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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

srvpid=/var/run/sendmail.pid

killproc -p \$msppid -i \$srvpid -TERM /usr/sbin/sendmail

startproc -p \$msppid -i \$srvpid /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