

×10000

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See <https://openbsd.org/events.html>

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- 9603 distinct ports
- 11881 packages (between FLAVORS and MULTI_PACKAGES)
- 64GB binary packages
- > 100GB source code
- 40 hours build on 4x8 cores

Every port can be built independently

```
1 hub$ make
2 ==> Building from scratch arc-5.21pp0
3 ==> Verifying specs:  c
4 ==> found c.97.1
5 ==> Checking files for arc-5.21pp0
6 `~/vide/build/usr/ports/distfiles/arc-5.21p.tar.gz' is up to date.
7 >> (SHA256) arc-5.21p.tar.gz: OK
8 ==> Extracting for arc-5.21pp0
9 ==> Patching for arc-5.21pp0
10 ==> Applying OpenBSD patch patch-arc_c
11 Hmm... Looks like a unified diff to me...
12 The text leading up to this was:
13 -----
14 |--- arc.c.orig Sat Aug  7 15:06:42 2010
15 |+++ arc.c      Mon May 30 11:55:37 2011
16 -----
```

```
17 Patching file arc.c using Plan A...
18 Hunk #1 succeeded at 129.
19 [...]
20 done
21 ==> Compiler link: clang -> /usr/bin/clang
22 ==> Compiler link: clang++ -> /usr/bin/clang++
23 ==> Compiler link: cc -> /usr/bin/cc
24 ==> Compiler link: c++ -> /usr/bin/c++
25 ==> Generating configure for arc-5.21pp0
26 ==> Configuring for arc-5.21pp0
27 ==> Building for arc-5.21pp0
28 cc -O2 -pipe -DSYSV=1 -c arc.c
29 cc -O2 -pipe -DSYSV=1 -c arcadd.c
30 [...]
31 cc -O2 -pipe -DSYSV=1 -c arcmisc.c
32 cc -O2 -pipe -o arc arc.o arcadd.o arccode.o arccvt.o arcdata.o arcdel.o arcdos.o
33 cc -O2 -pipe -DSYSV=1 -c marc.c
```

```
34 cc -O2 -pipe -o marc marc.o arcdata.o arcdos.o arcio.o arcmatch.o arcmisc.o
35 hub$
```

A real makefile with basic steps

- fetch
- checksum
- extract
- patch
- configure
- build
- fake
- package
- install

Proper Makefile, with real targets (in particular individual targets for distribution files).
All steps do generate "cookies"

Can't compute too much "on the fly" (`sysutils/telegraf` is the worst)
Variables first, targets later

3850 lines `bsd.port.mk`

3000 lines of documentation

It used to be worse (6000 lines)

We put things into MODULES

NetBSD is way worse (for instance)

Programming style I

```
1  # $OpenBSD: modules.port.mk,v 1.17 2023/09/06 09:51:34 espie Exp $
2  #
3
4  .undef _MODULES_KEEP_GOING
5
6  _COMPILER=
7  .if defined(COMPILER) && !defined(CHOSEN_COMPILER)
8  .  if defined(_MODULES_DONE) && ${_MODULES_DONE:Mgcc4}
9  ERRORS += "Fatal: COMPILER coming from a file included *after* the gcc module"
10 .  endif
11 COMPILER_LANGS ?= c c++
12 _COMPILER=compiler
13 .endif
14
15 .if defined(DIST_TUPLE) && empty(MODULES:Mdist-tuple)
16 MODULES += dist-tuple
17 .endif
```

```
18
19 .for _m in ${_COMPILER} ${MODULES:L}
20 .  if "${_m:M*/*}" != ""
21 .    for _d in ${PORTSDIR_PATH:S// /g}
22 .      if empty(_MODULES_DONE:M${_m}) && exists(${_d}/${_m}/${_m:T}.port.mk)
23 .        include "${_d}/${_m}/${_m:T}.port.mk"
24 _MODULES_DONE += ${_m}
25 _MODULES_KEEP_GOING = Yep
26 .      endif
27 .    endfor
28 .  endif
29 .  if empty(_MODULES_DONE:M${_m})
30 .    if exists(${PORTSDIR}/infrastructure/mk/${_m}.port.mk)
31 .      include "${PORTSDIR}/infrastructure/mk/${_m}.port.mk"
32 _MODULES_DONE += ${_m}
33 _MODULES_KEEP_GOING = Yep
34 .    else
```

```
35 ERRORS += "Fatal: Missing support for module ${_m}."
36 .    endif
37 .    endif
38 .endfor
39
40
41 # Tail recursion
42 .if defined(_MODULES_KEEP_GOING)
43 .    include "${PORTSDIR}/infrastructure/mk/modules.port.mk"
44 .endif
```

Current work

DISTFILES

coming from several sources

Old syntax

```
1 COMMENT=      OpenJDK Software Development Kit v${V}
2 [...]
3 DISTNAME=     jdk8u${UPDATE_VER}-${BUILD_VER}.${BSD_PORT_REL}
4 BOOTJDK_DATE= 20230629
5 DISTFILES=    ${DISTNAME}${EXTRACT_SUFX}
6 WRKDIST=      ${WRKDIR}/jdk8u-jdk8u${UPDATE_VER}-${BUILD_VER}.${BSD_PORT_REL}
7
8 MASTER_SITES= https://github.com/battleblow/jdk8u/archive/
9 MASTER_SITES1= https://spacehopper.org/mirrors/ \
10 http://www.intricatesoftware.com/distfiles/
11
12 SUPDISTFILES+= openjdk-jdk8u-bootjdk-i386-${BOOTJDK_DATE}.tar.gz:1 \
13 openjdk-jdk8u-bootjdk-amd64-${BOOTJDK_DATE}.tar.gz:1 \
14 openjdk-jdk8u-bootjdk-aarch64-${BOOTJDK_DATE}.tar.gz:1 \
15 openjdk-jdk8u-bootjdk-sparc64-${BOOTJDK_DATE}.tar.gz:1
```

New syntax

```
1 COMMENT=          OpenJDK Software Development Kit v${V}
2 [...]
3 DISTNAME=         jdk8u${UPDATE_VER}-${BUILD_VER}.${BSD_PORT_REL}
4 BOOTJDK_DATE=    20230629
5 DISTFILES=       ${DISTNAME}${EXTRACT_SUFX}
6 WRKDIST=         ${WRKDIR}/jdk8u-jdk8u${UPDATE_VER}-${BUILD_VER}.${BSD_PORT_REL}
7
8 SITES=           https://github.com/battleblow/jdk8u/archive/
9 SITES.boot=     https://spacehopper.org/mirrors/ \
10               http://www.intricatesoftware.com/distfiles/
11
12 BOOT_JDK_DIST=   openjdk-jdk8u-bootjdk-${MACHINE_ARCH}-${BOOTJDK_DATE}.tar.gz
13 .  if (${MACHINE_ARCH}==amd64) || (${MACHINE_ARCH}==i386) || \
14     (${MACHINE_ARCH}==aarch64) || (${MACHINE_ARCH}==sparc64)
15 DISTFILES.boot=  ${BOOT_JDK_DIST}
16 .  endif
17 MAKE_ENV+=      LD_LIBRARY_PATH=${WRKDIR}/bootjdk-libs
18 CONFIGURE_ENV+= LD_LIBRARY_PATH=${WRKDIR}/bootjdk-libs
19 BOOT_JDK=       ${WRKDIR}/bootjdk
```

fixed list of MASTER_SITES0..9

doesn't work well with MODULES

multiple sources: go, cargo, github, gitlab...

Introspection in make: `.VARIABLES`

Allows stuff like this

```
1
2 .for v in ${.VARIABLES:MMASTER_SITE*}
3 {v:S/MASTER_//} ?= ${$v}
4 .endfor
5
6 _ALL_SITES_VARIABLES = ${.VARIABLES:MSITES*:NSITES_*}
7 .for v in DISTFILES PATCHFILES SUPDISTFILES
8 . for w in ${.VARIABLES:M$v*}
9 . if !empty($w)
10 _ALL_DISTFILES_VARIABLES += $w
11 m=${w:s/${v}/SITES/}
12 . if !defined($m)
13 ERRORS += "Fatal: $m is not defined but referenced by $e in $v"
14 . endif
15 [...]
```



```
1  jdk/openjdk-jdk8u-bootjdk-amd64-20230629.tar.gz openjdk-jdk8u-bootjdk-amd64-20230629
```

New github syntax

```
1  V =                23.07
2  COMMENT =         XNA4 reimplementation for open platforms
3  DISTNAME =        fna-${V:S/.///g}
4  PKGNAME =         fna-${V}
5  REVISION =        0
6  CATEGORIES =      games
7  HOMEPAGE =        https://fna-xna.github.io/
8  MAINTAINER =      Thomas Frohwein <thfr@openbsd.org>
9
10 # MS-PL, includes lzxdcoder (dual MSPL/LGPL) and Mono.Xna (MIT)
11 PERMIT_PACKAGE =   Yes
12
13 DIST_TUPLE +=      github FNA-XNA FNA.NetStub ebff244074bb3c28aeeb8cf7b383b5a02
14                   ../FNA.NetStub # Ms-PL
15 DIST_TUPLE +=      github flibitijibibo Vorbisfile-CS \
16                   521c8532f03b3608a141b36d7c1343e816b46cb1 Vorbisfile-CS # zlib
17
18 SITES =            https://github.com/FNA-XNA/FNA/releases/download/\${V}/
```

More complicated introspection: which is "the canonical source" for DISTFILES

No longer fixed list of MASTER_SITES names

Broke portroach

Broken repology

Portroach is an outside tool
Repology has different issues
In the progress of fixing

Move 10000 ports to the new syntax
discover "fun usage" of variables that break
extend new "forge" syntax for new cases