

```
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in  
Minix: PID 92 swapped in  
Minix: PID 90 swapped in
```

avneet@avneet: ~/Desktop

```
File Edit View Search Terminal Help  
fstime completed  
--  
# Write done: 1008000 in 1.1500, score 219130  
COUNT[219130]0|KBps  
TIME|1.1  
Read done: 1000004 in 1.0333, score 241936  
COUNT[241936]0|KBps  
TIME|1.0  
Copy done: 1000004 in 2.3500, score 106383  
COUNT[106383]0|KBps  
TIME|2.4  


|            |            |          |
|------------|------------|----------|
| 15.76 real | 0.30 user  | 4.23 sys |
| 24.20 real | 19.08 user | 0.55 sys |

  
# cat arithoh.sh  
#!/bin/sh  
time ./pgms/arithoh &  
time ./pgms/arithoh &  
echo "arithoh completed"  
echo "--"  
# ./arithoh.sh  
arithoh completed  
--  
# █
```

Alternative PID's are being printed because both processes need CPU(since both are CPU intensive) and thus are scheduled like this.

Changed syscall.sh :
time ../pgms/syscall &
time ../pgms/arithoh &

```
Minix: PID 211 swapped in  
Minix: PID 230 exited  
Minix: PID 228 exited  
Minix: PID 206 swapped in  
Minix: PID 231 exited  
Minix: PID 229 exited  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
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Minix: PID 211 swapped in  
Minix: PID 211 swapped in  
Minix: PID 211 swapped in
```

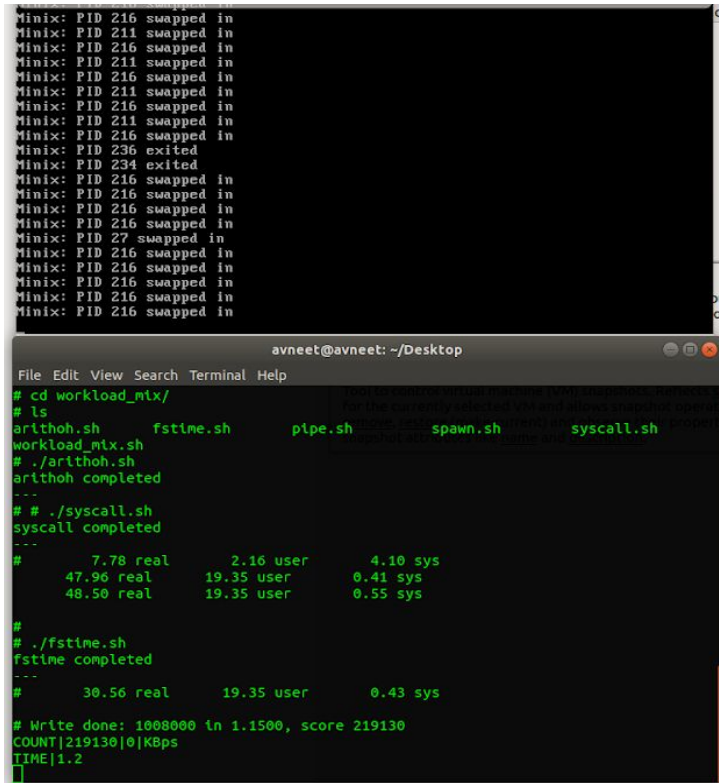
```
avneet@avneet: ~/Desktop
```

```
File Edit View Search Terminal Help  
  
-rwxr-xr-x 1 root operator 17753 Dec 15 2018 README  
-rwxr-xr-x 1 root operator 63778 Dec 15 2018 Run  
-rwxr-xr-x 1 root operator 18259 Dec 15 2018 USAGE  
drwxr-xr-x 1 root operator 4622 Dec 15 2018 WRITING_TESTS  
drwxr-xr-x 2 root operator 1600 Jan 30 01:52 pgms  
drwxr-xr-x 2 root operator   128 Jan 30 01:51 results  
drwxr-xr-x 2 root operator  1280 Jan 30 01:51 src  
drwxr-xr-x 2 root operator   384 Jan 30 01:51 testdir  
drwxr-xr-x 2 root operator   128 Jan 30 01:51 tmp  
drwxr-xr-x 2 root operator   640 Jan 30 02:00 workload_mtx  
# cd workload_mtx/  
# ls  
arthoth.sh      fstime.sh       pipe.sh         spawn.sh        syscall.sh  
workload_mtx.sh  
# ./arthoth.sh  
arthoth completed  
---  
# # ./syscall.sh  
syscall completed  
---  
#          7.78 real            2.16 user             4.10 sys  
    47.96 real           19.35 user              0.41 sys  
    48.50 real           19.35 user              0.55 sys
```

Initially, alternate PIDs are printed.
Later, one process is finished and only the PID of other process is printed then onwards.

3. CPU and IO intensive processes:

Changed fstime.sh :
time ../pgms/fstime &
time ../pgms/arithoh &



```
Minix: PID 216 swapped in
Minix: PID 211 swapped in
Minix: PID 216 swapped in
Minix: PID 211 swapped in
Minix: PID 216 swapped in
Minix: PID 211 swapped in
Minix: PID 216 swapped in
Minix: PID 211 swapped in
Minix: PID 216 swapped in
Minix: PID 236 exited
Minix: PID 234 exited
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 27 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in
Minix: PID 216 swapped in

avneet@avneet: ~/Desktop
File Edit View Search Terminal Help
# cd workload_mlx/
# ls
arithoh.sh      fstime.sh      pipe.sh        spawn.sh       syscall.sh
workload_mlx.sh
# ./arithoh.sh
arithoh completed
---
# # ./syscall.sh
syscall completed
---
#      7.78 real      2.16 user      4.10 sys
47.96 real      19.35 user      0.41 sys
48.50 real      19.35 user      0.55 sys
#
# ./fstime.sh
fstime completed
---
#      30.56 real      19.35 user      0.43 sys
# Write done: 1000000 in 1.1500, score 219130
COUNT|219130|0|KBps
TIME|1.2
|
```

One process is I/O intensive while the other is CPU intensive.
PID of I/O intensive process is printed and then it waits for its I/O operations to complete.