LaTeX Support for Linux Libertine and Biolinum Fonts

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1 Introduction

This package provides support for use of the Linux Libertine and Linux Biolinum families of fonts in LaTeX. Most features are usable with LaTeX and `dvips`, pdfLaTeX, xeLaTeX and luaLaTeX; the features in Section 5 are only usable with xeLaTeX or luaLaTeX. This package compatibly replaces several earlier packages (`libertine-type1`, `biolinum-type1`, `libertine`) and should provide partial compatibility with the obsolete `libertineotf` and `libertine-legacy` packages.

2 Installation

To install this package on a TDS-compliant TeX system, download the file

`tex-archive/install/fonts/libertine.tds.zip`

and unzip at the root of an appropriate `texmf` tree, likely a personal or local tree. If necessary, update the file-name database (e.g., `texhash texmf`). Update the font-map files by enabling the Map file `libertine.map`.

3 Basic Usage

For most purposes, simply add

```
\usepackage{libertine}
```

to the preamble of your document. This will activate Libertine as the main (seriffed) text font, Biolinum as the sans font, and (from January 2013) LibertineMono as the monospaced font. It is recommended that the font encoding be set to `T1` or `LY1` but the default `OT1` encoding is also supported. Available shapes in all series (except `tt`, which only has `it`) include:

`it`	italic
`sc`	small caps
`scit`	italic small caps

Slanted variants are not supported; the designed italic variants will be automatically substituted. The exceptions are the monospaced font and the bold series of Biolinum, for which designed italics are not currently available. Artificially slanted variants have been generated and treated as if they were italic.

To activate Libertine (without Biolinum), use the `libertine` (or `rm`) option. Similarly, to activate Biolinum (without Libertine) use the `biolinum` (or `sf` or `ss`) option. To use Biolinum as the main text font (as well as the sans font), use the option `sfdefault`. Use the `mono=false` (or `tt=false`) option to suppress activating LibertineMono. To activate single font families, use one or more of

```
\usepackage{libertineRoman}

\usepackage{libertineMono}

\usepackage{biolinum}
```

4 Advanced Usage

LuaLaTeX and xeLaTeX users who might prefer to use Type 1 fonts or who wish to avoid `fontspec` may use the `type1` (or `nofontspec`) option. The `libertine-type1.sty`, `biolinum-type1.sty` and `libertineMono-type1.sty` packages provide compatibility with older packages. For legacy documents that use only basic facilities of `libertineotf`, a wrapper package `libertineotf.sty` is provided. The following features of the original `libertine` or `libertineotf` packages are *not* supported:

- font-features such as `Ligatures` or `Scale` as option parameters
- the Outline or Shadow fonts
- commands `\Lnnum`, `\Lpnum`, `\Lcnum`, etc.
- environments `Ltable` and `libertineenumerate`

If your documents use any of the features listed above, you may have to continue to use the `libertineotf` package (which is still available from CTAN) or access the OpenType fonts directly using `fontspec`.

The following options are available in all styles (except monospaced):

`oldstyle` (`osf`)	old-style figures
`lining` (`nf`, `lf`)	lining figures
`proportional` (`p`)	varying-width figures
`tabular` (`t`)	fixed-width figures

The defaults (from January 2013) are `lining` and `tabular`. These apply to both Libertine and Biolinum; to change the default figure style of just the Biolinum (sans) fonts, use options

`sflining` (`sflf`) or `sfoldstyle` (`sfosf`, `osfss`)

`sftabular` (`sft`) or `sfproportional` (`sfp`)

The `semibold` (`sb`) option will enable use of the semi-bold series of Libertine; this has no effect on the Biolinum fonts, for which there is no semi-bold variant. The options `scale=`<*number*> (or `scaled=`<*number*>) will scale the Biolinum fonts but have no effect on the Libertine fonts. Similarly, the options `ttscale=`<*number*> (or `ttscaled=`<*number*>) will scale the LibertineMono font. Any of the "Boolean" options, such as `osf`, may also be used in the form `osf=true` or `osf=false`.

The option `defaultfeatures=...` allows the user to add default OpenType features; for example, `defaultfeatures={Variant=01}` will force use of the Stylistic Set 1 variant glyphs.

Commands `\oldstylenums{...}` and `\oldstylenumsf{...}` are defined to allow for local use of old-style figures in Libertine and Biolinum, respectively, if lining figures is the default, and similarly `\liningnums{...}` and `\liningnumsf{...}`.

Similarly, commands `\tabularnums{...}` and `\tabularnumsf{...}` are defined to allow local use of monospaced figures in Libertine or Biolinum, respectively,

if proportional figures is the default, and similarly `\proportionalnums{...}` and `\proportionalnumsf{...}`.

Superior numbers (for footnote markers) are available using `\sufigures` or `\textsu{...}`.

Command `\useosf` switches the default figure style for Libertine and Biolinum to oldstyle figures; this is primarily for use *after* calling a math package (such as `newtxmath` with the `libertine` option) with lining figures as the default.

The following macros select the font family indicated:

`\libertine`	Libertine
`\libertineSB`	Libertine with semibold
`\libertineOsF`	Libertine with oldstyle figures
`\libertineLF`	Libertine with lining figures
`\libertineDisplay`	Libertine Display
`\libmono`	Libertine Monospaced
`\libertineInitial`	Libertine Initials
`\biolinum`	Biolinum
`\biolinumOsF`	Biolinum with oldstyle figures
`\biolinumLF`	Biolinum with lining figures

Macro `\libertineInitialGlyph{...}` produces a glyph in the Libertine Initial font; Appendix C has a table of some of the glyphs.

5 OpenType Fonts

The features in this section are only available to xeLaTeX and luaLaTeX users.

Macros `\libertineGlyph{...}` and `\biolinumGlyph{...}` produce the glyph named in the argument in the Libertine or Biolinum font, respectively; for example, in regular-weight and upright-shape, `\libertineGlyph{seven.cap}` and `\libertineGlyph{uniE10F}` both produce a lining 7 that matches the height of capital letters, as in

K7L 3N6

Similarly, `\biolinumKeyGlyph{...}` produces the named glyph in the Biolinum Keyboard font; for example: `\biolinumKeyGlyph{seven}` produces 7. A large number of macros of the form `\LKey`...or `\LMouse`...are provided to simplify production of glyphs in the Biolinum Keyboard font; see Appendix A. Appendix B has a table of the entire Linux Biolinum Keyboard font, with corresponding glyph name and codepoint.

The directory `/fonts/opentype/public/libertine` has the fonts used for these features, as follows:

File name	Internal name	Description
LinBiolinum_RBO.otf	LinBiolinumOBO	sans serif bold italic (oblique)
LinBiolinum_RB.otf	LinBiolinumOB	sans serif bold
LinBiolinum_RI.otf	LinBiolinumOI	sans serif italic
LinBiolinum_R.otf	LinBiolinumO	sans serif regular
LinLibertine_RBI.otf	LinLibertineOBI	bold italic
LinLibertine_RB.otf	LinLibertineOB	bold
LinLibertine_RI.otf	LinLibertineOI	italic
LinLibertine_R.otf	LinLibertineO	regular
LinLibertine_RZI.otf	LinLibertineOZI	semibold italic
LinLibertine_RZ.otf	LinLibertineOZ	semibold
LinLibertine_MBO.otf	LinLibertineMOBO	mono bold italic (oblique)
LinLibertine_MB.otf	LinLibertineMOB	mono bold
LinLibertine_MO.otf	LinLibertineMOO	mono italic (oblique)
LinLibertine_M.otf	LinLibertineMO	mono
LinBiolinum_K.otf	LinBiolinumOKb	keyboard
LinLibertine_I.otf	LinLibertineIO	decorative capitals
LinLibertine_DR.otf	LinLibertineDisplayO	a display (titling) font

6 Concluding Remarks

For compatible mathematics, it is recommended to use

```
\usepackage[libertine]{newtxmath}
```

with pdfLaTeX and

```
\usepackage{unicode-math}
\setmathfont{texgyrepagellamath-regular.otf}
```

with xeLaTeX or luaLaTeX.

The original OpenType fonts were created by Philipp H. Poll (gillian@linuxlibertine.org) and are licensed under the terms of the GNU General Public License (Version 2, with font exception) and under the terms of the Open Font License. For details look into the doc directory of the distribution or at

http://www.linuxlibertine.org/

The Glyph and KeyCap support was adapted from the original libertine package by Michael Niedermair.

Three of the Libertine fonts were modified by Michael Sharpe (msharpe@ucsd.edu) using fontforge to correct minor problems, including adding three missing ligatures (***fl, ffl, ffi***) to the bold-italic font.

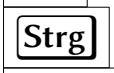
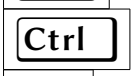
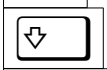
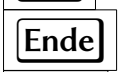
The Type 1 fonts were created using cfftot1 or fontforge. The internal font-family names of the Type 1 fonts have been changed to Linux Libertine T and Linux Biolinum T to avoid interfering with xeLaTeX users who access system fonts.

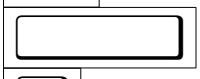
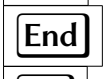
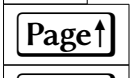
The support files were created using autoinst. The support files are licensed under the terms of the LaTeX Project Public License. See Appendix D for more detailed discussion of the implementation.

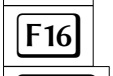
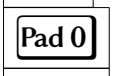
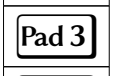
Thanks to Herbert Voss, Patrick Gundlach, Silke Hofstra, Marc Penninga, Michael Sharpe, Denis Bitouzé, and Khaled Hosny for their assistance. The maintainer of this package is Bob Tennent (rdt@cs.queensu.ca)

A Biolinum KeyCap Macros

A.1 Special Keys

Tux	\LKeyTux	
Win	\LKeyWin	
Menu	\LKeyMenu	
Strg	\LKeyStrg	
Ctrl	\LKeyCtrl	
Alt	\LKeyAlt	
AltGr	\LKeyAltGr	
Shift	\LKeyShift	
Enter	\LKeyEnter	
Tab	\LKeyTab	
CapsLock	\LKeyCapsLock	
Pos	\LKeyPos	
Entf	\LKeyEntf	
Einf	\LKeyEinf	
Leer	\LKeyLeer	
Esc	\LKeyEsc	
Ende	\LKeyEnde	
Back	\LKeyBack	
Up	\LKeyUp	
Dwon	\LKeyDown	
Left	\LKeyLeft	
Right	\LKeyRight	
PgUp	\LKeyPgUp	
PgDown	\LKeyPgDown	

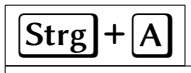
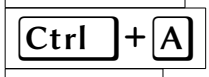
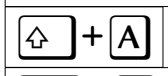
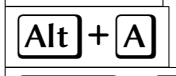
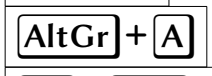
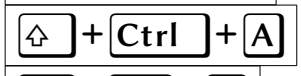
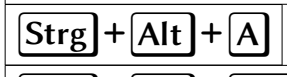
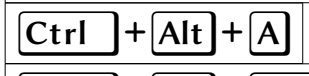
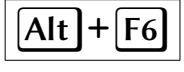
At	\LKeyAt	
Fn	\LKeyFn	
Home	\LKeyHome	
Del	\LKeyDel	
Space	\LKeySpace	
ScreenUp	\LKeyScreenUp	
ScreenDown	\LKeyScreenDown	
Ins	\LKeyIns	
End	\LKeyEnd	
GNU	\LKeyGNU	
PageUp	\LKeyPageUp	
PageDown	\LKeyPageDown	
Command	\LKeyCommand	
OptionKey	\LKeyOptionKey	
F1	\LKeyF{1}	
F2	\LKeyF{2}	
F3	\LKeyF{3}	
F4	\LKeyF{4}	
F5	\LKeyF{5}	
F6	\LKeyF{6}	
F7	\LKeyF{7}	
F8	\LKeyF{8}	
F9	\LKeyF{9}	
F10	\LKeyF{10}	
F11	\LKeyF{11}	
F12	\LKeyF{12}	
F13	\LKeyF{13}	

F14	\LKeyF{14}	
F15	\LKeyF{15}	
F16	\LKeyF{16}	
PAD0	\LKeyPad{1}	
PAD1	\LKeyPad{1}	
PAD2	\LKeyPad{2}	
PAD3	\LKeyPad{3}	
PAD4	\LKeyPad{4}	
PAD5	\LKeyPad{5}	
PAD6	\LKeyPad{6}	
PAD7	\LKeyPad{7}	
PAD8	\LKeyPad{8}	
PAD9	\LKeyPad{9}	
PAD10	\LKeyPad{10}	
PAD11	\LKeyPad{11}	
PAD12	\LKeyPad{12}	
PAD13	\LKeyPad{13}	
PAD14	\LKeyPad{14}	

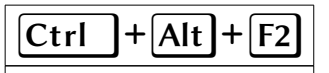
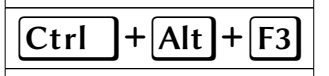
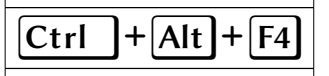
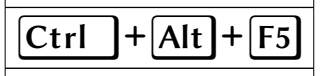
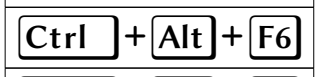
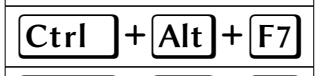
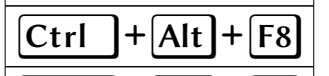
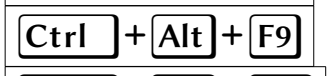
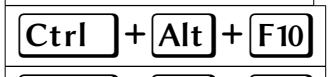
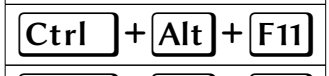
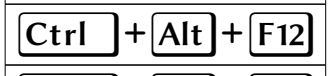
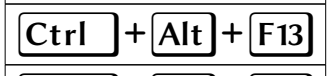
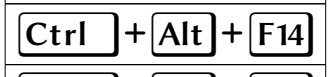
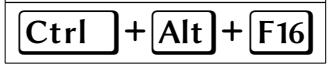
A.2 General Keyboard

0	`\LKey{zero},\LKey{0}`	
9	`\LKey{nine},\LKey{9}`	
A	`\LKey{A}`	
Z	`\LKey{Z}`	

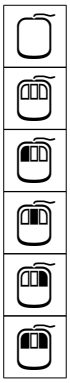
A.3 Keyboard Shortcuts

Strg-A	`\LKeyStrgX{A}`	
Ctrl-A	`\LKeyCtrlX{A}`	
Shift-A	`\LKeyShiftX{A}`	
Alt-A	`\LKeyAltX{A}`	
AltGr-A	`\LKeyAltGrX{A}`	
Shift-Strg-A	`\LKeyShiftStrgX{A}`	
Shift-Ctrl-A	`\LKeyShiftCtrlX{A}`	
Shift-Alt-A	`\LKeyShiftAltX{A}`	
Shift-AltGr-A	`\LKeyShiftAltGrX{A}`	
Strg-Alt-A	`\LKeyStrgAltX{A}`	
Strg-Alt-Entf	`\LKeyStrgAltEnt`	
Strg-Alt-Entf	`\LKeyReset`	
Ctrl-Alt-A	`\LKeyCtrlAltX{A}`	
Ctrl-Alt-Entf	`\LKeyCtrlAltEnt`	
Alt-F1	`\LKeyAltF{1}`	
Alt-F2	`\LKeyAltF{2}`	
Alt-F3	`\LKeyAltF{3}`	
Alt-F4	`\LKeyAltF{4}`	
Alt-F5	`\LKeyAltF{5}`	
Alt-F6	`\LKeyAltF{6}`	

Alt-F7	\LKeyAltF{7}	Alt + F7
Alt-F8	\LKeyAltF{8}	Alt + F8
Alt-F9	\LKeyAltF{9}	Alt + F9
Alt-F10	\LKeyAltF{10}	Alt + F10
Alt-F11	\LKeyAltF{11}	Alt + F11
Alt-F12	\LKeyAltF{12}	Alt + F12
Alt-F13	\LKeyAltF{13}	Alt + F13
Alt-F14	\LKeyAltF{14}	Alt + F14
Alt-F15	\LKeyAltF{15}	Alt + F15
Alt-F16	\LKeyAltF{16}	Alt + F16
Strg-Alt-F1	\LKeyStrgAltF{1}	Strg + Alt + F1
Strg-Alt-F2	\LKeyStrgAltF{2}	Strg + Alt + F2
Strg-Alt-F3	\LKeyStrgAltF{3}	Strg + Alt + F3
Strg-Alt-F4	\LKeyStrgAltF{4}	Strg + Alt + F4
Strg-Alt-F5	\LKeyStrgAltF{5}	Strg + Alt + F5
Strg-Alt-F6	\LKeyStrgAltF{6}	Strg + Alt + F6
Strg-Alt-F7	\LKeyStrgAltF{7}	Strg + Alt + F7
Strg-Alt-F8	\LKeyStrgAltF{8}	Strg + Alt + F8
Strg-Alt-F9	\LKeyStrgAltF{9}	Strg + Alt + F9
Strg-Alt-F10	\LKeyStrgAltF{10}	Strg + Alt + F10
Strg-Alt-F11	\LKeyStrgAltF{11}	Strg + Alt + F11
Strg-Alt-F12	\LKeyStrgAltF{12}	Strg + Alt + F12
Strg-Alt-F13	\LKeyStrgAltF{13}	Strg + Alt + F13
Strg-Alt-F14	\LKeyStrgAltF{14}	Strg + Alt + F14
Strg-Alt-F15	\LKeyStrgAltF{15}	Strg + Alt + F15
Strg-Alt-F16	\LKeyStrgAltF{16}	Strg + Alt + F16
Ctrl-Alt-F1	\LKeyCtrlAltF{1}	Ctrl + Alt + F1

Ctrl-Alt-F2	`\LKeyCtrlAltF{2}`	
Ctrl-Alt-F3	`\LKeyCtrlAltF{3}`	
Ctrl-Alt-F4	`\LKeyCtrlAltF{4}`	
Ctrl-Alt-F5	`\LKeyCtrlAltF{5}`	
Ctrl-Alt-F6	`\LKeyCtrlAltF{6}`	
Ctrl-Alt-F7	`\LKeyCtrlAltF{7}`	
Ctrl-Alt-F8	`\LKeyCtrlAltF{8}`	
Ctrl-Alt-F9	`\LKeyCtrlAltF{9}`	
Ctrl-Alt-F10	`\LKeyCtrlAltF{10}`	
Ctrl-Alt-F11	`\LKeyCtrlAltF{11}`	
Ctrl-Alt-F12	`\LKeyCtrlAltF{12}`	
Ctrl-Alt-F13	`\LKeyCtrlAltF{13}`	
Ctrl-Alt-F14	`\LKeyCtrlAltF{14}`	
Ctrl-Alt-F15	`\LKeyCtrlAltF{15}`	
Ctrl-Alt-F16	`\LKeyCtrlAltF{16}`	

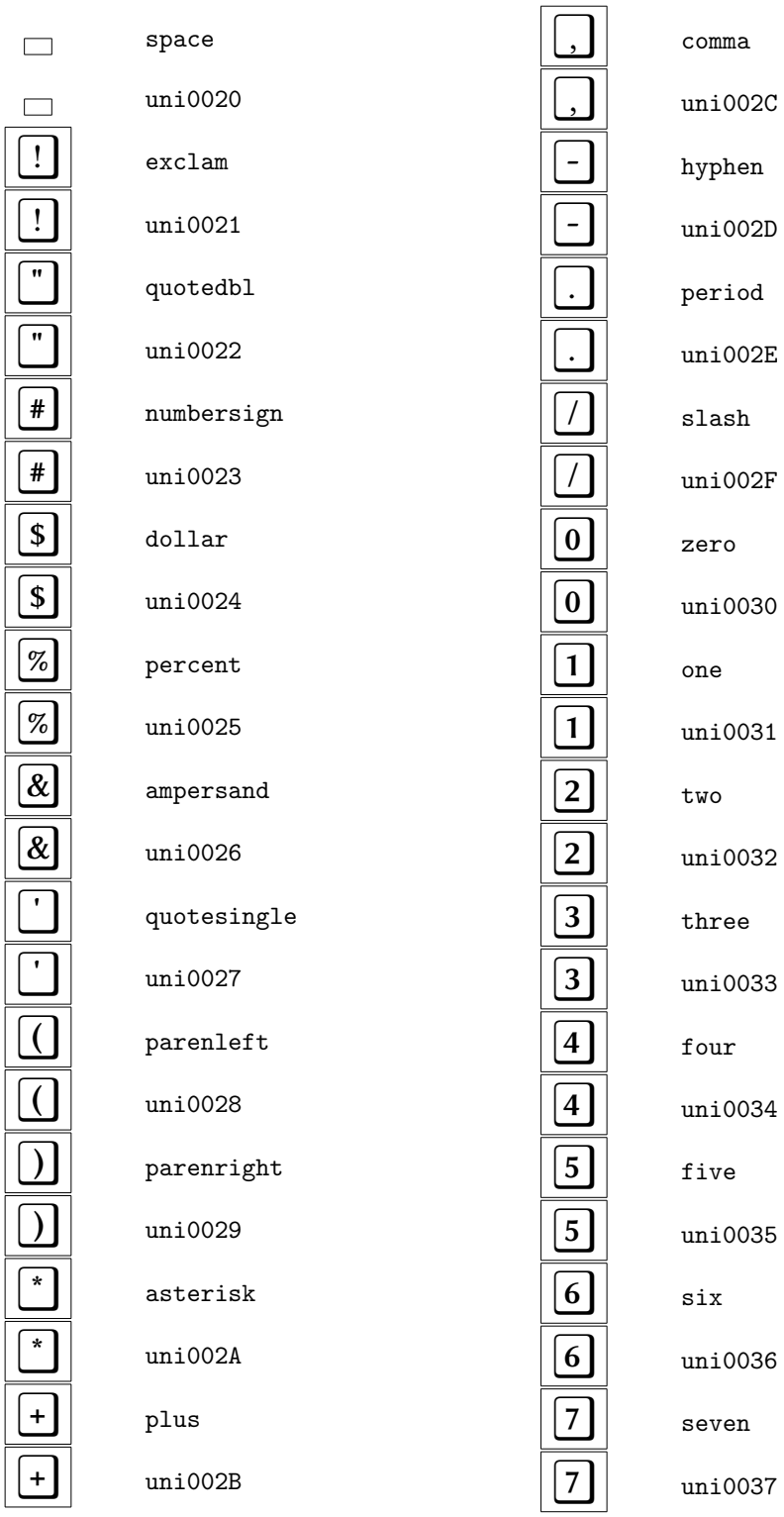
A.4 Mouse Buttons (Three-Button Mice)

Empty	\LMouseEmpty	
No	\LMouseN	
Left	\LMouseL	
Middle	\LMouseM	
Right	\LMouseR	
LeftRight	\LMouseLR	

A.5 Mouse Buttons (Two-Button Mice)

Empty	\LMouseIIEmpty	
No	\LMouseIIN	
Left	\LMouseIIL	
Right	\LMouseIIR	
LeftRight	\LMouseIILR	

B Linux Biolinum Keyboard Glyphs



8	eight
8	uni0038
9	nine
9	uni0039
:	colon
:	uni003A
;	semicolon
;	uni003B
<	less
<	uni003C
=	equal
=	uni003D
>	greater
>	uni003E
?	question
?	uni003F
@	at
@	uni0040
A	A
A	uni0041
B	B
B	uni0042
C	C
C	uni0043
D	D
D	uni0044
E	E
E	uni0045
F	F
F	uni0046
G	G
G	uni0047
H	H
H	uni0048
I	I
I	uni0049
J	J
J	uni004A
K	K
K	uni004B
L	L
L	uni004C
M	M
M	uni004D
N	N
N	uni004E
O	O
O	uni004F
P	P
P	uni0050

	Q
	uni0051
	R
	uni0052
	S
	uni0053
	T
	uni0054
	U
	uni0055
	V
	uni0056
	W
	uni0057
	X
	uni0058
	Y
	uni0059
	Z
	uni005A
	bracketleft
	uni005B
	backslash
	uni005C
	bracketright

	uni005D
	asciicircum
	uni005E
	underscore
	uni005F
	grave
	uni0060
	a
	uni0061
	b
	uni0062
	c
	uni0063
	d
	uni0064
	e
	uni0065
	f
	uni0066
	g
	uni0067
	h
	uni0068
	i
	uni0069

	j
	uni006A
	k
	uni006B
	l
	uni006C
	m
	uni006D
	n
	uni006E
	o
	uni006F
	p
	uni0070
	q
	uni0071
	r
	uni0072
	s
	uni0073
	t
	uni0074
	u
	uni0075
	v

	uni0076
	w
	uni0077
	x
	uni0078
	y
	uni0079
	z
	uni007A
	braceleft
	uni007B
	bar
	uni007C
	braceright
	uni007D
	asciitilde
	uni007E
	exclamdown
	uni00A1
	cent
	uni00A2
	sterling
	uni00A3
	currency
	uni00A4

yen

uni00A5

brokenbar

uni00A6

section

uni00A7

dieresis

uni00A8

guillemotleft

uni00AB

uni00AD

degree

uni00B0

plusminus

uni00B1

acute

uni00B4

uni00B5

periodcentered

uni00B7

cedilla

uni00B8

guillemotright

uni00BB

Agrave

uni00C0

Aacute

uni00C1

Acircumflex

uni00C2

Atilde

uni00C3

Adieresis

uni00C4

Aring

uni00C5

Ccedilla

uni00C7

Egrave

uni00C8

Eacute

uni00C9

Ecircumflex

uni00CA

Edieresis

uni00CB

Igrave

uni00CC

Iacute

uni00CD

Icircumflex

	uni00CE
	Idieresis
	uni00CF
	Eth
	uni00D0
	Ntilde
	uni00D1
	Ograve
	uni00D2
	Oacute
	uni00D3
	Ocircumflex
	uni00D4
	Otilde
	uni00D5
	Odieresis
	uni00D6
	multiply
	uni00D7
	Oslash
	uni00D8
	Ugrave
	uni00D9
	Uacute
	uni00DA

	Ucircumflex
	uni00DB
	Udieresis
	uni00DC
	Yacute
	uni00DD
	Thorn
	uni00DE
	germandbls
	uni00DF
	agrave
	uni00E0
	aacute
	uni00E1
	acircumflex
	uni00E2
	atilde
	uni00E3
	adieresis
	uni00E4
	aring
	uni00E5
	ae
	uni00E6
	ccedilla

	uni00E7
	egrave
	uni00E8
	eacute
	uni00E9
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	uni00EA
	edieresis
	uni00EB
	igrave
	uni00EC
	iacute
	uni00ED
	icircumflex
	uni00EE
	idieresis
	uni00EF
	eth
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	ntilde
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	ograve
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	oacute
	uni00F3

	ocircumflex
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	uni00F5
	odieresis
	uni00F6
	divide
	uni00F7
	oslash
	uni00F8
	ugrave
	uni00F9
	uacute
	uni00FA
	ucircumflex
	uni00FB
	udieresis
	uni00FC
	yacute
	uni00FD
	thorn
	uni00FE
	ydieresis
	uni00FF
	Amacron

	uni0100
	amacron
	uni0101
	Abreve
	uni0102
	abreve
	uni0103
	Aogonek
	uni0104
	aogonek
	uni0105
	Cacute
	uni0106
	cacute
	uni0107
	Ccircumflex
	uni0108
	ccircumflex
	uni0109
	Cdotaccent
	uni010A
	cdotaccent
	uni010B
	Ccaron
	uni010C
	ccaron
	uni010D
	Dcaron
	uni010E
	dcaron
	uni010F
	Dcroat
	uni0110
	dcroat
	uni0111
	Emacron
	uni0112
	emacron
	uni0113
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	uni0114
	ebreve
	uni0115
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	Eogonek
	uni0118
	eogonek

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	gcircumflex		uni0129
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	uni011E		imacron
	gbreve		uni012B
	uni011F		Ibreve
	Gdotaccent		uni012C
	uni0120		ibreve
	gdotaccent		uni012D
	uni0121		Iogonek
	Gcommaaccent		uni012E
	uni0122		iogonek
	gcommaaccent		uni012F
	uni0123		Idotaccent
	Hcircumflex		uni0130
	uni0124		dotlessi
	hcircumflex		uni0131
	uni0125		IJ

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	uni0133
	Jcircumflex
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	uni013D
	lcaron
	uni013E

	Ldot
	uni013F
	ldot
	uni0140
	Lslash
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	Nacute
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	nacute
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	Ncommaaccent
	uni0145
	ncommaaccent
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	Ncaron
	uni0147
	ncaron
	uni0148
	napostrophe
	uni0149
	Omacron
	uni014C
	omacron

	uni014D		Scircumflex
	Obreve		uni015C
	uni014E		scircumflex
	obreve		uni015D
	uni014F		Scedilla
	Ohungarumlaut		uni015E
	uni0150		scedilla
	ohungarumlaut		uni015F
	uni0151		Scaron
	Racute		uni0160
	uni0154		scaron
	racute		uni0161
	uni0155		Tcedilla
	Rcommaaccent		uni0162
	uni0156		tcedilla
	rcommaaccent		uni0163
	uni0157		Tcaron
	Rcaron		uni0164
	uni0158		tcaron
	rcaron		uni0165
	uni0159		Tbar
	Sacute		uni0166
	uni015A		tbar
	sacute		uni0167
	uni015B		Utilde

uni0168

utilde

uni0169

Umacron

uni016A

umacron

uni016B

Ubreve

uni016C

ubreve

uni016D

Uring

uni016E

uring

uni016F

Uhungarumlaut

uni0170

uhungarumlaut

uni0171

Uogonek

uni0172

uogonek

uni0173

Wcircumflex

uni0174

wcircumflex

uni0175

Ycircumflex

uni0176

ycircumflex

uni0177

Ydieresis

uni0178

Zacute

uni0179

zacute

uni017A

Zdotaccent

uni017B

zdotaccent

uni017C

Zcaron

uni017D

zcaron

uni017E

h.superior

uni02B0

hhook.superior

uni02B1

j.superior

uni02B2

r.superior

uni02B3

rturned.superior

uni02B4

rhookturned.superior

uni02B5

Rsmallinverted.superior

uni02B6

w.superior

uni02B7

y.superior

uni02B8

uni02B9

uni02BA

uni02BB

afii57929

uni02BC

afii64937

uni02BD

uni02BE

uni02BF

uni02C0

uni02C1

uni02C2

uni02C3

uni02C4

uni02C5

circumflex

uni02C6

caron

uni02C7

uni02C8

uni02C9

uni02CA

uni02CB

uni02CC

uni02CD

uni02CE

uni02CF

uni02D0

uni02D1

uni02D2

uni02D3

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breve

uni02D8

dotaccent

uni02D9

ring

uni02DA

ogonek

uni02DB

tilde

uni02DC

hungarumlaut

uni02DD

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uni02DF

gammalatin.superior

uni02E0

l.superior

uni02E1

s.superior

uni02E2

x.superior

uni02E3

glottalstopreversed.superior

uni02E4

uni02EC

uni02ED

uni02EE

gravecomb

uni0300

acutecomb

uni0301

uni0302

tildecomb

uni0303

uni0304

uni0305

uni0306

uni0307

uni0308

hookabovecomb

uni0309

uni030A

uni030B

uni030C

uni030D

uni030E

uni030F

uni0310

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uni0314

uni0315

uni0316

uni0317

uni0318

uni0319

uni031A

uni031B

uni031C

uni031D

uni031E

uni031F

uni0320

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uni0327

uni0328

uni0329

uni032A

uni032B

uni032C

uni032D

uni032E

uni032F

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	arrowdown
	uni2193
	arrowboth
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uni219B

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uni21C1

arrowdblleft

uni21D0

arrowdblup

uni21D1

arrowdblright

uni21D2

arrowdbldown

uni21D3

arrowdblboth

uni21D4

uni21D5

Nwarrow

uni21D6

Nearrow

uni21D7

Searrow

uni21D8

Swarrow

uni21D9

uni2318

uni2325

uni2326

uni2327

uni232B

uni237D

uni2380

uni2423

filledbox

uni25A0

H22073

uni25A1

triagup

uni25B2

uni25B3

uni25B6

uni25B7

triagdn

uni25BC

uni25BD

◀ uni25C0

◁ uni25C1

◆ uni25C6

◇ uni25C7

⊙ uni25C9

◊ lozenge

◊ uni25CA

○ circle

○ uni25CB

◎ uni25CE

● H18533

● uni25CF

◐ uni25D0

◑ uni25D1

◓ uni25D2

◒ uni25D3

◔ uni25D4

◴ uni25D5

◖ uni25D6

◗ uni25D7

◦ openbullet

◦ uni25E6

★ uni2605

uni2619

uni261B

uni261E

uni2627

uni262F

uni2639

uni263A

uni263B

☼ uni263C

☽ uni263D

☾ uni263E

☿ uni263F

♀ female

♀ uni2640

♁ uni2641

♂ male

♂ uni2642

♃ uni2643

♄ uni2644

♅ uni2645

♆ uni2646

♇ uni2647

♈ uni2648

♉ uni2649

♊ uni264A

♋ uni264B

♌ uni264C

♍ uni264D

♎ uni264E

uni264F

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uni2666

uni2669

musicalnote

uni266A

musicalnotedbl

uni266B

uni266C

uni2695

uni2698

uni26A2

uni26A3

uni26A4

uni26A5

uni26AD

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uni2777

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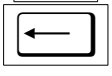
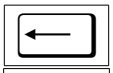
uniE13D

uniE168

 B_a_c_k


uniE16E

S_t_r_g

uniE170

A_l_t

uniE171

A_l_t_G_r

uniE172

C_t_r_l

uniE173

S_h_i_f_t

uniE174

T_a_b

uniE175

E_n_t_e_r

uniE176

C_a_p_s_l_o_c_k

uniE177

F_1

uniE178

F_2

uniE179

F_3

uniE17A

F_4

uniE17B

F_5

uniE17C

F_6

uniE17D

F_7

uniE17E

F_8

uniE17F

F_9

uniE180

F_1_0

uniE181

F_1_1

uniE182

F_1_2

uniE183

F_1_3

uniE184

F_1_4

uniE185

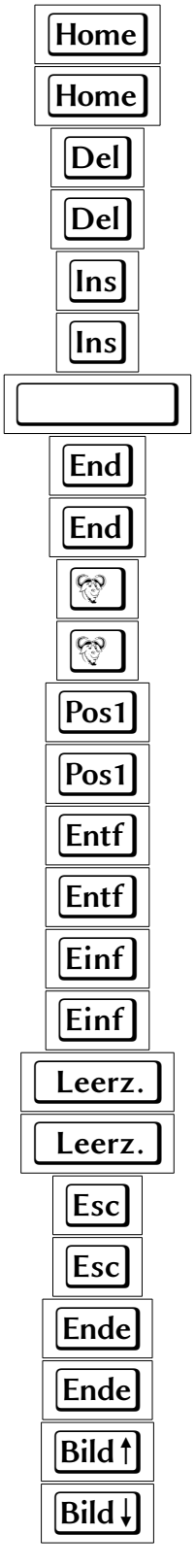
F_1_5

uniE186

F_1_6

uniE187

uniE188


Home
H_o_m_e
Home
uniE189
Del
D_e_l
Del
uniE18A
Ins
I_n_s
Ins
uniE18B
uniE18C
End
E_n_d
End
uniE18E
G_N_U
uniE190
Pos1
P_o_s_1
Pos1
uniE191
Entf
E_n_t_f
Entf
uniE192
Einf
E_i_n_f
Einf
uniE193
Leerz.
L_e_e_r
Leerz.
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uniE196
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uniE198
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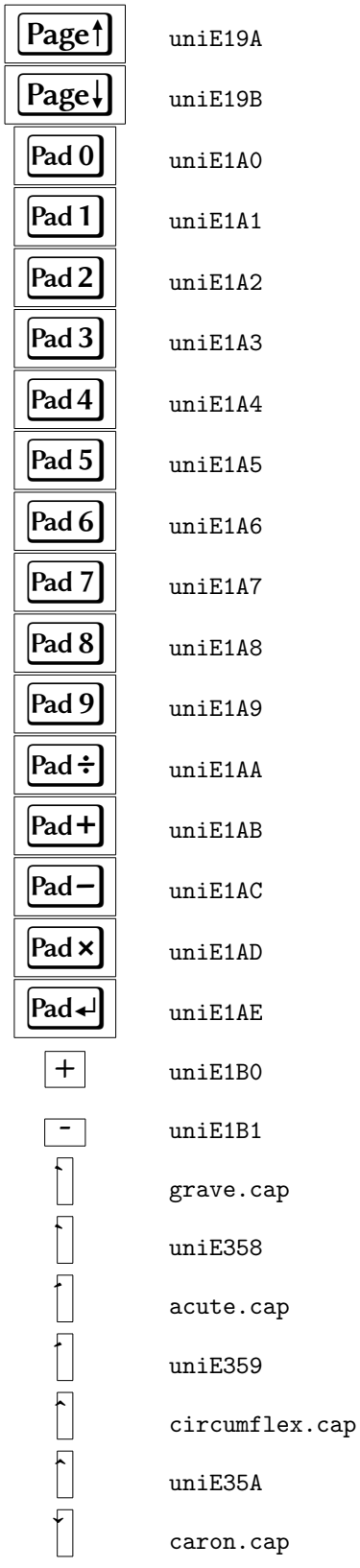
uniE199


Page
uniE19A
Page
uniE19B
Pad 0
uniE1A0
Pad 1
uniE1A1
Pad 2
uniE1A2
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Pad 4
uniE1A4
Pad 5
uniE1A5
Pad 6
uniE1A6
Pad 7
uniE1A7
Pad 8
uniE1A8
Pad 9
uniE1A9
Pad ÷
uniE1AA
Pad +
uniE1AB
Pad −
uniE1AC
Pad ×
uniE1AD
Pad
uniE1AE
+
uniE1B0
-
uniE1B1
grave.cap
uniE358
acute.cap
uniE359
circumflex.cap
uniE35A
caron.cap

uniE35B

breve.cap

uniE35C

hungarumlaut.cap

uniE35D

space_uni030F.cap

uniE35E

breveinvertedcmb.cap

uniE35F

breve.cyrcap

uniE360

breve.cyr

uniE361

dieresis.cap

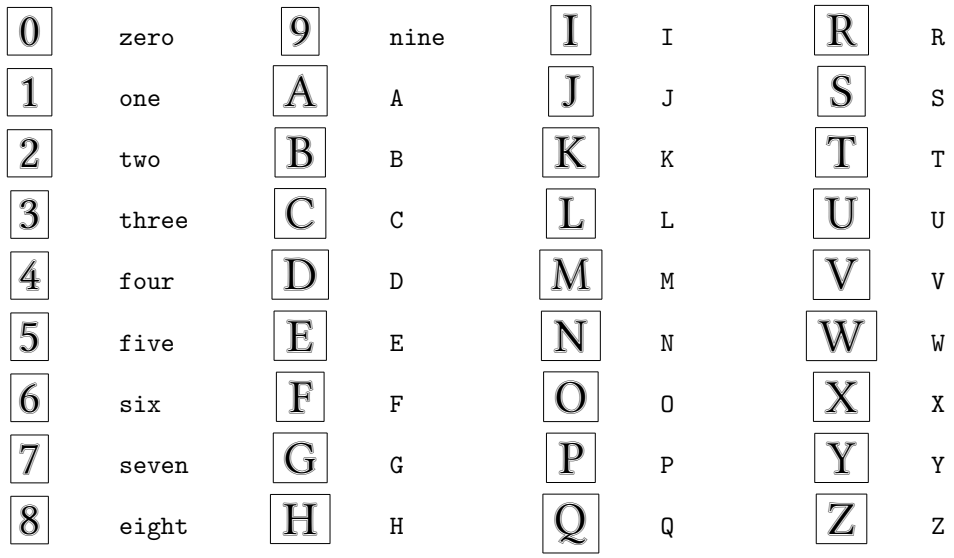
uniE362

hookabovecomb.cap

uniE363

uniFFFD

C Selected Libertine Initials



D Implementation Notes

D.1 Aims

Modern OpenType and TrueType fonts are not directly usable with traditional typesetting engines such as LaTeX or pdfLaTeX. On the other hand, many documents that use traditional font-selection mechanisms cannot be processed by emerging new technologies such as xeLaTeX and luaLaTeX. The primary aim of the `libertine` package is, as much as possible, to allow documents to use Linux Libertine and Biolinum fonts compatibly with *all* current LaTeX engines. Another aim is maintainability: it should be possible to update the package easily when updated fonts become available.

D.2 The Fonts

OpenType Linux Libertine and Biolinum fonts (with `otf` extensions) may be downloaded from `http://sourceforge.net/projects/linuxlibertine/files/linuxlibertine/`. There are a few problems with the current versions of the fonts (5.3.0).

- Currently, there is no bold-italic variant of the Biolinum family; an *ad hoc* solution is to use `fontforge` to generate an artificially slanted version of the bold variant. Note that the most recent version of `fontforge` must be used on Biolinum fonts; an earlier version will generate fonts with incorrect ex-height.
- Slanted (oblique) variants are not available from the upstream site. These could be generated easily but we have decided not to attempt to support slanted variants for the fonts; the italic (or fake-italic) variants will be silently substituted.
- The bold-italic variant of the Libertine family is missing several ligatures; the ligatures would be taken from the regular-weight italic variant, which is unacceptable. Michael Sharpe (`msharpe@ucsd.edu`) has generated the missing glyphs (***fl, ffl, ffi***) and added them to the `otf` file.
- Currently, Libertine Monospaced does not have bold, italic or bold-italic variants; `fontforge` has been used to generate artificially emboldened and/or slanted variants.
- When several of the fonts are opened in `fontforge`, warning messages are generated about errors in the glyph programs. Some of these are sufficient to cause failures or even crashes when conversion to Type 1 format is attempted using `cfftot1`. Michael Sharpe has corrected the most serious of these. In some cases, `fontforge` has been used to convert the format, as it is less sensitive than `cfftot1` to faulty glyph programs.

In some TeX distributions, the OpenType and Type 1 fonts are installed as system fonts, and xeLaTeX or luaLaTeX users may attempt to select the OpenType fonts directly by their Postscript FontName. If Type 1 versions with the *same* FontName have been installed, the latter may be selected by the system font-selection mechanism. To avoid this, it is appropriate to modify the FontNames of the `otf` fonts before converting to Type 1 format (but not *distribute* these re-named `otf` fonts). The Type 1 Libertine and Biolinum fonts distributed in this package have had the `O` (for Opentype) in their FontNames replaced by `T` (for Type 1) using `fontforge`. This font-renaming must be done *before* generating the LaTeX-support files, or else `dvi2ps` will fail.

D.3 Generation of Support Files

The `otftotfm` tool of the `lcdftypetools` package and the `autoinst` script of the `fontools` package are convenient tools for generating LaTeX support files for OpenType families. To generate

a texmf tree for the libertine package on a Unix-like system, one puts all the otf files to be supported for LaTeX or pdfLaTeX[1] into a directory, creates a texmf sub-directory and executes

```
autoinst -target=./texmf -encoding=OT1,T1,LY1,TS1 \
  -vendor=public -typeface=libertine -noupdmap    \
  -noswash -notitling -noornaments                \
  *.otf
```

Then move to the texmf directory and do

```
rm -rf fonts/pl fonts/vpl fonts/truetype fonts/type42
mv fonts/enc/dvips/public fonts/enc/dvips/libertine
mv fonts/map/dvips/public fonts/map/dvips/libertine
```

to delete irrelevant sub-directories and re-name directories as required by TeXLive.

A few additional steps are needed.

D.3.1 Renaming of the Encoding Files

otftotfm generates encoding files with filenames of the form a_xxxxxx; to avoid filename conflicts with other packages, the files have been re-named to have a distinctive prefix using the command

```
rename_enc libertine lbtn
```

executed in the texmf directory, where rename_enc is a PERL script in

```
doc/fonts/libertine
```

Then in fonts/map/dvips/libertine, the map files can be concatenated into a single file libertine.map and all instances of a_ changed to lbtn_; the original map files have been deleted.

D.3.2 Installation of the Fonts

The otf files after corrections (but before re-naming) are installed into the texmf tree in the following sub-directory:

```
fonts/OpenType/public/libertine/
```

The autoinst script will normally use cfftot1 to create pfb files with appropriate internal names and filenames; but if more than one font family has been processed or if cfftot1 runs into trouble, this may not happen. In that case, one must do the conversion font-by-font using either cfftot1 or fontforge; the appropriate internal names and filenames are as specified in libertine.map. The pfb files are installed into the texmf tree in the following sub-directory:

```
fonts/type1/public/libertine/
```

D.3.3 The fd Files

The autoinst script generates a large number of files with .fd extensions in the tex/latex/libertine/ directory. Recent versions will generate "silent substitution" rules for mapping sl to it and bx to b; if not, these have to be added by hand.

[1] Currently, all of the OpenType fonts except the Keyboard font are supported for LaTeX and pdfLaTeX.

D.3.4 The `sty` Files

The `autoinst` script generates files with `.sty` extensions in the `tex/latex/libertine/` directory for each of the font families; but these are useless for xeLaTeX and luaLaTeX users and have been deleted. A `libertine.sty` file has been generated "by hand" and is discussed in Section D.4.

D.4 `libertine.sty`

This file implements the support for both Type 1 and OpenType usage; the choice is initially determined by the processing engine, but as some xeLaTeX and luaLaTeX users may prefer to avoid `fontspec`, a `type1` (or `nofontspec`) option is provided to change this.

The `...@scale` commands are invoked in the `fd` files or when specifying fonts with `fontspec`; only the scale factors for Biolinum and Libertine Mono are adjustable using option parameters.

If the `sfdefault` option has been used, the `\familydefault` is set to the *current* value of `\sfdefault` (with no change to `\rmdefault`).

The use of `\newfontfamily` rather than `\addfontfeatures` avoids problems in the implementation of the latter for some fonts (including, unfortunately, Libertine).

For the Mono and Keyboard font families, the Ligature and SmallCap features must be turned off.

Commands to switch locally to oldstyle/lining/proportional/tabular numbers are defined; the definitions of `\oldstylenums` must deal with possible pre-existing definitions.

To implement the `\...Glyph` commands, it is necessary to, essentially, iterate through all the *defined* glyphs in the relevant OpenType font. This is implemented by creating files `LinLibertine_R.tex`, `\LinBiolinum_R.tex`, `LinBiolinum_K.tex` and `LinLibertine_I.tex` which declare the glyph name (when available), unicode code point, and glyph index for every defined glyph. These files are created by using `fontforge` to generate a "glyph map" file (extension `.g2n`) for the relevant font and then the small `C` program `doc/fonts/libertine/g2ntotex.c` will convert this into the required `.tex` file.

The final step in `libertine.sty` is to remove all default font features in `fontspec` in case other fonts will be activated by the user.

D.5 Additional `sty` Files

The `tex/latex/libertine/` directory also contains three "front-end" files `libertineotf.sty`, `libertine-type1.sty`, and `biolinum-type1.sty`, which provide partial compatibility with obsolete packages, primarily for legacy documents.