v.20230915

Panic for historical reasons:

Anecdotes from a life filled with BSD

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Picture: Dennis van Zuijlekom

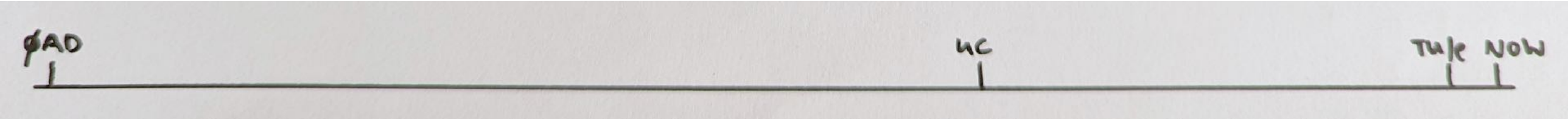
NLUUG

NetBSD 1.1 1.3.2 1.3.3 1.4.1 1.5.2 1.5.3 1.6 1.6.1 1.6.2 3.1 6.1 8.0
OpenBSD 2.3 2.5 3.1 3.3 3.5 3.6 5.0 5.6 5.9 6.2 6.9
FreeBSD 1.1.5.1 2.0 2.1 2.1.5 2.2.1 2.2.5 4.4 4.5 4.10 5.3 6.0 6.2
7.0 7.1 7.2 8.0 8.1 8.2 9.0 9.1 9.2 10.0 10.1 10.2 10.3 11.0 11.1
11.2 12.0 12.1 12.2 13.0 13.1 13.2

The start

TU/e Technische Universiteit Eindhoven University of Technology

- SunOS
- Ultrix

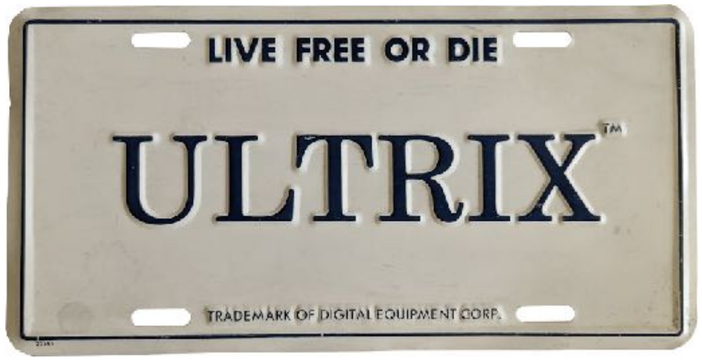


The start

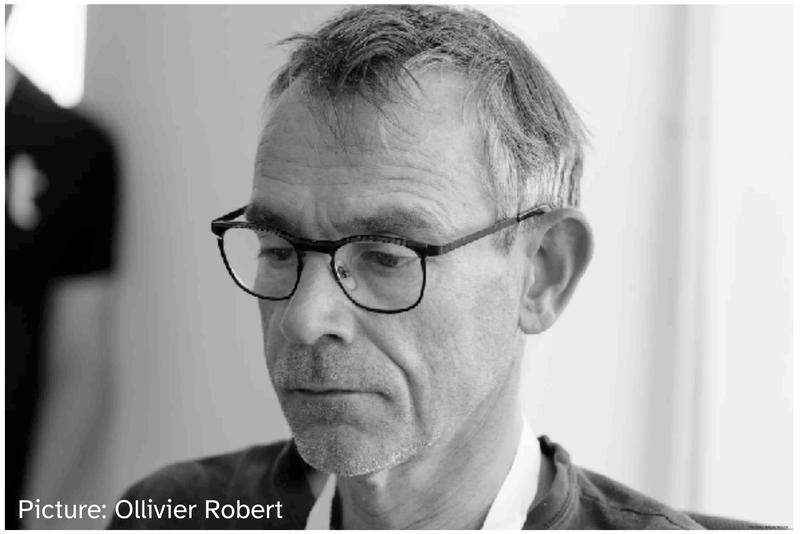
Ultrix V2.2 (eutws1)

login: rcstwb
Password:
Last login: Mon Feb 19 10:46:07 on tty00

You have mail.
% ls /bin /usr/bin /usr/local/bin | lpr
% man man
% man stty
% stty 0>/dev/tty3



386BSD


Picture: Ollivier Robert

- Guido van Rooij used 386bsd
- Interesting!
  But my PC (8086, 640kB RAM, 20MB disk) is not suited


POWER
TURBO
H.D.D.
RESET
TURBO
KEY LOCK
32-BIT DESIGN
386
PROCESSOR

OOPS..!

My First BSD

- 1995-2002
- 486DX100, 64MB RAM(!)
- FreeBSD 1.1.5.1, 2.0, 2.1, 2.1.5, 2.2.1, 2.2.5, 4.4, 4.5
- UUCP, Samba, NFS, NTP, firewall, INN, GRE tunnel for /28 IPv4 and /60 IPv6 networks
- `make buildworld`: 24 hours

My First BSD

- 2002: Regular crashes - hardware related?
- Slowless.. (MP3 playing, SSH)
- Upgraded to Intel Celeron
- Still crashes..

Longest running issue

- Issue IPv6+NAT+ipf/fw, never solved despite low-level debugging
- 2007: workaround: disabled IPv6
- 2011: FreeBSD 9.0: really solved

At work

- 1994-2000: Philips C&P (now Atos)
- Senior Security Consultant
- My own FreeBSD desktop machine

At work

- Root password: empty!
- But, only ‘walter’ in group wheel and tty’s insecure

```
root::0:0:Charlie &:/root:/bin/sh
walter:g3De2.eeFvY1Z:100:0:Walter Belgers:/home/walter:/bin/tcsh
+guido::::::
+arjan::::::
```

At work - #1

root::0:0:Charlie &:/root:/bin/sh
walter:7eI0HpoER03kK:100:0:Walter Belgers:/home/walter:/bin/tcsh
+guido::::::
+arjan::::::

- With access to the NIS master, you can choose your uid on my box..

root::0:0:Charlie &:/root:/bin/sh
walter:7eI0HpoER03kK:100:0:Walter Belgers:/home/walter:/bin/tcsh
+guido::101:100:Guido:/home/guido:/bin/tcsh
+arjan::102:100:Arjan:/home/arjan:/bin/tcsh

At work - #2

- Cannot leave a live session on my box, because:

walter% su
#

- Always lock the screen! Tool: xlockmore

-/+allowroot

The *allowroot* option allows the root password to unlock the server as well as the user who started **xlock**. May not be able to turn this on and off depending on your system and how **xlock** was configured.

At work - #3

- Guido was able to change the motd - he got root!
- Did not want to tell me how...
- But when you are security aware.. you log stuff!

```
DESCRIPTION
     The accton utility is used for switching system accounting on or off.  If
     called with the argument acctfile, system accounting is enabled.  The
     acctfile specified must exist prior to starting system accounting, or
     accton will return an error.  A record of every process that is started
     by the execve(2) system call and then later exits the system is stored in
     acctfile.  The sa(8) command may be used to examine the accounting
     records.  If no arguments are given, system accounting is disabled.

FILES
     /var/account/acct  default accounting file
```

```
DESCRIPTION
     The lastcomm utility gives information on previously executed commands.
     With no arguments, lastcomm prints information about all the commands
     recorded during the current accounting file's lifetime.
```

At work - #3

```
=============================================================================
FreeBSD-SA-96:12                                          Security Advisory
                                                              FreeBSD, Inc.

Topic:          security compromise from perl (suidperl) utility

Category:       core and ports
Module:         perl
Announced:      1996-06-28
Affects:        FreeBSD 2.0, 2.0.5, 2.1, 2.1-stable, and 2.2-current
Corrected:      2.1-stable and 2.2-current as of 1996-06-03
FreeBSD only:   no

Patches:        ftp://freebsd.org/pub/CERT/patches/SA-96:12/

=============================
```

```
III. Impact

     This vulnerability can only be exploited by users with a valid
     account on the local system to easily obtain superuser access.
```

At work - #4

- Who ever did an `rm -rf /` by accident?
- Just as dangerous:

```
root# tar cvf /dev/wd0 .
^C
root#
```

Collecting UNIX servers

- I started collecting Sun, HP, IBM, SGI, Sony, Digital, RDI, Motorola, Altos, NeXT, NCR, Tadpole, MIPS, Apollo, .. servers

UNIX servers

- Installing FreeBSD, NetBSD, OpenBSD
- Challenges everywhere, e.g. this VAXstation 2000
  - Netboot only (no tape drive)
  - Disk controller not supported in OpenBSD
  - NetBSD also issues

UNIX servers

- Sun 3/50 (68020 CPU, 12MB RAM, 327MB drive)
- Compiling NetBSD 1.6.1 kernel: 14 hours, 40 mins
- Kernel must be ≤ 1008kB (1MB - VMEM)
- Third attempt fit - days of fun!

UNIX servers

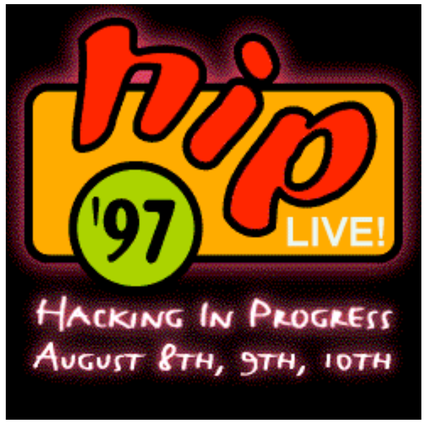
- Sun 2/50 (68010 CPU, 4MB RAM, no drive)
- From before rarp/bootparam/tftp/NFS tools existed
- Uses “network disk”, transferring disk blocks
- Matt Fredette’s ndbootd on NetBSD did the trick (now integrated)

UNIX servers

- This RDI PrecisionBook 180 was used to port OpenBSD to PA-RISC architecture
- Which it is still running

OpenBSD hppa

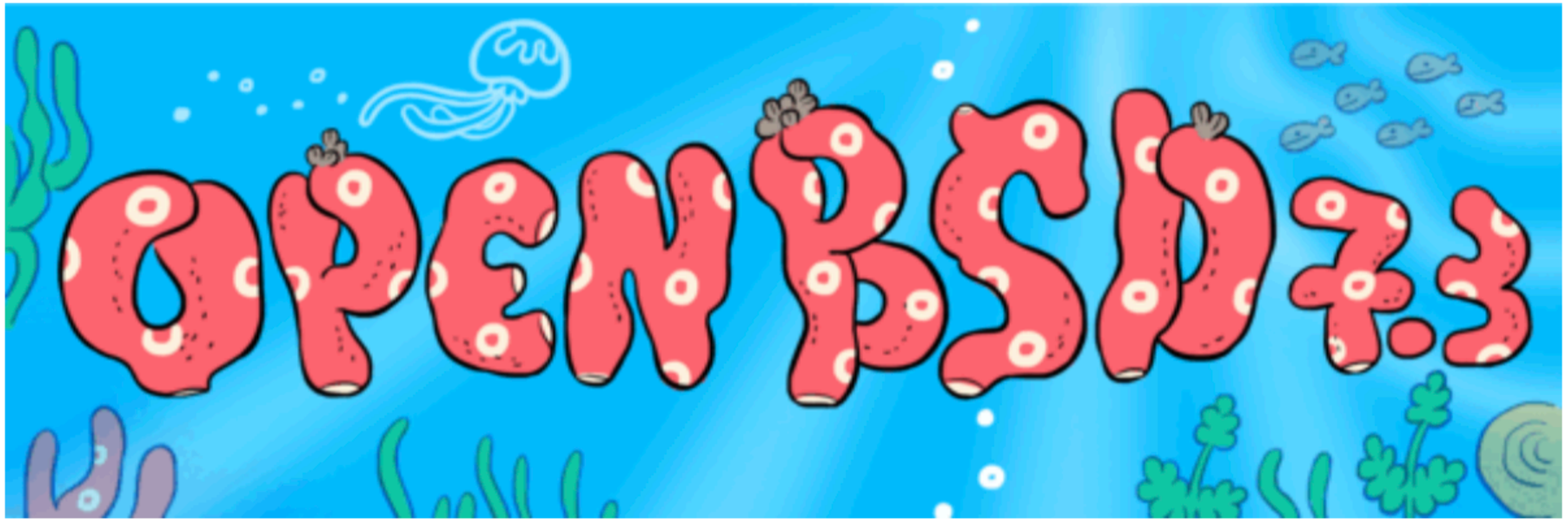
HIP97



- Large outdoor hacker camp
- Theo de Raadt was there
- Although his friends said he was not

WTH2005

OpenBSD



Only two remote holes in the default install, in a heck of a long time!

- Still, you can run insecure stuff on OpenBSD.

PicoBSD

- FreeBSD 3.x+ based OS (I used 4.6.2)
- Runs from floppy, meant as router/firewall
- Minimal spec: 80386SX, 8MB RAM
- ‘seejpeg’ viewer is 435kB, but only 271kB free
- Put floppy 1 in RAM, then mount floppy 2 with slides + viewer

NLUUG

http://www.freebsd.org/~picobsd/

PicoBSD

For the little BSD in all of us.

Panic

- My own FreeBSD desktop machine
- Suddenly: a panic!

```
panic: panic for historical reasons
```

Panic

index : src

FreeBSD source tree

about summary refs log tree commit diff

path: root/sys/i386/eisa/aha1742.c

blob: 77ca2a2826944f6111e6c3d67a5f05440146a02a (plain) (blame)

```
1  /*
2   * Written by Julian Elischer (julian@tfs.com)
```

Panic

```
/*
 * Function to  send an immediate type command to the adapter
 */
static void
ahb_send_immed(struct ahb_data *ahb, int target, u_long cmd)
{
        int     port = ahb->baseport;
        int     s = splbio();
        int     stport = port + G2STAT;
        int     wait = 100;     /* 1 ms enough? */

        while (--wait) {
                if ((inb(stport) & (G2STAT_BUSY | G2STAT_MBOX_EMPTY))
                    == (G2STAT_MBOX_EMPTY))
                        break;
                DELAY(10);
        } if (wait == 0) {
                printf("ahb%d: board is not responding\n", ahb->unit);
                Debugger("aha1742");
                fatal_if_no_DDB();
        }
        outl(port + MBOXOUT0, cmd);     /* don't know this will work */
        outb(port + G2CNTRL, G2CNTRL_SET_HOST_READY);
        outb(port + ATTN, OP_IMMED | target);
        splx(s);
}
```

Panic

```
#ifdef KERNEL
# ifdef DDB
#define fatal_if_no_DDB()
# else
#define fatal_if_no_DDB() panic("panic for historical reasons")
# endif
#endif
```

Thank you

Computer collection: https://giga.nl/walter/computers/