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The following notes document the steps to install TeX Live 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:

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

# 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 Opendiana MATE desktop:

![OI-TLMGR](image)

## 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 Opendiana MATE desktop:

![OI-TLMGR](image)

## 2 TeX Live Cross Platform Installer

See the full TeX Live guide at [http://tug.org/texlive](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](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:

```bash
# 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).

```bash
# 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:

```bash
# 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:

```bash
# 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):

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

Then run the TeX Live installer GUI as follows:

```bash
# 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 detects 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
```

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)
```
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)
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> TEXMFHOME: /usr/texlive/2020/texmf-var
<4> TEXMFHOME: /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:

- Use letter size instead of A4 by default: [ ]
- Execution of restricted list of programs: [X]
- Create all format files: [X]
- Install font/macro doc tree: [X]
- Install font/macro source tree: [X]
- 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:

```bash
# 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:

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

Information on specific packages can be obtained with tlmgr:

```bash
# tlmgr info babel
package: babel
category: Package
shortdesc: Multilingual support for Plain TeX or LaTeX
```
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.

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.