

An overview of T_EX, its children and their friends ...

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[Link for the impatient.](#)

In the world of T_EX, there are many developments and ambiguous names. This paper tries to give an overview of the development of T_EX and related programs. Contributions are very welcome!¹

Introduction

This document is for people that have stumbled upon different term including something related to T_EX and are confused by the many different terms – at least I was, so maybe others are, too ...

The base frame and main idea for this overview was taken from the article *A brief history of T_EX, volume II* by Arthur Reutenauer in the proceedings of EuroBachOT_EX2007 and his talk there (see references on page 31). Additional information is taken from original documentations and some review articles. For old, historic information, the historic archive maintained by Ulrik Vieth and hosted on <ftp.tug.org> (see refs) was very useful, especially in the reconstruction of L^AT_EX versions. Many thanks for that great archive!

All information is up to the date of this generated PDF and up to the information I found. Everything here is without guarantee – this is just to get an overview. Consult the references for further (and/or correct) information!

In the tree views, every node has a tooltip that shows up when you hover the mouse over it. For the case that your PDF viewer does not support this, there is a list of all the descriptions on page 22.

¹The current source code of this document is available at <http://github.com/alt/tex-overview>. Please feel free to patch there or mail me any suggestions and comments. I'll be happy to extend and correct this document!

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1. How to read this document

This document consists of several graphs showing the development of software more or less directly related to TeX. The graphs try to show the time development (downwards), as well as dependencies, changes, etc.

I tried to make the graphs more readable by using colors for different categories. The decisions about what is important and what is “normal” reflect my personal opinion only.

normal That is, not very important in my opinion, no huge user group, but still maybe important for special needs. Was used by a major community at least some time back, but is not of great impact nowadays.

important Engines or formats that had or have a great impact on (everyday) typesetting for a large community.

experimental Developments that might still be under construction or were never used by a large community. Nevertheless, these might be very important to the development of other engines or for use of special typesetting.

planned Things that are planned to raise one day and are in the phase of preparation, i. e. there may be some code but not in the final form yet.

package L^AT_EX-packages or single TeX-files (useable as packages or modules) that seemed worth mentioning. There won't be many of this; most very important packages won't be mentioned.

distribution Software bundles that bring TeX and friends to the normal user.

hist. dist. Historical distributions that have no use today but were important for bringing TeX to older computer systems.

program Programs that are not directly connected to $\text{T}_{\text{E}}\text{X}$ (but interesting in the context of using $\text{T}_{\text{E}}\text{X}$) or are separate helper programs.

font Something related to a font. Neither a program nor libraries that provide access to fonts nor the actual files, but rather the abstract definition or specification.

Some graphs are quite complex, which is the reason why there are two versions of them: A short one mentioning only the most important things and a full version with everything I could find.

In most cases I did not mention the authors of the programs/packages. This is not to diminish their effort but only for brevity (long names make things harder to read). I did not write any of the below-mentioned programs or packages. The authors are given in the documents linked in the references.

2. Engine, Format, Distribution

There are three kinds of terms that are often confused especially by new users. This will try to explain them very shortly:

engine This is the program that does all the actual work. The original program is $\text{T}_{\text{E}}\text{X}$, while $\text{luaT}_{\text{E}}\text{X}$ is its latest successor.

format A format is a (large) collection of abbreviations (macros) that make the life easy when working with $\text{T}_{\text{E}}\text{X}$. The most commonly used formats are $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$, $\text{ConT}_{\text{E}}\text{Xt}$ and $\text{plainT}_{\text{E}}\text{X}$. The latter is a minimal set of macros provided by Don Knuth. Formats can be combined with different engines, exploiting the special abilities of these engines. A format is first a collection of text files, but can be compiled into a binary format that can be read in very fast by $\text{T}_{\text{E}}\text{X}$.

distribution In addition to formats, a large set of additional files can be used to work with $\text{T}_{\text{E}}\text{X}$, called *packages* for $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$, *modules* for $\text{ConT}_{\text{E}}\text{Xt}$ etc. To get all needed files in a convenient way, there are distributions that contain everything and are (or should be) easy to install. Examples are MiKTeX and $\text{T}_{\text{E}}\text{X}$ live.

3. How to contribute

I hope one day this document would become the standard reference for questions like "What program do I need for ...?", "What's the difference between ... $\text{T}_{\text{E}}\text{X}$ and ... $\text{T}_{\text{E}}\text{X}$?", "Why is it called ...?" etc.

To get to this point, I need some help of people having read more documentation or even developed some of the programs mentioned here themselves. Special help is needed for:

- font technologies
- METAFONT and sucesors
- BibTeX and successors/alternatives

It is up to you to contribute texts, references, links, descriptions, hints etc. I'll be happy about anything I can add here. Also, if you have suggestions about the layout, let me know.

4. Problems with PDF viewers

As this document makes heavy use of PDF-features, some PDF viewers are not able to show everything correct and as intended. My experiences with viewers are as follows:

evince Shows the document correct and complete. Tested using Linux.

Acrobat Reader will show all the information but might hide some text of very long tooltips (at least that's the case on my machine). Also, it draws annoying green boxes around the tooltips which do not belong there.

TeXworks The built-in PDF viewer of the TeXworks editor does not break lines of tooltips, therefore long annotations are not shown completely.

okular also does not break the lines.

xpdf shows only very short tooltips. Most of the information is not visible in the graphs.

gv shows no tooltips, but the annoying green boxes. (Linux)

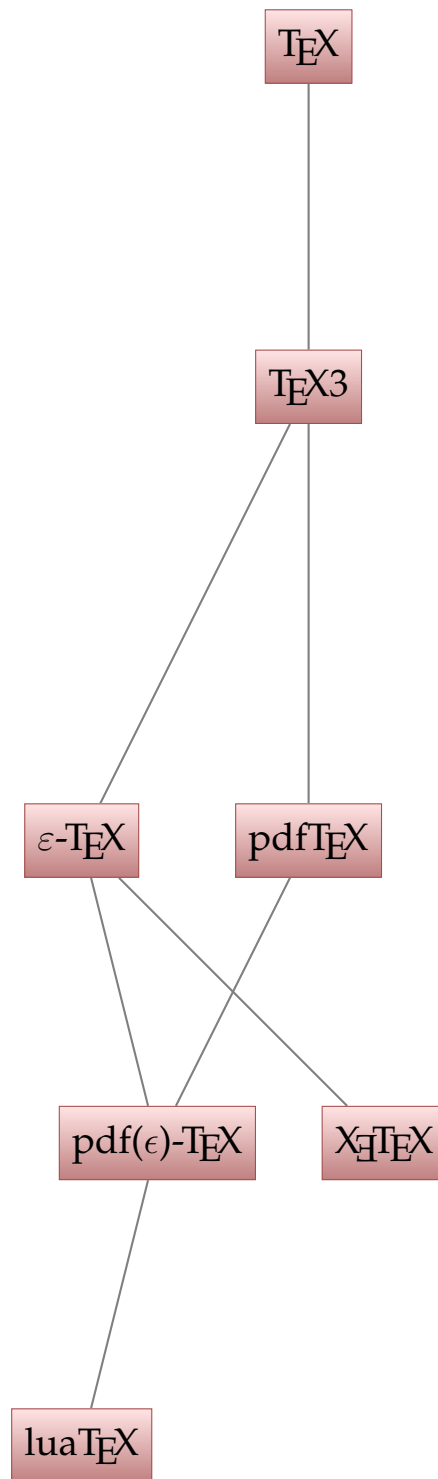
About this document

This document is typeset in the T_EX Gyre Pagella font using the lua^AT_EX 2_ε format with exp13 and xpackages based on luaT_EX 0.66.0.

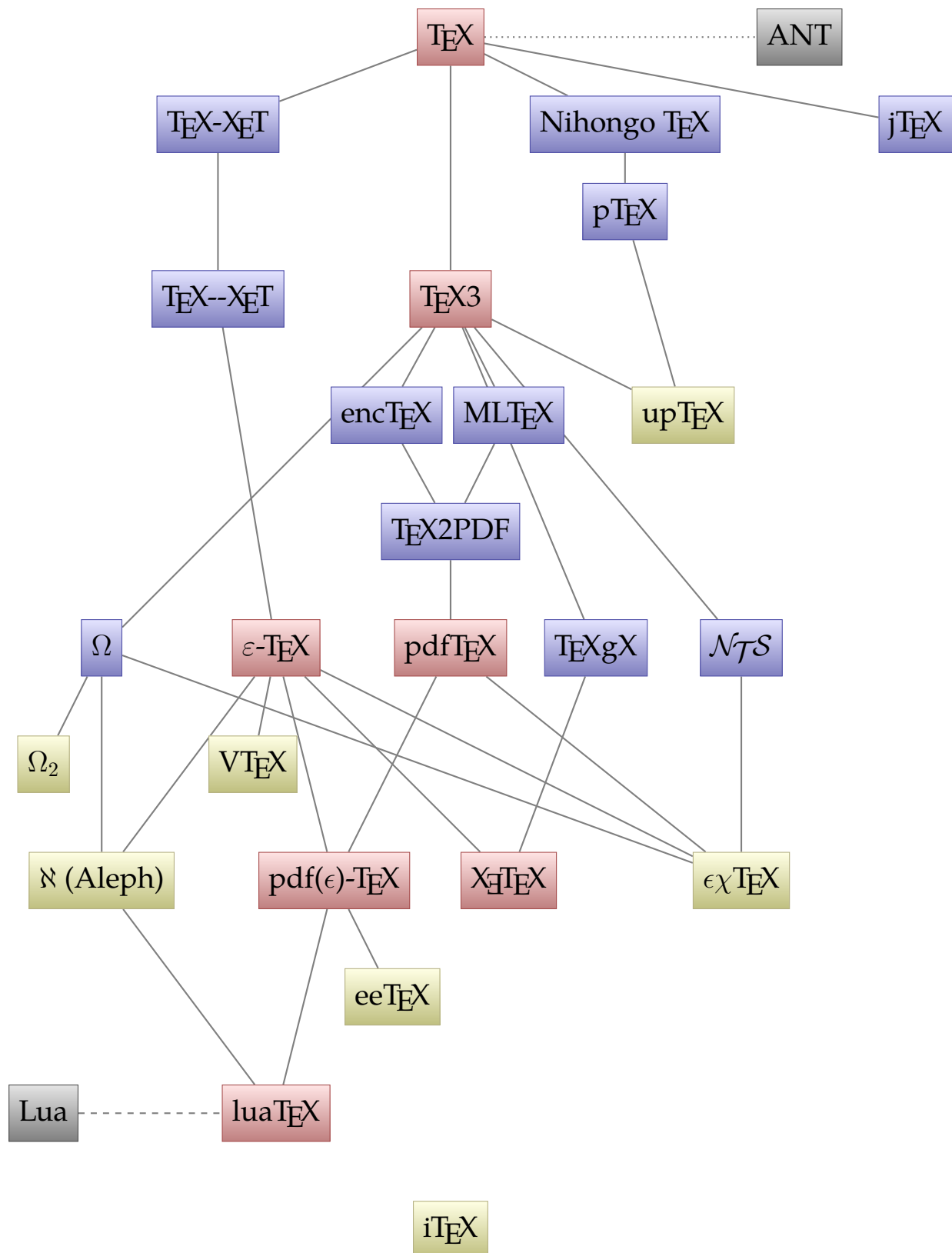
Part I.

Tree Views

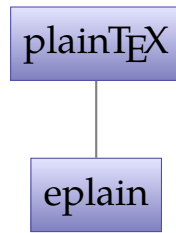
5. T_EX – the program short view



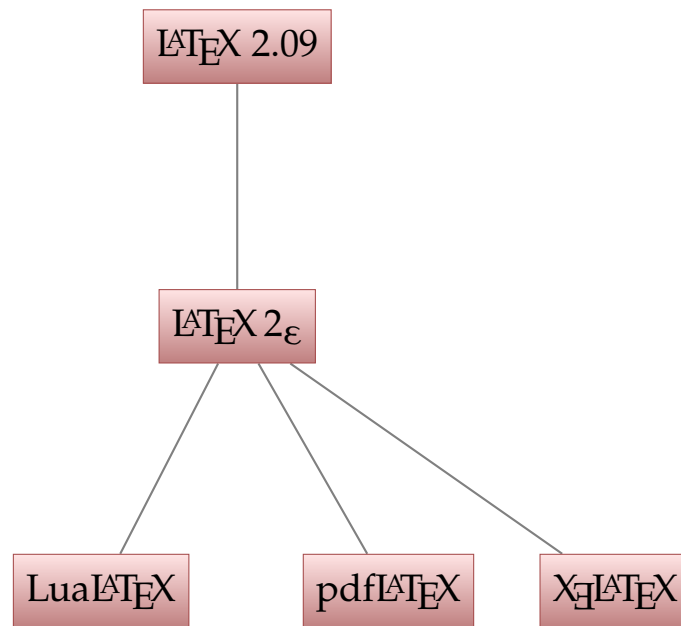
5. T_EX – the program



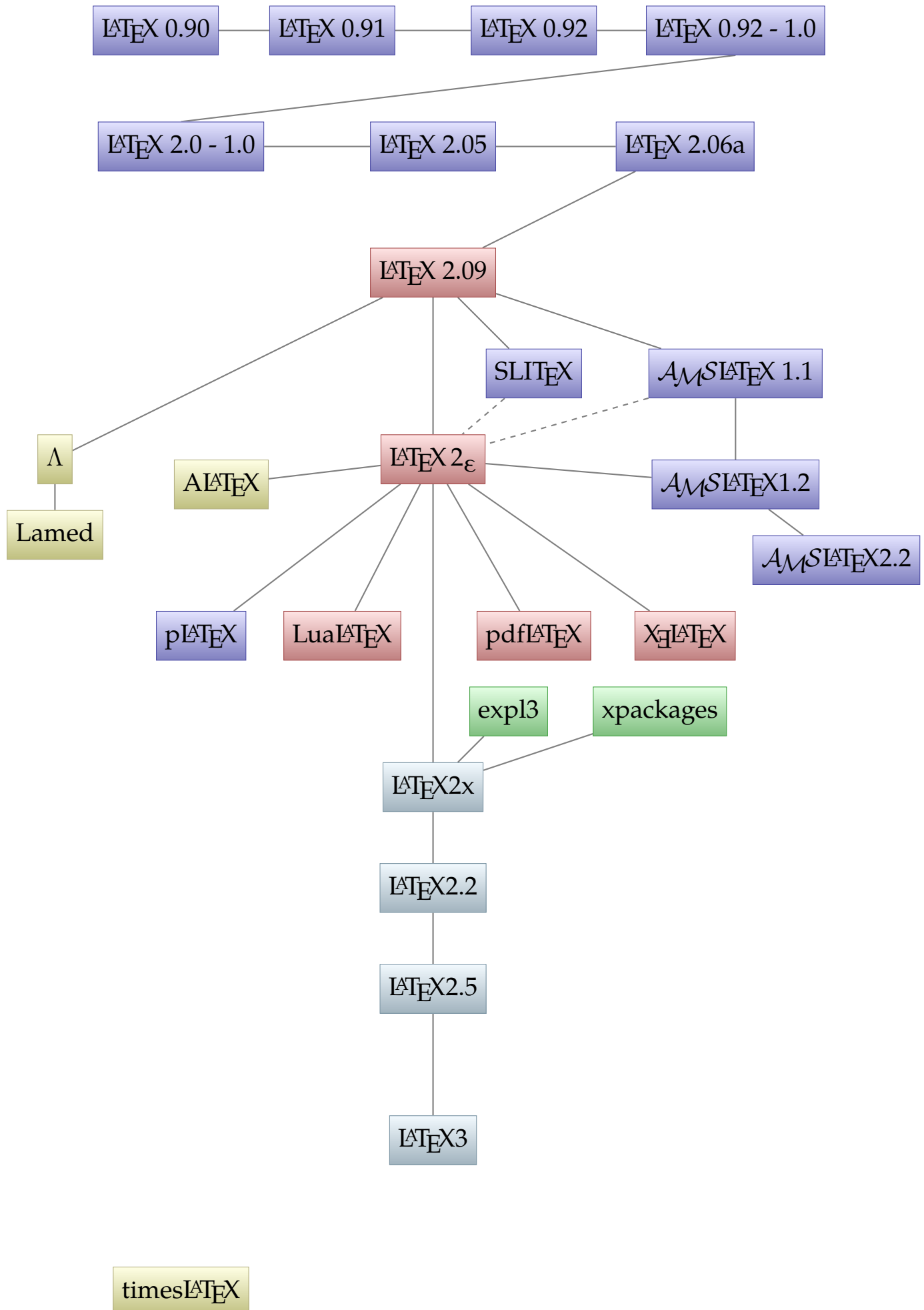
6. plainT_EX – the first format



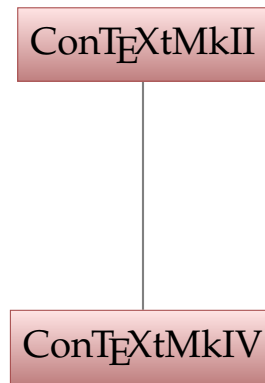
7. L^AT_EX – Lamport's T_EX format short view



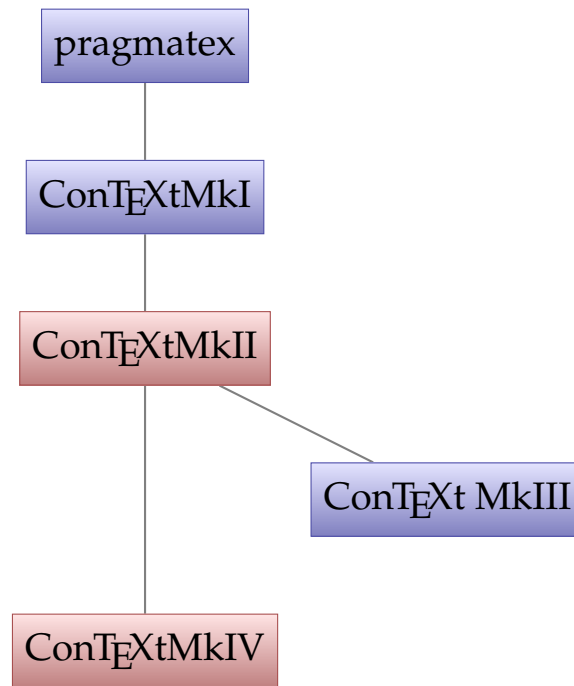
7. L^AT_EX – Lamport's T_EX format



8. ConT_EXt: con tex t – text with tex short view

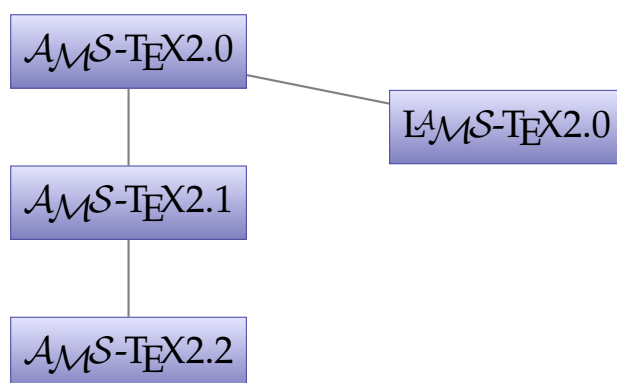


8. ConT_EXt: con tex t – text with tex



9. Other Formats

9.1. $\mathcal{A}\mathcal{M}\mathcal{S}\text{-}\mathrm{T}\mathrm{E}\mathrm{X}$



9.2. Jade $\mathrm{T}\mathrm{E}\mathrm{X}$

Jade $\mathrm{T}\mathrm{E}\mathrm{X}$

9.3. PHYS(E)

PHYS(E)

9.4. PHYZZX

PHYZZX

9.5. Macro $\mathrm{T}\mathrm{E}\mathrm{X}$

Macro $\mathrm{T}\mathrm{E}\mathrm{X}$

9.6. Star $\mathrm{T}\mathrm{E}\mathrm{X}$ – Starter's $\mathrm{T}\mathrm{E}\mathrm{X}$

Star $\mathrm{T}\mathrm{E}\mathrm{X}$

9.7. Texinfo

Texinfo

9.8. XML_T_EX

The logo for XMLTeX, featuring the text "XMLTeX" in a black serif font, centered within a light blue rectangular box with a thin black border.

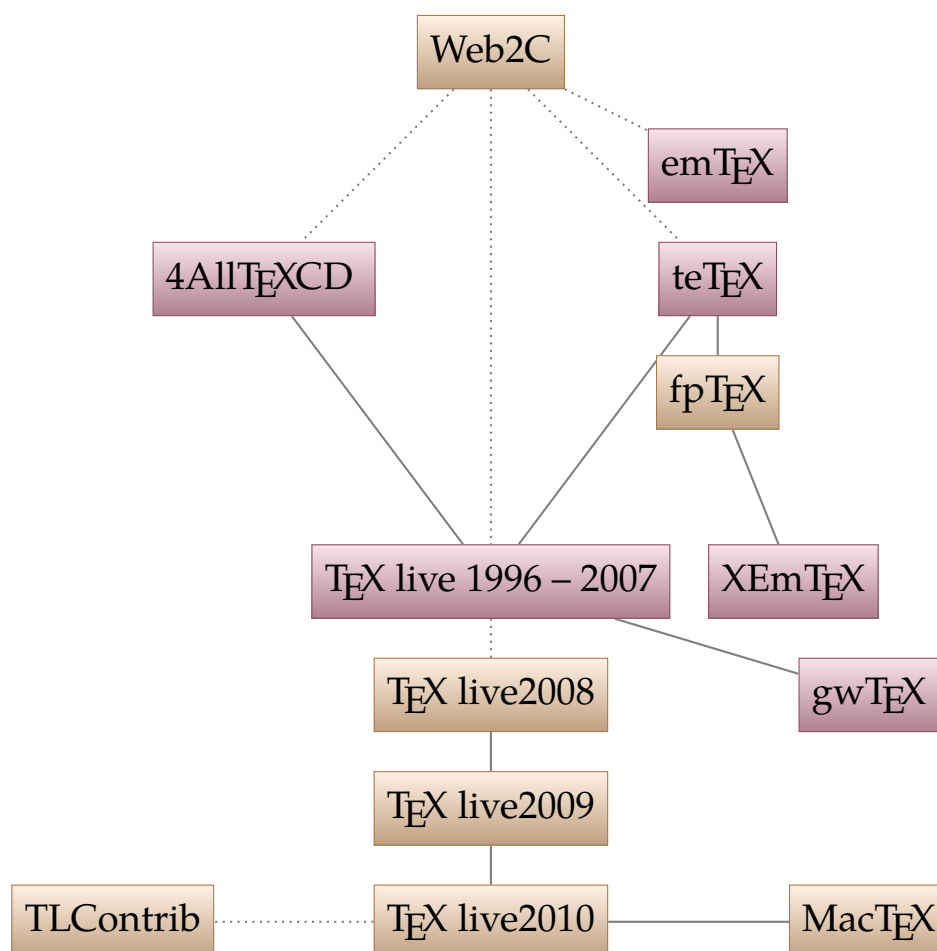
9.9. Y_T_EX

The logo for YTeX, featuring the text "YTeX" in a black serif font, centered within a light yellow rectangular box with a thin black border.

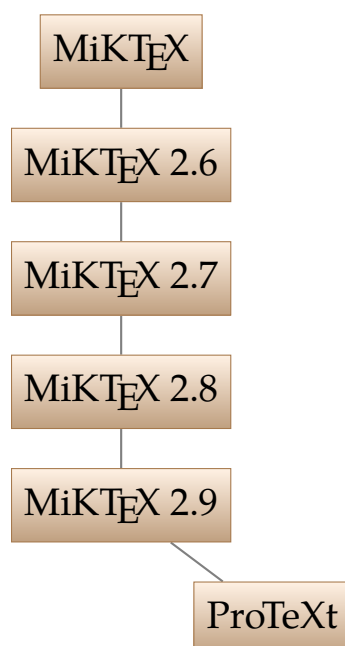
10. Distributions

This section will feature the main distributions of $\text{T}_{\text{E}}\text{X}$ and related programs. Of course, not every Linux Distribution's $\text{T}_{\text{E}}\text{X}$ package can be listed here, but only official upstream distributions.

10.1. $\text{T}_{\text{E}}\text{X}$ live



10.2. MiK $\text{T}_{\text{E}}\text{X}$



10.3. $\text{T}_{\text{E}}\text{X}$ collection

$\text{T}_{\text{E}}\text{X}$ Collection

10.4. $\text{ConT}_{\text{E}}\text{Xt}$ minimal

$\text{ConT}_{\text{E}}\text{Xt}$ minimal

10.5. $\text{W32T}_{\text{E}}\text{X}$

$\text{W32T}_{\text{E}}\text{X}$

10.6. $\text{OzT}_{\text{E}}\text{X}$

$\text{OzT}_{\text{E}}\text{X}$

10.7. For Amiga

Amiga- $\text{T}_{\text{E}}\text{X}$

pas $\text{T}_{\text{E}}\text{X}$

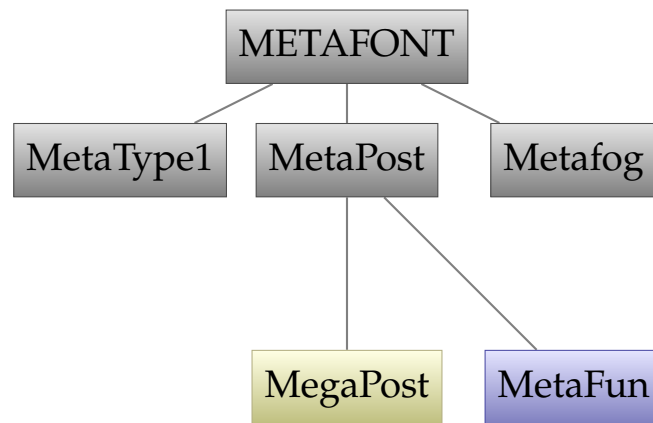
10.8. $\text{NT}_{\text{E}}\text{X}$

$\text{NT}_{\text{E}}\text{X}$

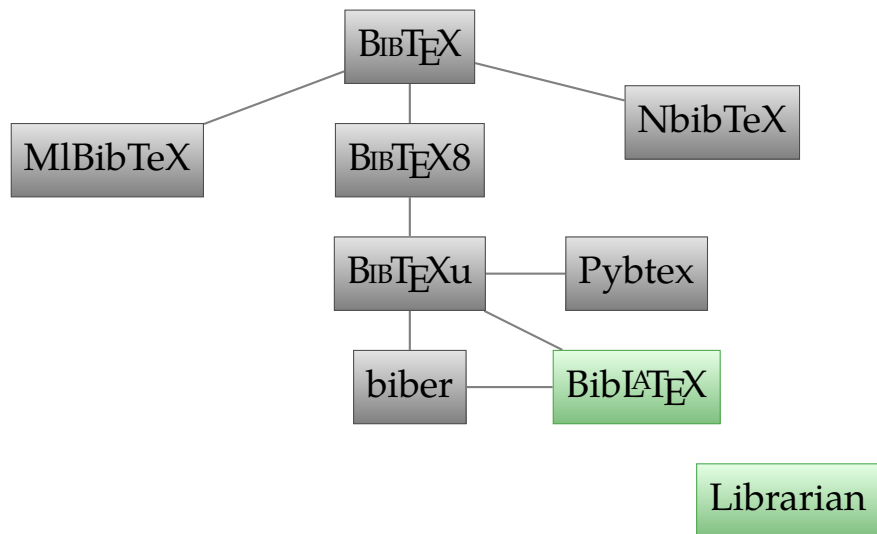
11. Pandora's Box

The following pages will be a hodge-podge of many things that are related to \TeX and used in the process of generating documents in different file formats, i. e. conversion tools, bibliography tools etc. Feel free to contribute, I'll choose case-by-case if I'll add something or won't include it. Text editors or viewers will *not* be included!

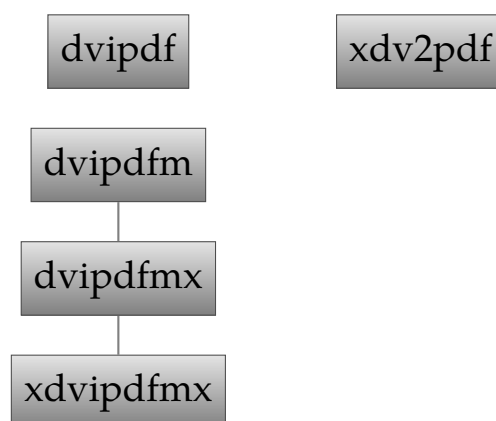
11.1. META*



11.2. BibT_EX

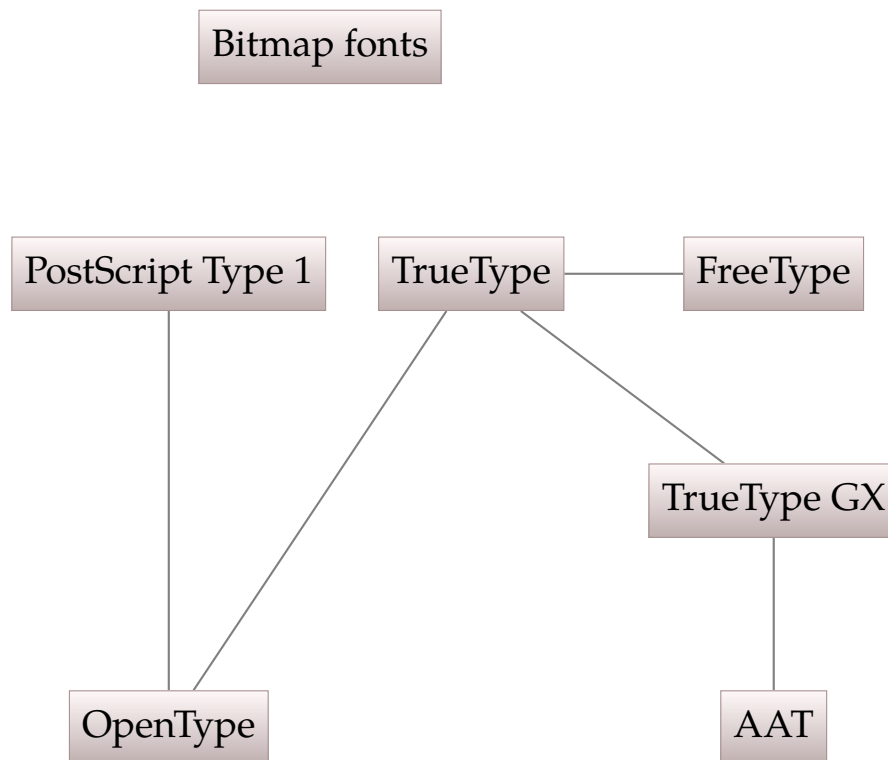


11.3. (x)dvipdf(m)(x)



11.4. Fonts

This section tries to cover the development of fonts – the most important thing for a typesetting system is it's font mechanism ...



Part II.

Text Views

4. T_EX – the program

T_EX

Born in 1978 by Donald Erwin Knuth.

ANT

Ant is Not TeX. A typesetting system inspired by TeX. Only *inspired*, so it has nothing to do with TeX in terms of common code.

T_EX- \XeT

The first extension to TeX, 1987. It was able to typeset in two directions, but only with a mark in the DVI to change the direction.

Nihongo T_EX

A true multibyte extension of TeX. Could handle all Japanese characters in one font.

jT_EX

An extension of TeX for typesetting Japanese. (1987, Yasuki Saito)

pT_EX

Extension of Nihongo TeX to enable vertical typesetting. ("p" for "publishing") Distributed as WEB change files.

T_EX-- \XeT

TeX--XeT was able to really put the glyphs on the right place in the DVI.

T_EX3

Ability to handle 8-bit input. 1989. TeX development was frozen in 1991 and only bugfixes were made. Now in version 3.1415926, it gets closer to pi with every bugfix. Don Knuth wishes the version number to be pi when he dies.

encT_EX

A small extension to TeX, started 1997. Adds 10 new primitives relating input re-encoding

MLT_EX

Extension to TeX (started 1990) that allows hyphenation of words with accented letters. (Therefore the name: MultiLingual TeX.) Distributed as a change file to the original WEB sources of TeX.

upT_EX

Unicode-aware version of pTeX. ("Unicode-publishing"-TeX) Also modernized from TeX3.

T_EX2PDF

Early name for pdfTeX. Don't confuse with converters like dvi2pdf.

Ω

Support for 16bit-Unicode-input. Still constrained on the output encoding. Started 1994.

ϵ -T_EX

An extension to TeX, provided by the NTS team as an intermediate project until NTS would be ready. eTeX is a full TeX and backward compatible. The number of TeX's registers is increased and various new primitives useful to programmers are added.

pdfT_EX

A new engine to directly produce PDF-files from TeX, without the need of DVI-PS-PDF. This allows to use microtypographic extensions and many other features of the PDF format like page transitions etc.

T_EXgX

GX stands for Graphic eXtension, a font technology available only on Mac OS. TeXGX was able to handle these fonts.

$\mathcal{N}\mathcal{T}\mathcal{S}$

A project to completely reimplement TeX in Java. Now NTS is officially declared dead.

Ω_2

A short-time try to pick up the development of Omega again in 2006. Seemed more like a good plan and is now regarded as obsolete. luaTeX is kind of a successor.

VTeX

VTeX (VisualTeX) can produce PDF, HTML, SVG, DVI or ps output directly from input. In contrast to pdfTeX, it includes a full PostScript interpreter, thus capable to include EPS figures, PStricks etc. First official version I found: February 15, 1999: VTeX 6.3; last official version seems to be from Oct 1, 2005: VTeX 8.61. Commercial product.

⌘ (Aleph)

Originally named epsilon-Omega, an attempt to stabilize Omega while merging epsilon extensions. Authors: John Plaice and Yannis Haralambous, now maintained for severe bugfixes by Taco Hoekwater.

X_YTeX

This extension enables full multilingual support for left-to-right typesetting, right-to-left and almost any other possible direction. Unicode encoding is fully supported (utf8 as native encoding). XeTeX also features support for OpenType, AAT, TrueType and Graphite-fonts (via the operation system). In contrary to pdfTeX or luaTeX, no external configuration file is needed to use fonts. In newest versions, character protrusion is possible.

εXTeX

Planned implementation of a high-quality typesetting system, written in Java. Based on experiences in NTS, eTeX, pdfTeX and Omega. Started in 2003, current version in repository is 0.0. (i. e. not very far ...)

pdf(ε)-TeX

Merging the pdfTeX engine with the eTeX-extensions. This engine can produce DVI (with or without the eTeX-extensions) as well as PDF (again, with or without extensions).

eeTeX

Experimental extension to pdfTeX by Taco Hoekwater, created 2000. Distributed as change file. Now dead due to his development of luaTeX.

Lua

A script language; has nothing to do with TeX.

luaTeX

luaTeX supports utf8, OpenType and many more things. TeX live 2010 ships version 0.60.2. luaTeX features an embedded scripting language, lua, making it easy to extend, so most of the programming can be done in lua instead of TeX-hackery.

iTeX

iTeX is the official successor of TeX3, announced by Don Knuth at the TUG conference 2010.

5. plainTeX – the first format

plainTeX

The basic format offered by Don Knuth to provide a minimal set of macros to work with.

eplain

Extensions of plainTeX to provide often-used utilities. Not thought for document preparation as LaTeX is. First version that is still available is 2.1 from 1992. Latest version 3.4 is from 2010 and based on pdfTeX..

6. L^ATeX – Lamport's TeX format

L^ATeX 0.90

First version still on web (historic archive, see refs) is 0.90, for use with TeX 0.95. No installation help found. Apparently one needs the files lplain.tex and latex.tex to create the format.

L^ATeX 0.91

Version 0.91 for use with TeX 0.97 (C) 1983 by Leslie Lamport. Most changes to previous version are in the file lplain.tex.

L^ATeX 0.92

First version with the @ as letter for internal names. Seemingly first version with a manual. For use with TeX Version 0.999999. (no joke, that's the version number given in the latex.tex file!) (C) 1983 by Leslie Lamport, conversion to 0.92 from 0.91 by Arthur Keller.

\LaTeX 0.92 - 1.0

Adaptation of 0.92 for TeX version 1.0. (C) 1983 by Leslie Lamport, conversion to 0.92 from 0.91 by Arthur Keller.

\LaTeX 2.0 - 1.0

Seemingly heavy changes compared to 0.92. Version for TeX 1.0. Release of 11 Dec 1983. There were never public versions 1.x

\LaTeX 2.05

No sure information found so far.

\LaTeX 2.06a

Release of version 2.06a of the LaTeX macros. September 1984.

\LaTeX 2.09

The first official version by Leslie Lamport, 1985.

SL \LaTeX

A variation of LaTeX2.09 to provide an easy way for producing presentations. In LaTeX2e absorbed as a documentclass (slides).

AMS \LaTeX 1.1

A port of Spivak's AMS-TeX to LaTeX 2.09 by Frank Mittelbach and Rainer Schöpf, released 1990.

\LaTeX 2 ϵ

June 1994: New release of LaTeX to avoid incompatible dialects of LaTeX 2.09. Introduced by the LaTeX3-Team.

Λ

A LaTeX based format for the omega engine.

Lamed

A LaTeX based format for the aleph engine.

AMS \LaTeX 1.2

A port of version 1.1 to LaTeX 2e by Downes and Jones.

A \LaTeX

A slightly changed LaTeX format by Matt Swift to offer modularity at format level. Acts as normal LaTeX if not explicitly told to do different. "A" for "alternate", "abstract" or the indefinite article.

AMS \LaTeX 2.2

Latest AMSLaTeX version is 2.2 from 2001. Intermedita versions are not shown.

pdf \LaTeX

The "standard LaTeX". If anyone talks about "LaTeX" it is nearly sure to be this package. pdfLaTeX2e produces PDF or DVI output.

X \LaTeX

Using the XeTeX engine. There are some special packages that provide easy access to the modern features of XeTeX.

p \LaTeX

A LaTeX based format for the pTeX engine.

Lua \LaTeX

LaTeX based on luaTeX with PDF (standard) or DVI (dviLuaLaTeX) output. LaTeX support for luaTeX is under heavy development to make this machine usable with the format. Work in progress, but already well useable! (This document is processed with luaLaTeX2e.)

expl3

The expl3 bundle is the ground stock of LaTeX3. It is a bundle of packages that can be used with LaTeX2e, but are planned to become the kernel of LaTeX3. They provide the low-level structures, programming structures and everything needed for package authors.

xpackages

The xpackages are a bundle of packages intended to become the ground stock of packages for the high-level and user-level interface in LaTeX3. Based on expl3, they can be used with LaTeX2e already.

L^AT_EX2x

An experimental step towards LaTeX3. LaTeX2x is a normal LaTeX2e, but with expl3 and xpackages compiled in the format. It is **not** intended for everyday use but only for experimenting with LaTeX3. Might be concentrated on luaTeX, but XeTeX and pdfTeX variants will be available.

L^AT_EX2.2

Inofficial suggestion by Philipp Stephani on the luaLaTeX list. LaTeX2.2 should still be a full LaTeX2e, but with the expl3 bundle in the format. In fact, this is what LaTeX2x is planned to be.

L^AT_EX2.5

Will Robertson suggested in an interview (see refs) an interim unstable version on the way to LaTeX3 with version number 2.5 that should bring package authors towards using LaTeX3 syntax. This version should be backwards **incompatible** to LaTeX2e. (This version does not exist in any official plannings, but I liked the idea, so it is mentioned here ;))

L^AT_EX3

The long-time successor of LaTeX2e. It is planned to implement a very elaborate low-level programming language. (Almost done by now.) The expl3-package provides an implementation that can be used on top of LaTeX2e. Several LaTeX packages already make heavy use of expl3. (As does this document.) LaTeX3 makes use of eTeX primitives and therefore needs this engine or successors. Special adaptations of luaTeX features are starting to evolve.

timesL^AT_EX

Some LaTeX 2.09 derivate, need more information.

7. ConT_EXt: con tex t – text with tex

pragmatex

Former name of ConTeXt.

ConT_EXtMkI

Original ConTeXt with Dutch low level interface.

ConT_EXtMkII

ConTeXt with English low level interface. Works with any TeX-engine, as LaTeX does: TeX, e-TeX, pdfTeX, Aleph, XeTeX, ...

ConT_EXt MkIII

Reserved for future use for files supporting XeTeX. Was "skipped" for "practical reasons" (Hans Hagen)

ConT_EXtMkIV

Specially designed for luaTeX.

8. Other Formats

8.1. $\mathcal{A}\mathcal{M}\mathcal{S}$ -T_EX

$\mathcal{A}\mathcal{M}\mathcal{S}$ -T_EX2.0

A macro package provided by the American Mathematical Society. Version 2.0 from 1990. No information found for versions pre-2.0.

$\mathcal{L}\mathcal{A}\mathcal{M}\mathcal{S}$ -T_EX2.0

"LamSTeX is an extension of AmSTeX, and thus almost completely compatible with plain TeX", as the documentation says. See references for details.

$\mathcal{A}\mathcal{M}\mathcal{S}$ -T_EX2.1

Version 2.1 released 1991.

$\mathcal{A}\mathcal{M}\mathcal{S}$ -T_EX2.2

Latest version is 2.2 from 2001.

8.2. JadeT_EX

JadeT_EX

A macro package for processing Jade/OpenJade output.

8.3. PHYS(E)

PHYS(E)

Documentation says: "The TeX formats PHYSE and PHYS are extensions of the PLAIN format and should simplify the writing of physics papers." Latest version I found is from 1986. PHYS is for german, PHYSE for english usage.

8.4. PHYZZX

PHYZZX

Documentation says: "PHYZZX is a macropackage which is designed to make typing papers destined for Physical Review or Nuclear Physics as simple as possible." Created 1984, latest version I found is from 1988.

8.5. MacroTeX

MacroTeX

Information needed.

8.6. StarTeX – Starter's TeX

StarTeX

A format designed to help students with short documents. Using html-like notation: <command> instead of command

8.7. Texinfo

Texinfo

The official documentation format of the GNU project. Uses TeX to provide documentations.

8.8. XMLTeX

XMLTeX

A format (based on machines like pdfTeX, XeTeX and maybe luaTeX) that converts XML input to DVI or PDF output. Can also be based on other formats when parsed at format-building time.

8.9. YTeX

YTeX

A macro package developed at MIT. Pronounced "why-TeX", "upsilon-TeX" or "oops-TeX". Tries to offer an easy structure for novices as well as a powerfull macro libraries for experienced users.

9. Distributions

9.1. TeX live

Web2C

An Implementation and Distribution of TeX which translates the original WEB sources to a C code.

emTeX

Eberhard Mattes' TeX Distribution for MS-DOS and OS2.

teTeX

Maintained by Thomas Esser (hence the te in teTeX) from 1994 to May 2006.

4AllTeXCD

The (vague) past ... (?)

fpTeX

A free TeX distribution for Win32 based on teTeX, by Fabrice Popineau. Still active, provides up-to-date binaries for Windows. Special support for Japanese Typesetting.

XEmTeX

A TeX distribution for Windows, based on fpTeX with XEmacs/ AucTeX as IDE for (La)TeX. XemTeX was sponsored by the French government.

TeX live 1996 – 2007

First version 1996 (UNIX only, later also Windows binaries), and then a long story of ongoing work -- see the documentation for a detailed history. Some of the binaries (still) identify themselves as *TeXk. The "k" stands for "Karl" meaning that they were compiled with kpathsea.

TeX live2008

A new package manager and network installer are available. So installation via the net is possible as well as package updates. Missing packages are not installed on-the-fly. The last of the modern machines is added: luaTeX

gwTeX

A (re)distribution for Mac OS based on TeX live (earlier on teTeX) by Gerben Wierda. Provides TeX-related packages for the i-Installer. Unsupported from 2007 on.

TeX live2009

Dropped Omega and Lambda. Aleph and Lamed are kept.

TeX live2010

Up to now, latest release of TeX live.

TLContrib

An extension of TeX live that contains packages that TeX live cannot hold because: not free, binary update, not on CTAN or intermediate release. Useable via the TeX live manager.

MacTeX

Once based on teTeX, MacTeX is now TeX live-based. For Mac OS X only, it provides a native installer, the TeXShop editor and Mac-specific tools.

9.2. MiKTeX

MiKTeX

MiKTeX is a TeX distribution originally for Windows only. Copyright by Christian Schenk goes back to 2001. Regarding the name, the author stated: "mik used to be my login name. It is an acronym for: Micro-kid. Hence the capital K in MiKTeX."

MiKTeX 2.6

Windows only. featuring pdftex 1.40.4, mpost 1.000

MiKTeX 2.7

Windows only. featuring XeTeX 0.999.6, pdftex 1.40.9, mpost 1.005

MiKTeX 2.8

Windows only. featuring XeTeX 0.9995.1, pdftex 1.40.10, mpost 1.005

MiKTeX 2.9

Windows only (stable version). Beta version for GNU/Linux available. Featuring XeTeX 0.9997.4, pdftex 1.40.11, luaTeX 0.60.2, mpost 1.211. Offers both LaTeX and ConTeXt (Mk IV) formats.

ProTeXt

A distribution based on MiKTeX (since 2004) with a comfortable install procedure, Editor etc. Provides an easy installation for a full (La)TeX environment.

9.3. TeX collection

TeX Collection

A meta-distribution. Provided on DVD by the TUG, this distribution ships with TeX live, MacTeX and ProTeX as well as with a full CTAN snapshot.

9.4. ConTeXt minimals

ConTeXt minimals

ConTeXt minimals provides a distribution of latest (beta and stable) ConTeXt versions with binaries and formats. Efficient upgrading is possible as well as parallel use with another TeX distribution.

9.5. W32TeX

W32TeX

A distributon to provide binaries for MS Windows, with special support for Japanese. First version (up to the changelog): 2009/08/02. Still highly up-to-date.

9.6. OzTeX

OzTeX

A commercial distribution for Mac OS. No longer supported.

9.7. For Amiga

Amiga-TeX

By Thomas Rockicki and Radical Eye Software. Commercial distribution for Amiga.

pasTeX

A free distribution for Amiga. Distributed as 5 floppy disks (TeX) plus 2 floppy disks (Metafont). Available from the Aminet.

9.8. N_TE_X

N_TE_X

A distribution for Linux and other Unix systems. Latest version is 2.3.2, released at 23-Aug-1998. No longer developed.

10. Pandora's Box

10.1. META*

METAFont

The program for creating the fonts originally used by TeX.

Metafont

A program to convert metafont shapes to Type1 contours. Uses mathematically correct transformations instead of autotracing.

MetaType1

A program to produce Type1 fonts from metafont source code.

MetaPost

A graphic generating program written by John Hobby, inspired by METAFONT. MetaPost can produce PostScript graphics as well as SVG.

MegaPost

A planned extension of MetaPost "that will extend the range and precision of the internal data types."

MetaFun

"MetaFun is Hans Hagen's extension to (or module for) the MetaPost language." It is a format for MetaPost.

10.2. Bib_TE_X

Bib_TE_X

A helper program to sort a bibliography list.

NbibTeX

"NbibTeX helps authors take better advantage of BibTeX data" says the homepage.

Bib_TE_X8

The documentation says: "An 8-bit Implementation of BibTeX 0.99 with a Very Large Capacity"

MLBibTeX

Mentioned in the kpathsea-manual. No idea what it is -- BibTeX for MLTeX?

Bib_TE_Xu

A Unicode-aware version of BibTeX

Pybtex

A python implementation of BibTeX.

biber

A perl implementation of a BibTeX-like program, designed as backend for BibLaTeX. "biber" is an animal handling bibliographies. (german for "beaver", hence the beaver in the biber logo)

Bib_LA_TE_X

A LaTeX package as frontend for biber (can also be used with BibTeXu/8).

Librarian

A TeX file (useable with all formats) that typesets BibTeX-style bibliographies without the need of BibTeX. Therefore, it provides a format-independent typesetting of bibliographies.

10.3. (x)dvipdf(m)(x)

dvipdf

A shellscript from Ghostscript that uses dvips and gs for converting.

xdv2pdf

No idea so far what this is, but it is mentioned in the fontspec manual as possible driver for XeTeX.

dvipdfm

Converts DVI files to PDF files. Does /not/ build on dvipdf, but is an independent implementation.

dvipdfmx

Extended version of dvipdfm. Support for multi-byte encodings and more pdfTeX features. Still active. Combined work of dvipdfm-jpn and dvipdfm-kor.

xdvipdfmx

Converts XDVI files produced by XeTeX to PDF files. Normally always executed after a XeTeX run, so the user won't notice that an xdvi document was created in between.

10.4. Fonts

Bitmap fonts

Bitmap fonts contain the shape of the letters as a number of dots. If you zoom in, a bitmap letter will show pixels. Hence one needs a special version for every resolution.

PostScript Type 1

Outline font. The shape of a letter is described as mathematical curves so the letter can be made arbitrarily large without getting pixelated.

TrueType

Available on Windows and Mac OS. Outline font technology with quadratic B splines.

FreeType

TrueType implementation for Unix.

TrueType GX

"Graphis eXtension". A font format only available for Mac OS.

OpenType

Extension of the TrueType font format, adding support for PostScript font data. Developed by Microsoft and Adobe.

AAT

"Apple Advanced Typography" fonts are successors of the GX fonts. Only available for Mac OS, too.

Part III.

Appendix

A. References

The references are in order of occurrence in the above document. i.e. if you want information about LuaTeX, it will be below e.g. εTeX. Everything that is not listed as "book" is freely available on the internet.

Books

D.E. Knuth, D. Bibby, and I. Makai. *The T_EXbook*
Addison-Wesley Reading, MA, 1986.

F. Mittelbach, M. Goossens, J. Braams, D. Carlisle, C. Rowley, C. Detig, and J. Schrod. *The L^AT_EX companion*.
Addison-Wesley, 2004.

Overview Articles

Arthur Reutenauer. A Brief History of T_EX. Talk at EuroBachTeX 2007.
<http://www.gust.org.pl/bachotex/EuroBachTeX2007/presentations/bhot.pdf/view>

A Brief History of L^AT_EX
<http://www.xent.com/FoRK-archive/feb98/0307.html>

Short Article About Omega And Aleph
<http://www.tex.ac.uk/cgi-bin/texfaq2html?label=omegaleph>

Interviews with Will Robertson, Hans Hagen et. al.
<http://www.tug.org/interviews>

Archives

CTAN – Comprehensive TeX Archive Network:
<http://www.ctan.org>

Historic Archive of TeX Distributions:
<ftp://ftp.tug.org/historic>

Engines

ANT project page

<http://ant.berlios.de>

Yasuki S AITO. Report on JTEX: A Japanese TEX. TUGboat 8 (1987), no. 2, 103–116.

<http://www.tug.org/TUGboat/Articles/tb08-2/tb18saito.pdf>

pT_EX sources and documentation

<http://dante.ctan.org/tex-archive/help/Catalogue/entries/ptex.html>

encT_EX page

<http://www.olsak.net/enctex.html>

MLT_EX source (CH file)

<http://www.tex.ac.uk/tex-archive/systems/generic/mltex/mltex.ch>

pdfT_EX project page

<http://tug.org/applications/pdftex/>

N_TS project page

<http://nts.tug.org>

VT_EX – official homepage of micropress-inc

<http://www.micropress-inc.com/>

X_ET_EX project page

<http://tug.org/XeTeX/>

εX_ET_EX project page

<http://www.extex.org>

eeT_EX project page

<http://tex.aanhet.net/eetex>

LuaT_EX project page

<http://www.luatex.org>

iT_EX announcement by Don Knuth at the TUG 2010

<http://river-valley.tv/tug-2010/an-earthshaking-announcement>

Formats

Eplain homepage

<http://www.tug.org/eplain/>

L^AT_EX project page

<http://www.latex-project.org>

A_MS_{TE}X: Documentation on CTAN

<http://www.ctan.org/tex-archive/macros/amstex/doc/>

L^AT_EX2.2 – mail from Philipp Stephani on luaLaTeX-dev list (last paragraph)

<http://tug.org/pipermail/lualatex-dev/2011-January/001033.html>

L^AT_EX3 project

<http://www.latex-project.org/latex3.html>

ConT_EXt wiki

<http://wiki.contextgarden.net>

A^LA^TE_X: Discussion in TUGboat Vol. 16 (1995), No. 3, p. 269ff.

<http://www.tug.org/TUGboat/Articles/tb16-3/tb48swif.pdf>

A_MS-_TE_X on CTAN

<http://www.ctan.org/tex-archive/macros/amstex/>

L_AM_ST_EX: Short description

<http://www.tex.ac.uk/tex-archive/digests/texline/no13/lamstex>

JadeT_EX project page

<http://jadetex.sourceforge.net/>

PHYSE and PHYS on CTAN

<http://ctan.org/tex-archive/macros/physe>

PHYZZX on CTAN

<http://ctan.org/tex-archive/macros/phyzzx>

StarT_EX on CTAN

<http://www.ctan.org/tex-archive/macros/startex>

Texinfo project page

<http://www.gnu.org/software/texinfo/>

XMLT_EX manual

<http://www.dcarlisle.demon.co.uk/xmltex/manual.html>

YT_EX on CTAN

<http://tug.ctan.org/tex-archive/macros/ytex>

Distributions

fpT_EX: Announcment at TUG 1999

<http://www.tug.org/tug99/program/node39.html>

T_EX live development history

<http://tug.org/texlive/doc/texlive-en/texlive-en.html>

gwT_EX project page

<http://ii2.sourceforge.net/tex-index.html>

Brief History of gwT_EX

<http://www.tug.org/twg/mactex/award/2007/gerben/aboutgwtex.html>

TLContrib project page

<http://tlcontrib.metatex.org/>

MacT_EX project page

<http://www.tug.org/mactex>

MiKTeX project page

<http://miktex.org/>

Christian Schenk about the name of MiKTeX (mailing list archive)

http://sourceforge.net/mailarchive/message.php?msg_id=26826076

ProT_EXt project page

<http://www.tug.org/protext/>

T_EXCollection page

<http://www.tug.org/texcollection/>

ConT_EXt minimalis on ConT_EXt garden wiki

http://wiki.contextgarden.net/ConTeXt_Minimalis

Win32 project page

<http://w32tex.org/>

OzT_EX project page

<http://www.trevorrow.com/oztex/>

T_EX on Amiga

http://serpens.de/~zza/amigafaq/AmigaFAQg_49.html

NT_EX project page

<http://www.langbein.org/software/ntex/>

Fonts

Type1 Fonts specifications

http://partners.adobe.com/public/developer/en/font/T1_SPEC.PDF

The FreeType project

<http://freetype.org/index2.html>

OpenType specifications

<http://www.microsoft.com/typography/otspec/default.htm>

Everything Else

MetaPost developments in TUGboat Vol. 29 (2008), No. 3, p. 380ff.

<http://www.tug.org/TUGboat/Contents/contents29-3.html>

dvipdfmx project page

<http://project.ktug.or.kr/dvipdfmx/>

B. List of Contributors

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