NetBSD 8
What's in Store?
Dispelling the Myths

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EuroBSDcon

September 2017

Long time to release

Long time to release

- 7.0 released September 25 2015
- 7.0.1 released May 22 2016
- 7.0.2 released October 21 2016
- 7.1 released March 11 2017
- 8.0 Release process started June 6th 2017
- Current status - about to be released

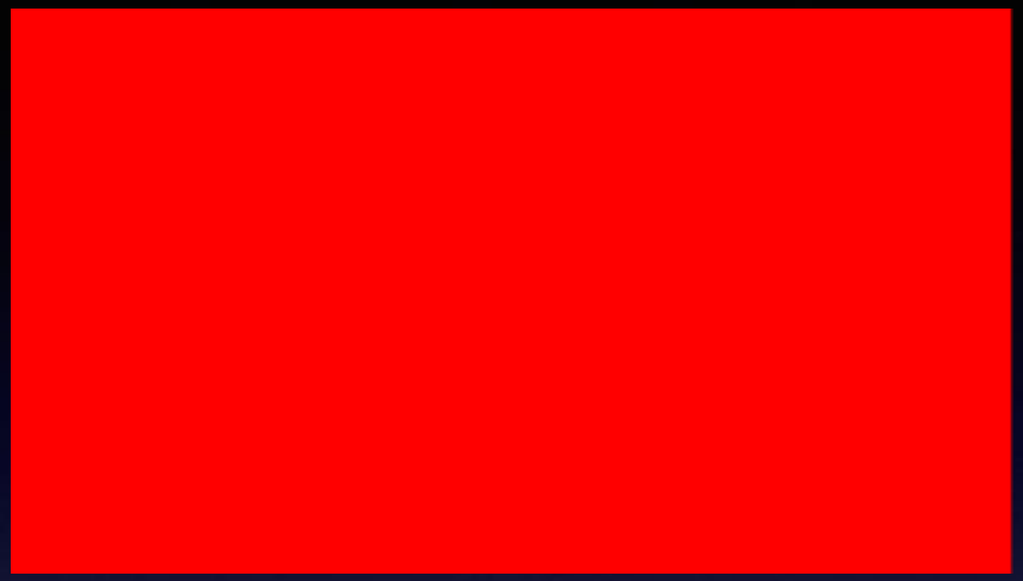
No packages available

No packages available

http://ftp.netbsd.org/pub/pkgsrc/packages/NetBSD/amd64/8.0/All/

Index of pub/pkgsrc/packages/NetBSD/amd64/8.0/All/index.html

Name	Last modified	Size
Parent Directory	27-Jul-2017 08:41	0kB
.pkgcache	08-Sep-2017 11:17	56840kB
0verkill-0.16nb1.tgz	02-Aug-2017 04:49	306kB
2048-cli-0.9.1.tgz	02-Aug-2017 04:49	9kB
2bwm-20150526.tgz	03-Aug-2017 08:23	26kB
2vcard-0.5nb5.tgz	01-Aug-2017 16:47	10kB
3ddesktop-0.2.9nb13.tgz	03-Aug-2017 08:23	73kB
3proxy-0.7.1.2.tgz	22-Aug-2017 12:56	89kB
6tunnel-0.11.tgz	02-Aug-2017 20:57	12kB
7plus-225nb1.tgz	22-Aug-2017 13:53	57kB
8086tiny-1.25.tgz	02-Aug-2017 01:51	1244kB
855resolution-0.4nb2.tgz	03-Aug-2017 03:42	8kB
915resolution-0.5.3.tgz	03-Aug-2017 03:42	11kB
9base-20100604nb2.tgz	03-Aug-2017 03:43	8230kB
9e-1.0.tgz	01-Aug-2017 11:51	5kB
9menu-1.8nb1.tgz	02-Aug-2017 19:28	12kB
9wm-1.4.0nb1.tgz	03-Aug-2017 08:23	23kB
Addresses-0.4.8nb10.tgz	30-Jul-2017 07:13	403kB
AfterShotPro-1.1.0.30.tgz	22-Aug-2017 17:50	72263kB
AnonymousPro-1.002.tgz	02-Aug-2017 03:09	282kB
BasiliskII-1.0.20060501nb5.tgz	02-Aug-2017 01:52	293kB



Old hardware only

Old hardware only

- Tegra K1 (SoC), NVIDIA Jetson TK1 (Dev Board)
- Allwinner - A31, A83T, H2+ and H3 (all SoC)
- A13, A64, R8 and GR8 in current
- A20 support is in 7, plans for FDT-ing

But no-one's heard of them

- A83T: BananaPi BPI-M3
- H2+: Xunlong Orange Pi Zero
- H3: FriendlyARM, Sinovoip, Xunlong
  - NanoPi NEO (256MB) up to
  - OrangePi Plus 2E (2GB)

From the horse's mouth

- ftp http://agc.ac/2017/jmcneill-20170919.script
- script -p jmcneill-20170919.script

Other hardware

- Intel QAT card support

- Support for VAXstation 4000 TURBOchannel USB and GPIO

xterm

```
load averages:  0.85,  1.18,  0.84;                up 0+00:13:53        21:32:34
40 processes: 39 sleeping, 1 on CPU
CPU states:  1.9% user,  0.0% nice,  2.2% system,  0.0% interrupt, 95.9% idle
Memory: 79M Act, 12M Wired, 17M Exec, 35M File, 77M Free
Swap: 384M Total, 384M Free

  PID USERNAME PRI NICE   SIZE   RES STATE      TIME   WCPU    CPU COMMAND
  734 mathew    84    0 5380K 2884K ttyraw     0:02  1.37%  1.37% tcsh
  717 root      85    0   33M   12M select     0:53  1.03%  1.03% XdecNetBSD
 1328 root      85    0 9320K 4008K netio      0:04  0.63%  0.59% ftp
  925 root      79    0 7236K 3092K wait       0:12  0.34%  0.34% make
  804 mathew    85    0   11M 4676K select     0:19  0.00%  0.00% ssh
   41 root      78    0   14M 4664K wait       0:16  0.00%  0.00% xdm
  296 root      81    0 6980K 3100K wait       0:13  0.00%  0.00% make
 1366 mathew    85    0   15M 5752K select     0:08  0.00%  0.00% xterm
    0 root     124    0    0K 8080K syncer     0:06  0.00%  0.00% [system]
  404 mathew    85    0   10M 4612K select     0:06  0.00%  0.00% xterm
  338 root      85    0   10M   11M pause      0:04  0.00%  0.00% ntpd
  110 mathew    85    0   10M 4660K select     0:04  0.00%  0.00% xterm
  763 mathew    85    0 9000K 3928K select     0:03  0.00%  0.00% xsm
  883 mathew    85    0 8828K 2936K select     0:03  0.00%  0.00% xeyes
  831 mathew    85    0 6256K 2872K pause      0:03  0.00%  0.00% tcsh
  812 mathew    43    0 5824K 1960K CPU        0:02  0.00%  0.00% top
  567 mathew    85    0   10M 4668K select     0:02  0.00%  0.00% xterm
```

xterm

```
root has logged on console from local.
mathew has logged on pts/1 from :0.0.
mathew has logged on pts/2 from :0.0.
mathew has logged on pts/3 from :0.0.
mathew has logged on pts/4 from :0.0.
[ariana]:~>/sbin/uname
/sbin/uname: Command not found.
[ariana]:~>uname -a
NetBSD ariana 8.0_BETA NetBSD 8.0_BETA (GENERIC_USB.20170906031OZ) pmax
[ariana]:~>/sbin/dmesg | grep sfb
sfb0 at tc0 slot 0 offset 0x0: 1280x1024, 8bpp
wsdisplay0 at sfb0 kbdmux 1: console (std, vt100 emulation), using wskbd0
[ariana]:~>
```

xterm

```
Requesting http://cdn.NetBSD.org/pub/pkgsrc/distfiles/olvwm4.src4.tar.gz
100% |**********************************|   377 KiB  283.61 KiB/s    00:00 ETA
386560 bytes retrieved in 00:01 (250.75 KiB/s)
=> Checksum SHA1 OK for olvwm4.src4.tar.gz
=> Checksum RMD160 OK for olvwm4.src4.tar.gz
=> Checksum SHA512 OK for olvwm4.src4.tar.gz
===> Installing dependencies for olvwm-4.4nb4
=> Tool dependency imake-[0-9]*: NOT found
=> Verifying reinstall for ../../devel/imake
=> Bootstrap dependency digest>=20010302: found digest-20160304
===> Checking for vulnerabilities in imake-1.0.7nb3
=> Fetching imake-1.0.7.tar.bz2
=> Total size: 156543 bytes
Trying [2610:10:20:722:a800:ff:feda:470f]:80 ...
ftp: Can't connect to `2610:10:20:722:a800:ff:feda:470f:80': No route to host
Trying 131.252.210.176:80 ...
Requesting http://xorg.freedesktop.org/releases/individual/util/imake-1.0.7.tar.
bz2
Redirected to https://www.x.org/releases/individual/util/imake-1.0.7.tar.bz2
Trying [2610:10:20:722:a800:ff:feda:470f]:443 ...
ftp: Can't connect to `2610:10:20:722:a800:ff:feda:470f:443': No route to host
Trying 131.252.210.176:443 ...
Requesting https://www.x.org/releases/individual/util/imake-1.0.7.tar.bz2
 83% |*************************      |   128 KiB    2.46 KiB/s  - stalled -
```

xterm

```
23:24 (herdware) http://www.pcmuseum.ca/details.asp?id=254&type=Peripheral s@?
23:28 (ali) nope... hang on, kan posta en bild i C64-gruppen p@fejan
23:34 (ali) hrrm
23:35 (ali) den @ extremt lik excelerator dock
23:35 (ali) fast utan loggan
23:35 (ali) och LEDen @ p@undersidan d@ loggan @ p@bilden ist@let f@
   ovanf@ springan
23:35 (ali) allts@det m@te vara en variant
23:37 (herdware) antagligen
23:39 (herdware) kallades @en oc-118n
23:45 ::  larsd [Lars@c83-254-8-96.bredband.comhem.se] has quit [Quit:
          Vanished!]
Day changed to 19 Sep 2017
12:11 (peli) snart dags att plocka fram m@sa
12:13 (crash) peli: du f@ g@i ide, och komma fram p@v@kanten :)
17:46 (herdware) https://twitter.com/MPA_tiddysucker/status/910090696039780352
19:57 (crash) herdware: otur :P
19:57 (herdware) https://twitter.com/herdware/status/910189197675425793
19:58 (herdware) crash: undrar hur hennes framtida sexliv kommre se ut :P
21:02 (crash) herdware: kanske fortfarande @ hett d@ nere sen blixten
21:29 (mathew) herdware, kor du X pa din 5000/240 nu?
```

xsm: Default

xterm

```
lkkbd0: no keyboard
Copyright (c) 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005,
    2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
    The NetBSD Foundation, Inc.  All rights reserved.
Copyright (c) 1982, 1986, 1989, 1991, 1993
    The Regents of the University of California.  All rights reserved.

NetBSD 8.0_BETA (GENERIC_USB.20170906003102)
DECstation 5000/240 (3MAXPLUS)
total memory = 192 MB
avail memory = 181 MB
timecounter: Timecounters tick every 3.906 msec
Kernelized RAIDframe activated
mainbus0 (root)
cpu0 at mainbus0: MIPS R4000A CPU (0x230) Rev. 3.0 with MIPS R3010 FPC Rev. 4.0
cpu0: 64KB/4B direct-mapped Instruction cache, 64 TLB entries
cpu0: 64KB/4B direct-mapped write-through Data cache
tc0 at mainbus0: 25 MHz clock
ioasic0 at tc0 slot 3 offset 0x0
le0 at ioasic0 offset 0xc0000: address 08:00:2b:2b:c1:1a
le0: 32 receive buffers, 8 transmit buffers
zsc0 at ioasic0 offset 0x100000
wsmux0 at zsc0 channel 0
--More--(byte 967)
```

xterm

```
[ariana]:~>
[ariana]:~>
[ariana]:~>
[ariana]:~>
[ariana]:~>
[ariana]:~>
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[ariana]:~>
[ariana]:~>
[ariana]:~>

[ariana]:~>


[ariana]:~>

[ariana]:~>
[ariana]:~>
[ariana]:~>uname -a
NetBSD ariana 8.0_BETA NetBSD 8.0_BETA (GENERIC_USB.20170906003102) pmax
[ariana]:~>dmesg | grep usb
usb0 at ohci0: USB revision 1.1
uhub0 at usb0: ScanLogic\Ypress (0x4ce) SL811HS/T root hub (0000), class 9/0, r
ev 1.00/1.00, addr 1
[ariana]:~>dmesg | grep [
```

xconsole *

xterm

No LLVM/clang support

LLVM/Clang 5.0 intree

- Joerg maintaining
- Still optional, off by default
- Regular testing with pkgsrc bulk builds
- Particularly good at finding compiler regressions

LLVM/Clang 5.0 intree

- Kamil has been working for TNF
  - lldb and debugging infrastructure
- Upstreaming sanitizer support
  - asan, ubsan working
  - tsan, and msan

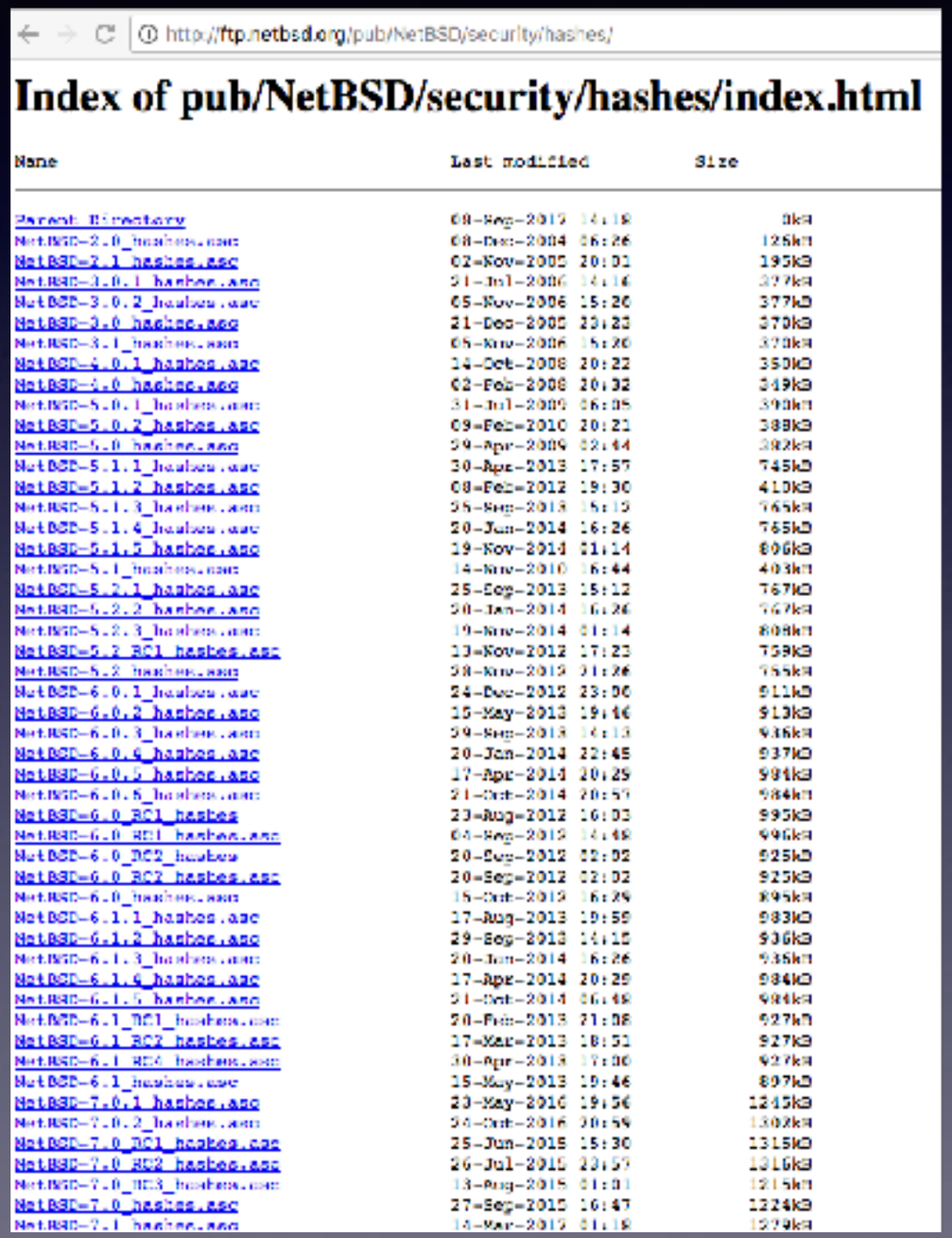
No virtualisation

No virtualisation

- Xen
- Usermode
- RUMP
- No Bhyve/VMM/KVM equivalent

No signing

No signing



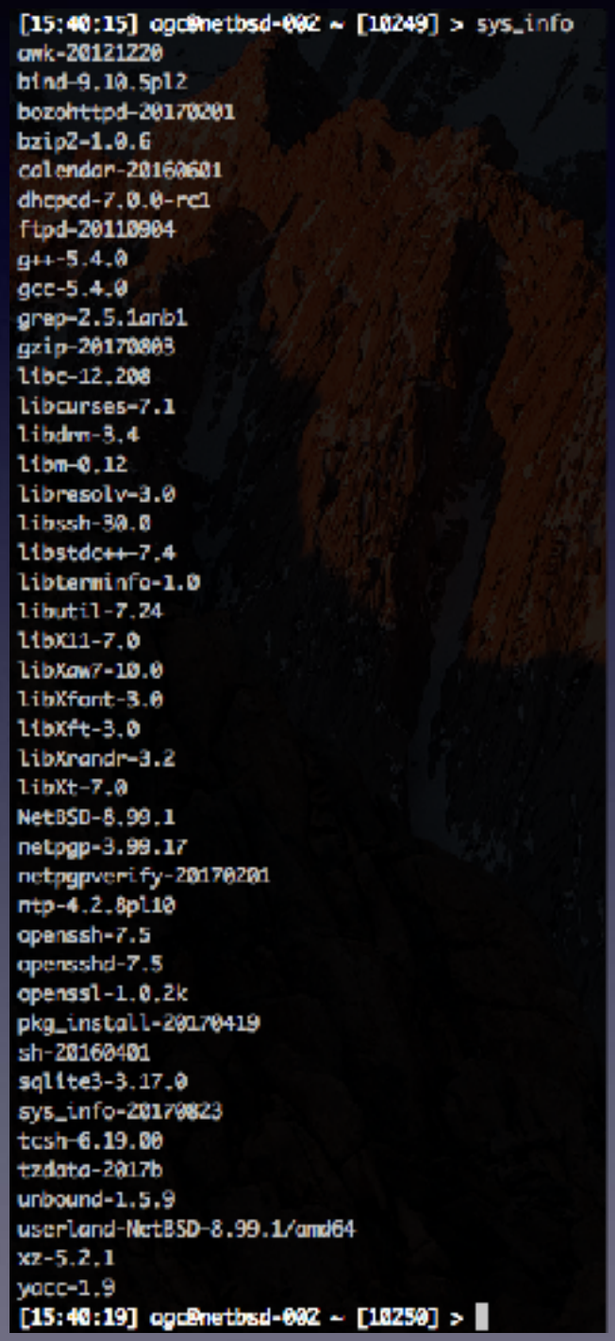
http://ftp.netbsd.org/pub/NetBSD/security/hashes/

Index of pub/NetBSD/security/hashes/index.html

Name	Last modified	Size
Parent Directory	08-Aug-2013 14:18	0kB
NetBSD-2.0_hashes.asc	08-Dec-2004 06:26	126kB
NetBSD-2.1_hashes.asc	02-Nov-2005 20:01	195kB
NetBSD-3.0.1_hashes.asc	31-Jul-2006 14:16	377kB
NetBSD-3.0.2_hashes.asc	05-Nov-2006 15:26	377kB
NetBSD-3.0_hashes.asc	21-Dec-2005 23:23	370kB
NetBSD-3.1_hashes.asc	05-Nov-2006 15:20	370kB
NetBSD-4.0.1_hashes.asc	14-Oct-2008 20:22	350kB
NetBSD-4.0_hashes.asc	02-Feb-2008 20:32	349kB
NetBSD-5.0.1_hashes.asc	31-Jul-2009 06:05	390kB
NetBSD-5.0.2_hashes.asc	09-Feb-2010 20:21	388kB
NetBSD-5.0_hashes.asc	09-Apr-2009 02:44	382kB
NetBSD-5.1.1_hashes.asc	30-Apr-2013 17:57	745kB
NetBSD-5.1.2_hashes.asc	08-Feb-2012 19:30	410kB
NetBSD-5.1.3_hashes.asc	05-Sep-2013 15:13	765kB
NetBSD-5.1.4_hashes.asc	20-Jun-2014 16:26	765kB
NetBSD-5.1.5_hashes.asc	19-Nov-2014 21:14	806kB
NetBSD-5.1_hashes.asc	14-Nov-2010 16:44	403kB
NetBSD-5.2.1_hashes.asc	25-Sep-2013 15:12	767kB
NetBSD-5.2.2_hashes.asc	20-Jan-2014 16:26	767kB
NetBSD-5.2.3_hashes.asc	19-Nov-2014 21:14	808kB
NetBSD-5.2_RC1_hashes.asc	13-Nov-2012 17:23	759kB
NetBSD-5.2_hashes.asc	08-Nov-2012 21:26	765kB
NetBSD-6.0.1_hashes.asc	24-Dec-2012 23:00	911kB
NetBSD-6.0.2_hashes.asc	15-May-2013 19:46	913kB
NetBSD-6.0.3_hashes.asc	05-Sep-2013 16:13	936kB
NetBSD-6.0.4_hashes.asc	20-Jan-2014 22:45	937kB
NetBSD-6.0.5_hashes.asc	17-Apr-2014 20:25	984kB
NetBSD-6.0.6_hashes.asc	21-Oct-2014 20:59	984kB
NetBSD-6.0_RC1_hashes	23-Aug-2012 16:03	995kB
NetBSD-6.0_RC1_hashes.asc	04-Sep-2012 14:49	995kB
NetBSD-6.0_RC2_hashes	20-Sep-2012 02:02	925kB
NetBSD-6.0_RC2_hashes.asc	20-Sep-2012 02:02	925kB
NetBSD-6.0_hashes.asc	15-Oct-2012 16:29	895kB
NetBSD-6.1.1_hashes.asc	17-Aug-2013 19:59	983kB
NetBSD-6.1.2_hashes.asc	29-Sep-2013 14:15	936kB
NetBSD-6.1.3_hashes.asc	20-Jan-2014 16:26	936kB
NetBSD-6.1.4_hashes.asc	17-Apr-2014 20:29	984kB
NetBSD-6.1.5_hashes.asc	21-Oct-2014 06:49	984kB
NetBSD-6.1_RC1_hashes.asc	20-Feb-2013 21:08	927kB
NetBSD-6.1_RC2_hashes.asc	17-Mar-2013 18:51	927kB
NetBSD-6.1_RC3_hashes.asc	30-Apr-2013 17:00	927kB
NetBSD-6.1_hashes.asc	15-May-2013 19:46	897kB
NetBSD-7.0.1_hashes.asc	23-May-2016 19:56	1245kB
NetBSD-7.0.2_hashes.asc	04-Oct-2016 20:59	1302kB
NetBSD-7.0_RC1_hashes.asc	25-Jun-2015 15:30	1315kB
NetBSD-7.0_RC2_hashes.asc	26-Jul-2015 23:57	1316kB
NetBSD-7.0_RC3_hashes.asc	13-Aug-2015 21:21	1315kB
NetBSD-7.0_hashes.asc	27-Sep-2015 16:47	1324kB
NetBSD-7.1_hashes.asc	14-Mar-2017 21:19	1379kB

Outdated utilities in base

Outdated utilities in base



Networking is outdated

Networking is outdated

- No BBR or RACK in TCP congestion
- bouyer's sockcan implementation
- dhcpcd's home

Difficult to develop

Difficult to develop for

- build.sh
  - cross-OS building AND cross-arch building
- distrib/utils/embedded/mkimage
- pkgsrc/sysutils/{mklivecd,mkmemstick}
- All the u-boot packages

Difficult to develop for

Wildcard matches

sysutils/u-boot-beagleboard, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (omap3_beagle_defconfig), u-boot-beagleboard-2017.07

sysutils/u-boot-beagleboneblack, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (am335x_boneblack_defconfig), u-boot-beagleboneblack-2017.07

sysutils/u-boot-beaglebonewhite, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (am335x_evm_defconfig), u-boot-beaglebonewhite-2017.07

sysutils/u-boot-chip, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (CHIP_defconfig), u-boot-chip-2017.07

sysutils/u-boot-cubieboard4, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (Cubieboard4_defconfig), u-boot-cubieboard4-2017.07

wip/u-boot-full, ***version 2016.05***, *maintainer* joe.davis512
Das U-Boot -- the Universal Boot Loader, u-boot-full-2016.05

sysutils/u-boot-jetson-tx1, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (p2371-2180_defconfig), u-boot-jetson-tx1-2017.07

sysutils/u-boot-nanopi-neo, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (nanopi_neo_defconfig), u-boot-nanopi-neo-2017.07

sysutils/u-boot-orangepi-2, ***version 2017.07nb1***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (orangepi_2_defconfig), u-boot-orangepi-2-2017.07nb1

sysutils/u-boot-orangepi-one, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (orangepi_one_defconfig), u-boot-orangepi-one-2017.07

sysutils/u-boot-orangepi-plus2e, ***version 2017.07nb1***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (orangepi_plus2e_defconfig), u-boot-orangepi-plus2e-2017.07nb1

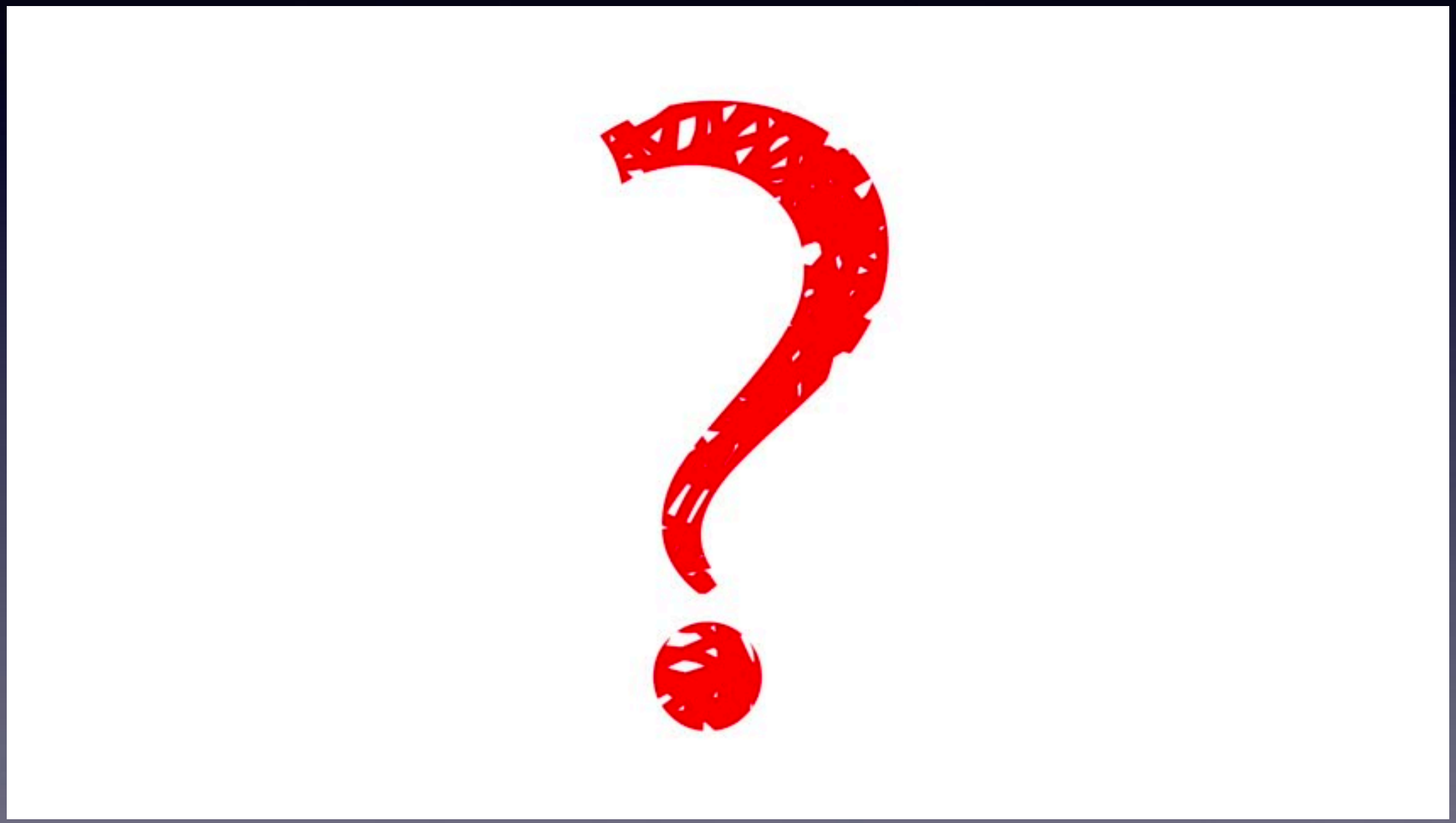
sysutils/u-boot-pine64, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (pine64_plus_defconfig), u-boot-pine64-2017.07

sysutils/u-boot-pinebook, ***version 2017.09rc2***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (pinebook_defconfig), u-boot-pinebook-2017.09rc2

sysutils/u-boot-pocketchip, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (PocketCHIP_defconfig), u-boot-pocketchip-2017.07

sysutils/u-boot-sinovoip-bpi-m3, ***version 2017.07***, *maintainer* port-arm
Das U-Boot, the Universal Boot Loader (Sinovoip_BPI_M3_defconfig), u-boot-sinovoip-bpi-m3-2017.07

Run by morons



Run by morons

- Others take a large amount of time and effort
- Board and core team (like a company)
- AGMs every year
- Board elections every year

No modern file systems

No modern file systems

- No Hammer
- ZFS is out of date (but being updated)
- LFS was worked on during Google SoC
- Puffs/Pud allow FUSE filesystems reliably

No Dtrace

No Dtrace

- **To**: source-changes%NetBSD.org@localhost
- **Subject**: **CVS commit: src/doc**
- **From**: **"Sevan Janiyan" <sevan%netbsd.org@localhost>**
- Date: Sun, 17 Sep 2017 15:30:08 +0000

```
Module Name:    src
Committed By:   sevan
Date:           Sun Sep 17 15:30:08 UTC 2017

Modified Files:
        src/doc: CHANGES

Log Message:
Note installation of scripts from the DTrace Toolkit in base.


To generate a diff of this commit:
cvs rdiff -u -r1.2317 -r1.2318 src/doc/CHANGES

Please note that diffs are not public domain; they are subject to the
copyright notices on the relevant files.
```

No Dtrace support

- Added syscall support [christos 20150307]
- Added lockstat support [christos 20150308]
- Toolkit scripts from sevan in last few days

No NVME support

No NVME support

```
NVME(4) Device Drivers Manual NVME(4)

NAME

   nvme -- Non-Volatile Memory Host Controller Interface

SYNOPSIS

   nvme* at pci? dev ? function ?

DESCRIPTION

   The nvme driver provides support for NVMe, or NVM Express, storage controllers conforming to the Non-Volatile
   Memory Host Controller Interface specification. Controllers complying to specification version 1.1 and 1.2 are
   known to work. Other versions should work too for normal operation with the exception of some pass-through
   commands.
   The driver supports the following features:
     * controller and namespace configuration and management using nvmectl(8)
     * highly parallel I/O using per-CPU I/O queues
     * PCI MSI/MSI-X attachment, and INTx for legacy systems
```

No NCQ support

No NCQ support

Initial ahci(4) NCQ support on jdolecek-ncq branch, test/review wanted

- **To: Tech-kern <tech-kern%netbsd.org@localhost>**
- **Subject: Initial ahci(4) NCQ support on jdolecek-ncq branch, test/review wanted**
- **From: Jaromír Doleček <jaromir.dolecek%gmail.com@localhost>**
- Date: Thu, 20 Apr 2017 00:25:47 +0200

Hi,

I've committed the initial NCQ support, it's available at jdolecek-ncq
branch (branch only over sys). It works under Parallels for now, and
is ready for brave adventurers. There is sys/dev/ata/TODO.ncq which
you might want to check, also.

If people want to try it out and give feedback, I'd really appreciate it.

Developers out of touch

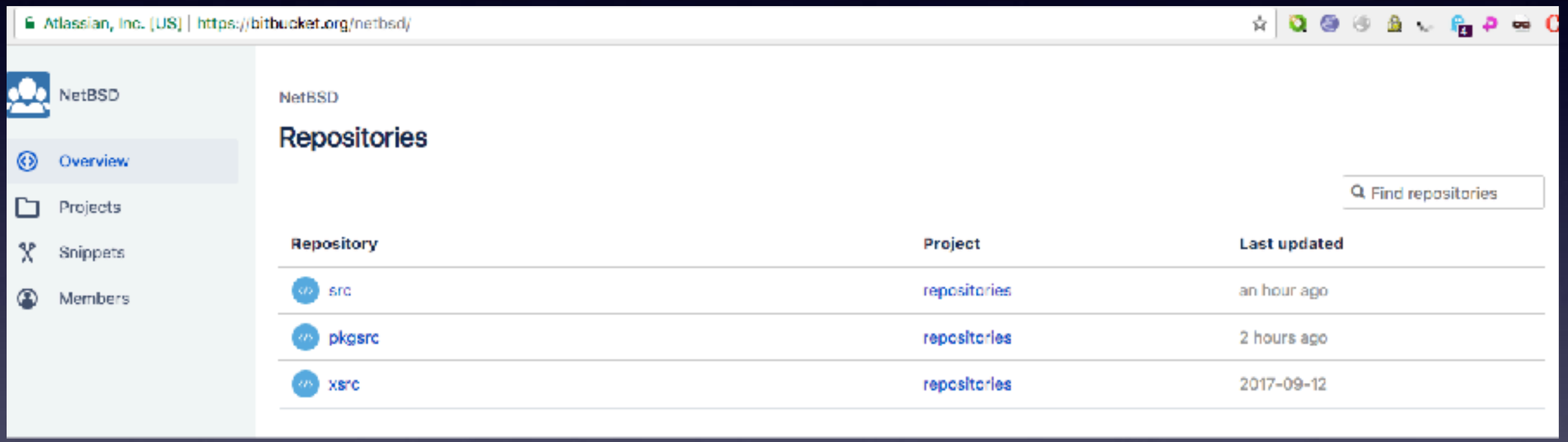
Developers out of touch

- Any developers here?
- Did you bring all private keys and 2FA tokens?

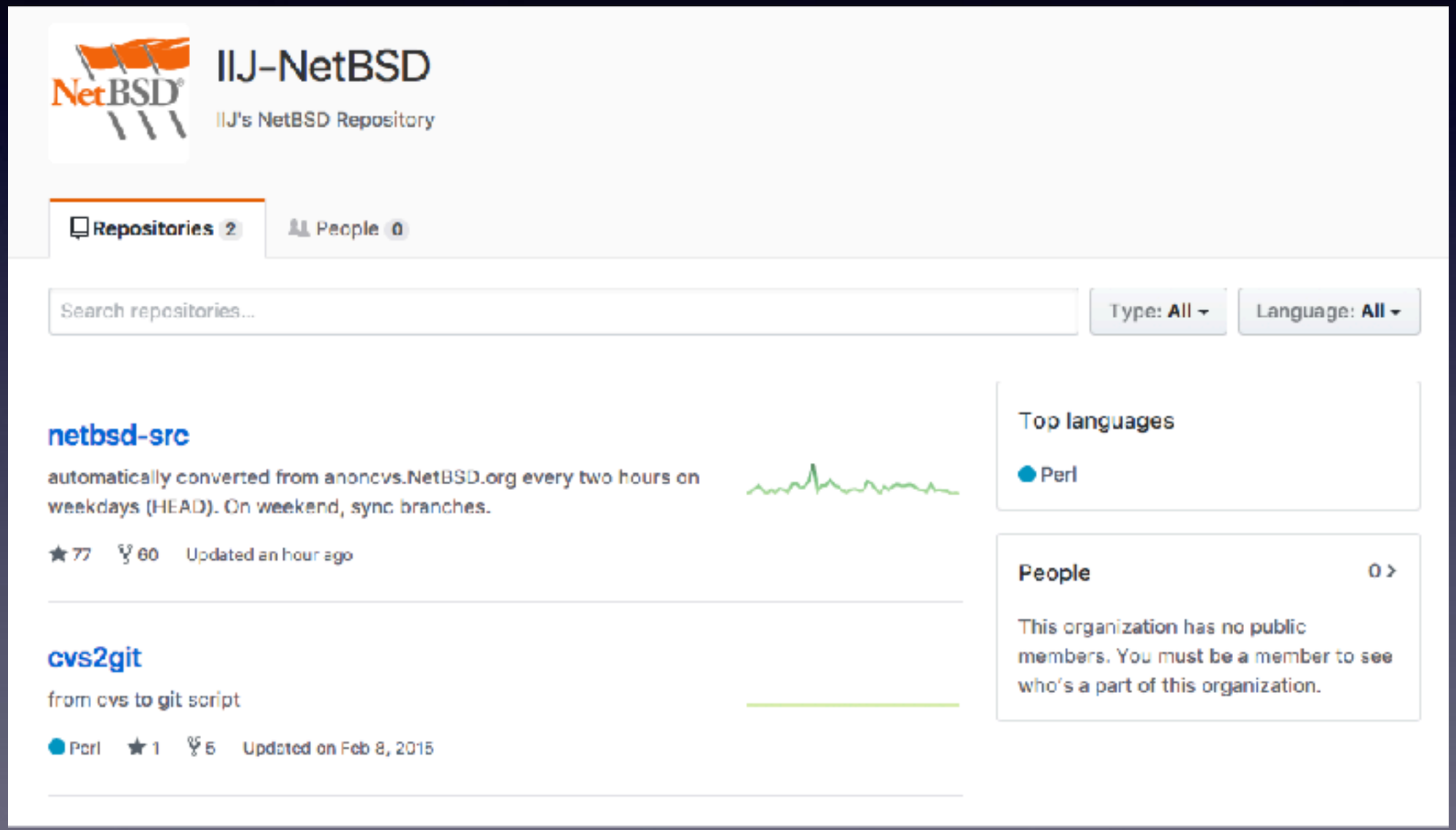
No DVCS Repos

No DVCS Repos

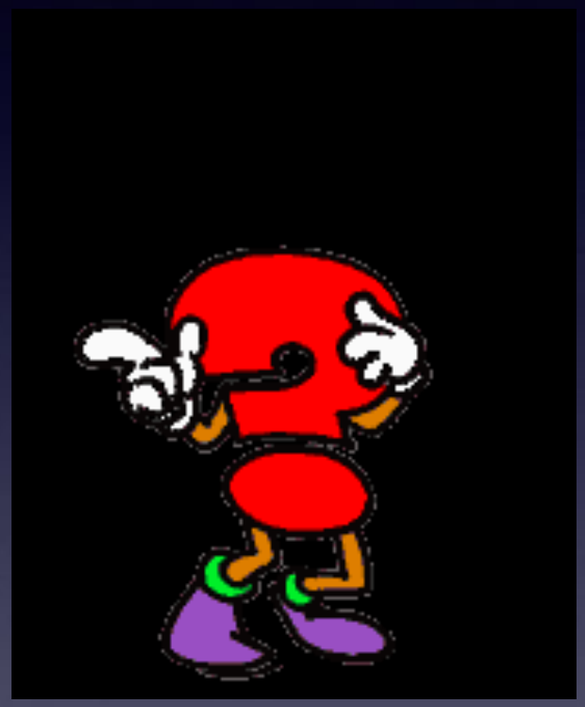
No DVCS Repos



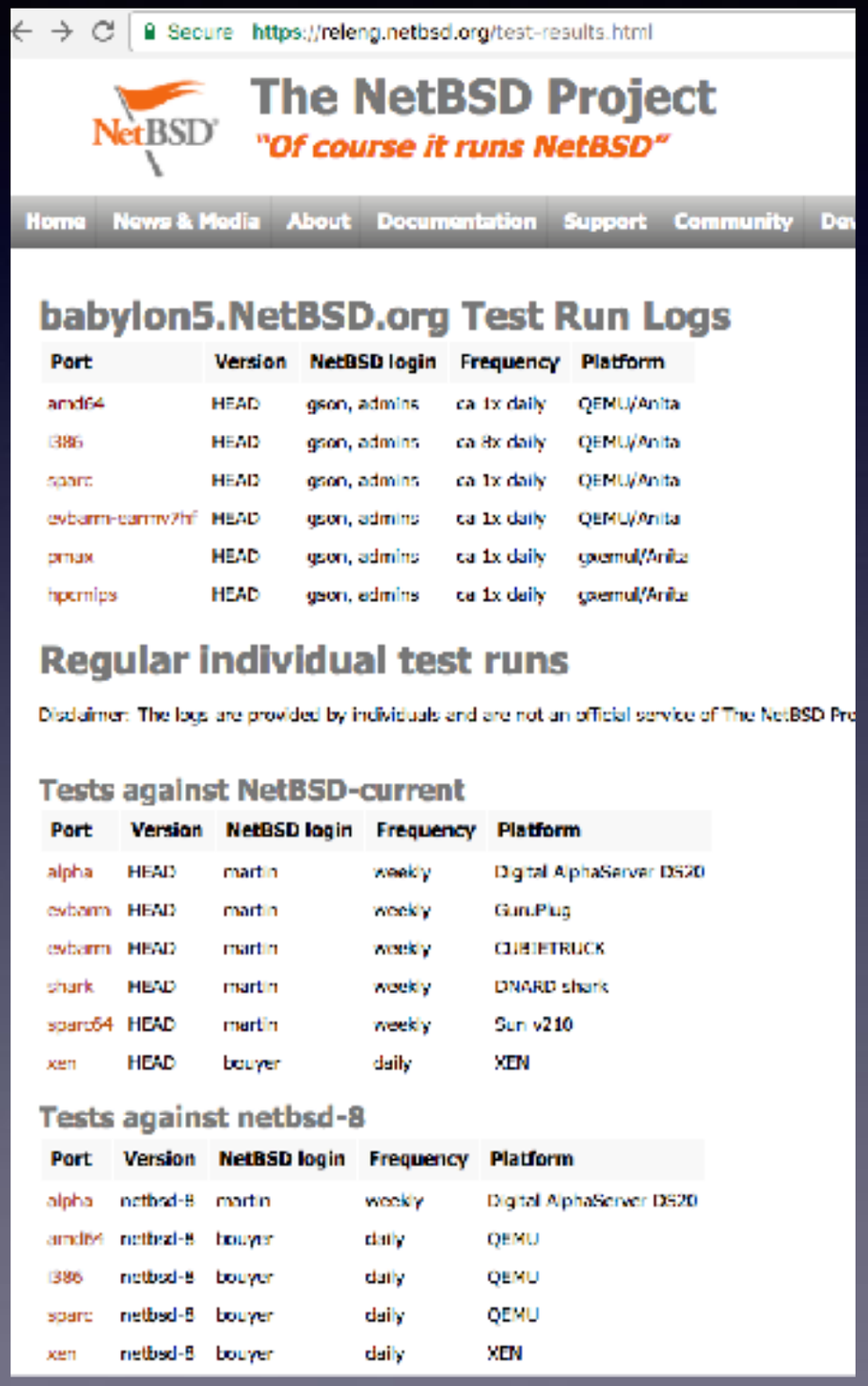
No DVCS Repos



Testing is crap

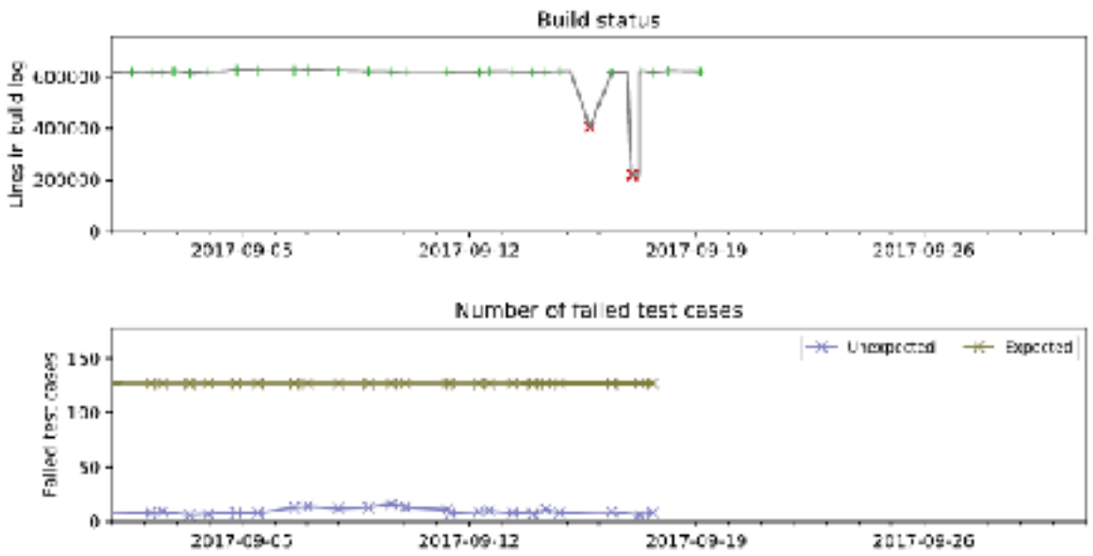


Testing is crap

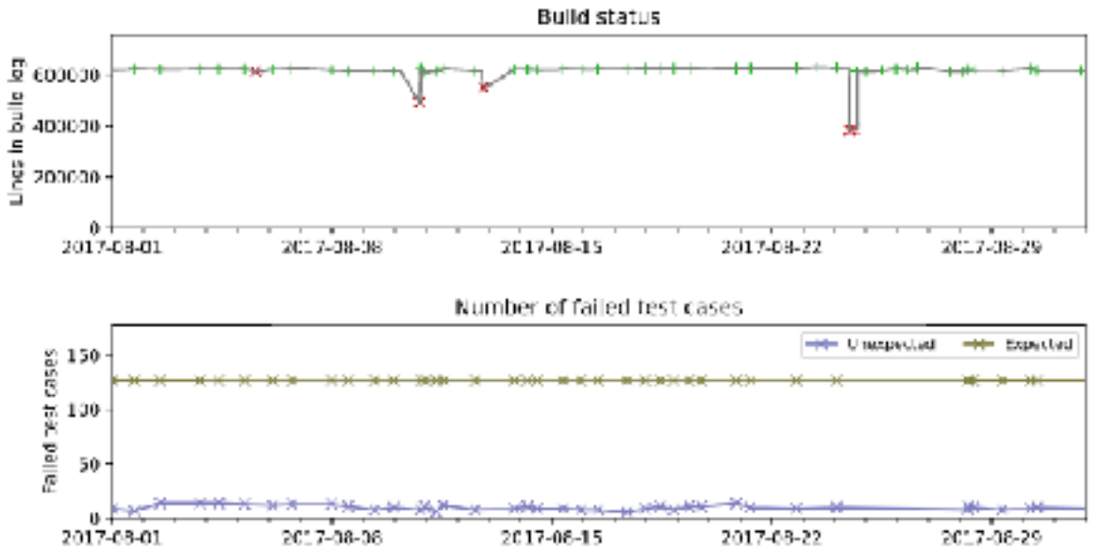


Testing is crap

September 2017 [details]



August 2017 [details]



Reproducible Builds

- 302 Return Code to Christos's talk
- Way more complex than I expected
- First BSD to complete Debian run
- First "big unix" to complete Debian run
- Minix uses NetBSD user land and build system

No FDT

No FDT

- sys/arch/arm/fdt/
- sys/arch/evbarm/fdt/
- sys/dev/fdt/
- sys/external/bsd/libfdt

Everything else

- ptrace(2) fixes from kamil
- nat's new sound driver, bta2dpd(8)
- msaitoh's updates for ixg(4) and ixv(4)
- alnsn's addition of AES-XTS to cgd(4)

Everything else

- jmcneill's new SDMMC driver
- maxv's amd64/i386 overhaul
- xen kernel modulkes (maxv)
- flxd's getrealloc/setrealloc changes to scsictl(8)

Everything else

- lua now at 5.3.4 in kernel
- secmodel_sandbox - https://www.bsdcan.org/2017/schedule/track/Security/835.en.html
- ext4fs - jdolocek's extents, dir_nlink and gdt_csum/uninit_bg support
- flxd's Turbochannel USB/GPIO option

Everything else

- ozaki-r MPSAFE network changes
- nick-nhusb merge - some USB3 support
- GPT support, including booting
- PCI support for DNARD/Shark

Everything else

- ip6addrctl - from FreeBSD
- christos's blacklistd
- maxv's security work

Everything else

- vioscsi - christos/jdolecek
- Google compute engine - bsiegert
- nouveau - riastradh

Summary

- Lots new in NetBSD 8
- Lots of people working very hard
- Available RSN

Q
&
A