Blatt 3

May 2020

Aufgabe 1

Linux Kernel-Version 5.7 May 10th 2020
Filepath: include/linux/sched.h
Line: 632
Size: ca. 1824 byte = 1,824 kilobyte with approximately 228 variables

Aufgabe 2

Forkbombs are recursive calls of the fork-function to create child processes which execute the same code of parent process. The code of the parent process calls the function fork (multiple times to rise the amount of following calls exponentially). For parent process calls fork() two times. After n- cycles the amount of processes is already 2**n. Forkbombs target CPU-memory registers, which are relatively small in size and therefore vastly overloaded.

Aufgabe 6

A) Named Pipes: If a malware process knows the name of a pipe, he has access to the pipe and to all processes connected to the pipe. This aspect is also a strength, because it allows an easier connection between processes. Also it is not possible, without much complexity, for multiple processes to use a single named pipe to receive or send multi-line data.

B) You need to open two shells. The first shell contains the following code, which writes data into the pipe:

```
mkfifo mypipe

mknod mypipe p

ls -R >mypipe
```

The second shell, reads the data out of the pipe:

```
while read line; do grep -ci 'jpg'; done <mypipe
```

C)A example would be a chat program where both users would be allowed to send and receive data. This would only be possible with named pipes, because anonymous pipes don't allow data traffic in both direction, they are unidirectional, whereas named pipes are bidirectional.