Apple is slowing down old MacBook

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This article documents my switch from a non usable MacBook Air with macOS, to a usable MacBook Air with OpenBSD.

Machine Specification

```
Apple MacBook Air, 13-inch, Mid 2011, CPU 1,7 GHz Intel Core i5
RAM 4 GB 1333 MHz DDR3, Flash Storage 251 GB Flash
Intel HD Graphics 3000 384 MB, Display 13,3 inches (1440 x 900)
macOS Sierra 10.12.6
```

From macOS to OpenBSD

A few years ago my old MacBook Air started to slow down, becoming so slow that it became unusable. I switched to another, non Mac notebook and put my MacBook Air into storage. A few days ago I decided to look at it again to fix it, or at least securely decommission it.

I discovered that Apple's operating system was improperly reacting to a dead battery in the machine. Firstly, the kernel process with PID 0 had consumed all CPU capacity. Secondly, a new installation of macOS High Sierra was not possible, because installation software stated that the machine is battery powered and I would have to connect to a power source for installation to be allowed.

There is a clear connection between the dead battery in the machine, and software bugs or features which are forcing me to buy at the least a new battery, but more likely a new Apple computer.

I asked Apple Support for a battery replacement or software patch, but they refused to provide me any support as my machine is out of warranty. I understand, that my machine is old, but I still want to use the machine when connected to a power source. MacOS, by consuming all CPU power is not allowing any other usage, so I decided to reinstall the machine with another operating system.

Results

I successfully installed OpenBSD 6.6 amd64 on the machine. The battery is still dead, but the machine is working very well and I can use it as I want.

Technical details

Output from top command in macOS

Here is enclosed output from top command. Formatting is adjusted for A4 paper width.

```
Processes: 262 total, 3 running, 259 sleeping, 883 threads
Load Avg: 12.83, 11.76, 10.77  CPU usage: 0.75% user, 93.18% sys, 6.5% idle
SharedLibs: 163M resident, 41M data, 49M linkedit.
MemRegions: 25898 total, 1399M resident, 106M private, 296M shared.
PhysMem: 3953M used (1188M wired), 141M unused.
VM: 695G vsize, 634M framework vsize, 0(0) swapins, 0(0) swapouts.
Networks: packets: 105144042/6925M in, 180845008/111G out.
Disks: 6709617/133G read, 1933718/28G written.


PID    COMMAND     %CPU  TIME    #TH    #WQ #PORT MEM   PURG CMPRS PGRP  PPID STATE
0      kernel_task 368.2 566 hrs 124/7 0   2     534M  0B   0B    0     0 running
77982  top         1.6   86:39.38 1    0   554   4748K 0B   0B 77982 528 sleeping
```

Output from uname, top and sysctl commands in OpenBSD

```
OpenBSD gildis.navratil.lan 6.6 GENERIC.MP#4 amd64


load averages:  0.00,  0.00,  0.00                  gildis.navratil.lan 19:00:17
41 processes: 40 idle, 1 on processor                                  up  6:00
CPU0 states:  0.0% user,  0.0% nice,  0.2% sys,  0.0% spin,  0.0% intr, 99.8% idle
CPU1 states:  0.0% user,  0.0% nice,  0.2% sys,  0.0% spin,  0.0% intr, 99.8% idle
Memory: Real: 136M/1004M act/tot Free: 2863M Cache: 502M Swap: 0K/8197M

  PID USERNAME PRI NICE  SIZE   RES STATE     WAIT     TIME    CPU COMMAND
77748 _pflogd    4   0  892K  560K sleep/0   bpf      0:05  0.00% pflogd
34314 _x11       2   0   28M   41M idle      poll     0:04  0.00% Xorg
    1 root      10   0  480K  408K idle      wait     0:02  0.00% init
12215 root       2   0 1660K 6660K idle      poll     0:01  0.00% xenodm
37104 _ntp       2 -20  872K 2660K idle      poll     0:00  0.00% ntpd
58050 root      18   0  948K  908K idle      pause    0:00  0.00% ksh
76920 root       2   0 1432K 3912K sleep/0   select   0:00  0.00% sshd
34033 _smtpd     2   0 1848K 4792K idle      kqread   0:00  0.00% smtpd


hw.vendor=Apple Inc.
hw.product=MacBookAir4,2
hw.version=1.0
hw.physmem=4185079808
hw.usermem=4176297984
hw.ncpufound=4
hw.allowpowerdown=1
hw.perfpolicy=auto
hw.smt=0
hw.ncpuonline=2
```