# TeX Live for Debian

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## Abstract

TeX Live is a widely used TeX distribution incorporating most of the free (in the Debian sense) packages from CTAN, and binaries for many different architecture–operating system combinations.

Debian GNU/Linux is a popular operating system distribution based on the Linux kernel, containing only free [3] programs. Like most distributions of the Linux flavor, Debian has a strong package managing facility. Since TeX Live is not packaged for any distribution (SuSE, Red Hat, . . . ), users and system administrators have the choice of either using the TeX system coming with the distribution, or installing TeX Live outside of the normal package management system.

It has thus been a longstanding wish to package TeX Live for Debian, so that system administrators can install TeX Live like any other Debian package. This article describes a project in this direction.

## 1   History

In times past, Sebastian Rahtz had some scripts ready, but unfortunately they were lost in a hard disk crash. In January 2005 the present author prepared the first proposal on packaging TeX Live for Debian. Within two months we had some scripts ready for building Debian packages directly from the TeX Live source repository. Sebastian Rahtz developed the scripts further, so that by March 2005 we had the first installable Debian packages of TeX Live.

In mid-May 2005 I came into contact with Frank Küster, who is responsible for packaging teTeX for Debian, and together with the Debian teTeX maintainers we developed a common base for the two TeX systems on Debian. Out of this grew improved versions of the packaging scripts, and by December we arrived at a state where we could initiate the first upload to the experimental Debian branch.

## 2   Users' point of view

From the users' point of view there is little difference between the original TeX Live distribution and the TeX Live Debian packages. The documentation of TeX Live present in the Debian packages describes typical use. Most differences arise only in the system administrators' perspective, discussed next.

## 3   System administrators' point of view

Standard TeX Live is organized in small units called *TeX packages*, each of which is described by a `tpm`

file. These files list the contents of the package together with dependencies and any special actions to be taken at installation time. These packages are grouped into around 30 so-called *collections*, which the administrator can select via the normal TeX Live installation procedure.

In the course of packaging TeX Live for Debian, we discussed the possibility of making a single Debian package from every `tpm`. This option was, however, quickly rejected, as it would have generated more than 1000 new packages. Thus we came to the conclusion that we would follow the TeX Live installation program and generate for each collection a Debian package.

Please see [1] for more details and installation instructions beyond the brief descriptions below.

### 3.1   Basic installation

The packages have been included into the experimental branch of Debian, so system administrators of Debian GNU/Linux systems can use any Debian mirror. Or, for those who do not want Debian's experimental branch, you can use the Debian TeX Live repository on `tug.org`. In this case, to get the files you should add

```
deb http://www.tug.org/texlive/Debian/ pool/
deb-src http://www.tug.org/texlive/Debian/ pool/
```

to your `sources.list` file.

After this you can install the package `texlive` to get a close approximation of a normal TeX Live system (for differences see below). If you prefer a smaller installation, the Debian package `texlive-latex-recommended` is a good start. We recommend adding at least `texlive-fonts-recommended` and the needed `texlive-lang-*` packages for your desired hyphenation patterns.

### 3.2   Further installation

At this time, several other Debian packages have dependencies on only the Debian teTeX packages and do not provide alternative dependencies onto TeX Live packages. Other packages do provide this alternative dependency. We hope this issue will be completely resolved soon. In the meantime, we provide updates to the affected packages in another repository on the TUG server. To access them, add

```
deb http://www.tug.org/texlive/Debian/ updpkg/
deb-src http://www.tug.org/texlive/Debian/ updpkg/
```

to your `sources.list` file. The list of such updated packages currently includes `lyx`, `pdfjam`, `muttprint` and around 20 others.

## 4  Differences from TEX Live

The packaging of TEX Live for Debian has brought about some changes due to Debian constraints and paradigms. The interested reader may consult this thread [4].

A general guideline to Debian specifics can be found in the Debian TEX Policy [2].

### 4.1  Naming scheme

The names of the deb packages roughly correspond to the names of the collections in TEX Live, but have been slightly modified to conform to Debian standards (additional hyphens, country codes for the documentation packages).

### 4.2  Location of files

As in TEX Live there are several support trees used. The most important are:

TEXMFDIST = /usr/share/texmf-texlive
TEXMFLOCAL = /usr/share/texmf
TEXMFSYSCONFIG = /etc/texmf
TEXMFSYSVAR = /var/lib/texmf

### 4.3  Configuration

Debian policy states that programs must be configured via files in /etc, and that changes to the configuration must be preserved over upgrades. This led to a slightly different handling of configuration files in the Debian packages of TEX Live and teTEX.

Since TEXMFSYSCONFIG is the /etc/texmf directory, system administrators can configure the system by making a copy of any file in the main or dist tree and placing it either in TEXMFLOCAL or TEXMFSYSCONFIG.

Some files needed special attention and are handled through a Debian-specific mechanism that allows TEX Live or teTEX, add-on packages and local administrators to combine their changes. These files are the central configuration file texmf.cnf, the configuration file of formats fmtutil.cnf, the font configuration file updmap.cfg, and the language configuration file language.dat.

All of these should *not* be modified directly, but only through files in special subdirectories of /etc: texmf.cnf in /etc/texmf/texmf.d, fmtutil.cnf in /etc/texmf/fmt.d, and so on. After modifying and/or adding files in these directories, the commands update-texmf, update-fmtutil, update-updmap, and update-language, respectively, should be run, followed by updmap-sys and/or fmtutil-sys as usual.

## 4.4  Replaced packages

Many tpm packages are not included in the TEX Live Debian packages since there are equivalent and/or improved packages available in Debian (e.g. preview, texinfo, cmsuper). As a result, some TEX Live collections are *not* matched by a Debian package (langarab → arabtex, langcjk → latex-cjk-all, htmlxml → several components). Other collections are not included since they should be available as independent Debian packages (e.g. graphicstools, ttfutils).

## 5  Call for Developers

In the last month developing these packages has been a one-man show. Interested developers are encouraged to join the TEX Live for Debian developers mailing list of the pkg-texlive-maint project at alioth.debian.org [5]. Help is needed!

## 6  Closing

I want to thank Sebastian Rahtz, Karl Berry, and all other TEX Live developers for the incredible amount of work they have put into TEX Live. In addition, Karl Berry and TUG deserve a big thanks for providing the web space for the Debian packages. From the Debian side I want to thank Frank Küster (the teTEX maintainer for Debian) for his permanent advice and support; without his cooperation, nothing would have been achieved.

## References

[1] TEX Live for Debian web site.
    http://www.tug.org/texlive/debian.html.

[2] Debian TEX policy. http://people.debian.
    org/~frank/Debian-TeX-Policy/.

[3] Debian Free Software Guidelines contained in
    the Debian Social Contract.
    http://www.debian.org/social_contract.

[4] Discussion thread on the debian-devel
    mailing list. http://lists.debian.org/
    debian-devel/2005/11/msg01649.html.

[5] TEX Live for Debian maintainers mailing list.
    http://lists.alioth.debian.org/mailman/
    listinfo/pkg-texlive-maint.

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