TEX Live 2008–2010

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TEXユーザの集い2010、東京大学、日本

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# Layout

<table>
<thead>
<tr>
<th>Part for users</th>
<th>Technical part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Getting things into \TeX Live</td>
</tr>
<tr>
<td>Installation</td>
<td>The new infrastructure</td>
</tr>
<tr>
<td>\TeX Live Manager</td>
<td>Internals of the <code>tlpdb</code>, config options</td>
</tr>
<tr>
<td>Other news</td>
<td></td>
</tr>
</tbody>
</table>
History

- late 1993 Dutch \TeX\ Users Group, 4All\TeX\ CD, TDS working group
History

- late 1993 Dutch TeX Users Group, 4AllTeX CD, TDS working group
- 1995 Unix-based TDS CD based on teTeX
History

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- 1996 first edition, Sebastian Rahtz
History

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- 1995 Unix-based TDS CD based on teTEX
- 1996 first edition, Sebastian Rahtz
- 2000 5th edition, non-free software removed
History

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- 1995 Unix-based TDS CD based on teTeX
- 1996 first edition, Sebastian Rahtz
- 2000 5th edition, non-free software removed
- 2002 7th edition: Mac OS X support
History

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- 1995 Unix-based TDS CD based on t\eTeX
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- 2002 7th edition: Mac OS X support
- 2005 addition of the \-sys scripts
History

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- 1995 Unix-based TDS CD based on te\TeX
- 1996 first edition, Sebastian Rahtz
- 2000 5th edition, non-free software removed
- 2002 7th edition: Mac OS X support
- 2005 addition of the -sys scripts
- 2006-09 Xe\TeX\ addition, end of te\TeX\ development, \TeX\works addition, Karl Berry
Features

- ‘complete’ – all the free stuff from CTAN
- multi-platform
- uniform across platforms
- practically daily updates
- DFSG free with a few exceptions
Features of the new installer

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

- DVD
  - update TeX Live Manager, noexec
- Network
- local (hard disk) mirror of CTAN
- svn checkout
- another installation
Installation sources

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

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

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

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

- binary systems
Installation settings

- binary systems
- schemes

- basic scheme (plain and LaTeX)
- ConTeXt scheme
- full scheme (everything)
- GUST TeX Live scheme
- medium scheme (plain, latex, recommended packages, some languages)
- minimal scheme (plain only)
- teTeX scheme (more than medium, but nowhere near full)
- XML scheme
Installation settings

- binary systems
- schemes
- collections
Installation settings

- binary systems
- schemes
- collections
- language collections and docs
Installation settings cont.

- destination folders
  - TEXDIR
  - TEXMFSYSVAR
  - TEXMFSYSCONFIG
  - TEXMFHOME

--- 設定項目 ---

<table>
<thead>
<tr>
<th>TEXDIR（TeX主ディレクトリ）</th>
<th>/usr/local/texlive/2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEXMFSYSVAR（サイト固有ファイル用ディレクトリ）</td>
<td>/usr/local/texlive/2010/texmf-var</td>
</tr>
<tr>
<td>TEXMFSYSCONFIG（ローカル設定用ディレクトリ）</td>
<td>/usr/local/texlive/2010/texmf-config</td>
</tr>
<tr>
<td>TEXMFHOME（ユーザ固有ファイル用ディレクトリ）</td>
<td>~/texmf</td>
</tr>
</tbody>
</table>
Installation settings cont.

- **Destination folders**
  - `texdir`
  - `texmfsysvar`
  - `texmfhome`
- **Options**
  - **papersize**
  - **create formats**
  - **install font/macro documentation**
  - **install font/macro sources**
Windows specific options

- shortcuts in the start menu and on the desktop
- change file associations:
  - not at all
  - only new file associations
  - all
- installation for all users
- installation of TeXworks front end
Wizard installer

TeX Live 2010 の導入

1/5

TeX Live 2010 の導入へようこそ。
http://tug.org/texlive

このウィザードが、あなたのインストールのご案内をします。
設定可能な、高度な導入を行うには、導入ガイドのウェブページをご覧ください。
あるいは install-tl に引数 --gui perlTk を付けてください。

取消

次へ
Wizard installer

TeX Live 2010 の導入

導入先フォルダには、インストールしたものが入ります。最後尾に年を入れたままにしておくことを強くお勧めします。

導入先フォルダ:
/home/norbert/tltest/2010

必要ディスク領域 2426 MB

取消 ←戻る 次へ→
この画面では、いくつかのオプションを設定することができます。
既定用紙：設定先 =：  A4  レター
Wizard installer

TeX Live 2010 を導入する準備が整いました。
以下の設定が使用されます。
変更したいものがある場合には、前に戻ってください。
そうでなければ、「導入」ボタンを押してください。

導入先フォルダ： /home/norbert/titest/2010
既定用紙：設定先 = A4
Wizard installer
Wizard installer

Tex Live 2010 の導入

TeX Live は世界中のTeX
ユーザーグループとの共同プロジェクトです。利用
しやすいグループに属することで、このプロジェクトを
サポートしていただけると助かります。グループの一覧は、ウェブ上の
http://tug.org/usergroups.html にあります

/home/norbert/tlnet/test/2010/texmf/doc/man を MANPATH
に追加してください。
/home/norbert/tlnet/test/2010/texmf/doc/info を INFOPATH
に追加してください。
特に、現セッションと今後のために、/home/norbert/tlnet/test/2010/bin/x86
64-linux を
PATH に追加してください。

TeX Live へようこそ！
TECTEX Live Manager
TeX 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 platforms
tlmgr cont.

- searching the installed and all available packages
- list and searching all schemes, collections, packages
- setting some default values like the installation repository
- regenerate fmtutil.cnf, language.dat, and updmap.cfg from the information stored in the database and local additions
- ... permanently growing
Tex Live Manager – Syntax

\texttt{tlmgr [opt]... action [opt]... [arg]...}

With first set of options:

- \texttt{-repository} installation source, see above
- \texttt{-gui} starts the GUI
- \texttt{-gui-lang} should be auto-detected, can be overridden
- standard options \texttt{-help, -q, -v, -version}
TeX 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 packages for what, either

- names and descriptions
- any of the three taxonomy systems as provided by the experimental \TeX{} Catalogue rework by Jim Hefferon

(special announcement here – available since 2 hours in tlcritical)
Options to the search action

- \texttt{-global} also searches the remote database
- \texttt{-file} searches for file names
- \texttt{-word} only matches full words, not parts of words
- \texttt{-taxonomy}, \texttt{-keyword}, \texttt{-functionality}, \texttt{-characterization}
Options to the search action

- \texttt{-global} also searches the remote database
- \texttt{-file} searches for file names
- \texttt{-word} only matches full words, not parts of words
- \texttt{-taxonomy}, \texttt{-keyword}, \texttt{-functionality}, \texttt{-characterization}

\texttt{tlmgr [opt]... show what}

shows information on the given packages, including taxonomies
Example of searching taxonomies

```bash
$ tlmgr search --taxonomy table
alnumsec - Alphanumeric section numbering.
arydshln - Horizontal and vertical dashed lines in arrays and tabulars.
autotab - Generating tabulars from input data.
blkarray - Extended array and tabular.
booktabs - Publication quality tables in LaTeX
...
variations - Typeset tables of variations of functions.
warpcol - Relative alignment of rows in numeric columns in tabulars.
widetable - An environment for typesetting tables of specified width
xtab - Break tables across pages.
youngtab - Typeset Young-Tableaux.
```
Example listing with taxonomies

<table>
<thead>
<tr>
<th>xtab listing</th>
</tr>
</thead>
</table>

```
$ tlmgr show --taxonomy xtab
package: xtab
category: Package
shortdesc: Break tables across pages.
longdesc: Xtab is an extended and somewhat improved version of supertabular; it provides tables that break across pages.
installed: Yes
revision: 16998
cat-version: 2.3e
cat-date: 2010-02-13 10:06:25 +0100
cat-license: lppl
collection: collection-latexextra
keywords: tables
function: Tables > Typesetting Long Tables
primary characterization: Page-focused > Tables
secondary characterization: Uncharacterized
```
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 (new) GUI of the TeX Live Manager
News in \TeX\ Live 2010
Partial inclusion of p\TeX\ Live

- Thanks to many people present here p\TeX\ and related programs have been included:
p\texttt{ptex}, \texttt{platex}, \texttt{pdvitype}, \texttt{pbibtex}, \texttt{mendex}, \texttt{makejvf}, \texttt{ppltotf}, \texttt{ptftopl}

- for 2011: up\TeX, and \ldots???

- aim: merge p\TeX\ Live into \TeX\ Live

- request: please send me suggestion and correction or information on missing pieces – please upload to CTAN!!!
PDF version level

- by default all engines and dvipdfmx now create level 1.5 PDF files
- higher compression rates
- loading \texttt{pdf14} \LaTeX{} package changes this back to 1.4
- or manually set \texttt{\textbackslash pdfminorversion=4}
Automatic eps to pdf conversion

- pdf(L)\TeX now automatically converts EPS to PDF if the graphics.cfg configuration file is loaded
- uses the epstopdf package/command
- should not overwrite existing PDF files
- manually disable by defining \DoNotLoadEpstopdf before the documentclass statement
\write18 restricted mode enabled

- announced last year, but pulled in last minute due to security considerations
- restricted list of programs are enabled (see texmf.cnf)
- can be disabled at install time
- can be disabled later by `tlmgr conf texmf shell_escape 0`
Output directory restrictions

- Bib\TeX and Makeindex behave like \TeX itself
- do not write to arbitrary directories
- override with environment variable TEXMFOUTPUT or the texmf.cnf config openout\_any
More user visible news

- new Bib\TeX{} (after 20 years!)
- Xe\TeX{} supports margin kerning
- hyph-utf8: all engines share the same patterns
- patterns for e\TeX{}: the available hyphenation patterns are now also loaded into the e\TeX{}-based engines
More user visible news, cont.

- `tlmgr` automatically creates and keeps one backup per package
- Mac\TeX: repackaged \TeX Live for Mac, adds nice GUI for updating and managing the installation, allows switching of distributions (TL2008, TL2009, TL2010)
- several (partly new) programs: `ps_view`, `dviout`, \TeXworks, `xindy`, `chktex`, `dvisvgm`, `bibtexu`
More user visible news, cont.

- `tlmgr` automatically creates and keeps one backup per package.
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Definition 16.

(a) Let $\mathcal{C}$ be the set of all $Q$-cclo’s.

(b) Let $\mathcal{C}_0 = \mathcal{C}_0'$ be the set of all $Q$-cclo’s with singleton.
    For any $\alpha \leq \omega_1$ let
    $$\mathcal{C}_{\alpha+1} = S(\mathcal{C}_\alpha) \cup \mathcal{C}_\alpha$$
    $$\mathcal{C}'_{\alpha+1} = S'(\mathcal{C}'_\alpha)$$
    and for limit ordinals $\delta > 0$ let $\mathcal{C}_\delta = \bigcup_{\alpha < \delta} \mathcal{C}_\alpha$, $\mathcal{C}'_\delta = \bigcup_{\alpha < \delta} \mathcal{C}'_\alpha$

(c) For any $L \in \bigcup_{\alpha} \mathcal{C}_\alpha$ we define the rank of $L$ ($\text{rk}(L)$) as an ordinal at which $L$ occurs in $\mathcal{C}_{\alpha+1}$. Similar, we define $\text{rk}'(L)$ to be the first ordinal $\alpha$ at which $L$ occurs in $\mathcal{C}'_{\alpha+1}$.

(d) The set of all $Q$-ddlo’s whose domino are subject to

- [Image]
More user visible news, cont.

\begin{definition}
In contrast with classical logic, in Gödel logics validity and satisfiability are not dual concepts. However the following relation holds:
\begin{itemize}
  \item \texttt{\$\neg\$} \texttt{\$A\$} is a positive tautology if and only if \texttt{\$\neg\$} \texttt{\$\neg\$} \texttt{\$\neg\$} \texttt{\$A\$} is unsatisfiable.
\end{itemize}
\end{definition}

% It is often very useful to enrich the logics by adding the unary operator $\dets$ with the following meaning:\cite{baaz96}:
\begin{Verbatim}
\begin{align*}
\forall \vdash \{ G \} \{ \dets A \} = \\begin{cases} 
1 & \text{\$\forall\$box} \text{if } \forall \vdash \{ G \} (A) = 1 \\
0 & \text{\$\forall\$box} \text{otherwise}.
\end{cases}
\end{align*}
\end{Verbatim}
% Henceforth we use $\forall \vdash G$ when the truth value set $\sim V S$
% is clear from the context.
% We will investigate \textbf{\textem{monadic}} Gödel logics \textbf{\textem{with}} and \textbf{\textem{without}} the operator $\dets$ i.e., in which all predicate symbols are (at most) unary and no function symbol occur. Every Gödel set $S V S$ induces a logic $S G \_ V S$ over the language without $\dets$ and a logic $S G \_ V S \_ \dets$ if $\dets$ is present.
% \textbf{\textem{Standard Gödel logic}} $S G S$; i.e., the logic over the full real unit interval as truth value set, see, e.g., \cite{hajek,TT}.
% We use $S G \_ n S$ to denote the $n$\textem{-valued} Gödel logic for $n \geq 2$.  

Several (partly new) programs: ps\textem{\_}view, dv\textem{\_}out, \TeXworks, xindy, chktex, dvisvgm, bibtexu
Other (not user visible) news

- translation infrastructure changed to standard .po files
- automake/autoconf system rebuild
- lzma → xz
- multi-threaded kpse
- no Ω, only ℵ
- package can ship their own postinstall and preremove scripts
Thanks

Karl Berry
for great enthusiasm and perpetual support (and critical voices)

TUG and DANTE
for financial support when my laptop broke

Your Attention
Intermezzo for
Package writers
Getting things into TeX Live

New package
Getting things into TeX Live

New package

upload CTAN
Getting things into \TeX\ Live

New package

\begin{itemize}
  \item upload CTAN
  \item known to \texttt{ctan2tds}?
\end{itemize}
Getting things into TEx Live

New package

upload CTAN

known to ctan2tds?

yes

call ctan2tds
Getting things into TeX Live

New package

upload CTAN

known to ctan2tds?

adjust ctan2tds

yes

call ctan2tds
Getting things into TeX Live

New package

upload CTAN

known to ctan2tds?

adjust ctan2tds

yes

call ctan2tds

TUG reference checkout

User’s computer

update tlnet

mirror to Cambridge CTAN

mirrors to other CTAN mirrors
Getting things into \TeX Live

New package

upload CTAN

known to ctan2tds?

adjust ctan2tds

\textit{yes}

call ctan2tds

TUG reference checkout

update tlnet

mirror to Cambridge

mirrors to other ctan mirrors
Getting things into \TeX\ Live

- New package
  - upload CTAN
  - known to ctan2tds?
    - adjust ctan2tds
    - yes
      - call ctan2tds
  - no
    - unknown

- TUG reference checkout
  - update tlnet
  - mirror to Cambridge CTAN

- Update CTAN
  - known to ctan2tds?
    - yes
      - call ctan2tds
    - no
      - unknown

- New package
  - upload CTAN
  - known to ctan2tds?
    - yes
      - call ctan2tds
    - no
      - unknown

- TUG reference checkout
  - update tlnet
  - mirror to Cambridge CTAN

User's computer

- 33
Getting things into TEX Live

New package

upload CTAN

known to ctan2tds?

adjust ctan2tds

call ctan2tds

TUG reference checkout

update tlnet

mirror to Cambridge CTAN

mirrors to other CTAN mirrors
Getting things into \TeX{} Live

- **New package**
  - upload CTAN
  - **known to ctan2tds?**
    - adjust ctan2tds
    - call ctan2tds
  - yes

- **TUG reference checkout**
  - update tlnet
  - mirror to Cambridge CTAN
  - mirrors to other CTAN mirrors
  - User’s computer