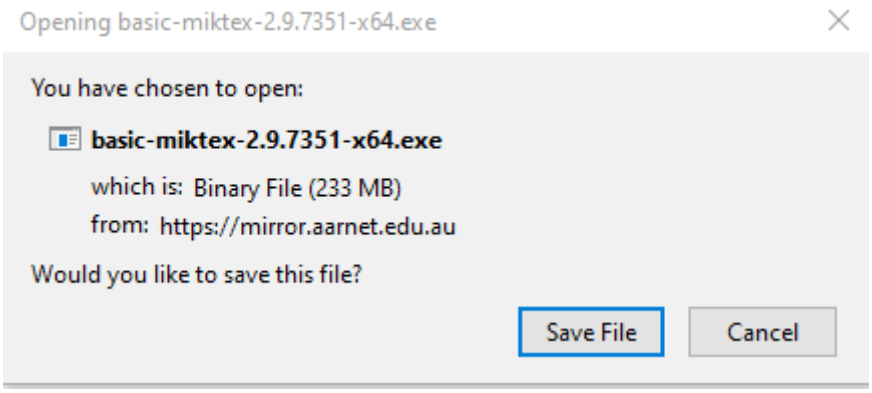
A simple LaTeX setup

These notes are intended to help someone install a fairly standard LaTeX setup on a work computer.

Download MikTeX

Goto https://miktex.org/download and download the latest Windows version there.

You will be prompted to save it



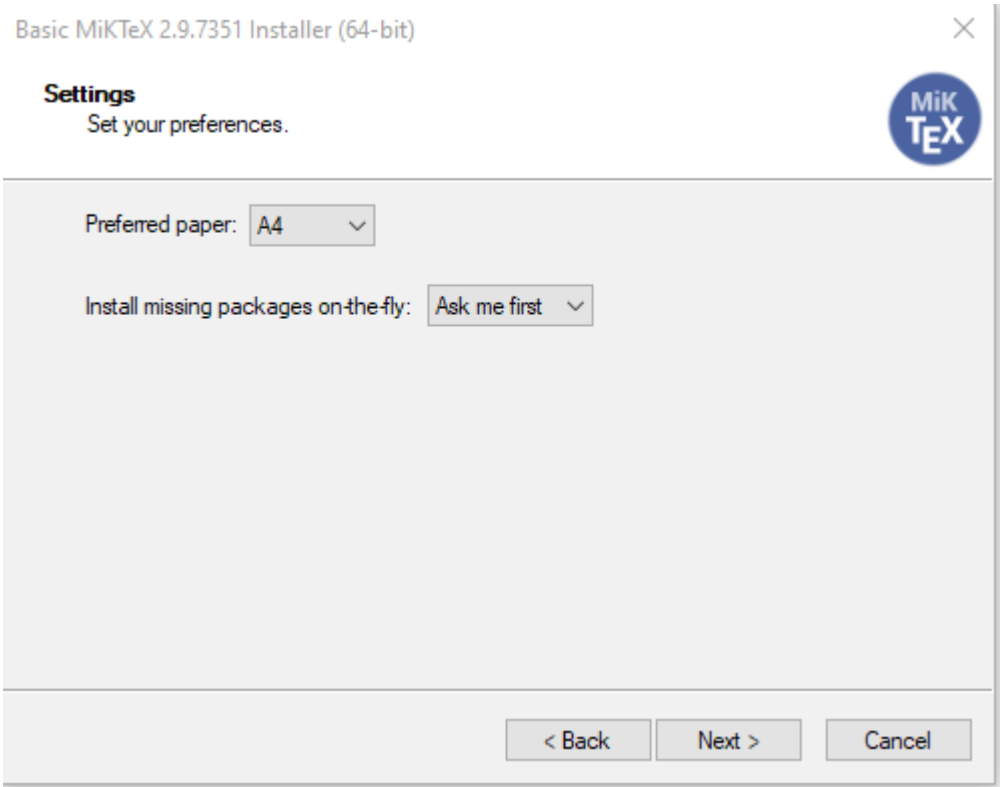
Run the installer (admin rights are only required if you want to install for all users of the computer).

You will be prompted for several options. In particular:

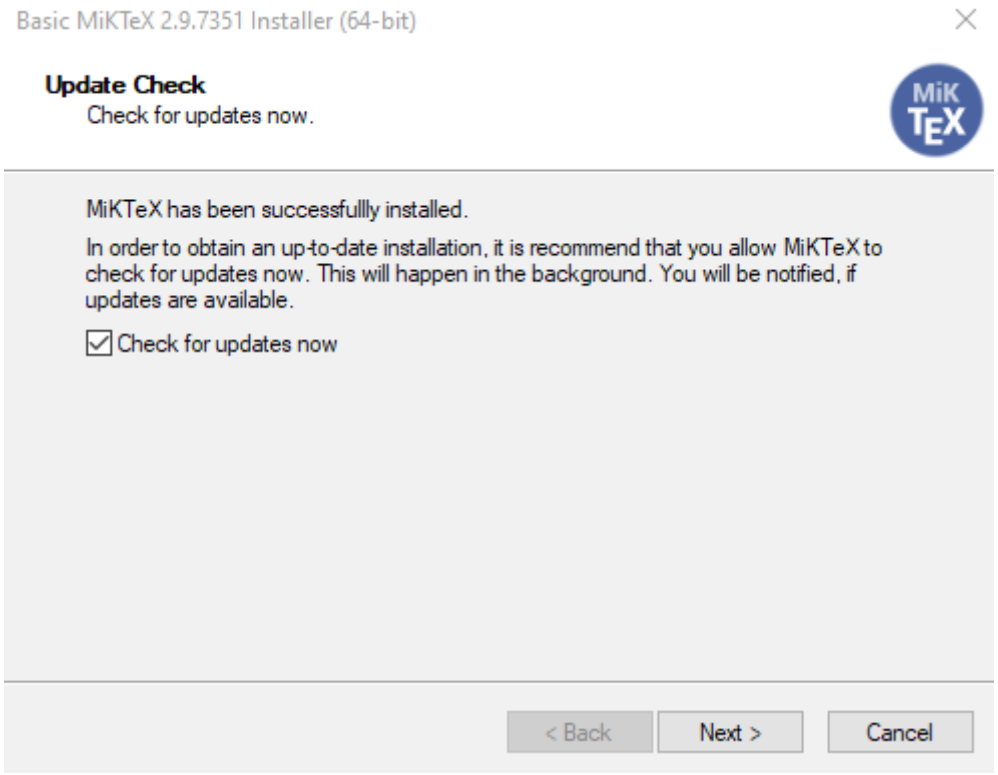
- The install folder should be somewhere you have access to. On Windows 10, without admin rights I suggest you choose the following (change “YourUserName” as approporiate):

  ```
  C:\Users\YourUserName\AppData\Local\Programs\MiKTeX 2.9
  ```

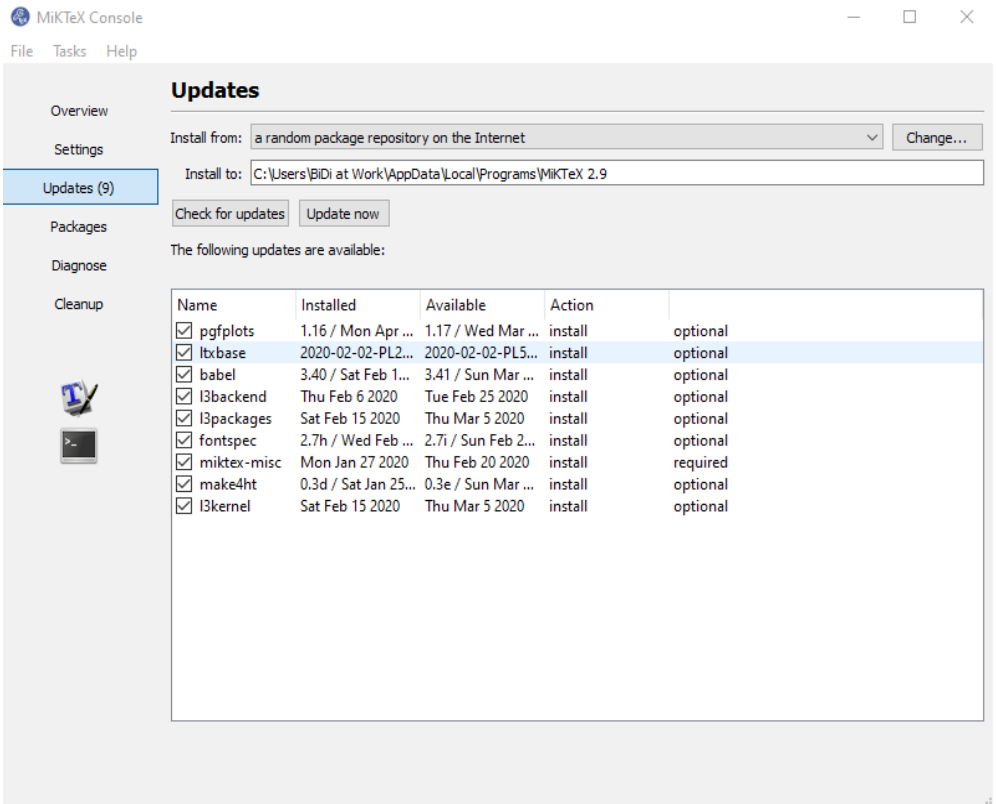
- Choose A4 paper and install missing packages “On the fly”:



- The installation can take a while. When over, check for updates immediately. This is not very intuitive. The installation finishes and the ‘MikTeX Console’ starts running independently and checks for updates.



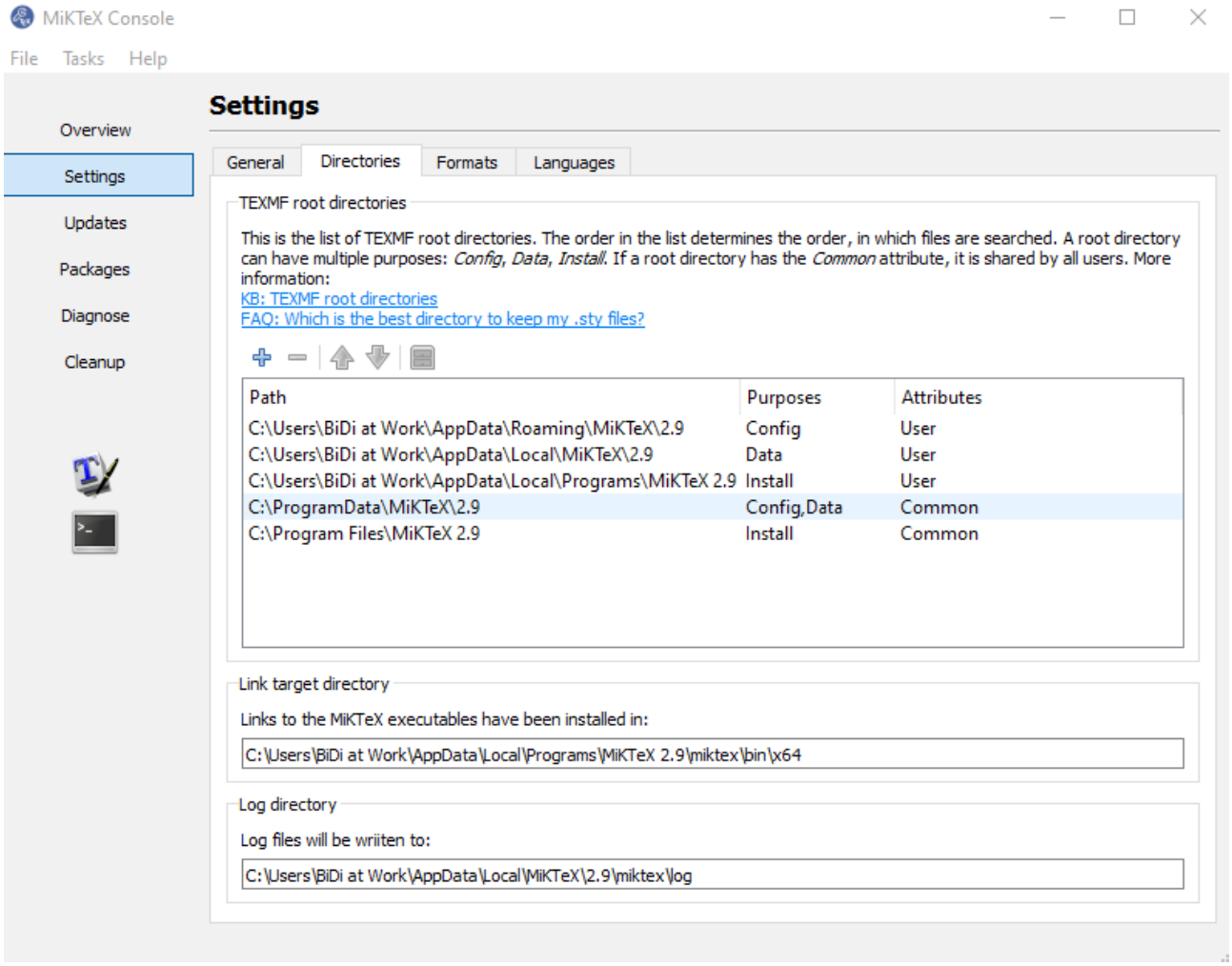
If updates are found, accept them. The installation of updates will also take a while.



A LaTeX root for MSL styles

When the system is ready, create a local LaTeX “root” for MSL-specific style files.

Do this from the ‘directories’ tab in the MikTeX console.



Click on the blue “+” sign and enter a suitable path, like:

`"C:\Users\YourUserName\Documents\ForLaTeX\localtex"`

or (this would be visible to all users)

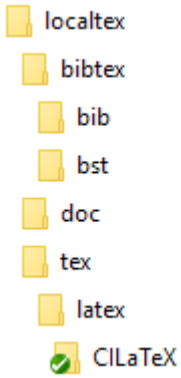
`"C:\localtex"`

Then go to the “Tasks” menu of the MikTeX Console and select “Refresh filename database”.

Root folder structure

There needs to be a particular folder structure under the root that you have just created (here: `localtex`).

This image shows what is expected



The “tex | latex”, “bibtex | bib” and “bibtex | bst” folders that are used to store various LaTeX style files.

I usually have folders within these folders to identify what is being introduced. For example, ‘CiLaTeX’ inside ‘latex’, as shown.

Note: the file name database has to be refreshed (from the MikTeX Console) whenever you change the file structure in the root (e.g., if you add a new file somewhere).

Where do my document LaTeX files go?

The choice of where to save your LaTeX work files is entirely yours.

An example: calibration report

An example calibration report is provided on EDI. Download the ZIP file called “MSL Reports in LaTeX”. Extract the file `CalibrationReport.tex` to a working directory of your choice.

`CalibrationReport.tex` must be typeset with the pdflatex tool in MikTeX to produce an electronic PDF report file. There are different ways to do this:

1. Open a Windows command prompt window (CMD) and, at the prompt, type:

   ```
   pdflatex CalibrationReport
   ```

   Doing this for the first time after MikTeX has been installed will cause a lot of LaTeX packages to be automatically downloaded and installed. This can take a while, but it only happens when MikTeX needs to install something new. Once it has everything, you won’t be bothered by this step again.

2. Open the file with TeXworks (which comes as part of the MikTeX installation).

   The green triangle at the top left is used to run MikTeX tools. There is a drop-down menu to select from the tools available: we want pdflatex (which is not the same as pdftex, by the way).

   Again, if this is the first time you run pdflatex after the MikTeX installation, then a lot of packages will be downloaded and installed. Don’t worry, it only happens once.

3. Open the file in Texmaker.

   Note, Texmaker is a more ‘advanced’ tool. So, consider options 1 or 2 if you are just after a simple process. I won’t try to explain how to use Texmaker here.

   When I know that MikTeX needs to download a lot of packages, I don’t use Texmaker, because it is much too slow. I use the command prompt for those occasions instead. However, once the packages are installed, Texmaker is my preferred LaTeX editor.

Processing `CalibrationReport.tex` with pdflatex produces a PDF file, which should look exactly like the one you downloaded in the ZIP archive from EDI.

Note you have to run pdflatex (via any of the options 1, 2 or 3 above) twice. This is necessary to resolve references within the document (like the last page number in the top right-hand corner of each page).

Editors

MikTeX comes with an editor called TeXworks. You can use this for most smallish projects.

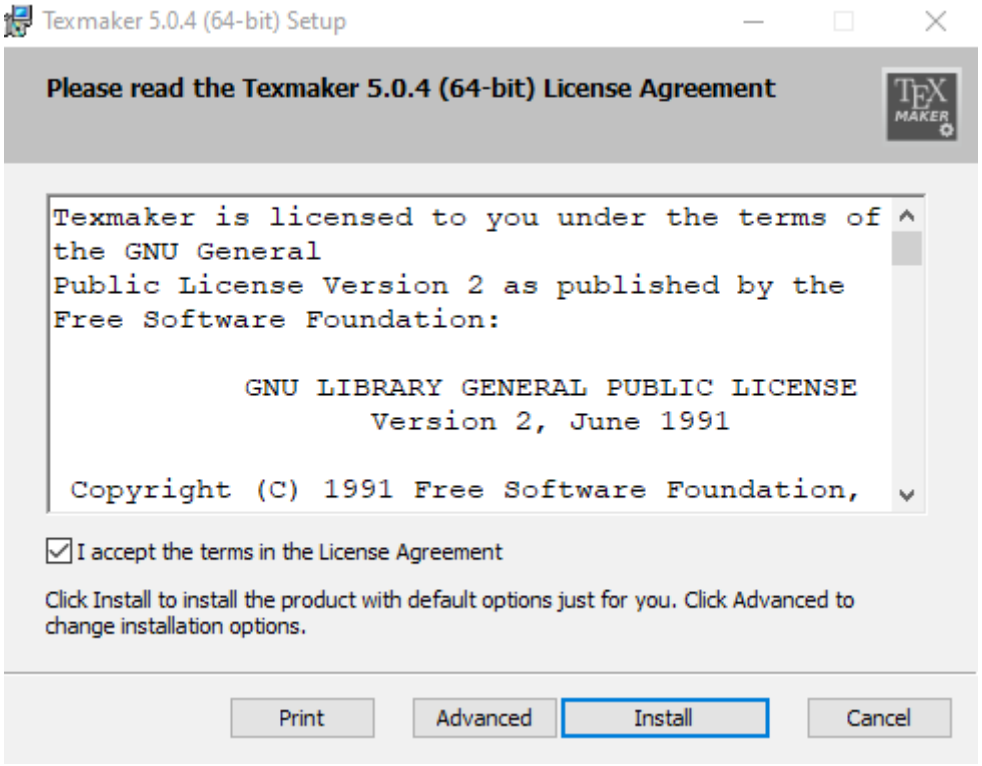
Install Texmaker

TeXmaker is a popular alternative to TeXworks.

You do need an admin password to install it, even if it is for your own use only.

Go to https://www.xm1math.net/texmaker/ and download the latest version.

In the first dialog box, accept the terms and conditions, but click on the advanced button.



That will give you the option to install the program as a single user (unfortunately, admin rights are still required). Click through the next two dialogs to begin the installation.

Some settings, like automatic spell checking, may not be configured correctly for single use. You need to check that the appropriate path has been found during the setup. For the spell checking, go to the Options | Editor pane and check that the path for the English language dictionary is

"`C:\Users\YourUserName\AppData\Local\Apps\Texmaker\`"

If it is something different and you find that spelling is not being checked by the editor, then change this setting.