

T_EX Live 2010



T_EX Live 2008–2010

Norbert Preining

T_EX Live and Debian Developer

北陸先端科学技術大学院大学

T_EXユーザの集い2010、東京大学、日本

2010年11月23日

T_EX Live 2010



Layout

Part for users

Overview
Installation
T_EX Live Manager
Other news

Technical part

Getting things into T_EX Live
The new infrastructure
Internals of the `tlpdb`, config options

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX
- ▶ 1996 first edition, Sebastian Rahtz



T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX
- ▶ 1996 first edition, Sebastian Rahtz
- ▶ 2000 5th edition, non-free software removed

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX
- ▶ 1996 first edition, Sebastian Rahtz
- ▶ 2000 5th edition, non-free software removed
- ▶ 2002 7th edition: Mac OS X support

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX
- ▶ 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

T_EX Live 2010



History

- ▶ late 1993 Dutch T_EX Users Group, 4AllT_EX CD, TDS working group
- ▶ 1995 Unix-based TDS CD based on teT_EX
- ▶ 1996 first edition, Sebastian Rahtz
- ▶ 2000 5th edition, non-free software re
- ▶ 2002 7th edition: Mac OS X support
- ▶ 2005 addition of the -sys scripts
- ▶ 2006-09 XeT_EX addition, end of teT_EX development, T_EXworks addition, Karl Berry



T_EX Live 2010



Features

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

T_EX Live 2010



Features of the new installer

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

T_EX Live 2010



Installation sources

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



T_EX Live 2010



Installation sources

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

T_EX Live 2010



Installation sources

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

T_EX Live 2010



Installation sources

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

T_EX Live 2010



Installation sources

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

T_EX Live 2010



Installation settings

- ▶ binary systems

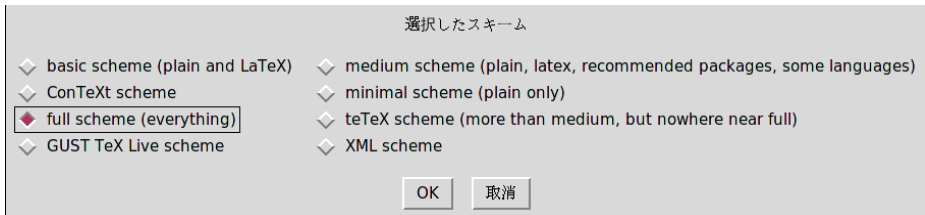


T_EX Live 2010



Installation settings

- ▶ binary systems
- ▶ schemes

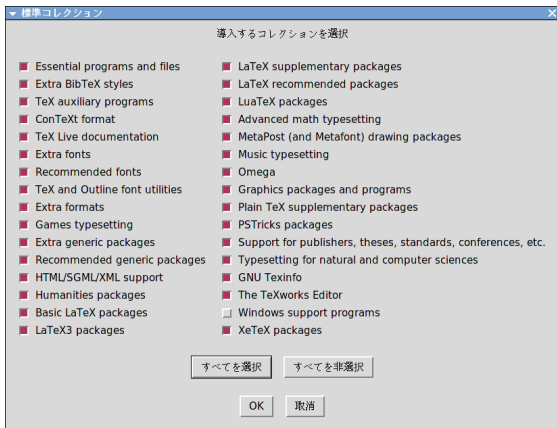


TeX Live 2010



Installation settings

- ▶ binary systems
- ▶ schemes
- ▶ collections

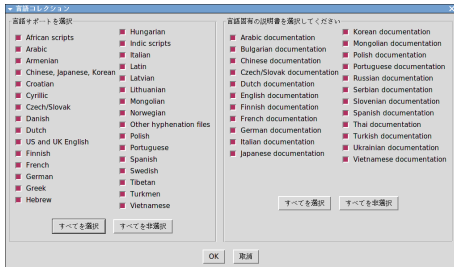


T_EX Live 2010



Installation settings

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



TEX Live 2010



Installation settings cont.

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

----- 辞書設定 -----		
TEXDIR (TeX主幹ディレクトリ)	/usr/local/texlive/2010	変更
TEXMFLOCAL (サイト固有ファイル用ディレクトリ)	/usr/local/texlive/texmf-local	変更
TEXMFSYSVAR (自動生成データ用ディレクトリ)	/usr/local/texlive/2010/texmf-var	変更
TEXMFSYSCONFIG (ローカル設定用ディレクトリ)	/usr/local/texlive/2010/texmf-config	変更
TEXMFHOME (ユーザ固有ファイル用ディレクトリ)	~/texmf	変更

既定用紙: 設定先 =	A4	入切
\write18 を用いて制限リスト中のプログラムを実行することを許可	はい	入切
フォーマットファイルをすべて生成	はい	入切
font と macro の doc ツリーを導入	はい	入切
font と macro のソースツリーを導入	はい	入切
システムディレクトリに symlink を作成する	いいえ	変更
メニューとデスクトップにショートカットを作成	はい	入切
ファイル関連付けを変更する	新規のみ	変更
全ユーザ用に導入	いいえ	入切
TeXworks フロントエンドを導入	はい	入切

▶ options

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

T_EX Live 2010



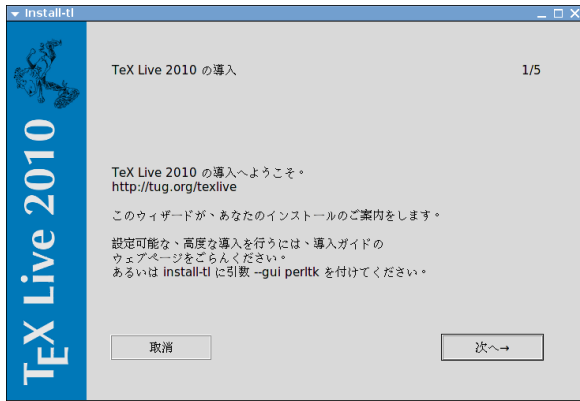
Windows specific options

- ▶ 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 T_EXworks front end

TeX Live 2010



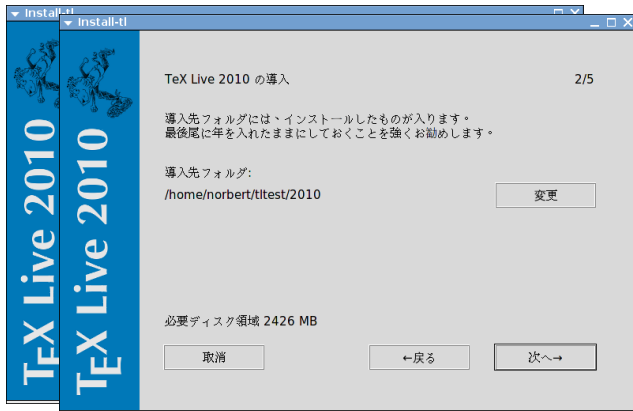
Wizard installer



TeX Live 2010



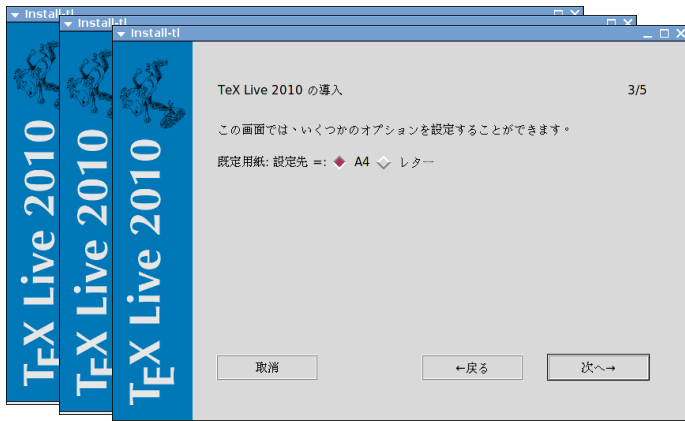
Wizard installer



TeX Live 2010



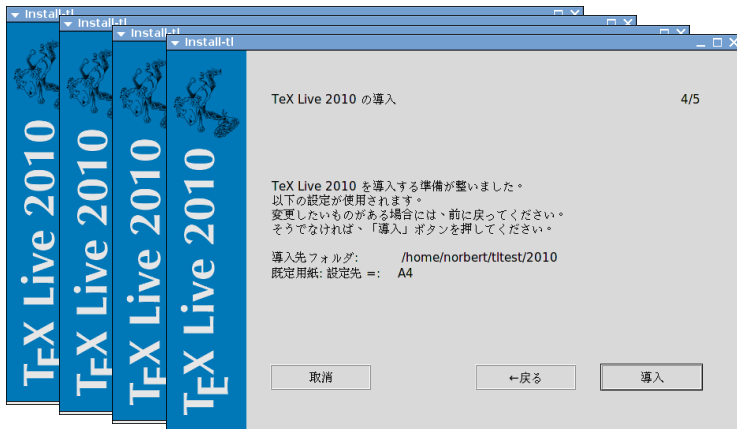
Wizard installer



TeX Live 2010



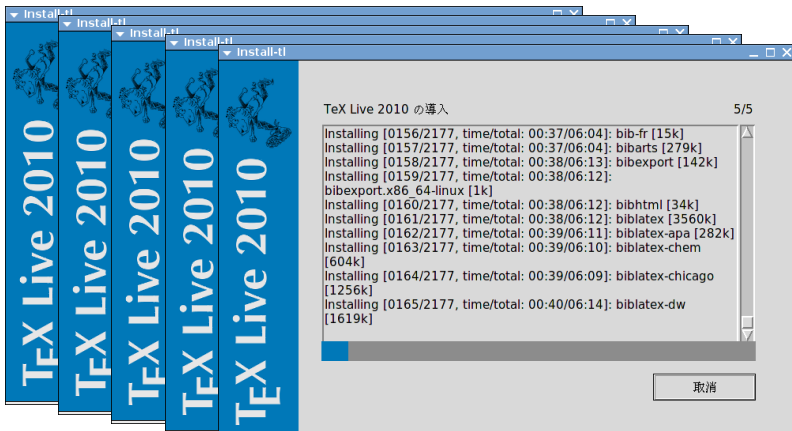
Wizard installer



TeX Live 2010



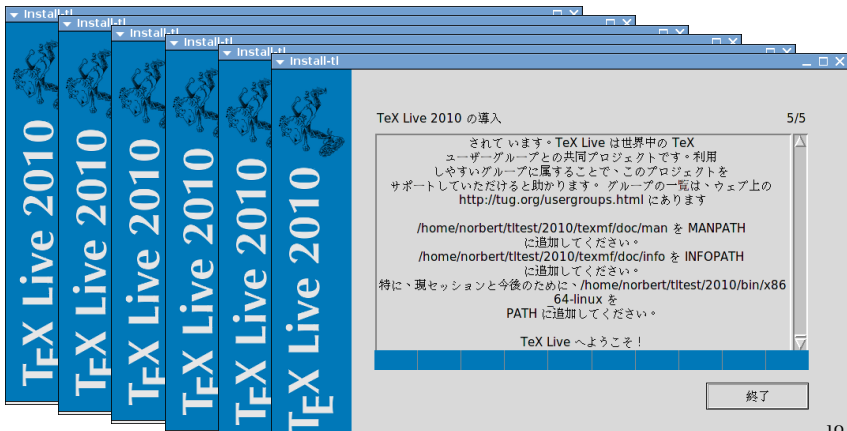
Wizard installer



TeX Live 2010



Wizard installer



T_EX Live 2010



T_EX Live Manager

T_EX Live 2010



T_EX 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



T_EX Live Manager – Syntax

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

With first set of options:

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



T_EX 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 T_EX Catalogue rework by Jim Hefferon

(special announcement here - available since 2 hours in tlcritical)



Options to the search action

- ▶ `-global` also searches the remote database
- ▶ `-file` searches for file names
- ▶ `-word` only matches full words, not parts of words
- ▶ `-taxonomy`, `-keyword`, `-functionality`,
`-characterization`



Options to the search action

- ▶ `-global` also searches the remote database
- ▶ `-file` searches for file names
- ▶ `-word` only matches full words, not parts of words
- ▶ `-taxonomy`, `-keyword`, `-functionality`,
`-characterization`

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

shows information on the given packages, including taxonomies



Example of searching taxonomies

tlmgr search

```
$ 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

xtab listing

```
$ 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 T_EX Live Manager

TeX Live Manager 2010

tlmgr オプション 作業 ヘルプ

読み込んだレポジトリ: /var/www/norbert/tlnet

表示設定

状態

- すべて
- 導入済
- 未導入
- 更新

区分

- パッケージ
- コレクション
- スキーム

一致

- 簡単な説明
- filenames

選択

- すべて
- 選択分
- 非選択分

すべて選択

すべて非選択

フィルタをリセット

	パッケージ名	ローカル rev. (ver.)	リモート rev. (ver.)	簡単な説明
<input type="checkbox"/>	scheme-basic	17228	17228	basic schem
<input type="checkbox"/>	scheme-context	19662	19662	ConTeXt sch
<input type="checkbox"/>	scheme-full	19112	19112	full scheme
<input type="checkbox"/>	scheme-gust	19662	19662	GUST TeX L
<input type="checkbox"/>	scheme-medium	18615	18615	medium sch
<input type="checkbox"/>	scheme-minimal	13822	13822	minimal sch

導入済のものをすべて更新

更新 導入 取り除く バックアップ

前回取り除いたパッケージを再導入

リモートの TeX Live データベースを読み込んでいます。
これには時間がかかることがあります。お待ちください！
完了。

T_EX Live 2010



News in T_EX Live 2010

T_EX Live 2010



Partial inclusion of pT_EX Live

- ▶ Thanks to many people present here pT_EX and related programs have been included
ptex, platex, pdvitype, pbibtex,
mendex, makejvf, ppltotf, ptftopl
- ▶ for 2011: upT_EX, and ...???
- ▶ aim: merge pT_EX Live into T_EX Live
- ▶ request: please send me suggestion and correction or information on missing pieces - **please upload to CTAN!!!**

T_EX Live 2010



PDF version level

- ▶ by default all engines and dvi_{PDF}mx now create level 1.5 PDF files
- ▶ higher compression rates
- ▶ loading pdf₁₄ L_AT_EX package changes this back to 1.4
- ▶ or manually set `\pdfminorversion=4`



Automatic eps to pdf conversion

- ▶ pdf(L)T_EX 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

T_EX Live 2010



`\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

- ▶ BibT_EX and Makeindex behave like T_EX itself
- ▶ do not write to arbitrary directories
- ▶ override with environment variable `TEXMFOUTPUT` or the `texmf.cnf` config `openout_any`

T_EX Live 2010



More user visible news

- ▶ new BibT_EX (after 20 years!)
- ▶ XeT_EX supports margin kerning
- ▶ hyph-utf8: all engines share the same patterns
- ▶ patterns for eT_EX: the available hyphenation patterns are now also loaded into the eT_EX-based engines

T_EX Live 2010



More user visible news, cont.

- ▶ tlmgr automatically creates and keeps one backup per package
- ▶ MacT_EX: repackaged T_EX Live for Mac, adds nice GUI for for updating and managing the installation, allows switching of distributions (TL2008, TL2009, TL2010)
- ▶ several (partly new) programs: ps_view, dviout, T_EXworks, xindy, chktex, dvisvgm, bibtexu

$$\sum_{c \geq 0} \binom{n}{c} \binom{m-c}{k-c} = \binom{n}{k} \sum_{k_0, k_1, \dots \geq 0} \binom{n}{k_0, k_1, \dots} \binom{m-k_0-k_1-\dots}{k-k_0-k_1-\dots}$$

$$\binom{n}{m} = \sum_{m=2}^n \left[\sum_{k=1}^{m-1} \binom{m-1}{k} \binom{m-k}{m/k} / \Gamma(1) \right]$$



```

\documentclass{article}
\usepackage{amsmath}
\begin{document}
is said to be  $\{\text{lem unsatisfiable}\}$ .
\end{definition}
In contrast with classical logic, in Gödel logics
validity and satisfiability are not dual concepts.
However the following relation holds:
 $\mathcal{S}A$  is a positive tautology if and only if  $\mathcal{S}\neg A$  is unsatisfiable.

%It is often very useful to enrich the logics by adding the unary operator
Consider the unary operator
 $\mathcal{S}\text{dets}$  with the following meaning~\cite{baaz96}:
\begin{math}
\begin{cases}
1 & \& \mathbb{1}\text{if } \forall v \{ \mathcal{S}Gv \} \{A\} = 1 \\
0 & \& \mathbb{1}\text{otherwise}
\end{cases}
\end{math}
\end{document}

%Henceforth we use  $\mathcal{S}V$  when the truth value set~ $V$ 
%is clear from the context.

We will investigate  $\{\text{lem monadic}\}$  Gödel logics (with
and without the operator~ $\mathcal{S}\text{dets}$ ) i.e., in which all predicate symbols are
(at most) unary and no function symbol occur. Every Gödel set  $\mathcal{S}V$ 
induces a logic~ $\mathcal{S}G_V$  over the language without~ $\mathcal{S}\text{dets}$  and
a logic~ $\mathcal{S}G_V^{\mathcal{S}\text{dets}}$  if  $\mathcal{S}\text{dets}$  is present.
 $\{\text{lem Standard Gödel logic}\}$  is  $\mathcal{S}\mathcal{S}G$ ; i.e., the logic over
the full real unit interval as truth value set, see, e.g., \cite{hajek,TT}.
We use  $\mathcal{S}G_{ns}$  to denote the  $\mathcal{S}ns$ -valued Gödel logic for  $\mathcal{S}\text{nge } 2s$ .

```

```

\documentclass{article}
\usepackage{amsmath}
\begin{document}
\begin{abstract}
We investigate satisfiability in the monadic fragment
of Gödel logics. These are a family of finite- and infinite-valued
Gödel logics. These are a family of finite- and infinite-valued
logics where the sets of truth values  $V$  are closed subsets of  $[0, 1]$ 
containing both 0 and 1. We identify conditions on the topological type of  $V$  that
characterize the decidability or undecidability of their satisfiability problem.
\end{abstract}

\section{1 Introduction}

Monadic logic is a first-order logic in which all predicates are
unary. Monadic logic is a rather simple fragment: decidable (both the
satisfiability problem) and having finite model property. The same
holds for many-valued monadic logics in which a rather complex landscape
of decidability and many questions are still open, see e.g. [3,9,10].

The family of (finite- and infinite-valued) Gödel logics is a
particular fragment of many-valued logics. Gödel logics, defined in general over sets of truth values
which are closed subsets of  $[0, 1]$  containing both 0 and 1, are
many-valued logics which are completely specified by the order structure
of the truth value set. This order structure characterizes Gödel logics as logics of comparative truth and
is an important case of so-called fuzzy logics, see [8].

Different choices of  $V$  in general induce different Gödel logics.
For  $V = \{0, 1\}$  the resulting logic coincides with classical logic.

```

- ▶ several (partly new) programs: ps_view, dviout, T_EXworks, 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 \varkappa
- ▶ package can ship their own postinstall and preremove scripts

T_EX Live 2010



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

T_EX Live 2010



Getting things into T_EX Live

New package

T_EX Live 2010



Getting things into T_EX Live

New package

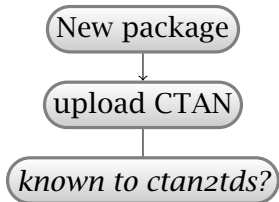


upload CTAN

T_EX Live 2010



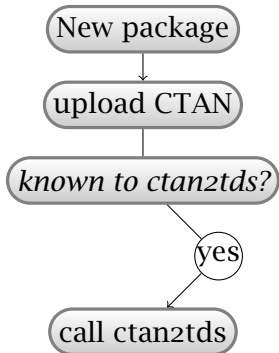
Getting things into T_EX Live



T_EX Live 2010



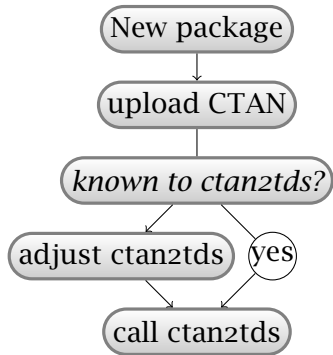
Getting things into T_EX Live



T_EX Live 2010



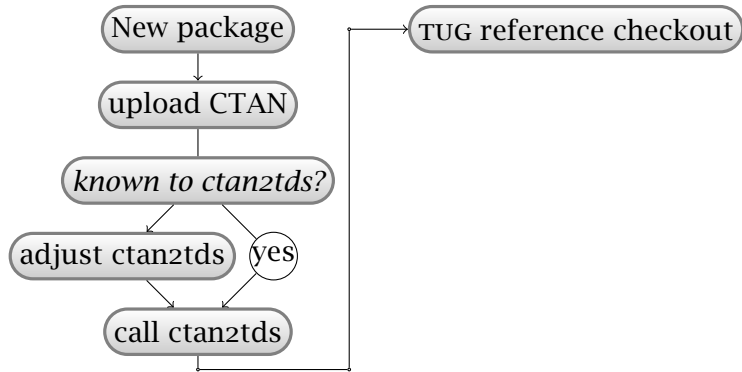
Getting things into T_EX Live



T_EX Live 2010



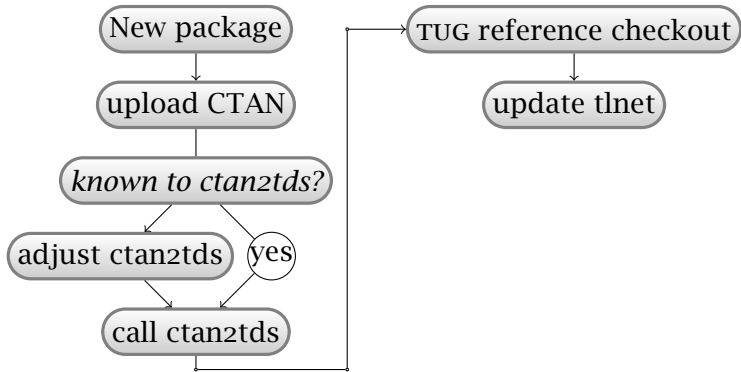
Getting things into T_EX Live



T_EX Live 2010



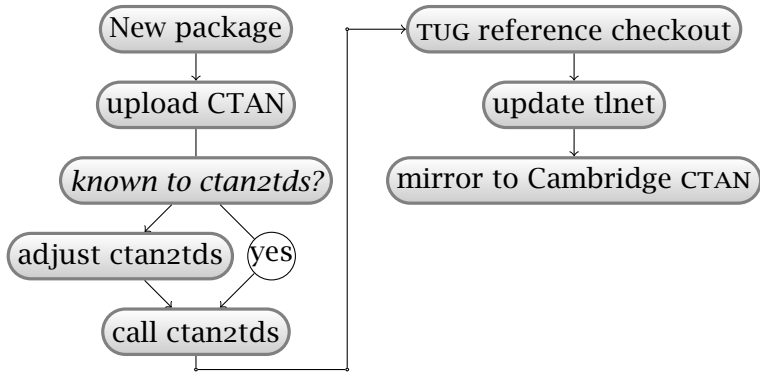
Getting things into T_EX Live



T_EX Live 2010



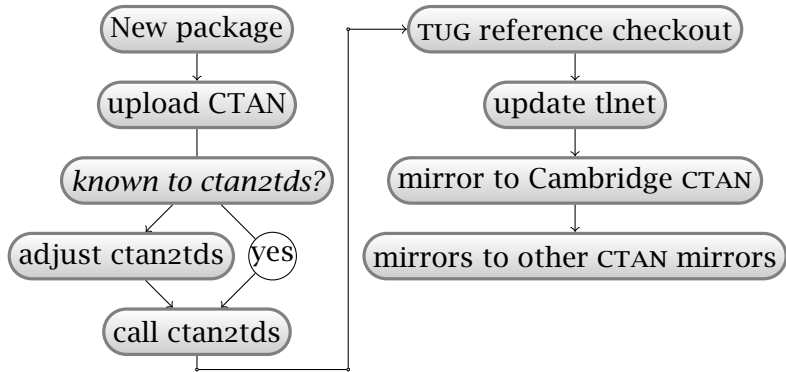
Getting things into T_EX Live



T_EX Live 2010



Getting things into T_EX Live



T_EX Live 2010



Getting things into T_EX Live

