The Nimbus15 package

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Nimbus15 is derived from the Nimbus fonts, metric clones of Courier, Helvetica and Times, issued in 2015 by URW++ by way of Artifex, makers of Ghostscript. (The latest versions for 2015 appeared with an update to the gs distribution in October, 2015.) The novelty here is that there are now Greek and Cyrillic glyphs in all the Nimbus fonts. To summarize the changes from those supplied by Artifex and those in this distribution, aside from the trivial addition of cyrbreve (uniF6D4), low asterisk (uni204E) (zco only), visiblespace (uni2423) and dotlessj (uni0237) so in each typewritten font * is correctly rendered and the ot1 and ot2 encodings are complete in all cases:

- Courier clone:

  NimbusMono-Regular->zco-Light
  NimbusMono-Bold->zco-Bold
  NimbusMono-Oblique->zco-LightOblique
  NimbusMono-BoldOblique->zco-BoldOblique

  A new weight, intermediate between Light and Bold, was created with names
  zco-Regular, zco-Oblique
  The glyphs in Light, Regular and Bold have stem widths 41em, 64em and 100em respectively. A few glyphs required modification prior to and following the thickening process. The Greek glyphs support only monotonic Greek typography. Several Greek glyphs were modified from the originals, most importantly alpha (less fish-like), nu (curved, not v-shaped) and Phi (less tall.) Thanks are due to Dimitrios Filippou for his important feedback on Greek typographic issues. Additionally, zco-Regular was modified to a narrow version, zcoN-Regular, starting with some FontForge transformations and finishing with manual adjustments to shorten serifs where necessary and make circular outlines narrower.

- Helvetica clone:

  NimbusSanL*->zhv-*

  The upright tonos accent in the originals was modified to a slanted form, along with the prebuilt letters with tonos and tonosdieresis accents. Only a few modifications were made to the spacing and kerning tables. The Greek glyphs support only monotonic Greek typography.

- Times clone:

  NimbusRomNo9L*->ztm-*

  The original fonts' Greek glyph coverage was relatively modest, supporting only monotonic Greek. This distribution adds glyphs to cover polytonic and some ancient forms. Three Cyrillic glyphs were changed substantially, and the spacing and kerning tables were modified considerably. (The Cyrillic

part covers all but eight glyphs in T2A encoding, but has serious gaps in T2B and T2C.) In addition, slanted versions were created for the benefit of those switching from other font families like Latin Modern, where both *italic* and *slanted* are available and may have different semantic connotations.

The glyphs missing from T2A are:

```
134 ("86) uni0498 CYRILLIC CAPITAL LETTER ZE WITH DESCENDER
138 ("8A) uni04A0 CYRILLIC CAPITAL LETTER BASHKIR KA
140 ("8C) uni04D4 CYRILLIC CAPITAL LIGATURE A IE
142 ("8E) uni04A4 CYRILLIC CAPITAL LIGATURE EN GHE
166 ("A6) uni0499 CYRILLIC SMALL LETTER ZE WITH DESCENDER
170 ("AA) uni04A1 CYRILLIC SMALL LETTER BASHKIR KA
172 ("AC) uni04D5 CYRILLIC SMALL LIGATURE A IE
174 ("AE) uni04A5 CYRILLIC SMALL LIGATURE EN GHE
```

This package is intended to be an add-on to a comprehensive Times-like text font package, such as `newtxtext` or `tgtermes`, adding the possibility of writing parts in Greek (monotonic, polytonic and ancient) and Cyrillic. (Note that the Courier and Helvetica clones support only monotonic Greek.) All LaTeX support files are provided in encodings T1, TS1, LGR, T2A, T2B, T2C, OT1 and OT2. The OT2 encoding and its usage is described in the last section of this document.

Another option for serifed Greek and Cyrillic in a font matching Times is the recently released Tempora package.

The Courier clone

All weights of `zco` have an advance width of `600em`. When used at `12pt`, this amounts to `10` characters per inch. While Courier and its clones don't seem very interesting as typewriter fonts because they appear to be too wide and too light (see however the narrower version `NimbusMonoN` below), they are essential to screenwriters who choose to make use of LaTeX. Unlike John Pate's `screenplay` package, `screenplay-pkg` (Alan Munn's reworked version) does not hard-code the `courier` package for use as its output font, but allows the use of whatever `\ttdefault` is defined to be when `screenplay-pkg` is loaded. So, to write a screenplay using `10cpi` Courier, as the screenplay rules require, you could set it up with preamble

```
\documentclass[12pt]{article}
\usepackage{nimbusserif} %Times for roman text, if any
\usepackage{nimbusmono} %Courier at 10cpi, regular (medium) weight
\usepackage{screenplay-pkg}
```

The following three lines illustrate the three weights provided by `zco`.

`zco-Light---the default weight of traditional Courier;`
`zco-Regular---the default Courier medium weight in this package;`
`zco-BoldBold---the default weight of traditional Bold Courier.`

The next two lines show for comparison `NimbusMonoN` (the narrower version of `zco-Regular`) and `cmtt10`.

`NimbusMonoN (Narrow)---a new, narrower Courier. (Regular weight, upright and` *`oblique`* `shapes only.)`
`Computer Modern Typewriter (cmtt)---the traditional tt for TeX users.`

`NimbusMonoN` is more compact (advance widths `500em` vs. `525em`) but a bit lighter (`64em` stems vs. `69em` stems) than Computer Modern Typewriter. IMO, both are good for rendering lines of code in TeX.

Note that the courier package brings up the old URW courier clone (unless you have the Adobe version of the PS35 and have chosen to prefer them to URW), which is essentially the same for basic Latin glyphs as zco and so it renders in this case the same as Light.

The package nimbusmono has a scaled (or, equivalently, scale) option. It has four other options that may be used to select the weights that LaTeX will render as medium and bold. These are:

- light—LaTeX medium renders with zco-Light;
- regular—LaTeX medium renders with zco-Regular;
- semibold—LaTeX bold renders with zco-Regular;
- bold—LaTeX bold renders with zco-Bold.

Unless specified otherwise, nimbusmono sets the options regular, bold.

The package nimbusmononarrow has a scaled (or, equivalently, scale) option, but no others, and offers only one weight (regular) in two styles style—upright and oblique. It is illustrated above. As for advance widths, nimbusmono is 600em, nimbusmononarrow is 500em and cmtt10 is 525em.

A comparison of widths of some free Typewriter fonts

This list is not meant to be exhaustive or even extensive.

Font	The same 46 characters
Inconsolata	A sample of 46 characters to illustrate width.
InconsolataNarrow	A sample of 46 characters to illustrate width.
cmtt (lmtt)	A sample of 46 characters to illustrate width.
lmtt condensed	A sample of 46 characters to illustrate width.
ntxtt	A sample of 46 characters to illustrate width.
nimbusmono	A sample of 46 characters to illustrate width.
nimbusmononarrow	A sample of 46 characters to illustrate width.

It appears that lmtt condensed is the narrowest free monospace font, but is very light and not so easy to read. Of the regular weight free monospaced fonts, the narrowest is InconsolataN (sans serif), followed by nimbusmononarrow (serifed.)

Some Font tables

zco-Regular-t1 GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	˝0x
´01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	’ 13	‹ 14	› 15	
´02x	“ 16	” 17	„ 18	« 19	» 20	– 21	— 22	23	˝1x
´03x	24	ı 25	26	ff 27	fi 28	fl 29	ffi 30	ffl 31	
´04x	␣ 32	! 33	" 34	# 35	$ 36	% 37	& 38	’ 39	˝2x
´05x	(40	) 41	* 42	+ 43	, 44	− 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63	
´10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	˝4x
´11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
´12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	˝5x
´13x	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95	
´14x	‘ 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103	˝6x
´15x	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111	
´16x	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119	˝7x
´17x	x 120	y 121	z 122	{ 123		124	} 125	~ 126	– 127	
´20x	Ă 128	Ą 129	Ć 130	Č 131	Ď 132	Ě 133	Ę 134	Ğ 135	˝8x
´21x	Ĺ 136	Ľ 137	Ł 138	Ń 139	Ň 140	Ŋ 141	Ő 142	Ŕ 143	
´22x	Ř 144	Ś 145	Š 146	Ş 147	Ť 148	Ţ 149	Ű 150	Ů 151	˝9x
´23x	Ÿ 152	Ź 153	Ž 154	Ż 155	Ĳ 156	İ 157	đ 158	ſ 159	
´24x	ă 160	ą 161	ć 162	č 163	ď 164	ě 165	ę 166	ğ 167	˝Ax
´25x	í 168	ľ 169	ł 170	ń 171	ň 172	ŋ 173	ő 174	ŕ 175	
´26x	ř 176	ś 177	š 178	ş 179	ť 180	ţ 181	ű 182	ů 183	˝Bx
´27x	ÿ 184	ź 185	ž 186	ż 187	ĳ 188	¡ 189	¿ 190	£ 191	
´30x	À 192	Á 193	Â 194	Ã 195	Ä 196	Å 197	Æ 198	Ç 199	˝Cx
´31x	È 200	É 201	Ê 202	Ë 203	Ì 204	Í 205	Î 206	Ï 207	
´32x	Đ 208	Ñ 209	Ò 210	Ó 211	Ô 212	Õ 213	Ö 214	Œ 215	˝Dx
´33x	Ø 216	Ù 217	Ú 218	Û 219	Ü 220	Ý 221	Þ 222	223	
´34x	à 224	á 225	â 226	ã 227	ä 228	å 229	æ 230	ç 231	˝Ex
´35x	è 232	é 233	ê 234	ë 235	ì 236	í 237	î 238	ï 239	
´36x	ð 240	ñ 241	ò 242	ó 243	ô 244	õ 245	ö 246	œ 247	˝Fx
´37x	ø 248	ù 249	ú 250	û 251	ü 252	ý 253	þ 254	ß 255	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

zcoN-Regular-t1 GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	˝0x
´01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	‚ 13	‹ 14	› 15	
´02x	“ 16	” 17	„ 18	« 19	» 20	– 21	— 22	23	˝1x
´03x	24	ı 25	26	ff 27	fi 28	fl 29	ffi 30	ffl 31	
´04x	␣ 32	! 33	" 34	# 35	$ 36	% 37	& 38	’ 39	˝2x
´05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63	
´10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	˝4x
´11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
´12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	˝5x
´13x	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95	
´14x	‘ 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103	˝6x
´15x	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111	
´16x	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119	˝7x
´17x	x 120	y 121	z 122	{ 123		124	} 125	~ 126	- 127	
´20x	Ă 128	Ą 129	Ć 130	Č 131	Ď 132	Ě 133	Ę 134	Ğ 135	˝8x
´21x	Ĺ 136	Ľ 137	Ł 138	Ń 139	Ň 140	Ŋ 141	Ő 142	Ŕ 143	
´22x	Ř 144	Ś 145	Š 146	Ş 147	Ť 148	Ţ 149	Ű 150	Ů 151	˝9x
´23x	Ÿ 152	Ź 153	Ž 154	Ż 155	Ĳ 156	İ 157	đ 158	Ș 159	
´24x	ă 160	ą 161	ć 162	č 163	ď 164	ě 165	ę 166	ğ 167	˝Ax
´25x	Í 168	ľ 169	ł 170	ń 171	ň 172	ŋ 173	ő 174	ŕ 175	
´26x	ř 176	ś 177	š 178	ş 179	ť 180	ţ 181	ű 182	ů 183	˝Bx
´27x	ÿ 184	ź 185	ž 186	ż 187	ĳ 188	¡ 189	¿ 190	£ 191	
´30x	À 192	Á 193	Â 194	Ã 195	Ä 196	Å 197	Æ 198	Ç 199	˝Cx
´31x	È 200	É 201	Ê 202	Ë 203	Ì 204	Í 205	Î 206	Ï 207	
´32x	Ð 208	Ñ 209	Ò 210	Ó 211	Ô 212	Õ 213	Ö 214	Œ 215	˝Dx
´33x	Ø 216	Ù 217	Ú 218	Û 219	Ü 220	Ý 221	Þ 222	223	
´34x	à 224	á 225	â 226	ã 227	ä 228	å 229	æ 230	ç 231	˝Ex
´35x	è 232	é 233	ê 234	ë 235	ì 236	í 237	î 238	ï 239	
´36x	ð 240	ñ 241	ò 242	ó 243	ô 244	õ 245	ö 246	œ 247	˝Fx
´37x	ø 248	ù 249	ú 250	û 251	ü 252	ý 253	þ 254	ß 255	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

zcoN-Regular-ot1 GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	Γ 0	Δ 1	Θ 2	Λ 3	Ξ 4	Π 5	Σ 6	Υ 7	˝0x
´01x	Φ 8	Ψ 9	Ω 10	↑ 11	↓ 12	' 13	¡ 14	¿ 15	
´02x	ı 16	ȷ 17	` 18	´ 19	ˇ 20	˘ 21	¯ 22	˚ 23	˝1x
´03x	¸ 24	ß 25	æ 26	œ 27	ø 28	Æ 29	Œ 30	Ø 31	
´04x	␣ 32	! 33	” 34	# 35	$ 36	% 37	& 38	’ 39	˝2x
´05x	(40	) 41	* 42	+ 43	, 44	− 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	; 59	¡ 60	= 61	¿ 62	? 63	
´10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	˝4x
´11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
´12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	˝5x
´13x	X 88	Y 89	Z 90	[91	“ 92	] 93	^ 94	˙ 95	
´14x	‘ 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103	˝6x
´15x	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111	
´16x	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119	˝7x
´17x	x 120	y 121	z 122	– 123	— 124	˝ 125	~ 126	¨ 127	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

Mimics `cmtt` layout very closely.

ztm-Reg-ot2 GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	Њ 0	Љ 1	Ц 2	Э 3	І 4	Є 5	Ъ 6	Ћ 7	˝0x
´01x	њ 8	љ 9	ц 10	э 11	і 12	є 13	ђ 14	ћ 15	
´02x	Ю 16	Ж 17	Й 18	Ё 19	Ѵ 20	Ѳ 21	S 22	Я 23	˝1x
´03x	ю 24	ж 25	й 26	ё 27	ѵ 28	ѳ 29	s 30	я 31	
´04x	¨ 32	! 33	” 34	Ђ 35	˘ 36	% 37	´ 38	’ 39	˝2x
´05x	(40	) 41	* 42	ђ 43	, 44	- 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	; 59	« 60	1 61	» 62	? 63	
´10x	ˇ 64	А 65	Б 66	Ц 67	Д 68	Е 69	Ф 70	Г 71	˝4x
´11x	Х 72	И 73	J 74	К 75	Л 76	М 77	Н 78	О 79	
´12x	П 80	Ч 81	Р 82	С 83	Т 84	У 85	В 86	Щ 87	˝5x
´13x	Ш 88	Ы 89	З 90	[91	“ 92	] 93	Ь 94	Ъ 95	
´14x	‘ 96	а 97	б 98	ц 99	д 100	е 101	ф 102	г 103	˝6x
´15x	х 104	и 105	j 106	к 107	л 108	м 109	н 110	о 111	
´16x	п 112	ч 113	р 114	с 115	т 116	у 117	в 118	щ 119	˝7x
´17x	ш 120	ы 121	з 122	– 123	— 124	№ 125	ь 126	ъ 127	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

ztm-Reg-lgr GLYPH TABLE:

	΄0	΄1	΄2	΄3	΄4	΄5	΄6	΄7	
΄00x	– 0	1	2	3	4	5	ς 6	ς 7	″0x
΄01x	ι 8	Aι 9	Hι 10	Ωι 11	A 12	Ÿ 13	α 14	ϋ 15	
΄02x	16	17	ϟ 18	ϙ 19	20	Ϙ 21	ς 22	ϡ 23	″1x
΄03x	€ 24	‰ 25	϶ 26	ϡ 27	‘ 28	’ 29	˘ 30	¯ 31	
΄04x	˜ 32	! 33	¨ 34	̓ 35	̔ 36	% 37	· 38	ʹ 39	″2x
΄05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
΄06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	″3x
΄07x	8 56	9 57	: 58	· 59	͵ 60	= 61	ʼ 62	; 63	
΄10x	῀ 64	A 65	B 66	῁ 67	Δ 68	E 69	Φ 70	Γ 71	″4x
΄11x	H 72	I 73	Θ 74	K 75	Λ 76	M 77	N 78	O 79	
΄12x	Π 80	X 81	P 82	Σ 83	T 84	Y 85	῍ 86	Ω 87	″5x
΄13x	Ξ 88	Ψ 89	Z 90	[91	῝ 92	] 93	῞ 94	῟ 95	
΄14x	` 96	α 97	β 98	ς 99	δ 100	ε 101	φ 102	γ 103	″6x
΄15x	η 104	ι 105	θ 106	κ 107	λ 108	μ 109	ν 110	ο 111	
΄16x	π 112	χ 113	ρ 114	ς 115	τ 116	υ 117	118	ω 119	″7x
΄17x	ξ 120	ψ 121	ζ 122	« 123	˛ 124	» 125	~ 126	— 127	
΄20x	ὰ 128	ά 129	ὰ 130	ᾶ 131	ᾳ 132	ᾴ 133	ᾲ 134	ᾷ 135	″8x
΄21x	ά 136	ᾰ 137	ᾱ 138	ᾲ 139	ᾴ 140	ᾷ 141	ᾷ 142	ᾷ 143	
΄22x	ᾶ 144	ᾷ 145	ᾷ 146	ϝ 147	ᾷ 148	ᾷ 149	ᾷ 150	151	″9x
΄23x	ὴ 152	ή 153	ὴ 154	155	ῆ 156	ῆ 157	ῆ 158	159	
΄24x	ή 160	ῐ 161	ῑ 162	ῒ 163	ΐ 164	ῗ 165	ῗ 166	ῗ 167	″Ax
΄25x	ῆ 168	ῆ 169	ῆ 170	ῆ 171	ῆ 172	ῆ 173	ῆ 174	ῆ 175	
΄26x	ὼ 176	ώ 177	ὼ 178	ῶ 179	ῳ 180	ῴ 181	ῲ 182	ῷ 183	″Bx
΄27x	ώ 184	ῠ 185	ῡ 186	ῢ 187	ΰ 188	ῧ 189	ῳ 190	ῷ 191	
΄30x	ῶ 192	ῶ 193	ῶ 194	F 195	ῶ 196	ῶ 197	ῶ 198	199	″Cx
΄31x	ὶ 200	ί 201	ὶ 202	ῖ 203	ὺ 204	ύ 205	ὺ 206	ὺ 207	
΄32x	ί 208	ῐ 209	ῐ 210	ῖ 211	ύ 212	ῠ 213	ῠ 214	ῠ 215	″Dx
΄33x	ῖ 216	ῖ 217	ῖ 218	Ï 219	ῦ 220	ῦ 221	ῦ 222	Ÿ 223	
΄34x	ὲ 224	έ 225	ὲ 226	ῗ 227	ὸ 228	ό 229	ὸ 230	ὸ 231	″Ex
΄35x	έ 232	ῑ 233	ῐ 234	ῗ 235	ό 236	ῐ 237	ῐ 238	ῐ 239	
΄36x	ϊ 240	ΐ 241	ΐ 242	ΐ 243	ϋ 244	ῧ 245	ΰ 246	ΰ 247	″Fx
΄37x	ᾳ 248	ῃ 249	ῳ 250	ῤ 251	ῥ 252	253	῾ 254	̓ 255	
	″8	″9	″A	″B	″C	″D	″E	″F	

Example: χοίρος.

zhv-Reg-lgr GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	– 0	1	2	3	4	5	6	7	˝0x
´01x	8	9	10	11	A 12	Ÿ 13	α 14	ü 15	
´02x	16	17	18	19	20	21	22	23	˝1x
´03x	€ 24	‰ 25	ə 26	27	‘ 28	’ 29	˘ 30	¯ 31	
´04x	32	! 33	¨ 34	˝ 35	36	% 37	· 38	’ 39	˝2x
´05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	· 59	60	= 61	62	63	
´10x	64	A 65	B 66	67	Δ 68	E 69	Φ 70	Γ 71	˝4x
´11x	H 72	I 73	Θ 74	K 75	Λ 76	M 77	N 78	O 79	
´12x	Π 80	X 81	P 82	Σ 83	T 84	Y 85	86	Ω 87	˝5x
´13x	Ξ 88	Ψ 89	Z 90	[91	92	] 93	94	95	
´14x	96	α 97	β 98	ς 99	δ 100	ε 101	φ 102	γ 103	˝6x
´15x	η 104	ι 105	θ 106	κ 107	λ 108	μ 109	ν 110	ο 111	
´16x	π 112	χ 113	ρ 114	ς 115	τ 116	υ 117	118	ω 119	˝7x
´17x	ξ 120	ψ 121	ζ 122	« 123	124	» 125	126	— 127	
´20x	128	129	130	131	132	133	134	135	˝8x
´21x	ά 136	137	138	139	140	141	142	143	
´24x	ή 160	161	162	163	164	165	166	167	˝Ax
´25x	168	169	170	171	172	173	174	175	
´26x	176	177	178	179	180	181	182	183	˝Bx
´27x	ώ 184	185	186	187	188	189	190	191	
´32x	ί 208	209	210	211	ύ 212	213	214	215	˝Dx
´33x	216	217	218	Ϊ 219	220	221	222	Ÿ 223	
´34x	224	225	226	227	228	229	230	231	˝Ex
´35x	έ 232	233	234	235	ό 236	237	238	239	
´36x	ϊ 240	241	ΐ 242	243	ϋ 244	245	ΰ 246	247	˝Fx
´37x	248	249	250	251	252	253	254	255	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

ztm-Reg-t2a GLYPH TABLE:

	´0	´1	´2	´3	´4	´5	´6	´7	
´00x	` 0	´ 1	ˆ 2	˜ 3	¨ 4	˝ 5	° 6	ˇ 7	˝0x
´01x	˘ 8	¯ 9	˙ 10	¸ 11	˛ 12	I 13	⟨ 14	⟩ 15	
´02x	“ 16	” 17	18	19	̆ 20	– 21	— 22	23	˝1x
´03x	24	1 25	J 26	ff 27	fi 28	fl 29	ffi 30	ffl 31	
´04x	32	! 33	" 34	# 35	$ 36	% 37	& 38	’ 39	˝2x
´05x	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47	
´06x	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55	˝3x
´07x	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63	
´10x	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71	˝4x
´11x	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79	
´12x	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87	˝5x
´13x	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95	
´14x	‘ 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103	˝6x
´15x	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111	
´16x	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119	˝7x
´17x	x 120	y 121	z 122	{ 123	| 124	} 125	~ 126	- 127	
´20x	Ґ 128	Ғ 129	Ђ 130	Ћ 131	Һ 132	Ӂ 133	134	Љ 135	˝8x
´21x	Ї 136	Ҟ 137	138	Ҝ 139	140	Ң 141	142	S 143	
´22x	Ө 144	Ҫ 145	Ў 146	Y 147	Ұ 148	Ҳ 149	Ц 150	Ч 151	˝9x
´23x	Ҷ 152	Є 153	Ә 154	Њ 155	Ё 156	№ 157	¤ 158	§ 159	
´24x	ґ 160	ғ 161	ђ 162	ћ 163	h 164	ӂ 165	166	љ 167	˝Ax
´25x	ї 168	ҟ 169	170	ҝ 171	172	ң 173	174	s 175	
´26x	ө 176	ҫ 177	ў 178	ү 179	ұ 180	ҳ 181	ц 182	ч 183	˝Bx
´27x	ҷ 184	є 185	ә 186	њ 187	ё 188	„ 189	« 190	» 191	
´30x	А 192	Б 193	В 194	Г 195	Д 196	Е 197	Ж 198	З 199	˝Cx
´31x	И 200	Й 201	К 202	Л 203	М 204	Н 205	О 206	П 207	
´32x	Р 208	С 209	Т 210	У 211	Ф 212	Х 213	Ц 214	Ч 215	˝Dx
´33x	Ш 216	Щ 217	Ъ 218	Ы 219	Ь 220	Э 221	Ю 222	Я 223	
´34x	а 224	б 225	в 226	г 227	д 228	е 229	ж 230	з 231	˝Ex
´35x	и 232	й 233	к 234	л 235	м 236	н 237	о 238	п 239	
´36x	р 240	с 241	т 242	у 243	ф 244	х 245	ц 246	ч 247	˝Fx
´37x	ш 248	щ 249	ъ 250	ы 251	ь 252	э 253	ю 254	я 255	
	˝8	˝9	˝A	˝B	˝C	˝D	˝E	˝F	

Example: который.

Usage

There are two basic pathways that can be followed, one based on fontspec (XeLaTeX or LuaLaTeX), the other on traditional LaTeX (pdflatex or latex/dvips).

Fontspec

With fontspec, the setup is fairly simple. Nimbus15 supplies a file named ztm.fontspec for Times with content

```
\defaultfontfeatures[ztm]
  {
  Extension = .otf ,
  UprightFont = *-Reg,
  BoldFont = *-Med,
  ItalicFont = *-Ita,
  BoldItalicFont = *-MedIta,
  SlantedFont = *-RegObl,
  BoldSlantedFont = *-MedObl,
  }
```

This file will be read by fontspec whenever ztm is loaded as a font, thereby simplifying the information you have to provide. (There are similar files zco.fontspec for Courier, zcoN.fontspec for Courier Narrow and zhv.fontspec for Helvetica.)

EXAMPLE:

```
\usepackage{fontspec}
\defaultfontfeatures{Mapping=tex-text}
\setmainfont{TeX Gyre Termes}% assumes it to be in one of your fonts folders
\newfontfamily{\nim}{ztm} % reads ztm.fontspec
\setsansfont[Scale=MatchLowercase,Mapping=tex-text]{Gill Sans}
\setmonofont{zco}[Scale=MatchLowercase]% reads zco.fontspec
```

so that utf8-encoded text within a \nim{} container will be rendered using ztm and, by default, all other text will be rendered using TeX Gyre Termes. You will most likely also wish to load the polyglossia package to replace babel.

LaTeX

The loading order of packages is important here. See the documentation of the newtx package for details. Here's an example of using newtx text and math, set up to allow the use of Greek, Russian and English as the main language.

```
\usepackage[OT2,LGR,T2A,T1]{fontenc} % spell out all text encodings to be used
\usepackage[utf8]{inputenc} %
\usepackage{substitutefont} % so we can use fonts other than those specified in babel
\usepackage[greek,russian,english]{babel}
\usepackage[largesc]{newtxtext} %
\usepackage{nimbusmononarrow} % Courier Narrow
\usepackage{nimbussans} % Helvetica
```

```
\usepackage[bigdelims,vvarbb]{newtxmath}
\useosf % use oldstyle figures except in math
\substitutefont{LGR}{\rmdefault}{NimbusSerif} % use nimbusserif to render Greek text
\substitutefont{T2A}{\rmdefault}{NimbusSerif} % use nimbusserif to render Russian
\substitutefont{OT2}{\rmdefault}{NimbusSerif} % poor man's version
```

Any utf8-encoded text typed outside of a `\foreignlanguage{}{}` block will be rendered as T1-encoded newtxtext, while that within `\foreignlanguage{greek}{}` will be rendered as LGR-encoded polytonic Greek, and that within `\foreignlanguage{russian}{}` will render as T2A-encoded Cyrillic.

The macro `\textgreek` made available by babel-greek may be used to avoid unicode. For example, `\textgreek{>agaj\~{h}| t'uqh|?}` renders as ἀγαθῇ τάχῃ;.

The macro `\LGCscale` can be set if you wish to rescale the `NimbusSerif` text. For example, `\def\LGCscale{1.05}` will scale it up by 5%. This is handled automatically for you by `newtxtext` if you set its scale using the `scaled` option. (In fact, there is another macro that takes priority over `LGCscale`, named `NimbusSerifscale`—it is automatically set if you load the package `nimbusserif`, which should not be loaded if you also use `newtxtext`.)

1 The OT2 encoding

Though OT2 is considered obsolete, as an essentially 7-bit encoding, it is quite useful to those who work with a non-Cyrillic keyboard but wish to produce documents containing a limited amount of Cyrillic text, Latin characters being appropriately transliterated to Cyrillic, and with predefined macros available for each Cyrillic character. These are specified in `ot2enc.def` in your TEX distribution.

The following table, taken from a document on OT2 by Walter Schmidt that seems not to be publicly available at the moment, shows the transliteration scheme specified by ligatures in the `OT2` encoding. In each column of this table, each row shows first a Cyrillic character pair (upper and lower case), then the pair of keys or key sequences required on the input side. In some cases alternatives are also specified.

А	а	A	a			О	о	O	o		
Б	б	B	b			П	п	P	p		
В	в	V	v			Р	р	R	r		
Г	г	G	g			С	с	S	s		
Д	д	D	d			Т	т	T	t		
Ђ	ђ	Dj	dj	D1	d1	Ћ	ћ	C1	c1		
Ѓ	ѓ	\'G	\'g			Ќ	ќ	\'K	\'k		
Е	е	E	e			У	у	U	u		
Ё	ё	\"E	\"e	E0	e0	Ф	ф	F	f		
Є	є	E2	e2			Х	х	Kh	kh	H	h
Ж	ж	Zh	zh	Z1	z1	Ц	ц	Ts	ts	C	c
З	з	Z	z			Ч	ч	Ch	ch	Q	q
И	и	I	i			Џ	џ	D2	d2		
І	і	\CYRII	\.{\i}	I1	i1	Ш	ш	Sh	sh	X	x
Й	й	\"I	\"i			Щ	щ	Shch	shch	W	w
Ј	ј	J	j			Ъ	ъ	P2	p2		
Й	й	\U{I}	\U{i}	I0	i0	Ы	ы	Y	y		
К	к	K	k			Ь	ь	P1	p1		
Л	л	L	l			Э	э	E1	e1		
Љ	љ	Lj	lj	L1	l1	Ю	ю	Yu	yu	J2	j2
М	м	M	m			Я	я	Ya	ya	J1	j1
Н	н	N	n			S	s	D3	d3		
Њ	њ	Nj	nj	N1	n1	«	»	<	>		
№		NO									

To use OT2 transliterated from Latin characters, accented characters and ligatures doesn't require babel. For example:

```
\documentclass{article}
\usepackage[OT2,T1]{fontenc} % loads ot2enc.def
\newcommand\cyrtext{\fontencoding{OT2}\selectfont} % declaration
\DeclareTextFontCommand{\textcyr}{\cyrtext}  %macro with argument
```

The Russian part of the following sentence is entered as `\textcyr{a e1to --- po-russki}`.

This is text in English, then Russian: a это — по-русски.