



# Manual for LINUX LIBERTINE with X<sub>Ǝ</sub>TEX

Advantages of XeTeX over classic LaTeX, examples of configuration  
**Deutsche Version ebenfalls erhältlich.**

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Berlin, den 21. März 2009

# Inhaltsverzeichnis

1	Advantages of XeTeX	3
2	Commands	3
3	Choosing OpenType-features	4
3.1	Letters: . . . . .	4
3.2	Numbers/Figures: . . . . .	4
3.3	Ligatures: . . . . .	4
4	Links	4
5	Appendix	5

# 1 Advantages of XeTeX

- Full Unicode-support. You can enter all Unicode-Glyphs directly into the source code.
- Simple usability of TrueType- and OTF-Fonts
- Full OpenType-support:
  - automatic substitution of standard activated OpenType-features, i.e. ligatures such as ff, fi, ch, ck, fl,ffi, ffl,fb, fh, ...
  - shifting from Stylistic Sets, i.e. old style figures, proportional figures, ÄÖÜ as trema-letters, substitution of german ß with ss
  - true GPOS-kerning

## 2 Commands

The XeTeX-interpreter is being invocated via *xelatex* instead of *latex* or *pdflatex*, example:

```
xelatex Document.tex
```

The output is a PDF-file, ergo analog to our example as Dokument.pdf

Because the interpreter needs to know wich fonts to use and because XeTeX needs some special packages, the document heading looks a little bit different from usual. Following commands should be entered into the heading:

```
\usepackage{xunicode}  
\usepackage{fontspec}  
\usepackage{xltextra}
```

In contrast, the definition of the input encoding (inputenc) is obsolete, because XeTeX considers UTF-8. Some examples found in the internet begin with following META-information:

```
%!TEX TS-program = xetex  
%!TEX encoding = UTF-8 Unicode
```

though this doesn't seem to be obligatory.

There are different possibilities to tell XeTeX, which fonts to use locally or globally. We do this in the heading via:

```
\setromanfont[Mapping=tex-text]{Linux Libertine}  
\setsansfont[Mapping=tex-text]{Myriad Pro}  
\setmonofont[Mapping=tex-text]{Courier New}
```

As a consequence we get Linux Libertine as main font and define Myriad Pro as sansserif (i.e. for titles) as well as Courier New as monospaced (i.e. for source-texts). The formation during the document can be done via `\setromanfont`, `\setsansfont` and `\setmonofont`. If you want to set certain options (which we list and describe later on) globaly, you can do that by adding the definition to the one above. Example: You want to have Old Style Figures for the entire document and therefore define the following.

```
\setromanfont[Mapping=tex-text, Numbers=OldStyle]{Linux Libertine O}
```

## 3 Choosing OpenType-features

### 3.1 Letters:

Small capitals as in „LIBERTINE“ can be activated via

```
{\addfontfeature{Letters=SmallCaps} Libertine}
```

As option can also be used: *Uppercase* and *UppercaseSmallCaps*.

Style-Sets such as for „ÄÖÜ“ instead of ÄÖÜ can be activated via

```
{\addfontfeature{Variant=01} ÄÖÜ}
```

Further sets in Libertine are *02* for kalligraphite K und R as well as *03* for the substitution of ß/ß with ss/SS.

### 3.2 Numbers/Figures:

Oldstyle or lowercase numbers such as 1234567890 can be activated via:

```
{\addfontfeature{Numbers=OldStyle}1234567890}
```

Further options are *Monospaced* for table-numbers (default), *Proportional* for proportional figures (useful in ordinary text), *Lowercase/OldStyle* as above, *SlashedZero* resp. *NoSlashedZero* for a/no slashed zero.

Exponents with true Indices<sup>1</sup>: 1234567890 L<sub>ibertine</sub>

```
{\addfontfeature{VerticalPosition=Superior}1234567890 Libertine}
```

Inferiors with true Indices: 1234567890 L<sub>ibertine</sub>

```
{\addfontfeature{VerticalPosition=ScientificInferior}1234567890 Libertine}
```

True fractures as 1/3:

```
{\addfontfeature{Fractions=On} 1/3}
```

### 3.3 Ligatures:

Standard ligatures are activated by default, i.e. ff, fi, Th, etc... Historical ligatures such as „st“ und „ct“ can be activated via

```
{\addfontfeature{Ligatures=Historical}„st“ und „ct“}
```

 With the option *NoCommon* you can deactivate standard ligatures (what we do not recommend).

You'll find the source code of this article in the appendix.

## 4 Links

Linux Libertine: <http://linuxlibertine.sf.net>

XeTeX-Homepage: <http://scripts.sil.org/xetex>

XeTeX-Tutorial (english): <http://xml.web.cern.ch/XML/lgc2/xetexmain.pdf>

Tex-Live-Distribution: <http://tug.org/texlive/>

---

<sup>1</sup>as long as available in Libertine, i.e. here not for „L“

## 5 Appendix

The XeTeX version is: 0.996

Source-code of this article as example:

Listing 1: Quelltext dieser Datei

```
%!TEX TS-program = xetex
%!TEX encoding = UTF-8 Unicode
%%-----Definitionen-----
\documentclass[a4paper,12pt]{scrartcl} % Koma-Script-Verwendung
%\documentclass[a4paper,12pt]{report} % klassisch ohne Koma-Script
%-----Packages-----
%\usepackage[utf8]{inputenc} % not needed by XeTeX -> must be UTF8
\usepackage{xunicode}% for XeTeX!
\usepackage{fontspec}% for XeTeX!
\usepackage{xltxtra} % for XeTeX!
\usepackage{url} % for XeTeX to break long URLs at line ending
\usepackage{ngerman} % choose your language here
\usepackage{multicol} % erlaubt es mit \begin und \end Teilbereiche
    mehrspaltig zu setzen
\usepackage{graphicx} % support of JPG, PNG und PDF-Grafics
\usepackage{wrapfig} % umflossene Grafiken im Fließtext
%\usepackage{verbatim}
\usepackage{pinyin}
\usepackage[german]{varioref} % better references
%\usepackage[wide]{sidecap} % ermöglicht seitliche Beschriftung von
    Abbildungen und Tabellen
\usepackage{ccaption} % Anpassungsmöglichkeiten für
    Abbildungsbezeichnungen
%\usepackage{capt-of}
\usepackage[colorlinks, linkcolor=blue]{hyperref} % refereces as links/
    URLs in the PDF
\usepackage{listings}
%\usepackage{ragged2e}
%\let\raggedright\RaggedRight
%\usepackage[newcommands,newparameters]{ragged2e} % bessere
    Zeilenumbrüche bes. bei \caption

%-----Font defenitions for Xetex
\defaultfontfeatures{Scale=MatchLowercase}% to adjust all used fonts to
    the same x-height => Harmonization
%\setmainfont[Mapping=tex-text]{Linux Libertine}%
\setromanfont[Mapping=tex-text]{Linux Libertine O}%
\setsansfont[Mapping=tex-text]{Linux Biolinum O}%
\setmonofont[Mapping=tex-text, Scale=0.9]{Courier New}%
%%-----Formatierungen-----
\setlength{\marginparwidth}{0cm}
\setlength{\oddsidemargin}{0cm}
\setlength{\evensidemargin}{0cm}
\setlength{\textwidth}{15cm}
\setlength{\textheight}{24cm}
\setlength{\topmargin}{-1cm}
\setlength{\parindent}{0pt} %<-----
%\setlength{\parskip}{1ex} %<-----
%%\setlength{\baselineskip}{1.2ex}
```

```

%\pagestyle{headings}
% ccpation provides this capability
% Change the format of a figure caption
% For more options see the package documentation
\captionnamefont{\bfseries\footnotesize}
\captiontitlefont{\footnotesize} %%\sffamily
%\captionstyle{\RaggedRight}
%% \captiondelim{ — }
%% \hangcaption
%%—————Dokumentvariablen—————
\newcommand{\Autor}{Philipp Henning Poll}

%%—————Silbentrennung: Definitionen —————
%\showhyphens{Wort}%%—zum Anzeigen von Trennstellen im Wort {}
\hyphenation{Haus Holz—ze—ment—dach Ra—sen}

%%—————Dokument starts here—————
\begin{document}
\begin{center}%
\thispagestyle{empty}
\includegraphics[width=4cm]{Signet.pdf}
\huge{Manual for\ \textsc{Linux Libertine} with \XeTeX }\newline
\large{Advantages of XeTeX over classic LaTeX, examples of
configuration}
{\color{red} Deutsche Version ebenfalls erhältlich.}
\vfil
\normalsize
\textsc \Autor\
Libertine Open Fonts Projekt\
\begin{footnotesize} \url{http://linuxlibertine.sf.net}\end{
footnotesize}\
Berlin, den \today
\end{center}%

\newpage
\tableofcontents
\newpage

\section{Advantages of XeTeX}

\begin{itemize}
\item Full Unicode–support. You can enter all Unicode–Glyphs directly
into the source code.
\item Simple usability of TrueType– and OTF–Fonts
\item Full OpenType–support:
\begin{itemize}
\item automatic substitution of standard activated OpenType–
features, i.e. ligatures such as ff, fi, ch, ck, fl, ffi,
ffl, fb, fh, ...
\item shifting from Stylistic Sets, i.e. old style figures,
proportional figures, ÄÖÜ as trema–letters, substitution
of german ß with ss
\item true GPOS–kerning
\end{itemize}
\end{itemize}

```

```
\end{itemize}
```

```
\section{Commands}
```

The XeTeX–interpreter is being invoked via `\textit{xelatex}` instead of `\textit{latex}` or `\textit{pdflatex}`, example:

```
\begin{verbatim}
xelatex Document.tex
\end{verbatim}
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though this doesn't seem to be obligatory.

There are different possibilities to tell XeTeX, which fonts to use locally or globally. We do this in the heading via:

```
\begin{verbatim}
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\setsansfont[Mapping=tex–text]{Myriad Pro}
\setmonofont[Mapping=tex–text]{Courier New}
\end{verbatim}
```

As a consequence we get Linux Libertine as main font and define Myriad Pro as sansserif (i.e. for titles) as well as Courier New as monospaced (i.e. for source–texts).

The formation during the document can be done via `\verb|\setromanfont|`, `\verb|\setsansfont|` and `\verb|\setmonofont|`.

If you want to set certain options (which we list and describe later on) globally, you can do that by adding the definition to the one above. Example: You want to have Old Style Figures for the entire document and therefore define the following.

```
\begin{verbatim}
\setromanfont[Mapping=tex–text, Numbers=OldStyle]{Linux Libertine O}
\end{verbatim}
```

```
\section{Choosing OpenType–features}
```

```
\subsection{Letters:}
```

Small capitals as in `{\addfontfeature{Letters=SmallCaps} „Libertine}`  
can be activated via `\\ \verb|{\addfontfeature{Letters=SmallCaps}`  
`Libertine}|\\`

As option can also be used: `\textit{Uppercase}` and `\textit{UppercaseSmallCaps}`.

Style-Sets such as for `{\addfontfeature{Variant=01} „ÄÖÜ}` instead of  
ÄÖÜ can be activated via `\\ \verb|{\addfontfeature{Variant=01} ÄÖÜ}`  
`|\\`

Further sets in Libertine are `\textit{02}` for kalligraphite K und R as  
well as `\textit{03}` for the substitution of ßß/ with ss/SS.

`\subsection{Numbers/Figures:}`

Oldstyle or lowercase numbers such as `{\addfontfeature{Numbers=OldStyle}`  
`}1234567890}` can be activated via: `\\`

`\verb|{\addfontfeature{Numbers=OldStyle}1234567890}|\\`

Further options are `\textit{Monospaced}` for table-numbers (default),  
`\textit{Proportional}` for proportional figures (useful in ordinary text  
) ,

`\textit{Lowercase/OldStyle}` as above, `\textit{SlashedZero}` resp. `\`  
`textit{NoSlashedZero}` for a/no slashed zero.

Exponents with true Indices `\footnote{as long as available in Libertine ,`  
i.e. here not for „L}: `{\addfontfeature{VerticalPosition=Superior}`  
`}1234567890 Libertine}|\\`

`\verb|{\addfontfeature{VerticalPosition=Superior}1234567890 Libertine}`  
`|\\`

Inferiors with true Indices:

`{\addfontfeature{VerticalPosition=ScientificInferior}1234567890`  
`Libertine}|\\`

`\verb|{\addfontfeature{VerticalPosition=ScientificInferior}1234567890`  
`Libertine}|\\`

True fractures as

`{\addfontfeature{Fractions=On} 1/3}:\\`

`\verb|{\addfontfeature{Fractions=On} 1/3}|`

`\subsection{Ligatures:}`

Standard ligatures are activated by default, i.e. ff, fi, Th, etc...

Historical ligatures such as:

`{\addfontfeature{Ligatures=Historical,}“st und „ct}` can be activated  
via `\\`

`\verb|{\addfontfeature{Ligatures=Historical,}“st und „ct}|`

With the option `\textit{NoCommon}` you can deactivate standard ligatures  
(what we do not recommend).'

You'll find the source code of this article in the appendix.

`\section{Links}`



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TeX-Live-Distribution: `\url{http://tug.org/texlive/}`

`\section{Appendix}`

The `\XeTeX` version is: `\the\XeTeXversion\XeTeXrevision`

Source-code of this article as example:

```
\begin{footnotesize}
\lstset{language=[LaTeX]TeX,commentstyle=\color{cyan},linewidth=15cm,
breaklines=true,extendedchars=true}
\lstinputlisting[label=Codebeispiel,caption=Quelltext dieser Datei]{
Libertine-XeTeX-EN.tex}
\end{footnotesize}
```

`%%` 

---

 `End` 

---

`\end{document}`