

Installation of

ConTeXt lmtx

a Typesetting Engine

Version: 2.1

Date: March 4, 2021

1 Installation of ConTeXt lmtx / SciTE

1.1 Introduction

It is of good practice to keep the ConTeXt installation directory and your working directory (with your data) separated. For example the ConTeXt distribution could run from `c:\programs\context` and your working directory could be at `d:\project\book`.

For testing purposes we will refer to a 'hello world' tex-document (by the name of `test.tex`). You can make such a test file with any ascii text editor (i.e. notepad).

```
\starttext  
Hello world.  
\stoptext
```

1.2 Installation of ConTeXt lmtx

1. open a webbrowser
2. go to <https://www.pragma-ade.nl/install.htm>
3. download `context-mswin.zip`
4. choose or make a convenient target map (we call this directory `your-contextdir`)
5. open `context-mswin.zip` and copy the contents to `your-contextdir`
6. open explorer and browse to `your-contextdir`
7. run `install.bat` (after some time ConTeXt is installed)
8. run `setpath.bat` to activate ConTeXt (so it can be found on your system)

In stead of running `setpath` you can also make ConTeXt known to your system permanently by editing the environment variables. See below.

Activate ConTeXt in the Windows System Variables.

- choose the Control Panel and select System
- select the Advanced system settings option
- click on the Environment Variables button
- select Path in the System Variables pane and click the Edit button
- select New and type the bin-path of ConTeXt `../tex-context/tex/texmf-mswin/bin` and save the changes
- close all menus correctly

Now ConTeXt is available throughout your computer, i.e. when you open an dos-box.

Do the test:

1. open a dos-box
2. go to the folder that contains the `test.tex` file (with the dos-box command `cd`)

3. type on the command line:
 `context test.tex`
 which will produce a `test.pdf` result file if installation was succesful
4. open Reader and open the `test.pdf` file

1.3 Update ConTeXt in the future

If you have to update ConTeXt in the future:

1. open explorer
2. go to `..\your-contextdir`
3. run `install.bat` (this will fetch only the changed and updated files)

1.4 Text editor

Offcourse you can use ConTeXt in combination with your own texteditor. However, below we describe the SciTE text editor that enables you to run ConTeXt directly from the editor.

1.4.1 Installation of Scite

1. create a convenient folder for SciTE (a good name and logical location would be
 `c:\data\system\scite`)
2. open a webbrowser
3. go to <http://www.scintilla.org/SciTEDownload.html>
4. choose the Windows version (32- or 64-version)
5. download Scite (full download)
6. open the zip file
7. go to the `wscite` folder in the zip
8. copy the `wscite` folder to `c:\data\system\scite`

Now SciTE (`scite.exe`) is available on your computer. You can create shortcuts from SciTE to your desktop and/or startmenu.

To be able to run ConTeXt from SciTE you have to make ConTeXt known to your system. You do that by editing the environment variables. You probably have done that already. See the box on **page 1**.

The last hurdle you have to take is to customize SciTE for ConTeXt processing:

A. Get specific SciTE lexer add-in

- open a webbrowser
- go to <https://github.com/orbitalquark/scintillua/releases>
- select the most recent version of `scintillua*.zip`
- download and open the zip file
- select the folder `lexers`

- copy this lexers folder and paste it in folder c:\system\scite\wscite (you now have a subfolder lexers in c:\system\scite\wscite)

B. Configure SciTE for full ConTeXt cooperation

1. go to to ..\your-contextdir\context\tex\texmf-context\context\data\scite it contains the context folder
2. copy the context folder and paste it in c:\system\scite\wscite
3. open SciTE (from your desktop)
4. go to the Option Menu
5. click on the Open Global Options File (SciTEGlobal.properties)
6. go to the end of the file and type

```
import context/scite-context-user
```

7. save this file
8. close SciTE

Your SciTE folder structure should now look like this:

c:\system\scite\wscite	your SciTE folder
lexers	folder with generic lexer files
context	folder with ConTeXt lexer files
:	
*.properties	SciTe property files
:	
scite.exe	the SciTE program
:	
*.properties	SciTe property files

Now open your test.tex file in SciTE to see if lexing works and ConTeXt runs properly:

- a. open SciTE
- b. open file test.tex (your 'hello world' file)
- c. check if lexing works properly
- d. press Ctrl F7 (this will open Acrobat Reader and start text processing)
- e. check the result file (test.pdf)

1.4.2 Installation of SumatraPDF

During the authoring process SumatraPDF is more convenient than Reader. It is light-weight, doesn't lock the PDF file and opens fast at the last viewed page. It can also be combined with synctex that enables a fast switch between PDF and source file (at the correct line location).

If you want SciTE to work with SumatraPDF please take the following actions:

- open a webbrowser
- go to <http://www.sumatrapdfreader.org/download-free-pdf-viewer.html>
- choose the most recent version
- download and run the installer
- check the installation by opening SumatraPDF from your desktop

Next you have to change a line in the file `scite-context.properties` to prevent Acrobat Reader from opening:

- open SciTE
- go to the Option Menu
- open `scite-context.properties` file
- search for: `name.flag.pdfopen=-autopdf=default` (part of `PLAT_WIN`)
- change this line in: `name.flag.pdfopen=-autopdf`
- save this file

For testing and to see if SumatraPDF operates well with SciTE:

- a. open SciTE
- b. open file `test.tex` (your 'hello world' file)
- c. press Ctrl F7 (this will start text processing and eventually open SumatraPDF)
- d. view the result file (`test.pdf`) in SumatraPDF

1.4.2.1 SumatraPDF and synctex

During the authoring process it is very convenient to be able to switch fast between PDF and sourcefile. This is done with the `synctex` option that is invoked by typing:

```
\setupsynctex[state=start]
```

in your TeX file.

Also SumatraPDF has no know you want to return to the sourcefile that is opened in SciTE. So you have to alter the SumatraPDF options file:

- open SumatraPDF
- go to the program setting (left upper corner)
- select Settings and then Advanced Options (the options file is opened)
- search for `InverseSearchCmdLine`
- change this line into: `InverseSearchCmdLine = scite "%f" "-goto:%l"`
- save the changes
- close SumatraPDF

The `scite "%f" "-goto:%l"` works only if SciTE can be found on your system. So again you have to change the system variables.

You have done that before so this should be no problem:

Activate SciTE in the Windows System Variables.

- choose the Control Panel and select System
- select the Advanced system settings option
- click on the Environment Variables button
- select Path in the System Variables pane and click the Edit button
- select New and type the path of the SciTE.exe file `c:\system\scite\wscite` and save the changes
- close all menus correctly

Now SciTE is available throughout your computer.

Do the test:

- open your `test.tex` file in SciTE
- add `\setupsynctex[state=start]` before the `\starttext` command
- process the test file by typing Ctrl F7 (the `test.pdf` file will open in SumatraPDF)
- click on the word 'world' and you will return to your `test.tex` file in SciTE if installation was successful

2 Further reading

Please refer to the following manuals:

- ConTeXt, an excursion (<http://www.pragma-ade.com/general/manuals/mp-cb-en.pdf>)
- Quick Reference Manual (<http://www.pragma-ade.com/general/qrcs/setup-en.pdf>)

An example file

Don't try to read the text below; just open the note in Reader and copy-paste the text from the note into your `test.tex` file. In that way you can preserve the white lines and the text stays readable. If you copied the content correctly you can process the file and it will give you an example document to experiment with.



```

1  #!/usr/bin/perl
2
3  use strict;
4  use warnings;
5
6  my $VERSION = "1.0.0";
7  my $AUTHOR = "John Doe";
8  my $COPYRIGHT = "Copyright 2023 John Doe";
9
10 my $SYNOPSIS = "Usage: perl script.pl [options]";
11 my $DESCRIPTION = "This script is a simple example of a Perl script. It takes a single argument, a filename, and prints the contents of the file to the standard output.";
12
13 my $USAGE = "Usage: perl script.pl [options]";
14 my $OPTIONS = "Options:
15   -h, --help            Display this help message
16   -v, --version          Display the version number
17   -f, --file FILE        The file to be processed
18   -o, --output FILE      The output file (default: stdout)
19   -s, --silent           Suppress the progress bar
20   -p, --pattern PATTERN  The regular expression to match (default: /./)
21   -m, --mode MODE        The mode to use (default: 'r')
22   -C, --charset CHARSET  The character set to use (default: 'UTF-8')
23   -E, --encoding ENCODING The encoding to use (default: 'UTF-8')
24   -D, --debug            Enable debugging
25   -q, --quiet            Suppress all output except errors
26   -V, --verbose          Enable verbose output
27   -W, --warning          Enable warnings
28   -M, --module MODULE     The module to use (default: 'perl')
29   -I, --include INCLUDE   The include path (default: './lib')
30   -L, --library LIBRARY   The library to use (default: 'perl')
31   -P, --platform PLATFORM The platform to use (default: 'perl')
32   -S, --script SCRIPT     The script to use (default: 'perl')
33   -T, --target TARGET      The target to use (default: 'perl')
34   -U, --user USER         The user to use (default: 'perl')
35   -G, --group GROUP       The group to use (default: 'perl')
36   -K, --key KEY           The key to use (default: 'perl')
37   -V, --value VALUE       The value to use (default: 'perl')
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199  -I, --interface INTERFACE The interface to use (default: 'perl')
200  -L, --language LANGUAGE The language to use (default: 'perl')
201  -P, --platform PLATFORM The platform to use (default: 'perl')
202  -S, --
```

3 Background

3.1 Introduction

ConTeXt runs on top of the well known and robust typesetting engine $\text{\TeX}$ by Donald E. Knuth. There are two older versions of ConTeXt available: the MKII version that used $\text{\PDFTEX}$ and its successor MKIV that uses $\text{\LUA\TeX}$. From 2020 onward we only use ConTeXt lmtx (LuaMetaTex).

For integrated graphics the elegant and efficient graphic environment of John Hobby's METAPOST is used which is based on Don Knuth's METAFONT. In $\text{\LUA\TeX}$ we use its successor MPLIB. The scripting language Lua is used to script solutions.

ConTeXt integrates well in the main stream $\text{\TeX}$ distributions. It can be used stand-alone and plugged in editors or web applications.

Documents can be coded in:

- $\text{\TeX}$, this format is very well suited for documents with a lot of mathematical formulas, or when typographic detail is needed
- XML (including MATHML), this has the advantage of tight quality control over the source code
- other (well) structured formats (HTML, database output) that may need some manipulations and conversions into one of the formats mentioned above

3.2 Why ConTeXt?

The open source typesetting engine ConTeXt is used to produce extensive documents like learning materials, technical manuals, comprehensive research books etc. in an automated generation process. These kind of documents have a well designed structure and layout and the content has to be accessible for the reader. For the author there are a number of other conditions that have to be fulfilled. You must be able to maintain the content, the content must be re-usable in more than one document and you have to be able to rely on a consistent and correct typography.

ConTeXt is developed for people that produce the documents mentioned above. To use ConTeXt a technical background or any $\text{\TeX}$ -programming experience is not required. Working with ConTeXt is easier however, when some knowledge of document typography and make up is available.

ConTeXt comes with a multi-lingual interface (czech, german, english, french, italian, dutch, persian and romanian). The ConTeXt-interface is parameter oriented which means that the ConTeXt-commands are easily mastered. ConTeXt in combination with a customizable texteditor is extremely suited as a document production environment.

The adaptable SciTE texteditor for example offers the following features:

- syntax highlighting for tex, lua and xml files
- document previewing after processing the textfile at hand
- syntax and error checking

People who are responsible for the production of educational textbooks and technical manuals or the production of bulk paper materials will applaud the features of ConTeXt that are listed below:

- the automatic placing of images, formulas, tables and other textblocks
- the automatic generation of lists of abbreviations and synonyms
- the automatic numbering of footnotes
- the correct and automatic placing of footers and headers
- the consistent make up of enumerations and subenumerations
- the consistent make up of legends combined with formulas
- the application of multiple subject registers in order to create accessible documents
- the automatic generation of text-text-, text-image-, text-formula-references (inter- and intra document references)
- the generation of image-, table- and formula-overviews
- the consistent use of tools to *emphasize* textelements
- the projectwise management of cohesive texts
- the automatic application of marginwords
- the use of multi columns in a text
- the use of textblocks that can be reused
- the use of text resources in different documents
- the automatic and correct hyphenation in multi lingual documents
- the use of colors in texts
- the simple change of layout while consistency is automatically controlled
- the generation of multiple tables of content in order to create accessible texts
- the automatic numbering of definitions, textblocks etc.
- the automatic numbering of tables, images, formulas etc.
- the consistent definition and generation of (extreme) tables and chemical content
- the direct processing of XML or otherwise structured content
- the generation of typographic enhancements like backgrounds, shades etc.

ConTeXt supports the PDF-format for publishing on the web. This means that all references that are produced during textprocessing with ConTeXt are automatically translated in hyperlinks. The PDF-document is then completely interactive and can be read by Acrobat Reader or other PDF viewers. ConTeXt has a number of standard navigational tools that can easily be activated by two or three ConTeXt-commands. The electronic version of the document is ready for web distribution.

User manuals for ConTeXt can be found at <http://www.pragma-ade.com/overview.htm> and a how-to and example repository at <http://wiki.contextgarden.net>. Furthermore users can subscribe to the ConTeXt mailing list at ntg-context@ntg.nl.