

# TeX Live Typesetting Software

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The following notes document the steps to install [TeX Live](https://tug.org/texlive) on OpenIndiana Hipster and how to update it using the tlmgr TeX Live package management tool.

To test a virtual machine running TeXLive on OpenIndiana, you can also run the `texlive2021` example Vagrantfiles in the `vagrantfiles` repository :

```
# git clone https://github.com/openindiana/vagrantfiles
```

## 1 TeX Live tlmgr Management Tool

The TeX Live Management Tool has both a command line interface and a GUI. The GUI (`tlmgr gui`) uses Perl Tk and works on OpenIndiana. The following screenshot illustrates `tlmgr` and the OpenIndiana MATE desktop :



Figure 1: oi-tlmgr

## 2 TeX Live Cross Platform Installer

See the full TeX Live guide at <http://tug.org/texlive> for detailed information.

Download the TeX Live Cross Platform Installer from <http://mirror.ctan.org/systems/texlive/tlnet/install-tl-unx.tar.gz>.

There is a script in this package, called `install-tl`. The goal is to install TeX Live using the cross platform installer as follows :

```
# install-tl
```

Before doing so, create a special BE (Boot Environment) if you plan to install TeX Live as root (installing as non-root user is recommended by TeX Live).

```
# beadm create -a texlive
```

Alternatively create a snapshot of the BE to have a possibility to rollback.

The `install-tl` script installs a utility called `tlmgr`, the package management utility for TeX Live and, in principle, `tlmgr` is able to remove (uninstall) a TeX Live installation:

```
# tlmgr remove --all
If you answer yes here the whole TeX Live installation here,
under /usr/texlive/2020, will be removed!
Remove TeX Live (y/N): y
Ok, removing the whole installation:
```

A snapshot of the old BE or a special BE for TeX Live, allows one to rollback to the situation before install without having to use `tlmgr` to uninstall.

After rebooting into a new BE, run the perl installer script :

```
# install-tl --help
```

If you wish to use the TeX Live GUI, install the OpenIndiana Perl Tk package (the `tk-perl` IPS package is available on OpenIndiana release 2022 or higher) :

```
# pkg install -v tk-perl
```

Then run the TeX Live installer GUI as follows :

```
# install-tl --gui
```

The next section discusses the interactive mode of the `install-tl` script.

### 3 TeX Live Cross Platform Installer Main Menus

The cross platform installer version 57337 of `install-tl` incorrectly identifies OpenIndiana as Solaris on Intel :

```
./install-tl --version
install-tl (TeX Live Cross Platform Installer) revision 57337
TeX Live (https://tug.org/texlive) version 2020
```

The command to detect the platform is:

```
./install-tl --print-arch
i386-solaris
```

This is incorrect, but it may work in some cases. Because OpenIndiana and Solaris are different systems, it may be necessary to download a TeX Live Cross Platform Installer script from the `tlnet-archive`, and use it with a `--repository` option. For example, to install TeX Live 2023 :

```
# ./install-tl --repository https://texlive.info/tlnet-archive/2023/10/10/tlnet/
```

It is also possible to download custom binaries, and install and use TeX Live with binaries that are not part of the original distribution :

```
# ./install-tl --custom-bin=/tmp/foobin
```

See the instructions at <http://tug.org/texlive/custom-bin.html> for detailed information.

The main menus in interactive mode are :

```
./install-tl
Loading http://ctan.cs.uu.nl/systems/texlive/tlnet/tlpkg/texlive.tlpdb
Installing TeX Live 2020 from: http://ctan.cs.uu.nl/systems/texlive/tlnet (verified)
Platform: i386-solaris => 'Solaris on Intel x86'
Distribution: net (downloading)
Using URL: http://ctan.cs.uu.nl/systems/texlive/tlnet
Directory for temporary files: /tmp/eCcsGDKJWY
=====> TeX Live installation procedure <=====

=====> Letters/digits in <angle brackets> indicate <=====
=====> menu items for actions or customizations <=====

Detected platform: Solaris on Intel x86

<B> set binary platforms: 1 out of 16

<S> set installation scheme: scheme-full

<C> set installation collections:
40 collections out of 41, disk space required: 7130 MB

<D> set directories:
  TEXDIR (the main TeX directory):
  !! default location: /usr/local/texlive/2020

<O> options:
  [ ] use letter size instead of A4 by default
  [X] allow execution of restricted list of programs via \write18
  [X] create all format files
  [X] install macro/font doc tree
  [X] install macro/font source tree
  [ ] create symlinks to standard directories

<V> set up for portable installation

Actions:
<I> start installation to hard disk
<P> save installation profile to 'texlive.profile' and exit
<H> help
<Q> quit
```

Enter command:

To add the 64bit executables go into menu "B" :

=====

Available platforms:

- a [ ] Cygwin on Intel x86 (i386-cygwin)
- b [ ] Cygwin on x86\_64 (x86\_64-cygwin)
- c [ ] MacOSX current (10.13-) on x86\_64 (x86\_64-darwin)
- d [ ] MacOSX legacy (10.6-) on x86\_64 (x86\_64-darwinlegacy)
- e [ ] FreeBSD on x86\_64 (amd64-freebsd)
- f [ ] FreeBSD on Intel x86 (i386-freebsd)
- g [ ] GNU/Linux on ARM64 (aarch64-linux)
- h [ ] GNU/Linux on ARMv6/RPi (armhf-linux)
- i [ ] GNU/Linux on Intel x86 (i386-linux)
- j [ ] GNU/Linux on x86\_64 (x86\_64-linux)
- k [ ] GNU/Linux on x86\_64 with musl (x86\_64-linuxmusl)
- l [ ] NetBSD on x86\_64 (amd64-netbsd)
- m [ ] NetBSD on Intel x86 (i386-netbsd)
- o [X] Solaris on Intel x86 (i386-solaris)
- p [ ] Solaris on x86\_64 (x86\_64-solaris)
- s [ ] Windows (win32)

Select "p" to add Solaris on x86\_64 for the TeX Live binaries for that architecture.

TeX Live works with "schemes"; the basic scheme (TeX and latex) requires about 270 MB of space :

=====

Select scheme:

- a [ ] full scheme (everything)
- b [ ] medium scheme (small + more packages and languages)
- c [ ] small scheme (basic + xetex, metapost, a few languages)
- d [X] basic scheme (plain and latex)
- e [ ] minimal scheme (plain only)
- f [ ] ConTeXt scheme
- g [ ] GUST TeX Live scheme
- h [ ] infrastructure-only scheme (no TeX at all)
- i [ ] teTeX scheme (more than medium, but nowhere near full)
- j [ ] custom selection of collections

Actions: (disk space required: 270 MB)

<R> return to main menu

<Q> quit

The default installation is going to /usr/local/texlive/2020, but in the Directories menu this can be changed :

Directories customization:

<1> TEXDIR:            /usr/texlive/2020

main tree:            /usr/texlive/2020/texmf-dist

```
<2> TEXMFLOCAL:        /usr/texlive/texmf-local
<3> TEXMFSYSVAR:       /usr/texlive/2020/texmf-var
<4> TEXMFSYSCONFIG:    /usr/texlive/2020/texmf-config
<5> TEXMFVAR:          ~/.texlive2020/texmf-var
<6> TEXMFCONFIG:       ~/.texlive2020/texmf-config
<7> TEXMFHOME:         ~/texmf
```

The installer can also create symbolic links such as `/usr/bin/tex` to the `/usr/texlive/2020` binaries, as can be set in the Options menu :

=====

Options customization:

```
<P> use letter size instead of A4 by default: [ ]
<E> execution of restricted list of programs: [X]
<F> create all format files:                    [X]
<D> install font/macro doc tree:               [X]
<S> install font/macro source tree:           [X]
<L> create symlinks in standard directories: [X]
      binaries to: /usr/bin
      manpages to: /usr/share/man
      info to: /usr/share/info
```

## 4 TeX Live Package Manager Queries

After installation of TeX Live, it is possible to make queries on what is exactly installed :

```
# tlmgr info schemes
i scheme-basic: basic scheme (plain and latex)
  scheme-context: ConTeXt scheme
  scheme-full: full scheme (everything)
  scheme-gust: GUST TeX Live scheme
i scheme-infraonly: infrastructure-only scheme (no TeX at all)
  scheme-medium: medium scheme (small + more packages and languages)
i scheme-minimal: minimal scheme (plain only)
  scheme-small: small scheme (basic + xetex, metapost, a few languages)
  scheme-tetex: teTeX scheme (more than medium, but nowhere near full)
```

The above output shows that `scheme-minimal`, `scheme-infraonly` and `scheme-basic` were installed.

New updates can be retrieved from the repository. Unless a special repository was used during installation (with the `--repository` switch for `install-tl`), the output of the default package repository can be something like :

```
# tlmgr option repository
Default package repository (repository): http://ctan.cs.uu.nl/systems/texlive/tlnet
```

Information on specific packages can be obtained with `tlmgr` :

```
# tlmgr info babel
package:      babel
category:     Package
shortdesc:    Multilingual support for Plain TeX or LaTeX
longdesc:     This package manages culturally-determined typographical (and other)
↳ rules for a wide range of languages. A document may select a single language to
↳ be supported, or it may select several, in which case the document may switch
↳ from one language to another in a variety of ways. Babel uses contributed
↳ configuration files that provide the detail of what has to be done for each
↳ language. Included is also a set of ini files for about 200 languages. Many
↳ language styles work with pdfLaTeX, as well as with XeLaTeX and LuaLaTeX, out of
↳ the box. A few even work with plain formats.
installed:    Yes
revision:     57530
sizes:        src: 1469k, doc: 809k, run: 3729k
relocatable:  No
cat-version:  3.53
cat-license:  lppl1.3
cat-topics:   multilingual
cat-related:  polyglossia
cat-contact-repository: https://github.com/latex3/babel
cat-contact-bugs: https://github.com/latex3/babel/issues
collection:   collection-latex
```

## 5 TeX Live Updating

Suppose that you have installed a version of TeX Live from a specific date :

```
# ./install-tl --repository https://texlive.info/tlnet-archive/2020/12/28/tlnet/
```

After installation, you have TeX Live from December 28, 2020.

It is possible then to change the repository and update to the latest version.

```
# tlmgr option repository https://texlive.info/tlnet-archive/2021/01/28/tlnet
tlmgr: setting default package repository to
↳ https://texlive.info/tlnet-archive/2021/01/28/tlnet
tlmgr: updating /usr/texlive/2020/tlpkg/texlive.tlpdb
```

To update the packages of TeX Live to the default repository :

```
# tlmgr update --all
```

The TeX Live package management tool has its own mechanism of making backups:

```
/usr/texlive/2020/tlpkg/backups
```

## 6 Removing TeX Live

In principle, tlmgr is able to remove (uninstall) a TeX Live installation:

```
# tlmgr remove --all
```

If you answer yes here the whole TeX Live installation here,  
under /usr/texlive/2020, will be removed!

Remove TeX Live (y/N): y

Ok, removing the whole installation:

If you have made a BE (boot environment) from before the TeX Live installation you can also  
rollback to an older BE as an alternative to uninstalling the software with tlmgr.