Basic Usage of \texttt{t\!lmgr}, the \TeX\ Live Manager

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1 Introduction

tlmgr manages an existing \TeX{} Live installation, both packages and configuration options. For information on initially downloading and installing \TeX{} Live, see \url{https://tug.org/texlive/acquire.html}.

\LaTeX{} Live is organized into a few top-level \textit{schemes}, each of which specifies a set of \textit{collections} and \textit{packages}, where a collection is a set of packages, and a package is what contains actual files. Schemes typically contain a mix of collections and packages, but each package is included in exactly one collection, no more and no less. A \TeX{} Live installation can be customized and managed at any level.

We will describe usage of tlmgr in the command-line interface. There are graphical front-ends for tlmgr: tlshell, tlcockpit and, for Macs, a \TeX{} Live Utility; these must be started as separate programs. These is also a graphical user interface in tlmgr itself; consult the documentation here:

\url{https://tug.org/texlive/doc/tlmgr.html#GUI-FOR-TLMGR}

2 Usage

\texttt{tlmgr [global options] action [action-specific options] [operands]}

The actions and relevant action-specific options and operands are described in Section 4. The global options are described in Section 5.

Options, whether global or action-specific, may be given anywhere on the command line, and in any order. The first non-option argument will be treated as the main action. In all cases, \texttt{--option} and \texttt{-option} are equivalent, and an \texttt{=} is optional between an option name and its value.

This report documents only the most commonly-used actions and options for tlmgr. Complete documentation may be found at

\url{https://tug.org/texlive/doc/tlmgr.html}

The file tlmgr.html may also be installed on your system; try texdoc \texttt{-l tlmgr}. Reference documentation for any action is also available using tlmgr \texttt{-help action}. 
3 Examples

After successfully installing \TeX\ Live, the following are examples of common operations with \texttt{tlmgr}:

\begin{itemize}
    \item \texttt{tlmgr -help install}
        Displays reference documentation on the install action.
    \item \texttt{tlmgr option repository ctan}
        Tells \texttt{tlmgr} to use a nearby CTAN mirror for future updates; \texttt{ctan} is just an alias for \url{https://mirrors.ctan.org/systems/texlive/tlnet}. Caveat: \texttt{mirrors.ctan.org} resolves to many different hosts, and they are not perfectly synchronized; we recommend updating only daily (at most), and not more often. You can choose a particular mirror in place of \texttt{mirrors.ctan.org} if there are problems; the list of all CTAN mirrors with the status of each is at \url{https://ctan.org/mirrors/mirmon}. Don’t forget to add \texttt{.../systems/texlive/tlnet} to the path.
    \item \texttt{tlmgr update -all}
        Makes your local \TeX\ installation correspond to what is in the default package repository.
    \item \texttt{tlmgr update -self}
        Updates \texttt{tlmgr} itself (that is, the infrastructure packages) if updates to it are present. If the \texttt{-self} option is given together with either \texttt{-all} or a list of packages, then \texttt{tlmgr} will be updated first and, if this update succeeds, the new version will be restarted to complete the rest of the updates.
    \item \texttt{tlmgr info fontspec}
        Displays detailed information about package \texttt{fontspec}, such as the installation status and description.
    \item \texttt{tlmgr info -list fontspec}
        The list of files in package \texttt{fontspec} is also displayed, including those for platform-specific dependencies.
    \item \texttt{tlmgr install fontspec}
        Installs the \texttt{fontspec} package (unless it is already installed). By default all packages on which the given package is dependent are also installed. Existing packages are not touched.
    \item \texttt{tlmgr search -file cabin}
        Searches locally installed packages and displays all filenames containing \texttt{cabin}.
\end{itemize}
4 Actions

4.1 The info Action

Usage:

```
  tlmgr info
  tlmgr info collections
  tlmgr info schemes
  tlmgr info pkgs
```

With no argument, lists all packages available at the package repository, prefixing those already installed with i.

With the single word collections or schemes as the argument, lists all the collections and schemes, respectively, instead of all packages.

With any other arguments, displays information about each of the pkgs: the name, category, short and long description, sizes, installation status, and TeX Live revision number. If the package is not locally installed, searches in the remote installation source.

For normal packages (not collections or schemes), the sizes of the four groups of files (run/src/doc/bin) are shown separately. For collections, the cumulative size is shown, including all directly-dependent packages (but not dependent collections). For schemes, the cumulative size is also shown, including all directly-dependent collections and packages.

If a package is not found locally or remotely, the search action (see Section 4.2) is used and lists matching packages and files.

It also displays information taken from the TeX Catalogue, namely the package version, date, and license. Consider these, especially the package version, as approximations only, due to timing skew of the updates of the different pieces. By contrast, the revision value comes directly from TL and is reliable.

Options for info:

- **list**

  If the option -list is given with a package, the list of contained files is also shown, including those for platform-specific dependencies. When given with schemes and collections, -list outputs their dependencies in a similar way.

- **only-installed**

  If this option is given, the installation source will not be used; only locally installed packages, collections, or schemes are listed.
4.1 The `info` Action

-only-remote

Only list packages from the remote repository. Useful when checking what is available in a remote repository using

```
tlmgr -repo ... -only-remote info.
```

Note that -only-installed and -only-remote cannot both be specified.
4.2 The search Action

Usage:

\texttt{tlmgr search what}

By default, search the names, short descriptions, and long descriptions of all locally installed packages for the argument \texttt{what}, interpreted as a (Perl) regular expression.

Options for search:

-\texttt{-file}
  
  List all filenames containing \texttt{what}.

-\texttt{-global}
  
  Search the \TeX\ Live Database of the installation medium, instead of the local installation.

-\texttt{-word}
  
  Restrict the search of package names and descriptions (but not filenames) to match only full words. For example, searching for \texttt{table} with this option will not output a package containing the word \texttt{tables} (unless it also contains the word \texttt{table} on its own).
4.3 The install Action

Usage:

```
\texttt{tlmgr install pkgs}
```

Install each of the \texttt{pkgs} (unless it is already installed). By default all packages on which the given package is dependent are also installed. Existing packages are not touched; use the update action described in Section 4.4 to get the latest version of a package.

Options for \texttt{install}:

\begin{itemize}
  \item \texttt{--dry-run}
    \begin{itemize}
      \item Nothing is actually installed; instead, the actions to be performed are written to the terminal.
    \end{itemize}
  \item \texttt{--reinstall}
    \begin{itemize}
      \item Reinstall a package (including dependencies for collections) even if it already seems to be installed (i.e., is present in the \TeX{} Live Package Database). This is useful to recover from accidental removal of files in the hierarchy.
      \item When \texttt{re-installing}, only dependencies on normal packages are followed (i.e., not those of category Scheme or Collection).
    \end{itemize}
  \item \texttt{--with-doc}, \texttt{--with-src}
    \begin{itemize}
      \item The \texttt{install-tl} program provides the option of omitting installation of all documentation and/or source files. (By default, everything is installed.) After such an installation, you may find that you want the documentation or source files for a given package after all. You can get them by using these options in conjunction with \texttt{reinstall}, as in
        \begin{itemize}
          \item \texttt{tlmgr install --reinstall --with-doc --with-src pkgs}
        \end{itemize}
    \end{itemize}
  \item \texttt{--no-depends}
    \begin{itemize}
      \item Do not install dependencies. (By default, installing a package ensures that all dependencies of this package are fulfilled.)
    \end{itemize}
\end{itemize}

The install action does not automatically add new symlinks in system directories; you need to run

```
\texttt{tlmgr path add}
```

yourself if you are using this feature and want new symlinks added; see Section 4.7.
4.4 The update Action

Usage:

```
tlmgr update pkgs
```

Updates the packages given as arguments to the latest version available at the installation source. Either `-all` or at least one package name must be specified.

Options for update:

- `-all`
  Update all installed packages (except for `tlmgr` itself). If updates to `tlmgr` itself are listed, this gives an error, unless also the option `-force` or `-self` is given. (See below.)

  In addition to updating the installed packages, during the update of a collection the local installation is (by default) synchronized to the status of the collection on the server, for both additions and removals.

  This means that if a package has been removed on the server (and thus has also been removed from the respective collection), `tlmgr` will remove the package in the local installation. This is called “auto-remove” and is announced as such when using the option `-list`.

  Analogously, if a package has been added to a collection on the server that is also installed locally, it will be added to the local installation. This is called “auto-install” and is announced as such when using the option `-list`.

  An exception to the collection dependency checks (including the auto-installation of packages just mentioned) are those that have been “forcibly removed” by you, that is, you called `tlmgr remove -force` on them. (See the `remove` action documentation.) To reinstall any such forcibly removed packages use `-reinstall-forcefully-removed`.

  If you want to exclude some packages from the current update run (e.g., due to a slow link), see the `-exclude` option below.

- `-self`
  Update `tlmgr` itself (that is, the infrastructure packages) if updates to it are present. On Windows this includes updates to the private Perl interpreter shipped inside TeX Live.

  If this option is given together with either `-all` or a list of packages, then `tlmgr` will be updated first and, if this update succeeds, the new version will be restarted to complete the rest of the updates.
-dry-run

Nothing is actually installed; instead, the actions to be performed are written to the terminal. This is a more detailed report than using -list.

-list [pkg]

Concisely list the packages which would be updated, newly installed, or removed, without actually changing anything. If -all is also given, all available updates are listed. If -self is given, but not -all, only updates to the critical packages (tlmgr, TeX Live infrastructure, Perl on Windows, etc.) are listed.

If neither -all nor -self is given, and in addition no pkg is given, then -all is assumed. Thus, tlmgr update -list is the same as tlmgr update -list -all. If neither -all nor -self is given, but specific package names are given, those packages are checked for updates.

-exclude pkg

Exclude pkg from the update process. If this option is given more than once, its arguments accumulate.

An argument pkg excludes both the package pkg itself and any related platform-specific packages. For example,

```
tlmgr update -all -exclude a2ping
```

will not update a2ping, a2ping.i386-linux, or any other a2ping.xxx package.

If this option specifies a package that would otherwise be a candidate for auto-installation, auto-removal, or reinstallation of a forcibly removed package, tlmgr quits with an error message. Excludes are not supported in these circumstances.

-no-depends

If you call for updating a package, normally all depending packages will also be checked for updates and updated if necessary. This switch suppresses this behavior.

If the package on the server is older than the package already installed (e.g., if the selected mirror is out of date), tlmgr does not downgrade. Also, packages for uninstalled platforms are not installed.

This action does not automatically add or remove new symlinks in system directories. You need to run tlmgr path yourself if you are using this feature and want new symlinks added; see Section 4.7.
4.5 The remove Action

Usage:

```bash
tlmgr remove pkgs
```

Remove each of the `pkgs`. Removing a collection removes all package dependencies (unless `-no-depends` is specified), but not any collection dependencies of that collection. However, when removing a package, dependencies are never removed.

Options for `remove`:

- `-dry-run`
  Nothing is actually removed; instead, the actions to be performed are written to the terminal.

- `-no-depends`
  Do not remove dependent packages.

- `-all`
  Uninstalls all of TeX Live, asking for confirmation unless `-force` is also specified.

Except with `-all`, the `remove` action does not automatically remove symlinks to executables from system directories; you need to run

```bash
tlmgr path remove
```

yourself if you are using this feature and want stale symlinks removed; see Section 4.7.
4.6 The option Action

**Usage:**

```
tlmgr option

```
```
tlmgr option help

```
```
tlmgr option key

```
```
tlmgr option key value

```

The first form shows the global \TeX Live settings currently saved with a short description and the key used for changing it in parentheses. The second form is similar, but also shows options which can be defined but are not currently set to any value. In the third form, the setting for \textit{key} is displayed. In the fourth form, \textit{key} is set to \textit{value}.

Some of the possible values for \textit{key} are (run \texttt{tlmgr option help} for the definitive list):

- repository: default package repository,
- docfiles: install documentation files,
- srcfiles: install source files,
- sys_bin: directory to which executables are linked by the path action
- sys_man: directory to which man pages are linked by the path action
- sys_info: directory to which info files are linked by the path action
- desktop_integration: Windows-only: create Start menu shortcuts
- fileassocs: Windows-only: change file associations
- multiuser: Windows-only: install for all users

One common use of option is to permanently change the installation to get further updates from the Internet, after originally installing from DVD. For example, you can run

```
tlmgr option repository ctan
```

to use a nearby CTAN mirror for future updates.

The docfiles and srcfiles keys control the installation of their respective file groups (documentation, sources; grouping is approximate) per package. By default both are enabled (1). Either or both can be disabled (set to 0) if disk space is limited or for minimal testing installations, etc. When disabled, the respective files are not downloaded at all.

The sys_bin, sys_man, and sys_info options are used on Unix systems to control the generation of links for executables, info files and man pages. See the path action in Section 4.7 for details.

The remaining options affect behavior on Windows installations.

- If desktop_integration is set, then some packages will install items in a sub-folder of the Start menu for tlmgr gui, documentation, etc.
• If `fileassoc` is set, Windows file associations are made (see also the `postaction` action).

• If `multiuser` is set, then adaptations to the registry and the menus are done for all users on the system instead of only the current user.

All three of these options are on by default.
4.7 The path Action

Usage:

\texttt{tlmgr path [-w32mode=user|admin] add}

\texttt{tlmgr path [--w32mode=user|admin] remove}

On Unix, adds or removes symlinks for executables, man pages, and info pages in the system directories specified by the respective options (see the option description above). Does not change any initialization files, either system or personal. Furthermore, any executables added or removed by future updates are not taken care of automatically; this command must be rerun as needed.

On Windows, the registry part where the binary directory is added or removed is determined in the following way:

- If the user has admin rights, and the option \texttt{-w32mode} is not given, the setting \texttt{w32\_multi\_user} determines the location (i.e., if it is on the system path, otherwise the user path is changed).

- If the user has admin rights, and the option \texttt{-w32mode} is given, this option determines the path to be adjusted.

- If the user does not have admin rights, and the option \texttt{-w32mode} is not given, and the setting \texttt{w32\_multi\_user} is off, the user path is changed, while if the setting \texttt{w32\_multi\_user} is on, a warning is issued that the caller does not have enough privileges.

- If the user does not have admin rights, and the option \texttt{-w32mode} is given, it must be \texttt{user} and the user path will be adjusted. If a user without admin rights uses the option \texttt{-w32mode admin} a warning is issued that the caller does not have enough privileges.
4.8 The paper Action

Usage

    tlmgr paper

    tlmgr paper [a4|letter]

    tlmgr program paper [a4|letter]

With no arguments, `tlmgr paper` shows the default paper size for all known programs. With one argument (e.g., `tlmgr paper a4`), sets the default for all known programs to that paper size. With a `program` given as the first argument and a paper size as the last argument (e.g., `tlmgr dvips paper a4`), sets the default for that program to that paper size.
5 Global Options

--help, -help, --h, -?

These options display reference documentation for any action.

--version, -version

Displays version information about the \TeX{} Live release and the tlmgr script itself. If -v is also given, revision numbers for the loaded \TeX{} Live Perl modules are shown as well.

-q

Suppresses informational messages.

-v

Displays debugging messages; can be repeated for more output.

--command-logfile file

tlmgr logs the output of all programs invoked (mktexlr, mtxrun, fmtutil, updmap) to a log file, by default TEXMFSYSVAR/web2c/tlmgr-commands.log. This option allows you to specify a different file for the log.

--package-logfile file

tlmgr logs all package actions (install, remove, update, failed updates, failed restores) to a log file, by default TEXMFSYSVAR/web2c/tlmgr.log. This option allows you to specify a different file for the log.

-pause

This option makes tlmgr wait for user input before exiting. Useful on Windows to avoid disappearing command windows.