

sp-hw10 許家文 408530049

1.殺不死

```
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw10$ kill 1830311
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw10$ ps -aux|grep "defunct"
ulohg      1830311  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830312  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830313  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830314  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830315  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830316  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830317  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830318  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830319  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830320  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830431  0.0  0.0   9684   720 pts/0    S+   17:11   0:00 grep  --color=auto defunct
```

2.

```
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw10$ ps -aux|grep "defunct"
ulohg      1830311  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830312  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830313  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830314  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830315  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830316  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830317  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830318  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830319  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
ulohg      1830320  0.0  0.0      0      0 pts/4    Z+   16:22   0:00 [ls] <defunct>
```

3.

法(1).parent要記得使用wait()

法(2)parent先產生一個child(稱A)再讓A去產生其他child(稱B), 若將A刪除後, B就沒parent了, 此時B的parent會改到pid 1的程式, 這個程式會幫我們執行wait()

執行時幾乎沒有zombie

```
1439 0.2 0.1 346588 28628 ? Ssl 18:18 0:00 /usr/libexec/gsd-keyboard
1447 0.3 0.2 836268 31108 ? Ssl 18:18 0:00 /usr/libexec/gsd-media-keys
1448 0.3 0.1 347020 29384 ? Ssl 18:18 0:00 /usr/libexec/gsd-power
1453 0.0 0.0 248860 11328 ? Ssl 18:18 0:00 /usr/libexec/gsd-print-notifications
1458 0.0 0.0 384012 6872 ? Ssl 18:18 0:00 /usr/libexec/gsd-rfkill
1461 0.0 0.0 236152 5968 ? Ssl 18:18 0:00 /usr/libexec/gsd-screensaver-proxy
1462 0.0 0.0 465296 9880 ? Ssl 18:18 0:00 /usr/libexec/gsd-sharing
1469 0.0 0.0 315804 10020 ? Ssl 18:18 0:00 /usr/libexec/gsd-smartcard
1470 0.0 0.0 319992 9256 ? Ssl 18:18 0:00 /usr/libexec/gsd-sound
1474 0.0 0.0 385604 7388 ? Ssl 18:18 0:00 /usr/libexec/gsd-usb-protection
1475 0.3 0.1 346044 28220 ? Ssl 18:18 0:00 /usr/libexec/gsd-wacom
1476 0.0 0.0 314736 8152 ? Ssl 18:18 0:00 /usr/libexec/gsd-wwan
1479 0.3 0.2 347428 29992 ? Ssl 18:18 0:00 /usr/libexec/gsd-xsettings
1505 0.2 0.3 446280 58076 ? Sl 18:18 0:00 /usr/libexec/evolution-data-server/evolution-alarm-notify
1510 0.0 0.0 231804 5912 ? Sl 18:18 0:00 /usr/libexec/gsd-disk-utility-notify
1578 0.0 0.1 342828 15224 ? Sl 18:18 0:00 /usr/libexec/gsd-printer
1579 0.1 0.0 247028 14452 ? Ssl 18:18 0:00 /usr/libexec/colord
1612 2.6 0.8 1099272 128404 ? Sl 18:18 0:06 /snap/snap-store/638/usr/bin/snap-store --gapplication-service
1630 0.0 0.0 532032 6836 ? Ssl 18:18 0:00 /usr/libexec/xdg-document-portal
1650 0.4 0.2 624896 39240 ? Sl 18:18 0:00 /usr/lib/ibus/ibus-engine-chewing --ibus
1761 0.0 0.0 463220 10788 ? Ssl 18:18 0:00 /usr/libexec/xdg-desktop-portal
1765 0.1 0.1 494500 28680 ? Ssl 18:18 0:00 /usr/libexec/xdg-desktop-portal-gtk
1799 0.2 0.2 391568 31992 ? Ssl 18:18 0:00 /usr/libexec/fwupd/fwupd
2290 0.0 0.0 162792 6284 ? Ssl 18:19 0:00 /usr/libexec/gvfsd-metadata
2293 0.1 0.1 419996 29056 ? Sl 18:19 0:00 update-notifier
2335 1.8 0.3 1047132 59572 ? Dsl 18:19 0:02 /usr/libexec/gnome-terminal-server
2346 0.0 0.0 11656 5616 pts/0 Ss+ 18:19 0:00 bash
2468 0.0 0.0 427472 12316 ? Sl 18:20 0:00 /usr/libexec/deja-dup/deja-dup-monitor
2476 2.7 0.9 38355816 146108 ? Sll 18:20 0:03 /usr/share/code/code --unity-launch --enable-crashpad
2480 0.0 0.2 33757468 44312 ? S 18:20 0:00 /usr/share/code/code --type=zygote --no-zygote-sandbox --enable-crashpad
2481 0.0 0.2 33757448 43156 ? S 18:20 0:00 /usr/share/code/code --type=zygote --enable-crashpad --enable-crashpad
2483 0.0 0.0 33757448 7468 ? S 18:20 0:00 /usr/share/code/code --type=zygote --enable-crashpad --enable-crashpad
2497 0.0 0.0 33576820 2672 ? Sl 18:20 0:00 /usr/share/code/chrome_crashpad_handler --monitor-self-annotations=ptype=crashpad-handler --no-rate-limit --database=/home/ulohg/.cc
2509 1.1 0.5 33895936 83200 ? Sl 18:20 0:01 /usr/share/code/code --type=gpu-process --enable-crashpad --crashpad-handler=ptid=2497 --enable-crash-reporter=dd234778-7162-436e-8f
2528 0.0 0.4 33806924 60576 ? Sl 18:20 0:00 /usr/share/code/code --type=utility --utility-sub-type=network.mojon.NetworkService --lang=en-US --service-sandbox-type=none --enab
2537 9.6 1.5 57141092 230100 ? Sl 18:20 0:10 /usr/share/code/code --type=renderer --enable-crashpad --crashpad-handler=ptid=2497 --enable-crash-reporter=dd234778-7162-436e-8f
2575 3.3 0.5 38189716 87912 ? Sl 18:20 0:03 /usr/share/code/code --type=utility --utility-sub-type=node.mojon.NodeService --lang=en-US --service-sandbox-type=none --enable-cra
2576 0.4 0.3 38214744 78272 ? Sl 18:20 0:00 /usr/share/code/code --type=utility --utility-sub-type=node.mojon.NodeService --lang=en-US --service-sandbox-type=none --enable-cra
2596 5.3 0.9 38206668 146380 ? Sl 18:20 0:05 /usr/share/code/code --type=utility --utility-sub-type=node.mojon.NodeService --lang=en-US --service-sandbox-type=none --inspect-pe
2617 0.5 0.4 38153912 72536 ? Sl 18:20 0:00 /usr/share/code/code --ms-enable-electron-run-as-node /usr/share/code/resources/app/out/bootstrap-fork --type=ptyHost --logsPath /h
2652 3.2 0.2 779448 40484 ? Sl 18:20 0:03 /home/ulohg/.vscode/extensions/ms-vscode.cpptools-1.15.4-linux-x64/bin/cpptools
2721 0.1 0.1 4955968 16348 ? Sl 18:20 0:00 /home/ulohg/.vscode/extensions/ms-vscode.cpptools-1.15.4-linux-x64/bin/cpptools-srv 2652 {660207A2-227F-40B9-A0C4-7E0678A2F8D8}
2950 0.0 0.0 11524 5388 pts/1 Ss 18:21 0:00 bash
```

4.大小為6400Byte

```
ulohg@ulohg-VirtualBox:~/Desktop/system-program/hw10$ sudo cat /proc/slabinfo|grep task_struct
task_struct 674 755 6400 5 8 : tunables 0 0 0 : slabdata 151 151 0
```