Отчёта по лабораторной работе №1

Практическое научное письмо

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1 Цель работы

Целью данной лабораторной работы является установка TexLive

2 Теоретическое введение

2.0.1 Installing TeXlive

TeX Live — the most complete LaTeX distribution supported by the TeX community. • Supports a large number of operating systems. • Developed since 1996. • Based on the teTeX distribution. • MacTeX — a variant for MacOS. • Main page: https://www.tug.org/texlive/.• • TeX Live — is a distribution with continuous updates as part of the annual version of the distribution.

Installation from distribution packages [1]

• Ubuntu: apt install texlive-full

• Windows. Use the Chocolatey package manager. choco install texlive

2.0.2 Manual installation

• Links on the site are to mirrors. The mirror is selected automatically. • Download the installer: • Unix: https://mirror.ctan.org/systems/texlive/tlnet/install-tl-unx.tar.gz cd /tmp/ wget

https://mirror.ctan.org/systems/texlive/tlnet/install-tl-unx.tar.gz • Windows: https://mirror.ctan.org/systems/texlive/tlnet/install-tl-windows.exe • For Windows: run the executable file and install. • For Linux • Unpack the downloaded file: tar xzvf install-tl-unx.tar.gz • Go to the unpacked directory and run the installer: cd install-tl-[0-9]* sudo ./install-tl • It is recommended to create links to executable files

in the /usr/local/bin directory. To do this, in the console version of the utility, select the O option, and then L. To return to the previous menu, use R.

3 Updating to the next version of TeXlive

It is recommended to install the new version of TeX Live separately.

• But you can do a manual update using an existing installation. • Let's assume that our architecture is x86_64-linux. • If you have installed symbolic links to system directories (via installer option or tlmgr path add), remove them:

1.1 Installing TeX Live

```
tlmgr path remove
```

• Move the entire TeX Live directory to match the new version, for example:

```
mv /usr/local/texlive/2024/ /usr/local/texlive/2025
```

• Remove package backups:

```
rm /usr/local/texlive/2025/tlpkg/backups/*
```

• Create links to executables:

```
/usr/local/texlive/2025/bin/x86_64-linux/tlmgr path add
```

• Download the latest version of the script update-tlmgr-latest.sh:

```
wget https://mirror.ctan.org/systems/texlive/tlnet/update-tlmgr-latest.sh \
-O /tmp/update-tlmgr-latest.sh
```

• Run the script:

```
sh /tmp/update-tlmgr-latest.sh --upgrade
```

- If you do not want to use the default repository for downloading new files, then replace it:

```
tlmgr option repository <reponame>
```

- Update the TeX Live package manager:

```
tlmgr update --self
```

- Update TeX Live packages:

```
tlmgr update --all
```

- Set symbolic links to executables in system directories (/usr/local/bin):

```
tlmgr path add
```

3.1 1 LaTeX basics

- You can recreate the cache lualatex under the user:

```
mv ~/.texlive2024 ~/.texlive2025
luaotfload-tool -fu
```
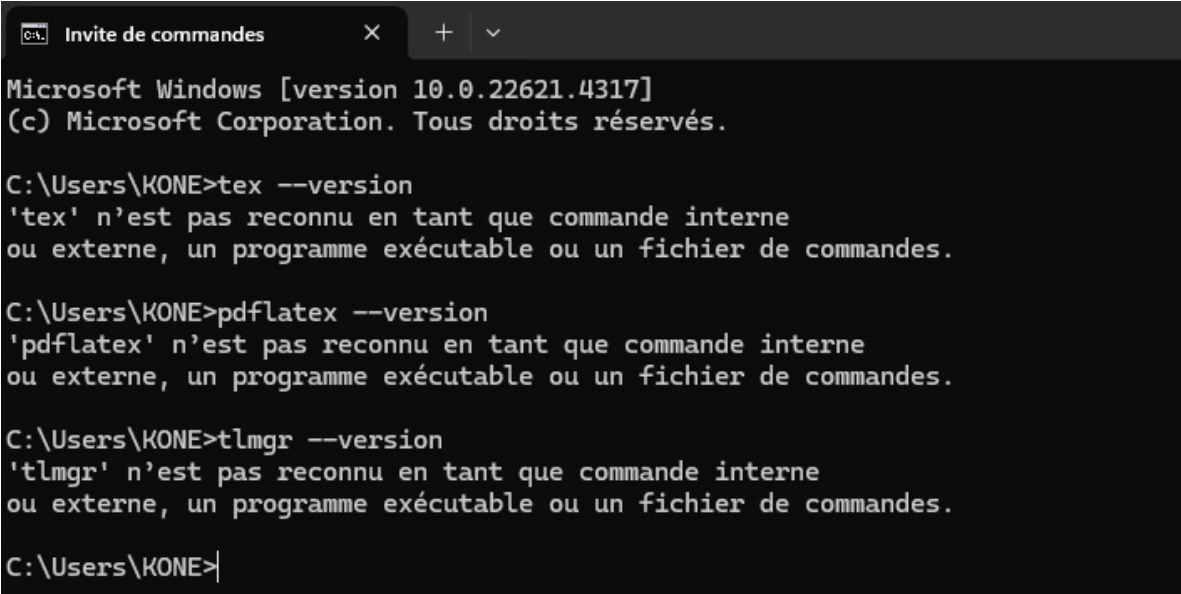
- If you don't do this, the cache will be recreated on the first run of lualatex.

4 Выполнение лабораторной работы

4.1 Перед установка teXlive

(см. Рис. **??**).

4.2 После установки teXlive

(см. Рис. **??**).

```
Microsoft Windows [version 10.0.22621.4317]
(c) Microsoft Corporation. Tous droits réservés.

C:\Windows\System32>choco install texlive
Chocolatey v1.2.1
Installing the following packages:
texlive
By installing, you accept licenses for the packages.
Progress: Downloading texlive 2025.20250902.0... 100%

texlive v2025.20250902.0 [Approved]
texlive package files install completed. Performing other installation steps.
The package texlive wants to run 'chocolateyinstall.ps1'.
Note: If you don't run this script, the installation will fail.
Note: To confirm automatically next time, use '-y' or consider:
choco feature enable -n allowGlobalConfirmation
Do you want to run the script?([Y]es/[A]ll - yes to all/[N]o/[P]rint): Y

Additional parameters for installer:
Writing Profile
Writing Profile using Passed Parameters.
TeX Live Profile will be written to C:\tools\texlive.profile
Extracting C:\ProgramData\chocolatey\lib\texlive\tools\install-tl.zip to C:\tools\install-tl-22092515...
C:\tools\install-tl-22092515
Automated TeX Live installation using profile: C:/tools/texlive.profile
Loading https://mirror.truenetwork.ru/CTAN/systems/texlive/tlpkg/texlive.tlpdb
Installing TeX Live 2025 from: https://mirror.truenetwork.ru/CTAN/systems/texlive/tlnet (verified)
Platform: windows => 'Windows (64-bit)'
Distribution: net  (downloading)
Using URL: https://mirror.truenetwork.ru/CTAN/systems/texlive/tlnet
Directory for temporary files: C:\Users\KONE\AppData\Local\Temp\chocolatey\8lMz9UaMk9
Installing to: C:\texlive\2025
Installing [1/6, time/total: ??:??/??:??]: hyphen-base [23k]
Installing [2/6, time/total: 00:01/12:11]: kpathsea [1042k]
Installing [3/6, time/total: 00:05/01:16]: luatex [1957k]
Installing [4/6, time/total: 00:09/00:48]: texlive-scripts [556k]
Installing [5/6, time/total: 00:13/00:58]: texlive.infra [610k]
Installing [6/6, time/total: 00:17/01:05]: tlperl.windows [11991k]
Time used for installing the packages: 01:24
Installing [001/131, time/total: ??:??/??:??]: ae [84k]
Installing [002/131, time/total: 00:03/01:34:18]: amscls [1437k]
Installing [003/131, time/total: 00:08/13:45]: amsfonts [4725k]
Installing [004/131, time/total: 00:25/10:27]: amsmath [2427k]
```

(см. Рис. **??**).

```
Administrateur : Invite de commandes
Time used for installing the packages: 09:02
[15:25:10] running mktexlsr C:\texlive\2025\texmf-dist ...
mktexlsr: Updating C:/texlive/2025/texmf-dist/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-dist/ls-R.
mktexlsr: Done.
writing fmtutil.cnf to C:\texlive\2025\texmf-dist/web2c/fmtutil.cnf
writing updmap.cfg to C:\texlive\2025\texmf-dist/web2c/updmap.cfg
writing language.dat to C:/texlive/2025/texmf-var/tex/generic/config/language.dat
writing language.def to C:/texlive/2025/texmf-var/tex/generic/config/language.def
writing language.dat.lua to C:/texlive/2025/texmf-var/tex/generic/config/language.dat.lua
[15:25:12] running mktexlsr C:/texlive/2025/texmf-var C:/texlive/2025/texmf-config C:\texlive\2025\texmf-dist ...
mktexlsr: Updating C:/texlive/2025/texmf-var/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-var/ls-R.
mktexlsr: Updating C:/texlive/2025/texmf-config/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-config/ls-R.
mktexlsr: Updating C:/texlive/2025/texmf-dist/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-dist/ls-R.
mktexlsr: Done.
[15:25:14] running updmap-sys --nohash ...done
[15:25:32] re-running mktexlsr C:/texlive/2025/texmf-var C:/texlive/2025/texmf-config ...
mktexlsr: Updating C:/texlive/2025/texmf-var/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-var/ls-R.
mktexlsr: Updating C:/texlive/2025/texmf-config/ls-R...
mktexlsr: Updated C:/texlive/2025/texmf-config/ls-R.
mktexlsr: Done.
pre-generating all format files, be patient...
[15:25:33] running fmtutil-sys --no-error-if-no-engine=luametatex,luajithbtex,luajittex,mfluajit --no-strict --all ...done
running path adjustment actions
finished with path adjustment actions
[15:29:12] running package-specific postactions
[15:29:15] finished with package-specific postactions

Logfile: C:\texlive\2025/install-tl.log
  texlive may be able to be automatically uninstalled.
Environment Vars (like PATH) have changed. Close/reopen your shell to
 see the changes (or in powershell/cmd.exe just type `refreshenv`).
 The install of texlive was successful.
  Software installed to 'C:\tools\install-tl-22092515'

Chocolatey installed 1/1 packages.
 See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).

C:\Windows\System32>
```

4.3 Проверка установление teXlive

(см. Рис. **??**).

```
Microsoft Windows [version 10.0.22621.4317]
(c) Microsoft Corporation. Tous droits réservés.

C:\Users\KONE>tex --version
TeX 3.141592653 (TeX Live 2025)
kpathsea version 6.4.1
Copyright 2025 D.E. Knuth.
There is NO warranty.  Redistribution of this software is
covered by the terms of both the TeX copyright and
the Lesser GNU General Public License.
For more information about these matters, see the file
named COPYING and the TeX source.
Primary author of TeX: D.E. Knuth.

C:\Users\KONE>pdflatex --version
pdfTeX 3.141592653-2.6-1.40.28 (TeX Live 2025)
kpathsea version 6.4.1
Copyright 2025 Han The Thanh (pdfTeX) et al.
There is NO warranty.  Redistribution of this software is
covered by the terms of both the pdfTeX copyright and
the Lesser GNU General Public License.
For more information about these matters, see the file
named COPYING and the pdfTeX source.
Primary author of pdfTeX: Han The Thanh (pdfTeX) et al.
Compiled with libpng 1.6.46; using libpng 1.6.46
Compiled with zlib 1.3.1; using zlib 1.3.1
Compiled with xpdf version 4.04

C:\Users\KONE>tlmgr --version
tlmgr revision 75204 (2025-05-13 23:48:24 +0200)
tlmgr using installation: C:/texlive/2025
TeX Live (https://tug.org/texlive) version 2025

C:\Users\KONE>
```

5 Выводы

Таким образом, была достигнута цель установил TeXlive.

Список литературы

1. Жданов О., Ушаков Ю. Криптографические методы защиты информации. Лекция 2: Алгоритмы тестирования на простоту и факторизации. НОУ «ИНТУИТ» https://intuit.ru/studies/courses/13837/1234/lecture/31191, 2014.