

# T<sub>E</sub>X Live 2008



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# T<sub>E</sub>X Live 2008



## Layout

### Part for users

Overview  
Installation  
T<sub>E</sub>X Live Manager  
Other news

### Technical part

Getting things into T<sub>E</sub>X Live  
The new infrastructure  
Internals of the t<sub>l</sub>p<sub>d</sub>b, config options

# T<sub>E</sub>X Live 2008



## History

- ▶ late 1993 Dutch T<sub>E</sub>X Users Group, 4AllT<sub>E</sub>X CD, TDS working group

# T<sub>E</sub>X Live 2008



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# T<sub>E</sub>X Live 2008



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# T<sub>E</sub>X Live 2008



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- ▶ 2000 5th edition, non-free software removed

# T<sub>E</sub>X Live 2008



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- ▶ 2002 7th edition: Mac OS X support

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- ▶ 2005 addition of the -sys scripts



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- ▶ 2002 7th edition: Mac OS X support
- ▶ 2005 addition of the -sys scripts
- ▶ 2006-07 XeT<sub>E</sub>X addition, end of teT<sub>E</sub>X development, Karl Berry



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## Features

- ▶ 'complete' - all the free stuff from CTAN
- ▶ multi-platform
- ▶ uniform across platforms
- ▶ practically daily updates
- ▶ DFSG free with a few exceptions

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## Features of the new installer

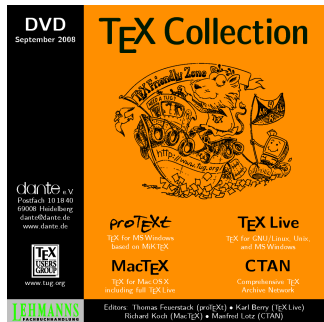
- ▶ Installation from various sources
- ▶ Text and GUI mode
- ▶ Windows == Unix (*cum grano salis*)

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## Installation sources

- ▶ DVD  
update T<sub>E</sub>X Live Manager, noexec
- ▶ Network
- ▶ local (hard disk) mirror of CTAN
- ▶ svn checkout
- ▶ another installation



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## Installation sources

- ▶ DVD
- ▶ Network  
automatic detection of nearest CTAN-mirror
- ▶ local (hard disk) mirror of CTAN
- ▶ svn checkout
- ▶ another installation

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## Installation sources

- ▶ DVD
- ▶ Network
- ▶ local (hard disk) mirror of CTAN  
use it like a DVD
- ▶ svn checkout
- ▶ another installation

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## Installation sources

- ▶ DVD
- ▶ Network
- ▶ local (hard disk) mirror of CTAN
- ▶ svn checkout
- ▶ another installation

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## Installation sources

- ▶ DVD
- ▶ Network
- ▶ local (hard disk) mirror of CTAN
- ▶ svn checkout
- ▶ another installation  
recent installations, -location argument necessary



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## Where to start

- ▶ Go and get it at `http://mirror.ctan.org/systems/texlive/tlnet/2008`
- ▶ `install-tl-unx.tar.gz` for Unix-ish systems
- ▶ `install-tl.zip` for all systems
- ▶ w32: double-click the `.bat` file
- ▶ Unix: `./install-tl`

# T<sub>E</sub>X Live 2008



## Where to start

- ▶ Go and get it at `http://mirror.ctan.org/systems/texlive/tlnet/2008`
- ▶ `install-tl-unx.tar.gz` for Unix-ish systems
- ▶ `install-tl.zip` for all systems  
supports all systems, but ships Perl for w32
- ▶ w32: double-click the `.bat` file
- ▶ Unix: `./install-tl`

# T<sub>E</sub>X Live 2008



## Where to start

- ▶ Go and get it at `http://mirror.ctan.org/systems/texlive/tlnet/2008`
- ▶ `install-tl-unx.tar.gz` for Unix-ish systems
- ▶ `install-tl.zip` for all systems
- ▶ w32: double-click the `.bat` file  
or start it from a cmd shell for additional arguments
- ▶ Unix: `./install-tl`

# T<sub>E</sub>X Live 2008



## Where to start

- ▶ Go and get it at `http://mirror.ctan.org/systems/texlive/tlnet/2008`
- ▶ `install-tl-unx.tar.gz` for Unix-ish systems
- ▶ `install-tl.zip` for all systems
- ▶ w32: double-click the `.bat` file
- ▶ Unix: `./install-tl`  
and add arguments if you need them



## Arguments for the Installer

- ▶ `-location` installation source, can be  
`/normal/path`  
`file:/some/path`  
`ftp://some.server/path`  
`http://some.server/path`
- ▶ `-gui` tries to start the GUI installer, `-no-gui` for w32 to disable the default GUI installer
- ▶ `-lang` specifies a language code, currently supported:  
`en`, `de`, `fr`, `it`, `nl`, `pl`, `sl`, `zh_cn`, `zh_tw`
- ▶ some more: `-profile`, `-non-admin`, ...

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## Installation settings

- ▶ binary systems

Select arch-os

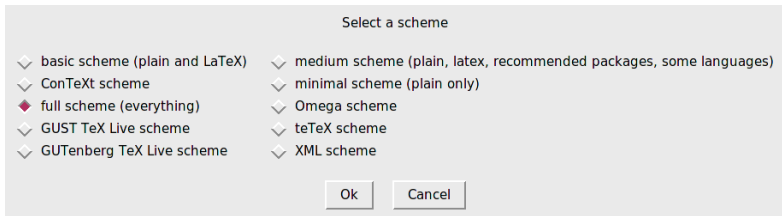
- DEC Alpha with GNU/Linux
- x86\_64 with FreeBSD
- HP-UX
- Intel x86 with FreeBSD
- Intel x86 with GNU/Linux
- Intel x86 with OpenBSD
- Intel x86 with Sun Solaris
- SGI IRIX
- PowerPC with AIX
- PowerPC with GNU/Linux
- Sparc with GNU/Linux
- Sparc with Solaris
- universal binaries for MacOSX/Darwin
- Windows
- x86\_64 with GNU/Linux

Ok Cancel



## Installation settings

- ▶ binary systems
- ▶ schemes



# TeX Live 2008



## Installation settings

- ▶ binary systems
- ▶ schemes
- ▶ collections

Select the collections to be installed

<input checked="" type="checkbox"/> Essential programs and files	<input checked="" type="checkbox"/> LaTeX3 packages
<input checked="" type="checkbox"/> Essential binaries	<input checked="" type="checkbox"/> LaTeX supplementary packages
<input checked="" type="checkbox"/> Extra BibTeX styles	<input checked="" type="checkbox"/> LaTeX recommended packages
<input checked="" type="checkbox"/> TeX auxiliary programs	<input checked="" type="checkbox"/> Advanced math typesetting
<input checked="" type="checkbox"/> ConTeXt format	<input checked="" type="checkbox"/> MetaPost (and Metafont) drawing packages
<input checked="" type="checkbox"/> TeX Live documentation	<input checked="" type="checkbox"/> Music typesetting
<input checked="" type="checkbox"/> TeX font-related programs	<input checked="" type="checkbox"/> Omega
<input checked="" type="checkbox"/> Extra fonts	<input checked="" type="checkbox"/> Graphics packages
<input checked="" type="checkbox"/> Recommended fonts	<input checked="" type="checkbox"/> Plain TeX supplementary packages
<input checked="" type="checkbox"/> Extra formats	<input checked="" type="checkbox"/> PSTricks packages
<input checked="" type="checkbox"/> Games typesetting (chess, etc)	<input checked="" type="checkbox"/> Extra font utilities
<input checked="" type="checkbox"/> Extra generic packages	<input checked="" type="checkbox"/> Support for publishers and theses
<input checked="" type="checkbox"/> Recommended generic packages	<input checked="" type="checkbox"/> Typesetting for natural and computer sciences
<input checked="" type="checkbox"/> Graphics tools	<input checked="" type="checkbox"/> GNU Texinfo
<input checked="" type="checkbox"/> HTML/SGML/XML support	<input checked="" type="checkbox"/> TrueType font manipulation
<input checked="" type="checkbox"/> Humanities packages	<input type="checkbox"/> Windows support programs
<input checked="" type="checkbox"/> Basic LaTeX packages	<input checked="" type="checkbox"/> XeTeX packages

Select All    Deselect All

Ok    Cancel



# T<sub>E</sub>X Live 2008



## Installation settings

- ▶ binary systems
- ▶ schemes
- ▶ collections
- ▶ language collections and docs

The dialog box is titled "Select language support" and "Select language-specific documentation". It contains two columns of checkboxes, each with a language name. At the bottom of each column are "Select All" and "Deselect All" buttons. At the bottom of the entire dialog are "Ok" and "Cancel" buttons.

Select language support		Select language-specific documentation	
<input checked="" type="checkbox"/> African scripts	<input checked="" type="checkbox"/> Hungarian	<input checked="" type="checkbox"/> Bulgarian documentation	<input checked="" type="checkbox"/> Korean documentation
<input checked="" type="checkbox"/> Arabic	<input checked="" type="checkbox"/> Indic scripts	<input checked="" type="checkbox"/> Chinese documentation	<input checked="" type="checkbox"/> Mongolian documentation
<input checked="" type="checkbox"/> Armenian	<input checked="" type="checkbox"/> Italian	<input checked="" type="checkbox"/> Czechoslovak documentation	<input checked="" type="checkbox"/> Polish documentation
<input checked="" type="checkbox"/> Chinese, Japanese, Korean	<input checked="" type="checkbox"/> Latin	<input checked="" type="checkbox"/> Dutch documentation	<input checked="" type="checkbox"/> Portuguese documentation
<input checked="" type="checkbox"/> Croatian	<input checked="" type="checkbox"/> Mongolian	<input checked="" type="checkbox"/> English documentation	<input checked="" type="checkbox"/> Russian documentation
<input checked="" type="checkbox"/> Cyrillic	<input checked="" type="checkbox"/> Norwegian	<input checked="" type="checkbox"/> Finnish documentation	<input checked="" type="checkbox"/> Slovenian documentation
<input checked="" type="checkbox"/> Czech/Slovak	<input checked="" type="checkbox"/> Other hyphenation files	<input checked="" type="checkbox"/> French documentation	<input checked="" type="checkbox"/> Spanish documentation
<input checked="" type="checkbox"/> Danish	<input checked="" type="checkbox"/> Polish	<input checked="" type="checkbox"/> German documentation	<input checked="" type="checkbox"/> Thai documentation
<input checked="" type="checkbox"/> Dutch	<input checked="" type="checkbox"/> Portuguese	<input checked="" type="checkbox"/> Greek documentation	<input checked="" type="checkbox"/> Turkish documentation
<input checked="" type="checkbox"/> Finnish	<input checked="" type="checkbox"/> Spanish	<input checked="" type="checkbox"/> Italian documentation	<input checked="" type="checkbox"/> Ukrainian documentation
<input checked="" type="checkbox"/> French	<input checked="" type="checkbox"/> Swedish	<input checked="" type="checkbox"/> Japanese documentation	<input checked="" type="checkbox"/> Vietnamese documentation
<input checked="" type="checkbox"/> German	<input checked="" type="checkbox"/> Tibetan		
<input checked="" type="checkbox"/> Greek	<input checked="" type="checkbox"/> UK English		
<input checked="" type="checkbox"/> Hebrew	<input checked="" type="checkbox"/> Vietnamese		

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## Installation settings cont.

- ▶ destination folders
  - ▶ TEXDIR
  - ▶ TEXMFSYSVAR
  - ▶ TEXMFSCONFIG
  - ▶ TEXMFHOME

----- Directory setup -----		
TEXDIR (the main TeX directory)	/home/norbert/texlive/2008	<input type="button" value="Change"/>
TEXMFLOCAL (directory for site-wide local files)	/home/norbert/texlive/texmf-local	<input type="button" value="Change"/>
TEXMFSYSVAR (directory for autogenerated data)	/home/norbert/texlive/2008/texmf-var	<input type="button" value="Change"/>
TEXMFSYSCONFIG (directory for local config)	/home/norbert/texlive/2008/texmf-config	<input type="button" value="Change"/>
TEXMFHOME (directory for user-specific files)	~/texmf	<input type="button" value="Change"/>



## Installation settings cont.

- ▶ destination folders

- ▶ TEXDIR
- ▶ TEXMFSYSVAR
- ▶ TEXMFSYSCONFIG
- ▶ TEXMFHOME

- ▶ options

- ▶ papersize
- ▶ create formats
- ▶ install font/macro documentation
- ▶ install font/macro sources

Use letter size instead of A4 by default

Create all format files

Install font/macro doc tree

Install font/macro source tree

----- Options -----

No

Yes

Yes

Yes

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## Post installation actions

### Windows systems

- ▶ Menu entry for T<sub>E</sub>X Live with all programs
- ▶ Desktop link to ps-view
- ▶ adjusting the PATH environment

# T<sub>E</sub>X Live 2008



## Post installation actions

### Windows systems

- ▶ Menu entry for T<sub>E</sub>X Live with all programs
- ▶ Desktop link to ps-view
- ▶ adjusting the PATH environment

### Unix systems

- ▶ add `TEXDIR/bin/<ARCH>` to PATH
- ▶ adjust MANPATH and INFOPATH

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## Other ways to use the installer

### Running from DVD

only text mode, writable root necessary, only the texmf trees and binaries are not copied

# T<sub>E</sub>X Live 2008



## Other ways to use the installer

### Running from DVD

only text mode, writable root necessary, only the texmf trees and binaries are not copied

### Portable usage `tl_portable(.bat)`

minimal impact on the system, first time it runs creates files in home directory, second time startup much faster, gives a shell that is set up for running T<sub>E</sub>X Live from there

# Demo Text and GUI mode installer

```
===== TeX Live installation procedure <=====
==> Note: Letters/digits in <angle brackets> indicate menu items <==
==>         for commands or configurable options           <==

Proposed platform: Intel x86_64 with GNU/Linux

<B> binary systems: 1 out of 15

<S> Installation scheme (scheme-full)

Customizing installation scheme:
  <C> standard collections
  <L> language collections
  83 collections out of 84, disk space required: 1426 MB

<D> directories:
  TEXDIR (the main TeX directory):
    /usr/local/texlive/2008
  TEXMFLOCAL (directory for site-wide local files):
    /usr/local/texlive/texmf-local
  TEXMFSYVAR (directory for variable and automatically generated data):
    /usr/local/texlive/2008/texmf-var
  TEXMFSCONFIG (directory for local config):
    /usr/local/texlive/2008/texmf-config
  TEXMFHOME (directory for user-specific files):
    ~/texmf

<O> options:
  [ ] use letter size instead of A4 by default
  [X] create all format files
  [X] install macro/font doc tree
  [X] install macro/font source tree
  [ ] create symlinks in standard directories

<V> set up for running from DVD

Other options:
=====
<I> start installation to hard disk
<H> help
<Q> quit

Enter command:
```

TeX Live 2008 Installation

Basic Information

Binary Systems) 1 out of 15

Selected Scheme scheme-full

Further Customization

Standard Collections Change

Language Collections Change

83 collections out of 84, disk space required: 1731 MB

Directory setup

TEXDIR (the main TeX directory) (default not writable - please change!) Change

TEXMFLOCAL (directory for site-wide local files) /usr/local/texlive/2008/texmf-local Change

TEXMFSYVAR (directory for autogenerated data) (please change TEXDIR first!) Change

TEXMFSCONFIG (directory for local config) (please change TEXDIR first!) Change

TEXMFHOME (directory for user-specific files) ~/texmf Change

Options

Use letter size instead of A4 by default No Toggle

Create all format files Yes Toggle

Install font/macro doc tree Yes Toggle

Install font/macro source tree Yes Toggle

System Integration

Create symlinks in system directories No Change

Install TeX Live Quit

Status output

v10659/10234



# T<sub>E</sub>X Live 2008



The new player

T<sub>E</sub>X Live Manager

# T<sub>E</sub>X Live 2008



## T<sub>E</sub>X Live Manager `tlmgr`

- ▶ installation/removal of additional packages or collections
- ▶ update all packages to the newest versions available
- ▶ backups and restore
- ▶ paper configuration like `texconfig`, but also for Windows
- ▶ managing the installed binary systems
- ▶ searching the installed and all available packages
- ▶ list and searching all schemes, collections, packages
- ▶ setting some default values like the installation location
- ▶ regenerate `fmtutil.cnf`, `language.dat`, and `updmap.cfg` from the information stored in the database and local additions

# T<sub>E</sub>X Live 2008



## T<sub>E</sub>X Live Manager – Syntax

```
tlmgr [opt]...  action [opt]...  [arg]...
```



## T<sub>E</sub>X Live Manager – Syntax

```
tlmgr [opt]... action [opt]... [arg]...
```

With first set of options:

- ▶ `-location` installation source, see above
- ▶ `-gui` starts the GUI
- ▶ `-gui-lang` should be auto-detected, can be overridden
- ▶ standard options `-help`, `-q`, `-v`, `-version`



## T<sub>E</sub>X Live Manager – Syntax

```
tlmgr [opt]... action [opt]... [arg]...
```

- ▶ general actions: search, show, list, uninstall, check, gui, version, help
- ▶ configuration actions: option, paper, generate
- ▶ package management actions: install, update, remove, backup, restore, arch



## The search (and show) action

```
tlmgr [opt]... search [opt]... what
```

searches the *locally* installed package names and descriptions for **what**.

Options:

- ▶ `-global` also searches the remote database
- ▶ `-file` searches for file names



## The search (and show) action

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Options:

- ▶ `-global` also searches the remote database
- ▶ `-file` searches for file names

```
tlmgr [opt]... show what
```

shows information on the given packages



## The install action

```
tlmgr [opt]... install [opt]... what
```

installs the package `what` including all dependencies

Options:

- ▶ `-no-depends` do not install dependencies
- ▶ `-no-depends-at-all` do not even install architecture specific sub-packages





## The update action

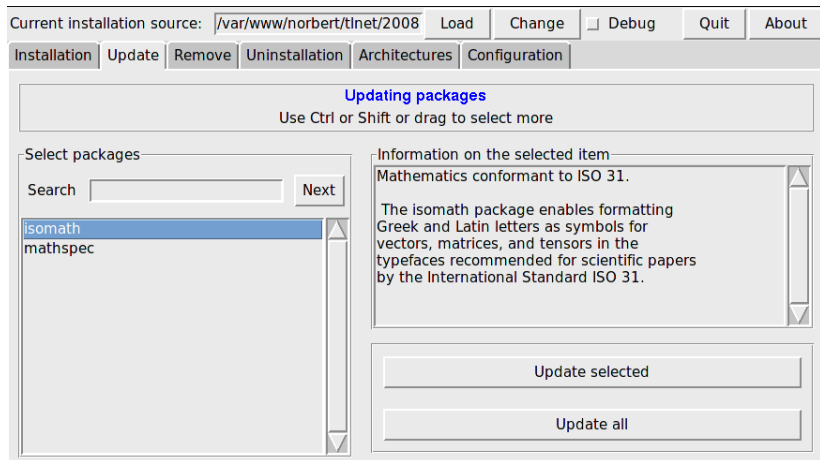
```
tlmgr [opt]... update [opt]... what
```

installs the package `what` including all dependencies

Options:

- ▶ `-list` list packages to be updated (or added) with revisions
- ▶ `-all` update everything
- ▶ `-dry-run` don't actually do it
- ▶ `-backupdir dir` saves a snapshot of the current status to the specified directory
- ▶ `-no-depends`, `-no-depends-at-all` as before

# The GUI of the T<sub>E</sub>X Live Manager



# T<sub>E</sub>X Live 2008



## Concluding remarks on `tlmgr`

- ▶ very much work in progress, please do update your `tlmgr` immediately after a new installation

# T<sub>E</sub>X Live 2008



## Concluding remarks on `tlmgr`

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- ▶ the GUI needs a lot of work, does not exhibit all the functionality of the cmd line version

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- ▶ Perl programmers – join us!

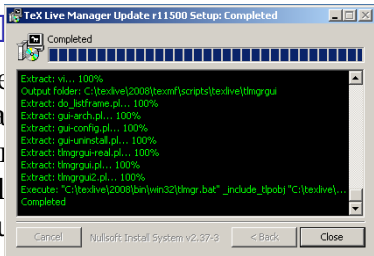
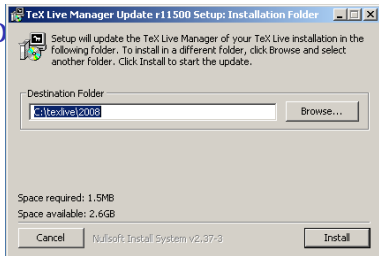


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Recovering from crashed `tlmgr` or perl modules

# TeX Live 2008



Recovering from crashed `tlmgr` or perl modules

- ▶ for Windows systems: CTAN:  
`update-tlmgr-latest.exe`



## Concluding remarks on `tlmgr`

- ▶ very much work in progress, please do update your `tlmgr` immediately after a new installation
- ▶ the GUI needs a lot of work, does not exhibit all the functionality of the cmd line version
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## Recovering from crashed `tlmgr` or perl modules

- ▶ for Windows systems: CTAN:  
`update-tlmgr-latest.exe`
- ▶ for Unix systems: CTAN:  
`update-tlmgr-latest.sh`



# T<sub>E</sub>X Live 2008



## Other (user visible) news

- ▶ `hyph-utf8`: all engines share the same patterns

# T<sub>E</sub>X Live 2008



## Other (user visible) news

- ▶ `hyph-utf8`: all engines share the same patterns
- ▶ `luaTEX`: embedded lua interpreter

# T<sub>E</sub>X Live 2008



## Other (user visible) news

- ▶ `hyph-utf8`: all engines share the same patterns
- ▶ `luaTEX`: embedded lua interpreter
- ▶ `xindy` indexing program

# T<sub>E</sub>X Live 2008



## Other (user visible) news

- ▶ `hyph-utf8`: all engines share the same patterns
- ▶ `luaTEX`: embedded lua interpreter
- ▶ `xindy` indexing program
- ▶ (W32) Perl and Ghostscript. 'hidden' copies, no interference with full-scale distributions

# T<sub>E</sub>X Live 2008



## Other (user visible) news

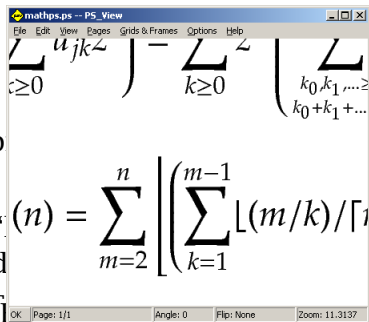
- ▶ `hyph-utf8`: all engines share the same patterns
- ▶ `luaTEX`: embedded lua interpreter
- ▶ `xindy` indexing program
- ▶ (W32) `Perl and Ghostscript`. ‘hidden’ copies, no interference with full-scale distributions
- ▶ (W32) `fc-cache` helps X<sub>E</sub>T<sub>E</sub>X to handle fonts more efficiently.

# T<sub>E</sub>X Live 2008



## Other (user visible) news

- ▶ [hyph-utf8](#): all engines share
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- ▶ (W32) [fc-cache](#) helps XeT<sub>E</sub> efficiently.
- ▶ (W32) [PS\\_View](#). a new PostScript (and PDF viewer that is free software

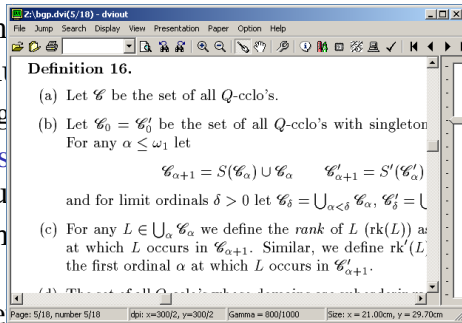


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## Other (user visible) news

- ▶ [hyph-utf8](#): all engines
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- ▶ (W32) [Perl and Ghos](#) interference with fonts
- ▶ (W32) [fc-cache](#) handles fonts more efficiently.
- ▶ (W32) [PS\\_View](#). a new (and PDF viewer that is free software
- ▶ (W32) [dviout](#) DVI previewer





## Intermezzo for Package writers



# T<sub>E</sub>X Live 2008



Getting things into T<sub>E</sub>X Live

New package

# T<sub>E</sub>X Live 2008



## Getting things into T<sub>E</sub>X Live

New package

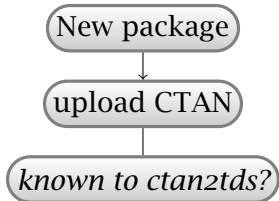


upload CTAN

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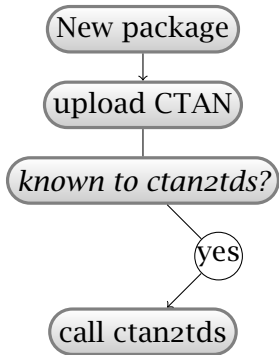
## Getting things into T<sub>E</sub>X Live



# T<sub>E</sub>X Live 2008



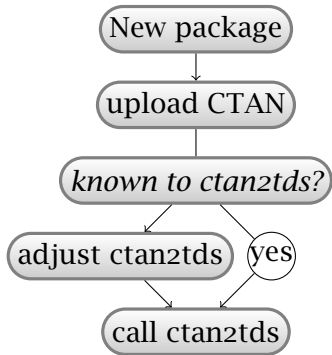
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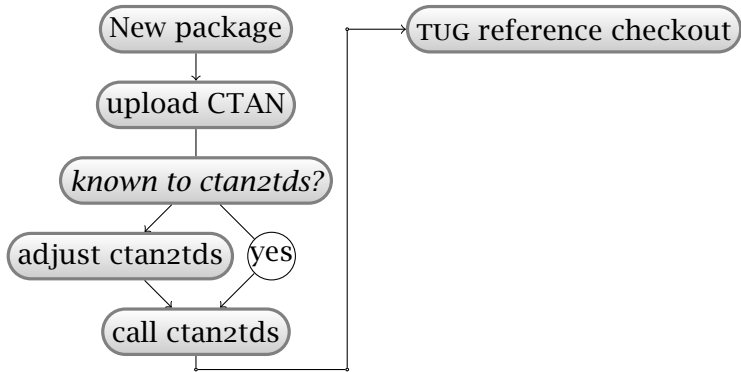
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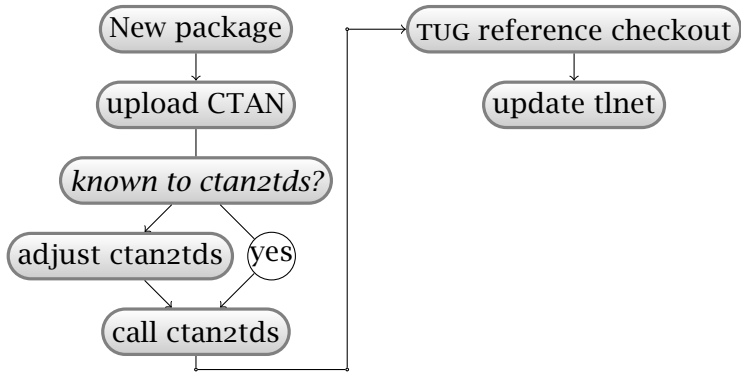
## Getting things into T<sub>E</sub>X Live



# T<sub>E</sub>X Live 2008



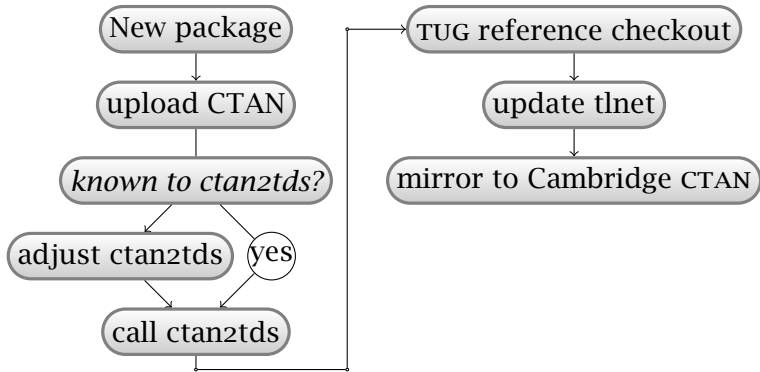
## Getting things into T<sub>E</sub>X Live



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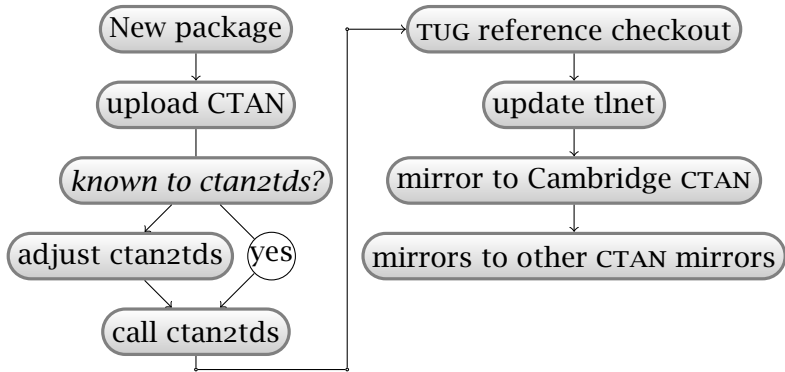




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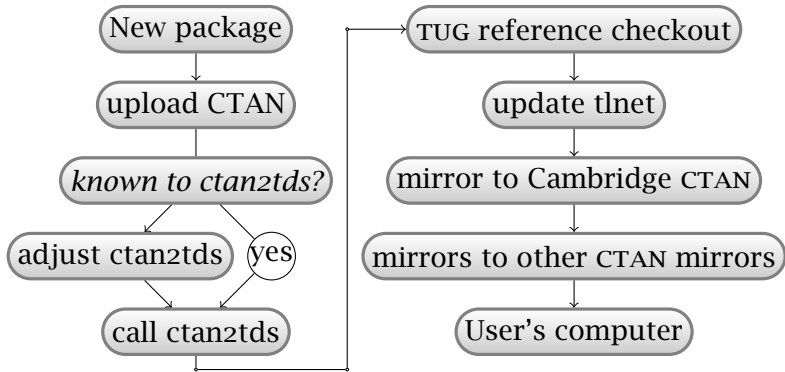
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## Technical part



## Aims of the new infrastructure

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Going from a 'source' to the 'object' should include automatically data from various other sources



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Going from a 'source' to the 'object' should include automatically data from various other sources
- ▶ No additional files to be kept in sync  
any additional files tend to be outdated, all the necessary information should be present in *one* place and be easily parseable.
- ▶ Single package updates via the web
- ▶ Better documentation  
since T<sub>E</sub>X Live is replacing teT<sub>E</sub>X we want to give people incorporating T<sub>E</sub>X Live into distributions a better documented and easier to handle system

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## The central `texlive.tlpdb`

One installation or media is now completely described by one file, the T<sub>E</sub>X Live Database:

- ▶ simple text file - easily parseable
- ▶ revision number for the single packages
- ▶ generated from static content (the `tlpsrc` files)
- ▶ enriched with information from the T<sub>E</sub>X Catalogue
- ▶ format documented in detail (POD documentation in the respective perl module)





How does `texlive.tlpdb` look like

`texlive.tlpdb`

---

`name_abbrev`

...

`name_memoir`

...

---

- ▶ sequence of `key value` pairs
- ▶ separated by an empty line (or more)
- ▶ one group per package
- ▶ some 'meta'-packages for configuration options

# The single package: tlpobj by example I

## aoposter.tlpobj

---

```
name_aoposter
category_Package
revision_7340
shortdesc_Support_for_designing_posters_on_large_paper.
longdesc_Provides_fonts_in_sizes_of_12pt_up_to_107pt_and_also_makes_sure
longdesc_that_in_math_formulas_the_symbols_appear_in_the_right_size._Can
longdesc_also_create_a_PostScript_header_file_for_dvips_which_ensures
longdesc_that_the_poster_will_be_printed_in_the_right_size._Supported
longdesc_sizes_are_DIN_A0,_DIN_A1,_DIN_A2_and_DIN_A3.
docfiles_size=47
_texmf-dist/doc/latex/aoposter/a0.pdf_details="Package_documentation_(German)"_ )
  { language="de"
_texmf-dist/doc/latex/aoposter/a0.tex
_texmf-dist/doc/latex/aoposter/a0_eng.pdf_details="Package_documentation_(English)"_ )
  { " language="en"
_texmf-dist/doc/latex/aoposter/a0_eng.tex
runfiles_size=4
_texmf-dist/tex/latex/aoposter/aoposter.cls
_texmf-dist/tex/latex/aoposter/a0size.sty
catalogue-version_1.22b
catalogue-date_2006-11-28_22:38:04_+0100
catalogue-ctan_/macros/latex/contrib/aoposter
catalogue-license_lpl
```

---

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## The origin of this a0poster.tlplib

aoposter.tlpsrc

---

name\_a0poster  
category\_Package

---

- ▶ minimal input file with static data
- ▶ rest is generated from actual svn repository (revision, size)
- ▶ enriched with information from the T<sub>E</sub>X Catalogue (catalogue-\*, specification of the documentation files)
- ▶ tagged documentation files (details, language), information again from the Catalogue

# The single packages: tlpobj by example II

## bin-bibtex8 and friends

---

```
name_bin-bibtex8
category_TLCore
revision_7340
depend_bin-bibtex8.ARCH
docfiles_size=15
_texmf/doc/bibtex8/00readme.txt
_texmf/doc/bibtex8/HISTORY
_texmf/doc/bibtex8/csfile.txt
_texmf/doc/bibtex8/file_id.diz
runfiles_size=10
_texmf-dist/bibtex/csf/base/88592pl.csf
_texmf-dist/bibtex/csf/base/cp1250pl.csf
_texmf-dist/bibtex/csf/base/cp852pl.csf
_texmf-dist/bibtex/csf/base/iso8859-7.csf

name_bin-bibtex8.alpha-linux
category_TLCore
revision_7340
shortdesc_binary_files_of_bin-bibtex8_for_alpha-linux
binfiles_arch=alpha-linux_size=62
_bin/alpha-linux/bibtex8

...
name_bin-bibtex8.win32
category_TLCore
revision_7340
shortdesc_binary_files_of_bin-bibtex8_for_win32
binfiles_arch=win32_size=25
_bin/win32/bibtex8.exe
```

---



## The origin of the above `bin-bibtex8`

`bin-bibtex8.tlpsrc`

---

```
name_bin-bibtex8
category_TLCore
runpattern_d_texmf-dist/bibtex/csf/base
docpattern_f_texmf/doc/bibtex8/*
binpattern_f_bin/${ARCH}/bibtex8
```

---

- ▶ various patterns for capturing files
- ▶ tricks to capture binaries on unix and windows
- ▶ separate objects for the binary files of the package

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## The pattern language

patterns are of the form

$$[\text{PREFIX}]\text{TYPE PAT}$$

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## The pattern language

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where PREFIX can be +, !+, or !, and TYPE PAT can be:

- f path** includes all files which match `path` where *only* the last component of `path` can contain the usual glob characters \* and ? (but no others!).
- d path** includes all the files in and below the directory specified as `path`.



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## The pattern language

patterns are of the form

[PREFIX]TYPE PAT

where PREFIX can be +, !+, or !, and TYPE PAT can be:

t word<sub>1</sub> ... word<sub>N</sub> word<sub>L</sub> includes all the files in and below  
all directories of the form

word<sub>1</sub>/word<sub>2</sub>/.../word<sub>N</sub>/.../any/  
dirs/.../word<sub>L</sub>/

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all directories of the form

word<sub>1</sub>/word<sub>2</sub>/.../word<sub>N</sub>/.../any/  
dirs/.../word<sub>L</sub>/

**r regexp** includes all files matching the Perl regexp  
/^regexp\$/

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## Example patterns

- ▶ `runpattern f texmf/chktex/*`  
includes all files *in* `Master/texmf/chktex/`



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- ▶ `runpattern f texmf/chktex/*`  
includes all files *in* `Master/texmf/chktex/`
- ▶ `binpattern f bin/${ARCH}/bibtex`  
includes the bibtex binaries into the bin-bibtex package,  
depending on the architecture



## Example patterns

- ▶ `runpattern f texmf/chktex/*`  
includes all files *in* Master/texmf/chktex/
- ▶ `binpattern f bin/${ARCH}/bibtex`  
includes the bibtex binaries into the bin-bibtex package, depending on the architecture
- ▶ `runpattern d texmf/tex/lambda/base`  
includes all files in and under the above path



## Example patterns

- ▶ `runpattern f texmf/chktex/*`  
includes all files *in* Master/texmf/chktex/
- ▶ `binpattern f bin/${ARCH}/bibtex`  
includes the bibtex binaries into the bin-bibtex package, depending on the architecture
- ▶ `runpattern d texmf/tex/lambda/base`  
includes all files in and under the above path
- ▶ `runpattern t texmf-dist/omega/uni2char`  
includes all files in texmf-dist/omega/.../uni2char/



## Example patterns

- ▶ `runpattern f texmf/chktex/*`  
includes all files *in* Master/texmf/chktex/
- ▶ `binpattern f bin/${ARCH}/bibtex`  
includes the bibtex binaries into the bin-bibtex package, depending on the architecture
- ▶ `runpattern d texmf/tex/lambda/base`  
includes all files in and under the above path
- ▶ `runpattern t texmf-dist/omega/uni2char`  
includes all files in texmf-dist/omega/.../uni2char/
- ▶ `runpattern r */foobar`  
includes the files matching the regexp

## Autogenerated patterns

To keep `tlp`src files small, if a pattern section is empty or all patterns are prefixed with `+`, the following patterns are automatically generated (actual list is specified in a special `tlp`src-file):

- ▶ `runpatterns` in category `Package`:

```
t texmf-dist topdir name
```

- ▶ `docpatterns` in category `Package`:

```
t texmf-dist doc name
```

- ▶ `docpatterns` in category `Documentation`:

```
t texmf-doc doc name
```

- ▶ `srcpatterns` in category `Package`:

```
t texmf-dist source name
```

- ▶ `srcpatterns` in category `Documentation`:

```
t texmf-doc source name
```





## Additional tricks

### arch expansion

In case the string `${ARCH}` occurs in one `binpattern` it is automatically expanded to the respective architecture.

### `bat/exe/dll/texlua` for `win32`

For `binpatterns` of the form `f bin/win32/foobar` files `foobar.bat`, `foobar.dll`, `foobar.exe`, and `foobar.texlua` are also matched.



## Effects of auto generation and tricks

total number of tlp-src files: 1719

total number of tlp-src files with patterns: 157

number of bin- and hyphen- tlp-src files with patterns: 80

number of 'normal' packages with patterns: 77

## Allowed fields for `tlpobj`

- ▶ `name`: identifies the package
- ▶ `category`: one of (currently) `Collection`, `Scheme`, `TLCore`, `Documentation`, `Package`
- ▶ `shortdesc`, `longdesc`: description of the package
- ▶ `depend`: Name (multiple entries possible)
- ▶ `execute`: activating maps, formats, hyphenation patterns
- ▶ `runfiles`, `docfiles`, `srcfiles`, `binfiles`  
every files section has a `size` attribute, and the `binfiles` section can occur more than once with different `arch` tags (see above)
- ▶ `revision`: maximum svn revision number of the contained files, since version numbers are not parseable, trustworthy, or not even present
- ▶ `catalogue-*` keys: stuff taken from the catalogue for example `catalogue-version`, `catalogue-authors`, `catalogue-license`

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## Perl programming API

Important for 'users' or integrators

`TeXLive::TLPOBJ` for `tlpobj` files, basic functionality like read, write, and member access and change functions, etc.

`TeXLive::TLPDB` access to the TeX Live database.

`TeXLive::TLPostInstall` collects post installation actions



## Perl programming API II

Important for 'us' as developer:

`TeXLive::TLTREE` properties of the subversion repository, in principle it is `svn status -v`

`TeXLive::TeXCatalogue` simple interface to the T<sub>E</sub>X Catalogue

`TeXLive::TLPSRC` for `tlpsrc` files, basic functionality like read, write, etc

`TeXLive::TLUtils` some handy functions

`TeXLive::TLMedia` abstracts an arbitrary installation media



## Other (planned/wished) APIs

Are they necessary/useful? Maybe calling the Perl code ...?

`texlua` next on the list to be done, would really help us a lot

`python` minimal code present (by Jim Hefferon)

`C` some code present, was a GSOC project, but no slot available (code by Jjgod Jiang)

`bash` maybe, some code present (by the author)

... no idea what else ...

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## Documentation

- ▶ all modules contain a full documentation in pod format
- ▶ additional text API document
- ▶ article in ArsT<sub>E</sub>Xnica, 2007:4, 69-73, and in the proceedings of the BachoT<sub>E</sub>X 2008.

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## Some special packages

Some packages do not relate to actual files but are used to save options and configurations into the database by putting them into a depend line: `00texlive.config`, `00texlive-installation.config`, `00texlive.core`.

Values are stored in these packages as dependencies.

All packages starting with `00texlive` are considered virtual packages in the sense that no containers are generated and these packages are never split into `.src` and `.doc` sub-packages in the `tlpdb`.





## 00texlive.config

This package contains configuration options for the T<sub>E</sub>X Live archive:

- ▶ `container_split_{doc,src}_files`  
documentation and source files are split into separate containers (.tar.lzma) during container build time. Note that this has *no* effect on the appearance within the texlive.tlpdb. It is only on container level.
- ▶ `container_format/XXXXX`  
specifies the format, currently allowed is only lzma, which generates .tar.lzma files. zip can be supported.
- ▶ `release/NNNN`  
specifies the release number as used in the installer

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## 00texlive-installation.config

This package serves two purposes:

- ▶ at installation time the present values are taken as default for the installer
- ▶ on an installed system it serves as a configuration file. We have to remember these settings for additional package installation, removal, etc.

The value of `__MASTER__` for the location field tells the installer to use the present directory itself. For example, the DVD can be mounted anywhere and we want the installer to work.

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## Example 00texlive-installation.config

```
name_00texlive-installation.config
category_TLCore
depend_platform:x86_64-linux
depend_location:/var/www/norbert/tlnet/2008
depend_opt_paper:a4
depend_opt_create_formats:0
depend_opt_create_symlinks:0
depend_opt_sys_bin:/usr/local/bin
depend_opt_sys_info:/usr/local/info
depend_opt_sys_man:/usr/local/man
depend_opt_install_docfiles:1
depend_opt_install_srcfiles:0
depend_available_architectures:x86_64-linux_win32
```

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`00texlive.core`

actually contains files, but those are never installed and this package is only here to collect files which are not contained in any package, thus making the coverage check squeak

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## Resources

- ▶ `tex-live@tug.org` - main contact point
- ▶ `www.tug.org/texlive` - the main entry point, with links to developers' resources, documentation
- ▶ `www.tug.org/svn/texlive/trunk/` - web view onto the subversion repository;
- ▶ `svn://tug.org/texlive/trunk` - svn repository, anonymous access
- ▶ `www.tug.org/texlive/pkgupdate.html` - an explanation how updates from CTAN to T<sub>E</sub>X Live are done.

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Thanks

Karl Berry

for great enthusiasm and perpetual support (and critical voices)

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