0.033s
10	0m0.290s
100	0m2.673s
1000	0m25.469s

### Phase 2 - Forked Client:

```
loopNum: 1000
received: 1024000

real    0m31.755s
user    0m4.858s
sys     0m25.268s
[kkartchner@eceimage PEX4-Processes_and_IPC]$
```



LoopNum	System Time
1	0m0.030s
10	0m0.251s
100	0m2.554s
1000	0m25.268s