
Subject: Re: /proc pid number off-by-one? ... 2.6.18-028test003.1

Posted by [John Kelly](#) on Mon, 13 Nov 2006 17:19:59 GMT

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```
#!/bin/sh
```

```
SENDMAIL_CLIENT_ARGS="-L sendmail-client -Ac -qp30m"
```

```
msppid=/var/spool/clientmqueue/sm-client.pid
```

```
srvid=/var/run/sendmail.pid
```

```
killproc -p $msppid -i $srvid -TERM /usr/sbin/sendmail
```

```
startproc -p $msppid -i $srvid /usr/sbin/sendmail $SENDMAIL_CLIENT_ARGS
```

Here is a reduced test case, the problem happens on the last line, startproc. The problem seems like some kind of race, because sometimes it happens, and other times, it does not.

I tried strace with startproc, but that seems to avoid the race. However, after running the test script above many times, followed immediately by "ps ax," I was able to see what the problem is (shown below). There is a zombie with the PID number in question, and the actual PID number of the running sendmail process is one higher. Seeing the zombie with "ps ax" is hard to reproduce, I only captured it one time.

This never happened until I started using the openvz 2.6.18 kernel. I don't know if this happens with any other VE, suse 9.1 is the only one I use enough to produce the problem.

```
startproc: cannot stat /proc/1372/exe: Permission denied
```

```
PID TTY STAT TIME COMMAND
  1 ?   Rs   0:00 init [3]
28095 ?   Ss   0:00 sendmail: accepting connections
28107 ?   Ss   0:00 /usr/sbin/sshd -o PidFile=/var/run/sshd.init.pid
28113 ?   Ss   0:00 /usr/sbin/xinetd
28119 ?   Ss   0:00 /usr/sbin/cron
28276 pts/1 Ss+  0:00 -bash
 1372 pts/0 Z    0:00 [sendmail] <defunct>
 1373 ?   Ss   0:00 sendmail: Queue control
 1374 ?   S    0:00 sendmail: running queue: /var/spool/clientmqueue
1375 pts/0 R+   0:00 ps ax
```