# pkgsrc on windows

# disclaimer

- Hi, I'm wiedi@NetBSD.org

- usually illumos & osx

- don't know what I'm talking about

# current options: cygwin

- already exists (and has for some time)

- creates real PE files (.exe, .dll)

- rather slow (fork can't CoW)

- recently (?) no pkgsrc dev work

- no bulk builds, no fixes

# current options: WSL

- windows subsystem for linux

- aka „bash on ubuntu on windows"

- executes native linux ELF binaries

- syscall translation, just like lx-branded zones

- not much to be done on pkgsrc side

# current options: WSL

## Bootstrap pkgsrc under 'bash on Windows'

- **To**: tech-pkg%NetBSD.org@localhost
- **Subject**: **Bootstrap pkgsrc under 'bash on Windows'**
- **From**: **Ryo ONODERA <ryo_on%yk.rim.or.jp@localhost>**
- Date: Sat, 30 Apr 2016 16:51:54 +0900 (JST)

```
Hi,


If you use pkgsrc under bash on Windows (Windows Subsystem for Linux).
you should use Windows 10 Insider Preview 14332 (or later).
14332 fixes a bug about file system and you can bootstrap pkgsrc under it.


$ apt-get gcc
$ apt-get g++
$ apt-get cvs
; Checkout pkgsrc tree
$ cd /usr/pkgsrc
$ SH=/bin/bash ./bootstrap


--
Ryo ONODERA // ryo_on%yk.rim.or.jp@localhost
PGP fingerprint = 82A2 DC91 76E0 A10A 8ABB  FD1B F404 27FA C7D1 15F3
```
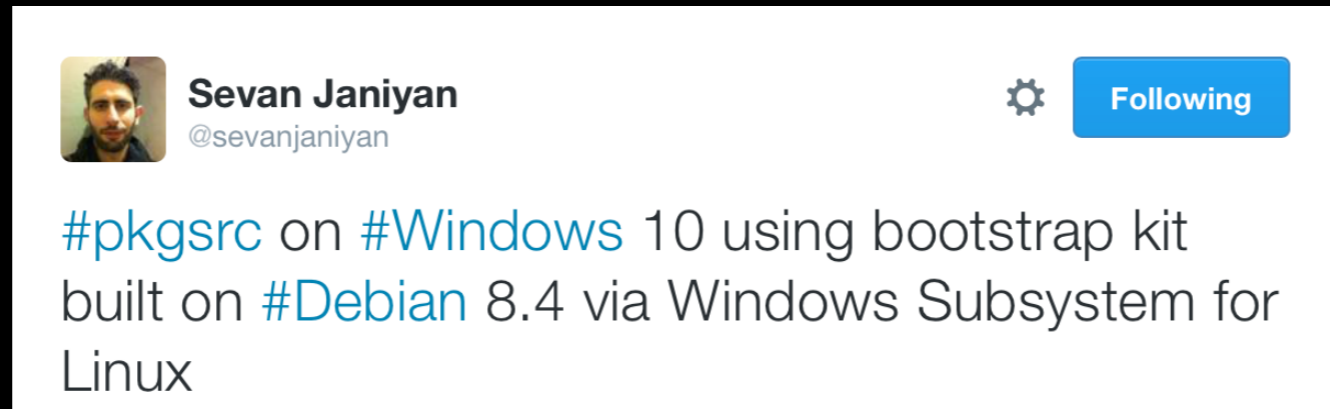
# current options: WSL



Sevan Janiyan
@sevanjaniyan

#pkgsrc on #Windows 10 using bootstrap kit
built on #Debian 8.4 via Windows Subsystem for
Linux

```
root@DESKTOP-7TGMSOD: /mnt/c/Users/win10vm                          —    □    ✕

sevan@DESKTOP-7TGMSOD:/mnt/c/Users/win10vm$ sudo su
root@DESKTOP-7TGMSOD:/mnt/c/Users/win10vm# tar -zxpf Downloads/bootstrap.tar.gz -C /
root@DESKTOP-7TGMSOD:/mnt/c/Users/win10vm# /usr/pkg/sbin/pkg_info
bmake-20150505        Portable (autoconf) version of NetBSD 'make' utility
bootstrap-mk-files-20150908 *.mk files for the bootstrap bmake utility
nawk-20121220nb1     Brian Kernighan's pattern-directed scanning and processing language
pkg_install-20150901nb1 Package management and administration tools for pkgsrc
root@DESKTOP-7TGMSOD:/mnt/c/Users/win10vm#
```

# midipix

warning: not even alpha release yet!

# midipix

- create windows programms

  - using standard C and POSIX APIs

- provides posix syscall layer

- uses Native API (ntdll.dll)

- copy-on-write fork

- utf-8

- easy cross-compilation

# midipix

- git.midipix.org:

  - cbb-gcc-4.6.4: gcc with midipix targets

  - psxscl: midipix system call layer

  - ntapi: Native API core lib

  - ntctty: pty

- musl: libc

# midipix



MsEdge-Win10-VMware

Host Name:         MSEDGEWIN10
IE Version:        11.0.10240.16683
OS Version:        Windows 10
Service Pack:      No service pack
User Name:         IEUser
Password:          Passw0rd!

http://modern.IE

Recycle Bin

Cygwin64
Terminal

VMware
Share...

eula

~/pkgsrc/bootstrap

```
IEUser@MSEDGEWIN10 ~/pkgsrc/bootstrap
$ uname -a
midipix node pre-pre-alpha-experimental-tree-internal-testing-only 0.0.0.0.0.0.0.1 x86_64 Midipix

IEUser@MSEDGEWIN10 ~/pkgsrc/bootstrap
$ sh bootstrap
===> bootstrap command: bootstrap
===> bootstrap started: Sat Mar  5 22:13:50 GMT 2016
This platform (midipix) is untried - good luck, and thanks for using pkgsrc
C:\cygwin64\home\IEUser\midipix\native\bin\touch: cannot touch '/home/IEUser/pkgsrc/bootstrap/work/
.writeable': No such file or directory
Working directory is: /home/IEUser/pkgsrc/bootstrap/work
===> running: /home/IEUser/midipix/native/bin/sed -e 's|@DEFAULT_INSTALL_MODE@|'0755'|' /home/IEUse
r/pkgsrc/sysutils/install-sh/files/install-sh.in > /home/IEUser/pkgsrc/bootstrap/work/bin/install-s
h
bootstrap: line 297: /home/IEUser/pkgsrc/bootstrap/work/bin/install-sh: No such file or directory
===> exited with status 1
aborted.

IEUser@MSEDGEWIN10 ~/pkgsrc/bootstrap
$
```

# midipix

```
drwxr-xr-x 1 0 0 4.0K Jun 19 16:25 .
drwxr-xr-x 1 0 0 4.0K Jun 19 16:28 ..
drwxr-xr-x 1 0 0  64K Jun 19 16:37 bin
drwxr-xr-x 1 0 0 4.0K Jun 15 17:06 etc
drwxr-xr-x 1 0 0    0 Jun 19 16:44 home
drwxr-xr-x 1 0 0  20K Jun 15 16:50 include
drwxr-xr-x 1 0 0 4.0K Jun 15 16:37 info
drwxr-xr-x 1 0 0  96K Jun 15 17:07 lib
drwxr-xr-x 1 0 0 4.0K Jun 15 16:45 libexec
drwxr-xr-x 1 0 0    0 Jun 15 16:35 man
drwxr-xr-x 1 0 0 4.0K Jun 15 16:45 sbin
drwxr-xr-x 1 0 0 4.0K Jun 15 16:50 share
drwxr-xr-x 1 0 0    0 Jun 15 16:45 var
drwxr-xr-x 1 0 0    0 Jun 15 16:29 x86_64-nt64-midipix
bash-4.3$ cd etc
bash: cd: etc: Filename too long
bash-4.3$ cat /etc/passwd
cat: /etc/passwd: No such file or directory
bash-4.3$ echo hi > /etc/hi
bash-4.3$ cat /etc/hi
hi
bash-4.3$ echo ^C
bash-4.3$ echo wiedi:*:1000:0:wiedi:/home/wiedi:/bin/bash
wiedi:*:1000:0:wiedi:/home/wiedi:/bin/bash
bash-4.3$ echo wiedi:*:1000:0:wiedi:/home/wiedi:/bin/bash  > /etc/passwd
bash-4.3$ id
Trace/breakpoint trap
bash-4.3$ whoami
wiedi
bash-4.3$ groups
groups: cannot find name for group ID 0
Trace/breakpoint trap
bash-4.3$ echo wheel:*:0:root > /etc/group
bash-4.3$ groups
Trace/breakpoint trap
bash-4.3$
```

# midipix

```
/bin/sh -c set -o errexit; stty raw -echo;mount --change-cygdrive-prefix /;cd /C/Midipix/native/bin;export PATH=/C/Midipix/native/bin:/C/Midipix/native/lib;./ntcty.exe -e chroot //C/Midipix/native /bin/bash     —    ☐    ✕

bash-4.3$ ./bootstrap --unprivileged
===> bootstrap command: ./bootstrap --unprivileged
===> bootstrap started: Sun Jun 19 17:38:52 GMT 2016
Working directory is: //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work
===> running: //c/Midipix/native/bin/sed -e 's|@DEFAULT_INSTALL_MODE@|'0755'|' //c/Midipix/native/home/wiedi/pkgsrc/sysutils/install-sh/files/install-sh.in >
 //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bin/install-sh
===> running: //c/Midipix/native/bin/chmod +x //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bin/install-sh
===> building as unprivileged user wiedi/wheel
===> Creating default mk.conf in //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work
===> running: //c/Midipix/native/bin/sh //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bin/install-sh -d -o wiedi -g wheel //c/Midipix/native/home/wiedi
/pkgsrc/bootstrap/work/sbin
===> running: //c/Midipix/native/bin/sh //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bin/install-sh -d -o wiedi -g wheel //c/Midipix/native/home/wiedi
/pkgsrc/bootstrap/work/share/mk
===> Bootstrapping mk-files
===> running: (cd //c/Midipix/native/home/wiedi/pkgsrc/pkgtools/bootstrap-mk-files/files && env CP=//c/Midipix/native/bin/cp  OPSYS=midipix MK_DST=//c/Midipi
x/native/home/wiedi/pkgsrc/bootstrap/work/share/mk ROOT_GROUP=wheel ROOT_USER=root SED=//c/Midipix/native/bin/sed SYSCONFDIR=C:\cygwin64\home\IEUser\pkg/etc
//c/Midipix/native/bin/sh ./bootstrap.sh)
===> Bootstrapping bmake
===> running: //c/Midipix/native/bin/sh //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bin/install-sh -d -o wiedi -g wheel //c/Midipix/native/home/wiedi
/pkgsrc/bootstrap/work/bmake
./bootstrap.sh: line 23:  4212 Trace/breakpoint trap    ${CP} ${file} ${MK_DST}/${file}
===> running: (cd //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bmake && //c/Midipix/native/bin/sh configure  --prefix=//c/Midipix/native/home/wiedi/pk
gsrc/bootstrap/work --with-default-sys-path=//c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/share/mk --with-machine-arch=x86_64 )
configure: line 489:  1384 Trace/breakpoint trap    ln -s conf$$.file conf$$ 2> /dev/null
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... configure: line 3066:  5208 Trace/breakpoint trap    rm -f conftest.$ac_ext
none needed
checking how to run the C preprocessor... gcc -E
checking for grep that handles long lines and -e... //c/Midipix/native/bin/grep
checking for egrep... //c/Midipix/native/bin/grep -E
checking for ANSI C header files... ===> running: (cd //c/Midipix/native/home/wiedi/pkgsrc/bootstrap/work/bmake && //c/Midipix/native/bin/sh make-bootstrap.s
h)
//c/Midipix/native/bin/sh: make-bootstrap.sh: No such file or directory
no

Trace/breakpoint trap
```

# slibtool

- libtool rewrite in C

- drop-in replacement

- jperkin also working on it

# summary / todo

- integrate slibtool

- allow native bootstrap

- package midipix cross toolchain

# thanks!

- questions to #midipix on freenode