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# TeXLive OpenBSD Porting Guide

Edd Barrett  
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# 1 Introduction

This document aims to explain in detail the porting process of T<sub>E</sub>XLive on OpenBSD. I advise you accompany this document with the source code of the port to fully understand the porting process. This guide refers to the 2007 release of T<sub>E</sub>XLive.

T<sub>E</sub>XLive is a modern L<sup>A</sup>T<sub>E</sub>X distribution for Windows, UNIX and MacOSX. L<sup>A</sup>T<sub>E</sub>X is a fully featured typesetting system geared towards scientists and researchers.

## 2 Overview

### 2.1 Structure

The port is structured using four sub-packages<sup>1</sup>.

- base  
Compilers and tools.
- texmf-minimal  
A minimal texmf similar to that supplied with the (now deprecated) teT<sub>E</sub>X distribution (without “DocFiles”). The full texmf is too large, so the tree was separated down. Many PDF viewers rely on kpathsea (distributed with T<sub>E</sub>XLive) for DVI support. It would be ridiculous to expect a casual user to install the full texmf tree (> 500MB) just for PDF viewing capabilities.
- texmf-full  
The texmf tree excluding anything included in texmf-minimal, but excluding “DocFiles”.
- texmf-docs  
All “DocFiles”

### 2.2 Apparatus

You will need:

- An OpenBSD-current machine running a *recent snapshot*.
- A T<sub>E</sub>XLive release on DVD. You can acquire it by either downloading an ISO from the T<sub>E</sub>XLive web page<sup>2</sup>, or by becoming a TUG (T<sub>E</sub>X user group) member. I recommend copying the DVD onto your hard disk, as it will be quicker to run subsequent runs of MfSplit. I copy mine to */export/texlive*.
- MfSplit  
MfSplit is a python script (Written by myself), which resolves dependencies of the various collections that constitute the T<sub>E</sub>XLive texmf tree. I wrote it in order to roll a distfile containing the “full” tree minus anything found in base. You can download MfSplit from the port web-page<sup>3</sup>.
- Some knowledge of the OpenBSD ports system. Lots of documentation on the OpenBSD web site.

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<sup>1</sup>See *FLAVORS AND MULTIPACKAGES* in the *bsd.port.mk* manual page

<sup>2</sup><http://tug.org/texlive>

<sup>3</sup><http://students.dec.bmth.ac.uk/ebarrett/texlive>

### 3 A Note On MfSplit

Unfortunately the latest version of mfsplit was lost in an administrative f\*\*k up. The last version released before this(20070615), is perfectly capable of making distfiles from the now deprecated TPM database, however it does not make hints on which maps to include in configurations. This was the only change lost. As far as I can see there is no real reason to re-code it because TPM is now deprecated.

mfsplit-20070615.tgz is available at <http://students.dec.bmth.ac.uk/texlive/>.

## 4 Porting The Texmf-Minimal Sub-Package

The first stage of porting T<sub>E</sub>XLive is to port a minimal texmf package; A small “teT<sub>E</sub>X-like” subset of the T<sub>E</sub>XLive texmf tree.

### 4.1 Rolling The Texmf-Minimal Distfile

The T<sub>E</sub>XLive project does not supply a tarball of their texmf tree, so we must roll our own distfile.

On the DVD in the *texmf/tpm* directory containing *scheme-tetex.tpm*. This XML file describes all files and Dependant collections needed to create the distfile. I have copied my T<sub>E</sub>XLive DVD onto hard disk under */export/texlive*, so I run MfSplit like so:

```
1 ./mfsplit.py -k doc -i /export/texlive/texmf/tpm/scheme-tetex.tpm
2   -o texlive_texmf-minimal-VERSION
```

You should substitute *VERSION* for a T<sub>E</sub>XLive release number (eg. 2007). *-k doc* is to ensure that no “DocFiles” are included in the subset, as these will be included in the *texmf-docs* sub-package.

MfSplit will create a directory called *texlive\_texmf-minimal-VERSION*. This can take a long time, as the texmf is huge and MfSplit is not very optimised. I did plan to improve performance of MfSplit later, but it seems T<sub>E</sub>XLive are planning to ditch the TPM system altogether, so I will not<sup>4</sup>.

You may now tar (and gz) this directory up and move it into */usr/ports/distfiles*.

### 4.2 The Texmf-Minimal Makefile

Here is the *Makefile* used to install texmf-minimal:

```
1 # $OpenBSD: Makefile,v 1.4 2007/12/09 10:49:34 steven Exp $
2
3 COMMENT=          minimal texmf tree for TeXLive
4
5 V=                2007
6 # distfile generation number (distfiles can change for same TeXLive
   version)
7 G=                g0
8 DISTNAME=         texlive_texmf-minimal-$$G
9 PKGNAME=          texlive_texmf-minimal-$$Vp1
10
11 NO_BUILD=         Yes
12 NO_REGRESS=       Yes
13 PKG_ARCH=         *
14
15 pre-install:
16     rm -Rf ${WRKDIST}/texmf/doc/man
```

<sup>4</sup><http://tug.org/pipermail/tex-live/2007-June/014109.html>

```

17     rm -Rf ${WRKDIST}/texmf-dist/source
18 # fix for broken bold font
19     rm -f ${WRKDIST}/texmf-dist/tex/latex/jknapltx/ubbold.fd
20     cd ${WRKDIST}/texmf-dist/tex/latex/bbold/ && mv -f Ubbold.fd
        ubbold.fd
21
22 do-install:
23     mv ${WRKDIST}/texmf ${PREFIX}/share
24     mv ${WRKDIST}/texmf-dist ${PREFIX}/share
25     chown -R ${SHAREOWN}:${SHAREGRP} ${PREFIX}/share/*
26
27 post-install:
28 # tweak fmtutil.cnf (e.g. there's no XeTeX support in this minimal texmf)
29     cp ${PREFIX}/share/texmf/web2c/fmtutil.cnf \
30         ${PREFIX}/share/texmf/web2c/fmtutil.cnf-dist
31     mv ${PREFIX}/share/texmf/web2c/fmtutil.cnf \
32         ${PREFIX}/share/texmf/web2c/fmtutil.cnf-full
33     sed -e 's/.*xetex.*//g' ${PREFIX}/share/texmf/web2c/fmtutil.cnf-
        full \
34         > ${PREFIX}/share/texmf/web2c/fmtutil.cnf-minimal
35
36 .include <bsd.port.mk>

```

- *NO\_BUILD* is set because the distfile has no configure script or Makefile. Instead we define a *do-install* build target which simply copies the files into the fake environment with the correct permissions (*umask 022 && ...*).
- Do not allow any of the texmf sub-packages install man pages, as the base sub-package will do this for us and they are more likely to be the correct versions (hence *rm -Rf \${WRKDIST}/share/texmf/doc/man*).
- *PKG\_ARCH* is set to *\** because texmf trees are platform independent.
- I copy the distributed *fmtutil.cnf* to *fmtutil.cnf-dist* in order to make it clear to users which config file is “as standard”. *fmtutil.cnf-full* will in-fact be the same, but the file name does not imply that it is the default distributed config.
- I move the *fmtutil.cnf* to *fmtutil.cnf-full*. This is the format configuration that will be used if the texmf-full sub-package installed.
- Now I generate a format configuration named *fmtutil.cnf-minimal*, which is used when only the texmf-minimal sub-package is installed. This is achieved through *sed*. All references to *xeT<sub>E</sub>X* must be removed.
- *updmap.cfg* will change (when the *updmap-sys* command is run by ports) depending upon which texmf is installed, so we can not account for it in a packing list (MD5's will mismatch otherwise).

## 4.3 The Texmf-Minimal Packing List

### 4.3.1 Conflicting Ports

Mark teT<sub>E</sub>X as a conflicting port; *@conflict teT<sub>E</sub>X.texmf-\**.

### 4.3.2 File Duplication

There are some files which are duplicated from the base sub-package. You will only know which files these are once you have ported the base sub-package, so go back and *@comment* them when ports informs you of colliding files.

At the time of writing these files were:

```

1 @comment share/texmf/dvipdfm/EUC-UCS2
2 @comment share/texmf/dvipdfm/UniKSCms-UCS2-H
3 @comment share/texmf/dvipdfm/UniKSCms-UCS2-V
4 @comment share/texmf/dvipdfm/dvipdfm.cfg
5 @comment share/texmf/dvips/base/
6 @comment share/texmf/dvips/base/color.pro
7 @comment share/texmf/dvips/base/crop.pro
8 @comment share/texmf/dvips/base/finclude.pro
9 @comment share/texmf/dvips/base/hps.pro
10 @comment share/texmf/dvips/base/special.pro
11 @comment share/texmf/dvips/base/tex.pro
12 @comment share/texmf/dvips/base/texc.pro
13 @comment share/texmf/dvips/base/texps.pro
14 @comment share/texmf/dvips/gsftopk/render.ps
15 @comment share/texmf/texconfig/
16 @comment share/texmf/texconfig/README
17 @comment share/texmf/texconfig/g/
18 @comment share/texmf/texconfig/g/generic
19 @comment share/texmf/texconfig/generic
20 @comment share/texmf/texconfig/tcfmgr
21 @comment share/texmf/texconfig/tcfmgr.map
22 @comment share/texmf/texconfig/v/
23 @comment share/texmf/texconfig/v/vt100
24 @comment share/texmf/texconfig/x/
25 @comment share/texmf/texconfig/x/xterm
26 @comment share/texmf/web2c/aleph.pool
27 @comment share/texmf/web2c/mf.pool
28 @comment share/texmf/web2c/mktex.opt
29 @comment share/texmf/web2c/mktexdir
30 @comment share/texmf/web2c/mktexdir.opt
31 @comment share/texmf/web2c/mktexnam
32 @comment share/texmf/web2c/mktexnam.opt
33 @comment share/texmf/web2c/mktexupd
34 @comment share/texmf/web2c/omega.pool
35 @comment share/texmf/web2c/pdftex.pool
36 @comment share/texmf/web2c/tex.pool
37 @comment share/texmf/web2c/texmf.cnf
38 @comment share/texmf/web2c/texmf.cnf-4WIN
39 @comment share/texmf/xdvi/
40 @comment share/texmf/xdvi/XDvi
41 @comment share/texmf/xdvi/pixmaps/
42 @comment share/texmf/xdvi/pixmaps/toolbar.xpm
43 @comment share/texmf/xdvi/pixmaps/toolbar2.xpm
44 @comment share/texmf/xdvi/xdvi.cfg

```

Do not copy this directly. They are subject to change between T<sub>E</sub>XLive versions.

### 4.3.3 Configuration Files

You must place the correct files in place (fmtutil.cnf and updmap.cfg) using `@exec` commands in the plist.

```

1 @exec cp /usr/local/share/texmf/web2c/fmtutil.cnf-minimal
2         /usr/local/share/texmf/web2c/fmtutil.cnf
3 @exec cp /usr/local/share/texmf/web2c/updmap.cfg-dist
4         /usr/local/share/texmf/web2c/updmap.cfg

```

## 4.4 Other Considerations

### 4.4.1 Blackboard Font Fix

There is a small fix for the *bbold* font in the *pre-install* stage of the port. See source code for more details.

### 4.4.2 Powerdot fix

The powerdot configuration file was patched to fix a known bug reported to me by Predrag Punosevac, but known previously by the T<sub>E</sub>XLive project, as indicated by the known bugs section of their web page:

```

1 | Some powerdot documents fail to have proper page sizes, due to an
   |   unforeseen interaction with dvips. To fix, download the current config.
   |   ps file and replace the installed one. You can find the config.ps in
   |   use by running the command:
2 |
3 | kpsewhich --format='dvips config' config.ps

```

## 5 Porting The Base Sub-Package

### 5.1 Rolling The Base Distfile

The source code for the compilers is on the T<sub>E</sub>XLive DVD in the *source* directory. Rename it to something useful like *texlive\_base-VERSION-src.tar.bz2*, where version is a T<sub>E</sub>XLive release number (eg. 2007).

### 5.2 Patching The Sources

#### 5.2.1 Making T<sub>E</sub>XLive Honor DESTDIR

Porting the base sub-package is probably the most tedious of the porting process as there are so many patches needed. I plan to push as many of these patches upstream, so that it is not necessary to patch. There is no single easy hack<sup>5</sup> to have all of the sources respect DESTDIR. Trust me, I tried.

Most of the patches just resemble just tacking  $\${DESTDIR}$  onto the install target's paths. For example:

```

1 | $OpenBSD: patch-textk_detex_Makefile_in,v 1.1.1.1 2007/07/17 21:53:29
   |   jasper Exp $
2 | --- textk/detex/Makefile.in.orig Wed Apr 18 20:37:27 2007
3 | +++ textk/detex/Makefile.in      Wed Apr 18 20:37:56 2007
4 | @@ -39,13 +39,13 @@ distclean::
5 |   install: install-exec install-data
6 |   uninstall: uninstall-exec uninstall-data
7 |   install-exec: $(program)
8 | -      $(SHELL) $(top_srcdir)/../mkinstalldirs $(bindir)
9 | -      $(INSTALL_LIBTOOL_PROG) $(program) $(bindir)
10 | +      $(SHELL) $(top_srcdir)/../mkinstalldirs ${DESTDIR}${bindir}
11 | +      $(INSTALL_LIBTOOL_PROG) $(program) ${DESTDIR}${bindir}

```

<sup>5</sup>*CONFIGURE\_STYLE=gnu dest* does not work because the newer libraries do understand DESTDIR, whereas the older ones don't.

```

12 | uninstall-exec:
13 | -     rm -f $(bindir)/$(program)
14 | +     rm -f ${DESTDIR}${bindir}/$(program)
15 | install-data:
16 | -     $(SHELL) $(top_srcdir)/../mkinstalldirs $(man1dir)
17 | -     $(INSTALL_DATA) $(srcdir)/detex.man $(man1dir)/detex.$(manext)
18 | +     $(SHELL) $(top_srcdir)/../mkinstalldirs ${DESTDIR}${man1dir}
19 | +     $(INSTALL_DATA) $(srcdir)/detex.man ${DESTDIR}${man1dir}/detex.$(
    |     manext)
20 | uninstall-data:
21 | -     rm -f $(man1dir)/detex.$(manext)
22 | +     rm -f ${DESTDIR}${man1dir}/detex.$(manext)
23 | depend info dvi check:

```

## 5.2.2 XeT<sub>E</sub>X Bugs

I found and patched away (with the help of Jonathan Kew) several bugs whilst testing the port:

- 2 Bus errors in XeT<sub>E</sub>X on big endian systems.
- 1 Seg Fault in *xdvipfdm* when poor quality fonts are used.
- Silenced many warnings in build.

Patches to fix the bugs are as follows:

1. patch-textk\_web2c\_xetexdir\_XeTeX\_ext.c
2. patch-textk\_web2c\_xetexdir\_XeTeX\_ext.h
3. patch-textk\_web2c\_xetexdir\_XeTeX\_mac.c
4. patch-textk\_web2c\_xetexdir\_jpegimage.c
5. patch-textk\_web2c\_xetexdir\_xetex-new.ch
6. patch-textk\_web2c\_xetexdir\_xetex\_defines
7. patch-textk\_web2c\_xetexdir\_xetex.h
8. patch-textk\_xdvi.pdfmx\_src.tt\_cmap.c
9. patch-libs\_icu-xetex\_layout\_KernTable.cpp
10. patch-textk\_web2c\_textmfmem.h

These patches have been committed back upstream and should not be necessary in T<sub>E</sub>XLive 2008.

## 5.2.3 Separating @exec's From The Build

*Makefile.in* in the root of the sources must be patched in order to co-operate with the OpenBSD ports system. Basically this comprises of removing all of the commands that will be run as an @exec in the packing list. Notice that I have made a variable called *TETEXENV*, which is used to make sure that the fake environment is operated on properly.

```

1  $OpenBSD: patch-Makefile_in,v 1.1.1.1 2007/07/17 21:53:28 jasper Exp $
2  --- Makefile.in.orig   Tue Dec 26 23:37:34 2006
3  +++ Makefile.in       Thu May 24 15:28:58 2007
4  @@ -52,6 +52,20 @@ LIBSDIRS = @LIBSDIRS@
5  # install kpathsea and friends by default.
6  INSTDIRS = @INSTDIRS@
7
8  +# OpenBSD fake env patch
9  +MK_TEXMFDIST=          ${DESTDIR}${(texmf)-dist
10 +MK_TEXMFLOCAL=         ${DESTDIR}${(texmf)-local
11 +MK_TEXMFSYSVAR=        ${DESTDIR}/var
12 +MK_TEXMFSYSCONFIG=     ${DESTDIR}${SYSCONFDIR}/texmf
13 +MK_TEXMFMAIN=          ${DESTDIR}${(texmf)
14 +
15 +TETEXENV=              TEXMFDIST=${MK_TEXMFDIST} \
16 +                        TEXMFLOCAL=${MK_TEXMFLOCAL} \
17 +                        TEXMFSYSVAR=${MK_TEXMFSYSVAR} \
18 +                        TEXMFSYSCONFIG=${MK_TEXMFSYSCONFIG} \
19 +                        TEXMFMAIN=${MK_TEXMFMAIN} \
20 +                        PATH=${DESTDIR}${(scriptdir):${DESTDIR}${(bindir):$(PATH)
21 +
22 default: all
23 install: all
24     for dir in $(INSTDIRS); do \
25 @@ -64,35 +78,41 @@ install: all
26     fi
27     @FMU@
28     @FMU@install-extra:
29 +
30 +# MESS - Will be @exec anyway...
31 # temporary fix for missing links
32 -     - if test -f texk/web2c/omegafonts/omfonts; then \
33 -         cd texk/web2c/omegafonts && $(MAKE) install-links; \
34 -     else ;; fi
35 -     $(srcdir)/selfautofix "$(bindir)" "$(texmf)/web2c"
36 -     - if test -f $(scriptdir)/mktexlsr; then \
37 -         TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
38 -         $(scriptdir)/mktexlsr; \
39 -     else ;; fi
40 -     - if test -f $(scriptdir)/fmtutil-sys; then \
41 -         TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
42 -         $(scriptdir)/fmtutil-sys --all; \
43 -     else ;; fi
44 -     - if test -f $(scriptdir)/texlinks; then \
45 -         TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
46 -         $(scriptdir)/texlinks; \
47 -     else ;; fi
48 -     - if test -f $(scriptdir)/updmap-sys \
49 -         && TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
50 -         $(scriptdir)/kpsewhich --format='web2c files' updmap.cfg >/
51 dev/null; \
52     then \
53 -         TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
54 -         $(scriptdir)/updmap-sys; \
55 -     else ;; fi
56 +     - if test -f texk/web2c/omegafonts/omfonts; then \
57 +         cd texk/web2c/omegafonts && $(MAKE) install-links; \
58 +     else ;; fi

```

```

58  + #      $(srcdir)/selfautofix "$(bindir)" "$(texmf)/web2c"
59  + #      - if test -f $(scriptdir)/mktexlsr; then \
60  + #          TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
61  + #          $(scriptdir)/mktexlsr; \
62  + #      else ;; fi
63  + #      - if test -f $(scriptdir)/fmtutil-sys; then \
64  + #          TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
65  + #          $(scriptdir)/fmtutil-sys --all; \
66  + #      else ;; fi
67  + #      - if test -f $(scriptdir)/texlinks; then \
68  + #          TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
69  + #          $(scriptdir)/texlinks; \
70  + #      else ;; fi
71  + #      - if test -f $(scriptdir)/updmap-sys \
72  + #          && TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
73  + #          $(scriptdir)/kpsewhich --format='web2c files' updmap.cfg >/
74  + #          dev/null; \
75  + #          then \
76  + #              TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
77  + #              $(scriptdir)/updmap-sys; \
78  + #          else ;; fi
79  + #      # OpenBSD (All non @exec stuff here, see PLIST for the rest)
80  + #      cd texk/web2c/omegafonts && $(MAKE) install-links
81  + #      ${TETEXENV} $(srcdir)/selfautofix "${DESTDIR}${bindir}" "${DESTDIR}
82  + #      }$(texmf)/web2c"
83  +
84  + install-exec:
85  +     for dir in $(INSTDIRS); do \
86  +         echo making @$ in $$dir; \
87  +         - (cd $$dir && PATH=$(scriptdir):$(bindir):$(PATH) \
88  +           + (cd $$dir && PATH=${DESTDIR}${scriptdir}:${DESTDIR}${bindir}:$(
89  +             PATH) \
90  +             $(MAKE) @$) || exit 1; \
91  +     done
92  + @FMU@
93  @@ -101,9 +121,9 @@ install-exec:
94  +     - if test -f texk/web2c/omegafonts/omfonts; then \
95  +         cd texk/web2c/omegafonts && $(MAKE) install-links; \
96  +     else ;; fi
97  +     - if test -f $(scriptdir)/texlinks; then \
98  +         TEXMFMAIN=$(texmf) PATH=$(scriptdir):$(bindir):$(PATH) \
99  +         $(scriptdir)/texlinks; \
100  +     - if test -f ${DESTDIR}${scriptdir}/texlinks; then \
101  +         TEXMFMAIN=${DESTDIR}${texmf} PATH=${DESTDIR}${scriptdir}:${
102  +         DESTDIR}${bindir}:$(PATH) \
103  +         ${DESTDIR}${scriptdir}/texlinks; \
104  +     else ;; fi
105  +
106  + strip: install

```

## 5.2.4 Texlinks

I applied a small patch to the *texlinks* shell script. A new `-u` option was inserted, which cleans up previously created symlinks.

## 5.3 The Base Makefile

Here is the *Makefile* for the base sub-package:

```

1 # $OpenBSD: Makefile,v 1.7 2007/12/09 10:49:34 steven Exp $
2
3 COMMENT=                base TeXLive LaTeX distribution
4
5 V=                       2007
6 DISTNAME=               texlive_base-${V}-src
7 PKGNAME=                 texlive_base-${V}p3
8 SHARED_LIBS=            kpathsea          0.0
9
10 WANTLIB=                m X11 ICE freetype Xt pthread c Xext fontconfig \
11                        Xp Xpm SM Xmu z ncurses Xaw Xau Xdmpc stdc++ expat
12
13 EXTRACT_SUFX=           .tar.bz2
14
15 BUILD_DEPENDS=          :texlive_texmf-minimal-${V}*:print/texlive/texmf-
16                        minimal
17 RUN_DEPENDS=            :texlive_texmf-minimal-${V}*:print/texlive/texmf-
18                        minimal \
19                        :ruby-*:lang/ruby \
20                        :ghostscript-*:print/ghostscript/gnu \
21                        :detex-*:print/detex \
22                        :dvi2tty-*:print/dvi2tty \
23                        :ps2eps-*:print/ps2eps \
24                        :psutils-*:print/psutils \
25                        :t1utils-*:print/t1utils
26 LIB_DEPENDS=            t1.>=4::devel/t1lib \
27                        png.>=3::graphics/png
28
29 WRKDIST=                 ${WRKDIR}/texlive_base-${V}
30
31 SEPARATE_BUILD=         simple
32 USE_X11=                 Yes
33 USE_GMAKE=               Yes
34 USE_LIBTOOL=             Yes
35 NO_REGRESS=              Yes # Regress does not listen to DESTDIR, not worth the
36                        effort.
37
38 CONFIGURE_STYLE=         gnu
39
40 # Do not link with system icu. TeXLive ICU is not vanilla (Yet)!
41 CONFIGURE_ARGS+=         --with-fontconfig=${X11BASE} \
42                        --with-system-freetype2 \
43                        --with-freetype2-libdir=${X11BASE}/lib \
44                        --with-freetype2-include=${X11BASE}/include \
45                        --with-system-ncurses \
46                        --with-system-pnglib \
47                        --with-pnglib-libdir=${TRUEPREFIX}/lib \
48                        --with-pnglib-include=${TRUEPREFIX}/include/libpng
49                        \
50                        --with-system-zlib \
51                        --with-system-t1lib \
52                        --with-t1lib-libdir=${TRUEPREFIX}/lib \
53                        --with-t1lib-include=${TRUEPREFIX}/include \
54                        --without-texinfo \
55                        --with-xdvi-x-toolkit=xaw \

```

```

52         --without-texi2html \
53         --disable-multiplatform \
54         --without-detex \
55         --without-dvi2tty \
56         --without-ps2eps \
57         --without-psutils \
58         --without-t1utils
59
60 post-build:
61     @# Fix for broken metapost
62     mv ${WRKBUILD}/texk/web2c/mpware/.libs/makempx \
63         ${WRKBUILD}/texk/web2c/mpware/makempx
64
65 .include <bsd.port.mk>

```

- Many of the scripts distributed rely upon ghostscript and ruby at runtime. Don't forget to add them as *RUN\_DEPENDS*.
- Link against as many system libraries, but do not link against the system libicu, as the T<sub>E</sub>XLive version has been modified.
- *-disable-multiplatform* must be used in order to have the binaries installed in the right location (*/usr/local/bin/* instead of */usr/local/bin/i386-unknown-openbsd4.1/*).
- OpenBSD already has ports for texi2html, detex, dvi2tty, ps2eps, psutils and t1utils. For this reason, we do not build these utilities as a part of T<sub>E</sub>XLive.
- texinfo is not built because the old teT<sub>E</sub>X package did not build it. Perhaps this is because some of this functionality is already in the base distribution of OpenBSD.
- As a post install target, you should back up the original *texmf.cnf* as *texmf.cnf-dist* and put a modified version back with *TEXMFSYSCONFIG* equal to *TEXMFMAIN*. If you do not do this then updmapp-sys will fail.
- *USE\_LIBTOOL* must be set because libtool is used to create a shared library (kpathsea). As a follow on, we must maintain an internal ports version number for this library, hence *SHARED LIBS= kpathsea 0.0*<sup>6</sup>.

## 5.4 The Base Packing List

### 5.4.1 Texlinks Clean Up

Upon uninstall of the package you should call `texlinks -u`<sup>7</sup>

### 5.4.2 Conflicting Ports

Mark teT<sub>E</sub>X as a conflicting port; `@conflict teTeX.base-*`.

### 5.4.3 Indexing Tools

In the packing list for the base sub-package you should run (with `@exec`):

- `mktextlsr`  
To index the texmf tree for kpathsea.

<sup>6</sup>For more information see: <http://www.openbsd.org/porting/libraries.html>

<sup>7</sup>See patches section.

- `fmtutil-sys -all`  
To generate the various `.fmt` files needed for the compilers.
- `udpmap-sys -all`  
To generate the various map files.
- `texlinks`  
To create symlinks to the binaries.

## 5.5 Other Considerations

### 5.5.1 Conflicting Files

Upon installing this package for the first time you will find a few files that conflict with `texmf-minimal`. These files should be commented in the packing list for `texmf-minimal`<sup>8</sup>.

### 5.5.2 Metapost Fix

A minor metapost bug is fixed in the `post-build` target of the port. See the source code for the fix.

## 6 Porting The Texmf-Full Sub-Package

### 6.1 Rolling The Texmf-Full Distfile

If you have your T<sub>E</sub>XLive DVD copied to `/export/texlive`, you would run:

```
1 ./mfsplit.py -k doc -i /export/texlive/texmf/tpm/scheme-full.tpm
2     -n /export/texlive/texmf/tpm/scheme-tetex.tpm
3     -o texlive_texmf-full-VERSION
```

You should substitute `VERSION` for a T<sub>E</sub>XLive release number (eg. 2007). `-k doc` is to ensure that no “DocFiles” are included in the subset, as these will be included in the `texmf-docs` sub-package. `-n /export/texlive/texmf/tpm/scheme-tetex.tpm` tells MfSplit not to include any files in the `scheme-tetex.tpm` subset, as these will already be installed in the `texmf-minimal` sub-package.

Tar and gzip the resulting subset.

### 6.2 The Texmf-Full Makefile

See the *Makefile* for `texmf-minimal` as a reference.

- `NO_BUILD` is set because the distfile has no configure script or Makefile. Instead we define a `do-install` build target which simply copies the files into the fake environment with the correct permissions (`umask 022 && ...`).
- Do not allow any of the `texmf` sub-packages install man pages, as the base sub-package will do this for us and they are more likely to be the correct versions (hence `rm -Rf ${WRKDIST}/share/texmf/doc/man`).
- `PKG_ARCH` is set to `*` because `texmf` trees are platform independent.
- Copy the files into the fake directory using the same technique as with the `texmf_minimal` package

<sup>8</sup>See section on the `texmf-minimal` sub-package for more details

- ConTeXt requires the ImageMagick graphics suite in order to render images when using the XeT<sub>E</sub>X backend. Add it as a `RUN_DEPEND` of `texmf-full`.

## 6.3 The Texmf-Full Packing List

### 6.3.1 Indexing Tools

There is a fair amount of `@exec/@unexec` malarkey going on here:

```

1 | @exec cp %D/share/texmf/web2c/fmtutil.cnf-full %D/share/texmf/web2c/
   |   fmtutil.cnf
2 | @exec cp %D/share/texmf/web2c/updmap.cfg-full %D/share/texmf/web2c/updmap.
   |   cfg
3 | @exec mktexlsr > /dev/null 2>&1
4 | @exec fmtutil-sys --all > /dev/null 2>&1
5 | @exec updmap-sys > /dev/null 2>&1
6 | @exec texlinks
7 | @unexec cp %D/share/texmf/web2c/fmtutil.cnf-minimal %D/share/texmf/web2c/
   |   fmtutil.cnf
8 | @unexec cp %D/share/texmf/web2c/updmap.cfg-minimal %D/share/texmf/web2c/
   |   updmap.cfg
9 | @unexec mktexlsr > /dev/null 2>&1
10 | @unexec fmtutil-sys --all > /dev/null 2>&1
11 | @unexec updmap-sys --syncwithtrees > /dev/null 2>&1
12 | @unexec texlinks

```

As you can see, we must regenerate all information regarding maps, formats, indexes and links upon both install and de-install of this package, otherwise `kpathsea` and friends will either not reference installed files, or reference non-existent files. You don't want this.

### 6.3.2 SplitIndex

Search for `splitindex` in the packing list and comment out the platform/system Dependant binaries. If you run `make plist` on a non-i386 architecture ports will not include these files in the packing list at all.

### 6.3.3 Conflicting Ports

Mark `teTEX` as a conflicting port; `@conflict teTEX.texmf-*`.

## 6.4 Other Considerations

### 6.4.1 Dependencies

`Texmf-full` should `RUN_DEPEND` upon the base sub-package.

# 7 Porting The Texmf-Docs Sub-Package

## 7.1 Rolling The Texmf-Docs Distfile

If you have your T<sub>E</sub>XLive DVD copied to `/export/texlive`, you would run:

```

1 | ./mfsplit.py -k src -k run -i /export/texlive/texmf/tpm/scheme-full.tpm
2 |   -o texlive_texmf-docs-VERSION

```

You should substitute *VERSION* for a T<sub>E</sub>XLive release number (eg. 2007). *-k src -k run* is to ensure that only “DocFiles” are included in the subset.

Tar and gzip the resulting subset.

## 7.2 The Texmf-Docs Makefile

See the *Makefile* for *texmf-minimal* as a reference.

- *NO\_BUILD* is set because the distfile has no configure script or Makefile. Instead we define a *do-install* build target which simply copies the files into the fake environment with the correct permissions (*umask 022 && ...*).
- Do not allow any of the *texmf* sub-packages install man pages, as the base sub-package will do this for us and they are more likely to be the correct versions (hence *rm -Rf \${WRKDIST}/share/texmf/doc/man*).
- *PKG\_ARCH* is set to *\** because *texmf* trees are platform independent.
- Copy the files into the fake directory using the same technique as with the *texmf\_minimal* package

## 7.3 The Texmf-Docs Packing List

### 7.3.1 Indexing Tools

Ensure you run *mktexlsr* in the packing list so that the documentation is indexed properly for *texdoc*. No other indexing tools are required for this sub-package to my knowledge.

### 7.3.2 Conflicting Ports

Mark *teT<sub>E</sub>X* as a conflicting port; *@conflict teT<sub>E</sub>X.texmf-\**.

## 7.4 Other Considerations

### 7.4.1 Dependencies

*texmf-docs* *RUN\_DEPENDS* upon the base sub-package for *texdoc* functionality.

### 7.4.2 Duplicate Info Files

*texmf-docs* tries to install info files. Remove them (base does it already).

## 8 Check List

- 4 sub-packages; *texmf-minimal*, *base*, *texmf-full*, *texmf-docs*.
- Build on big and little endian machines.
- Build the port with *USE\_SYSTRACE* set (See the OpenBSD FAQ for details<sup>9</sup>).
- Build the port as a normal user with *SUDO=sudo* (Again see the FAQ).

<sup>9</sup><http://openbsd.org/faq/faq15.html#Ports>

- Run *make clean* as a non root user with *SUDO=sudo*. If your umask copy was incorrect this will fail!
- Build some documents using latex, pdflatex and xelatex. These are a good test to see if the port runs properly.
- Check *texdoc* works.
- Make sure *pkg/DESCR—MESSAGE—UNMESSAGE* are all *fmt -72*'d so that they fit on a standard width terminal.