

Doulos SIL 4.0 Font Documentation

2004-03-31

SIL Non-Roman Script Initiative (NRSI)

Introduction to the Doulos SIL Font Package

Note:

Updates to this font, FAQ and Known-issues list will be available online. Go to <http://scripts.sil.org/> and click on “Font Downloads” in the sidebar.

Welcome to the Doulos SIL font package. The goal for this product was to provide a single Unicode-based font family that would contain a comprehensive inventory of glyphs needed for almost any Roman- or Cyrillic-based writing system, whether used for phonetic or orthographic needs. In addition, there is provision for other characters and symbols useful to linguists. This font makes use of state-of-the-art font technologies to support complex typographic issues, such as the need to position arbitrary combinations of base glyphs and diacritics optimally.

One font from this typeface family is included in this release:

- Doulos SIL Regular

Distribution

This font package consists of the Doulos SIL font plus this (and possibly other) associated documentation. This font was prepared to facilitate linguists from SIL International and other partner organizations in preparing for a transition from using non-standard custom character encodings for their data to using the Unicode Standard for character encoding.

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Support

As this font is distributed at no cost, we are unable to provide a commercial level of personal technical support. We will, however, try to resolve problems that are reported to us. We do wish to know about these problems so they can be addressed in future releases. Even if you are not having any specific problems, but have an idea on how this system could be improved, we want to hear your ideas and suggestions.

Contacting Us

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Overview of the Doulos SIL Font

This Doulos SIL font is essentially the same design as the SIL Doulos font first released by SIL in 1992. The design has been changed from the original in that it has been scaled down to be a better match with contemporary digital fonts, such as Times New Roman®. This current release is a regular typeface, with no bold or italic version available.

Note:

We reserve the right to alter metrics in future releases. Future versions of the font may result in different lines, line spacing, or paragraph lengths. Do not expect that a document laid out in one version will always have the same page breaks, etc., in future fonts.

The Doulos SIL font differs significantly from SIL Doulos in the following ways:

- SIL Doulos, as other fonts included in the *SIL Encore Fonts* package, was provided not as a working font but as a “library” font from which working fonts could be made using the *TypeCaster* program. In contrast, Doulos SIL is a working font to be used as is, not as a basis for derivative fonts.
- Doulos SIL is a Unicode-encoded font. The encoding is *entirely* different from the old font, or most working fonts produced from it. Data created for use with the old font (or its derivatives) will most likely have to be re-typed or converted before it will display with the Doulos SIL font.
- Doulos SIL is a TrueType font with “smart font” capabilities added using the Graphite and OpenType® font technologies. This means that complex typographic issues such as the placement of diacritics or the formation of ligatures are handled by the *font*, provided you are running an application that provides an adequate level of support for the Graphite or OpenType technology. With the old font (and its derivatives), diacritic placement was handled using non-standard character encodings that incorporated multiple versions of a diacritic as distinctly-encoded characters.

Technical Reference

System requirements

The Doulos SIL font is designed to work on systems and with applications that provide support for TrueType fonts and for Unicode character encoding. This includes all 32-bit versions of Microsoft Windows®, as well as recent versions of the Mac OS (version 9.0 and later), and also some implementations of Unix / Linux (TrueType font support on Unix and Linux may depend upon the particular applications in use). On some systems (true, at least, of 32-bit Windows), it can also be used with older applications that use legacy, industry-standard, 8-bit character encodings.

The preceding characterization of system requirements describes the minimum needed to display characters. *Realizing the full capabilities of this font involves additional requirements.* This font is designed to work with either of two advanced font technologies: Graphite, or OpenType. We expect that future versions of the font will contain AAT tables to offer selection of alternate glyphs on Mac OS X. To take advantage of the advanced typographic capabilities of this font, you must be using applications that provide an adequate level of support for Graphite and OpenType. At the time of release, no application supports all of the OpenType features of this font. Paratext 6 and Microsoft Office 2003 support many of the automatic ligatures as well as dynamic positioning of most diacritics. While Adobe InDesign 2 does not offer support for dynamic diacritic positioning, it is one of the few applications to offer selection of alternate glyphs from OpenType fonts. There are currently three applications which make use of the Graphite capabilities of the font. These are WorldPad, a beta version of Mozilla and Data Notebook.

Features of the font

The Doulos SIL font contains near-complete coverage of all the characters defined in Unicode 4.0 for Latin and Cyrillic. In total, over 2,200 glyphs are included, providing support for over 1,500 graphic or control characters as well as a large number of ligated character sequences (e.g., contour tone letters used in phonetic transcription of tonal languages).

In addition, alternately-designed glyphs are also provided for a number of characters for use in particular contexts. The glyphs are accessible in applications that support advanced font technologies, specifically the Graphite or OpenType technologies. These technologies are also utilized to provide automatic positioning of diacritics relative to base characters in arbitrary base+diacritic combinations (including combinations involving multiple diacritics).

Some important issues with respect to Unicode need to be borne in mind. Unicode is a character encoding and not a glyph encoding. Thus you should endeavor to use the character that reflects your character needs rather than finding a glyph that looks right and using its character code. Thus, for example, there is only one code for CAPITAL ENG (U+014A), although there are 3 different glyph shapes for this character in use around the world. Therefore it is necessary to use other means, such as user-selectable font features, to ensure that your document displays the right glyph for the character that you are anticipating. The advanced typographic capabilities mentioned above provide this very capability.

Installation

This font can be installed using standard font installation procedures for the given operating-system platform. There are no additional installation steps required to use Graphite-related

functionality. Note that certain applications may not see the new font immediately. You may have to quit and restart the application for the font to become available.

Supported character ranges

The Doulos SIL Regular 4.0 font supports over 1,500 graphic or control characters from the Unicode 4.0 standard as well as over 190 private-use (PUA) characters. In total, over 2,200 glyphs are included, supporting stylistic alternates for a number of characters as well as a large number of ligated sequences (e.g., contour tone letters used in phonetic transcription of tonal languages). The following character ranges constitute many of the characters supported by this font:

C0 Controls and Basic Latin	U+0020..U+007E
C1 Controls and Latin-1 Supplement	U+00A0..U+00FF
Latin Extended-A	U+0100..U+017F
Latin Extended-B	U+0180..U+0236
IPA Extensions	U+0250..U+02AF
Spacing Modifier Letters	U+02B0..U+02FF
Combining Diacritical Marks	U+0300..U+0320, U+0323..U+0333, U+0339..U+033F, U+0346..U+0357, U+035D..U+036F
Greek and Coptic	U+0387, U+0393..U+0394, U+0398, U+03A9, U+03B1..U+03B4, U+03B8, U+03BB, U+03C0, U+03C3, U+03C7
Cyrillic	U+0400..U+045F, U+048A.. U+04CE, U+04D0..U+04F9
Cyrillic Supplementary	U+0500..U+050F
Phonetic Extensions	U+1D00..U+1D6B
Latin Extended Additional	U+1E00..U+1E9B, U+1EA0..U+1EF9
General Punctuation	U+2000..U+2030, U+2032..U+203A, U+203F, U+2040, U+2044, U+2057, U+2060..U+2063, U+206A..U+206F
Superscripts and Subscripts	U+2070..U+2071, U+2074..U+208E
Currency Symbols	U+20A0..U+20B1
Letterlike Symbols	U+2116, U+2122
Number Forms	U+2153..U+2183
Arrows	U+2190..U+2199, U+21A8, U+21D0..U+21D5
Mathematical Operators	U+2202, U+2205.. U+2206, U+220F, U+2211..U+2212, U+2219..U+221A, U+221E, U+222B, U+2248, U+2260..U+2261, U+2264..U+2265
Geometric Shapes	U+25CA, U+25CC
PUA: Specials	U+F100..U+F13F
PUA: Combining Marks	U+F160..U+F17F
PUA: Modifier letters (e.g. superscripts)	U+F180,,U+F1EF
PUA: Latin	U+F208..U+F216, U+F218..U+F25F
PUA: Cyrillic	U+F320..U+F329
Alphabetic Presentation Forms	U+FB00..U+FB04
Arabic Presentation Forms-B	U+FEFF (zero-width no-break space)
Mathematical Alphanumeric Symbols	U+1D510, U+1D52D

Private-use (PUA) characters supported by Doulos SIL

There are 194 private-use characters that are supported in this font. These conform to SIL International's corporate registry for usage of the Unicode private-use areas. These are shown below.

Specials

F130		FONT BASELINE AND SIDE-BEARING MARKER LEFT
F131		FONT BASELINE AND SIDE-BEARING MARKER RIGHT
F132		FONT VERTICAL METRICS MARKER LEFT
F133		FONT VERTICAL METRICS MARKER RIGHT
F134		OPENING LOW RIGHT-ANGLE TEXT BRACKET
F135		CLOSING LOW RIGHT-ANGLE TEXT BRACKET

Combining Marks

F170		COMBINING SNAKE BELOW
F171		COMBINING MACRON-ACUTE
F172		COMBINING GRAVE-MACRON
F173		COMBINING MACRON-GRAVE
F174		COMBINING ACUTE-MACRON
F175		COMBINING GRAVE-ACUTE-GRAVE
F176		COMBINING DOUBLE BREVE BELOW
F178		COMBINING LATIN SMALL LETTER R BELOW
F179		COMBINING ACUTE-GRAVE-ACUTE

Modifier Letters

F181		MODIFIER LETTER SMALL N WITH LEFT HOOK
F18B		MODIFIER LETTER SMALL REVERSED OPEN E
F195		MODIFIER LETTER CHINANTEC TONE MARK BACKSLASH
F196		MODIFIER LETTER CHINANTEC TONE MARK VERTICAL BAR
F197		MODIFIER LETTER CHINANTEC TONE MARK SLASH
F198		MODIFIER LETTER CHINANTEC TONE MARK DOT VERTICAL BAR

F199		MODIFIER LETTER CHINANTEC TONE MARK DOT SLASH
F19A		MODIFIER LETTER CHINANTEC TONE MARK DOT BAR
F19B		MODIFIER LETTER CHINANTEC TONE MARK LOWER RIGHT CORNER ANGLE
F19C		MODIFIER LETTER RAISED UP ARROW
F19D		MODIFIER LETTER RAISED DOWN ARROW
F19E		MODIFIER LETTER AFRICANIST DOWNSTEP = MODIFIER LETTER RAISED EXCLAMATION MARK
F19F		MODIFIER LETTER AFRICANIST UPSTEP
F1A0		MODIFIER LETTER SMALL TURNED LATIN ALPHA
F1A1		MODIFIER LETTER SMALL AE
F1A2		MODIFIER LETTER SMALL C WITH CURL
F1A3		MODIFIER LETTER SMALL REVERSED E
F1A4		MODIFIER LETTER SMALL CLOSED REVERSED OPEN E
F1A5		MODIFIER LETTER SMALL F
F1A6		MODIFIER LETTER SMALL SCRIPT G
F1A7		MODIFIER LETTER SMALL I WITH STROKE
F1A8		MODIFIER LETTER SMALL CAPITAL I
F1A9		MODIFIER LETTER SMALL DOTLESS J WITH STROKE
F1AA		MODIFIER LETTER SMALL L WITH RETROFLEX HOOK
F1AB		MODIFIER LETTER SMALL O WITH STROKE
F1AC		MODIFIER LETTER SMALL BARRED O
F1AD		MODIFIER LETTER SMALL LIGATURE OE
F1AE		MODIFIER LETTER SMALL CAPITAL OE

F1AF		MODIFIER LETTER SMALL ESH
F1B0		MODIFIER LETTER SMALL U BAR
F1B1		MODIFIER LETTER SMALL UPSILON
F1B2		MODIFIER LETTER SMALL TURNED M WITH LONG LEG
F1B3		MODIFIER LETTER SMALL TURNED V
F1B4		MODIFIER LETTER SMALL CAPITAL Y
F1B5		MODIFIER LETTER SMALL RAMS HORN
F1B6		MODIFIER LETTER SMALL Z
F1B7		MODIFIER LETTER SMALL Z WITH CURL
F1B8		MODIFIER LETTER SMALL EZH
F1B9		MODIFIER LETTER SMALL C
F1BA		MODIFIER LETTER SMALL ETH
F1BB		MODIFIER LETTER SMALL TURNED H
F1BC		MODIFIER LETTER SMALL H WITH STROKE
F1BD		MODIFIER LETTER SMALL J WITH CROSSED TAIL
F1BE		MODIFIER LETTER SMALL L WITH PALATAL HOOK
F1BF		MODIFIER LETTER SMALL CAPITAL L
F1C0		MODIFIER LETTER SMALL M WITH HOOK
F1C1		MODIFIER LETTER SMALL N WITH RETROFLEX HOOK
F1C2		MODIFIER LETTER SMALL CAPITAL N
F1C3		MODIFIER LETTER SMALL PHI
F1C4		MODIFIER LETTER SMALL S WITH HOOK
F1C5		MODIFIER LETTER SMALL T WITH PALATAL HOOK
F1C6		MODIFIER LETTER SMALL V WITH HOOK
F1C7		MODIFIER LETTER SMALL Z WITH RETROFLEX HOOK
F1C8		MODIFIER LETTER SMALL GLOTTAL STOP
F1C9		MODIFIER LETTER THETA

F1CA		MODIFIER LETTER SMALL IOTA
F1CB		MODIFIER LETTER SMALL CAPITAL I WITH STROKE
F1CC		MODIFIER LETTER SMALL CAPITAL U
F1CD		MODIFIER LETTER SMALL CAPITAL U BAR
F1CE		MODIFIER LETTER SMALL TURNED Y
F1D0		MODIFIER LETTER EXTRA-HIGH LEFT-STEM TONE BAR
F1D1		MODIFIER LETTER HIGH LEFT-STEM TONE BAR
F1D2		MODIFIER LETTER MID LEFT-STEM TONE BAR
F1D3		MODIFIER LETTER LOW LEFT-STEM TONE BAR
F1D4		MODIFIER LETTER EXTRA-LOW LEFT-STEM TONE BAR
F1D5		MODIFIER LETTER EXTRA-HIGH DOTTED TONE BAR
F1D6		MODIFIER LETTER HIGH DOTTED TONE BAR
F1D7		MODIFIER LETTER MID DOTTED TONE BAR
F1D8		MODIFIER LETTER LOW DOTTED TONE BAR
F1D9		MODIFIER LETTER EXTRA-LOW DOTTED TONE BAR
F1DA		MODIFIER LETTER EXTRA-HIGH DOTTED LEFT-STEM TONE BAR
F1DB		MODIFIER LETTER HIGH DOTTED LEFT-STEM TONE BAR
F1DC		MODIFIER LETTER MID DOTTED LEFT-STEM TONE BAR
F1DD		MODIFIER LETTER LOW DOTTED LEFT-STEM TONE BAR
F1DE		MODIFIER LETTER EXTRA-LOW DOTTED LEFT-STEM TONE BAR
F1DF		MODIFIER LETTER CHINESE TONE YIN PING
F1E0		MODIFIER LETTER CHINESE TONE YIN SHANG
F1E1		MODIFIER LETTER CHINESE TONE YIN QU
F1E2		MODIFIER LETTER CHINESE TONE YIN RU
F1E3		MODIFIER LETTER CHINESE TONE YANG PING
F1E4		MODIFIER LETTER CHINESE TONE YANG SHANG

F1E5	Ꞥ	MODIFIER LETTER CHINESE TONE YANG QU
F1E6	ꞥ	MODIFIER LETTER CHINESE TONE YANG RU
F1E7	Ꞧ	MODIFIER LETTER LOW CIRCUMFLEX ACCENT
F1E8	ꞧ	MODIFIER LETTER LOW CARON
F1E9	Ꞩ	MODIFIER LETTER COLON
F1EA	ꞩ	MODIFIER LETTER SHORT EQUAL

Latin

F208	ɑ̣	LATIN CAPITAL LETTER SMALL ALPHA
F209	ɑ̤	LATIN CAPITAL LETTER SMALL TURNED ALPHA
F20A	Ꞃ	LATIN CAPITAL LETTER B WITH STROKE
F20B	ꞃ	LATIN SMALL LETTER C WITH STROKE
F20C	Ꞅ	LATIN SMALL LETTER D WITH TAIL AND HOOK
F20D	ꞅ	LATIN CAPITAL LETTER D WITH STROKE AND HOOK
F20E	Ꞇ	LATIN SMALL LETTER DOUBLE-BARRED L
F20F	ꞇ	LATIN CAPITAL LETTER DOUBLE-BARRED L
F210	ꞈ	LATIN SMALL LETTER P WITH STROKE
F211	꞉	LATIN SMALL LETTER Q WITH HOOK TAIL
F212	꞊	LATIN CAPITAL LETTER SMALL Q WITH HOOK TAIL
F213	Ꞌ	LATIN SMALL LETTER R WITH STROKE
F214	ꞌ	LATIN CAPITAL LETTER R WITH STROKE
F215	Ɥ	LATIN CAPITAL LETTER R WITH TAIL
F216	ꞎ	LATIN SMALL LETTER ESH WITH HOOK
F218	Ꞑ	LATIN CAPITAL LETTER U BAR
F219	ꞑ	LATIN CAPITAL LETTER TURNED V
F21A	Ꞓ	LATIN SMALL LETTER W WITH HOOK
F21B	ꞓ	LATIN CAPITAL LETTER W WITH HOOK
F21C	ꞔ	LATIN SMALL LETTER EZH WITH HOOK

F21D	ꞕ	MODIFIER LETTER STRAIGHT APOSTROPHE = <i>LATIN LETTER DOTLESS EXCLAMATION</i>
F21E	Ꞗ	LATIN SMALL LETTER GLOTTAL STOP
F21F	ꞗ	LATIN CAPITAL LETTER L WITH BAR
F220	Ꞙ	LATIN SMALL LETTER E WITH STROKE
F221	ꞙ	LATIN CAPITAL LETTER E WITH STROKE
F222	Ꞛ	LATIN SMALL LETTER H WITH DESCENDER
F223	ꞛ	LATIN CAPITAL LETTER H WITH DESCENDER
F224	Ꞝ	LATIN SMALL LETTER B WITH PALATAL HOOK
F225	ꞝ	LATIN SMALL LETTER C WITH PALATAL HOOK
F226	Ꞟ	LATIN SMALL LETTER D WITH PALATAL HOOK
F227	ꞟ	LATIN SMALL LETTER F WITH PALATAL HOOK
F228	Ꞡ	LATIN SMALL LETTER G WITH PALATAL HOOK
F229	ꞡ	LATIN SMALL LETTER K WITH PALATAL HOOK
F22A	Ꞣ	LATIN SMALL LETTER L WITH PALATAL HOOK
F22B	ꞣ	LATIN SMALL LETTER M WITH PALATAL HOOK
F22C	Ꞥ	LATIN SMALL LETTER N WITH PALATAL HOOK
F22D	ꞥ	LATIN SMALL LETTER P WITH PALATAL HOOK
F22E	Ꞧ	LATIN SMALL LETTER R WITH PALATAL HOOK
F22F	ꞧ	LATIN SMALL LETTER S WITH PALATAL HOOK
F230	Ꞩ	LATIN SMALL LETTER ESH WITH PALATAL HOOK
F231	ꞩ	LATIN SMALL LETTER V WITH PALATAL HOOK
F232	Ɦ	LATIN SMALL LETTER X WITH PALATAL HOOK
F233	Ɜ	LATIN SMALL LETTER Z WITH PALATAL HOOK
F234	Ɡ	LATIN CAPITAL LETTER Z WITH PALATAL HOOK
F235	Ɬ	LATIN SMALL LETTER EZH WITH PALATAL HOOK

F236	ǻ	LATIN SMALL LETTER A WITH RETROFLEX HOOK
F237	ǿ	LATIN SMALL LETTER ALPHA WITH RETROFLEX HOOK
F238	ǽ	LATIN SMALL LETTER E WITH RETROFLEX HOOK
F239	Ǽ	LATIN SMALL LETTER OPEN E WITH RETROFLEX HOOK
F23A	ǿ̂	LATIN SMALL LETTER REVERSED OPEN E WITH RETROFLEX HOOK
F23B	ǻ̂	LATIN SMALL LETTER SCHWA WITH RETROFLEX HOOK
F23C	ǻ̄	LATIN SMALL LETTER I WITH RETROFLEX HOOK
F23D	ǽ̄	LATIN SMALL LETTER OPEN O WITH RETROFLEX HOOK
F23E	ǿ̄	LATIN SMALL LETTER U WITH RETROFLEX HOOK
F23F	Ǿ	LATIN LETTER SMALL CAPITAL U BAR
F240	ǿǽ	LATIN SMALL LETTER DB DIGRAPH
F241	ǿǽ̄	LATIN SMALL LETTER QP DIGRAPH
F242	Ł	LATIN CAPITAL LETTER L WITH MIDDLE TILDE
F243	ł	LATIN SMALL LETTER Y WITH STROKE
F244	Ÿ	LATIN CAPITAL LETTER Y WITH STROKE
F245	ɿ	LATIN LETTER TRESILLO
F246	ɥ	LATIN LETTER CUATRILLO
F247	@	LATIN SMALL LETTER AT
F248	Ⓐ	LATIN CAPITAL LETTER AT
F249	Ḃ	LATIN SMALL LETTER B WITH MIDDLE TILDE
F24A	Ḅ	LATIN SMALL LETTER D WITH MIDDLE TILDE
F24B	Ḅ	LATIN SMALL LETTER F WITH MIDDLE TILDE
F24C	Ḅ	LATIN SMALL LETTER M WITH MIDDLE TILDE
F24D	Ḅ	LATIN SMALL LETTER N WITH MIDDLE TILDE
F24E	Ḅ	LATIN SMALL LETTER P WITH MIDDLE TILDE
F24F	Ḅ	LATIN SMALL LETTER R WITH MIDDLE TILDE
F250	Ḅ	LATIN SMALL LETTER R WITH FISHHOOK WITH MIDDLE TILDE

F251	ſ̃	LATIN SMALL LETTER S WITH MIDDLE TILDE
F252	ţ	LATIN SMALL LETTER T WITH MIDDLE TILDE
F253	ţ̃	LATIN SMALL LETTER Z WITH MIDDLE TILDE
F254	ſ̣	LATIN LETTER SMALL CAPITAL I WITH STROKE
F255	ſ̣̂	LATIN LETTER SMALL CAPITAL UPSILON WITH STROKE
F256	ſ̃̂	LATIN SMALL LETTER S WITH SWASH TAIL
F257	ţ̃̂	LATIN SMALL LETTER Z WITH SWASH TAIL
F258	ſ̃̄	LATIN LETTER SMALL CAPITAL I OVER SMALL SCHWA
F259	ſ̃̄̂	LATIN LETTER SMALL UPSILON OVER SMALL SCHWA
F25A	ḥ	LATIN SMALL LETTER HENG
F25B	ḿ	LATIN CAPITAL LETTER M WITH HOOK
F25D	İ	LATIN SMALL LETTER IOTA WITH STROKE
F25E	ṽ	LATIN SMALL LETTER V WITH CURL

Cyrillic

F320	Ґ	CYRILLIC CAPITAL LETTER GHE WITH DESCENDER
F321	ґ	CYRILLIC SMALL LETTER GHE WITH DESCENDER
F322	Ґ̂	CYRILLIC CAPITAL LETTER EL WITH HOOK
F323	ґ̂	CYRILLIC SMALL LETTER EL WITH HOOK
F324	Җ	CYRILLIC CAPITAL LETTER HA WITH HOOK
F325	җ	CYRILLIC SMALL LETTER HA WITH HOOK
F326	Ґ̣	CYRILLIC CAPITAL LETTER GHE WITH STROKE AND DESCENDER
F327	ґ̣	CYRILLIC SMALL LETTER GHE WITH STROKE AND DESCENDER
F328	Җ̣	CYRILLIC CAPITAL LETTER HA WITH STROKE
F329	җ̣	CYRILLIC SMALL LETTER HA WITH STROKE

Advanced typographic capabilities

This font supports various advanced typographic capabilities using either the Graphite or OpenType font technologies.

- Automatic conversion of sequences of pitch letters (U+02E5..U+02E9) into ligatures.
- Automatic *fi*-type ligatures.
- Auto placement of diacritics to a sufficient level of stacking.
- Auto placement of double-width diacritics (U+035D..U+0362, and the private-use character U+F176) according to heights and depths of adjacent clusters (in Graphite only)
- Vietnamese diacritic placement handling (enabled via a user-selectable font feature).

The automatic placement of diacritics is supported for data that may or may not be canonically ordered (as defined by the Unicode Standard). This should normally be the responsibility of application software and text-processing resources (such as input methods), however, and not the user.

These capabilities are available in any application that supports the Graphite technology. They are also available via the OpenType technology, though this requires applications that provide a sufficient level of support for OpenType features. (See *System Requirements*.)

Additional capabilities available via font features

When the Doulos SIL font is used in applications that support Graphite and that provide an appropriate user interface, various user-controllable font features are available that allow access to certain alternately-designed glyphs that would be appropriate for use in certain contexts. These font features are also available for use in InDesign 2 (and above) and on Mac OS X. The following font features are available in this font:

<i>Capital Eng alternates</i> (ID=1024)	Three forms of U+014A LATIN CAPITAL LETTER ENG are available: Large eng with descender: a taller form of the lowercase eng, with a curved tail that hangs below the baseline. This is the default rendering. (Value = 0.) Large eng on baseline: a taller form of the lowercase eng, with the right vertical stroke curving to the left above the baseline. (Value = 1.) Capital N with tail: resembles the uppercase N, with a curved tail hanging from the right vertical stroke. (Value = 2.)	 Ŋ Ŋ Ŋ
<i>Rams horn alternates</i> (ID=1025)	Three forms of U+0264 LATIN SMALL LETTER RAMS HORN are available: Small bowl (Value = 0) Large bowl (Value = 1) Small gamma (Value = 2)	 ϣ σ γ

<i>Tone numbers</i> (ID=1026)	Modifies appearance of U+02E5 through U+02E9, the modifier letter tone bars, and of ligatures formed from sequences of these characters. Possible settings are: Characters: characters are represented by tone bars. This is the default rendering. (Value = 0) Numbers: characters are represented using superscript numerals. (Value = 1)	ᵥ / 115
<i>Cyrillic E alternates</i> (ID=1027)	Provides alternates for Cyrillic letters with the central horizontal stroke slightly curved, as is appropriate for Mongolian. U+042D CYRILLIC CAPITAL LETTER E U+044D CYRILLIC SMALL LETTER E	ᠡ / ᠢ ᠢ / ᠣ
<i>Combining breve Cyrillic form</i> (ID=1028)	Provides alternates for U+0306 COMBINING BREVE that is appropriate for Cyrillic script.	˘ / ˘
<i>Vietnamese-style diacritics</i> (ID=1029)	Turning this feature on causes some pairs of diacritics to be rendered side-by-side as is appropriate for Vietnamese. When the feature is off, the result is standard stacking diacritics.	ˆ / ˆ
<i>Show invisible characters</i> (ID=1030)	Provides visible alternates for invisible characters. (U+00AD, U+034F, U+200B..U+200F, U+202A..U+202E, U+2060..U+2063, U+FE00..U+FE0F, U+FEFF)	/ 
<i>Barred-bowl forms</i> (ID=1031)	Provides alternates for variants of characters that are needed for phonetic transcriptions conforming to Americanist linguistic traditions: U+0111 LATIN SMALL LETTER D WITH STROKE U+0180 LATIN SMALL LETTER B WITH STROKE U+01E5 LATIN SMALL LETTER G WITH STROKE	đ / đ ɓ / ɓ ɠ / ɠ
<i>Literacy alternates</i> (ID=1032)	Provides alternates for literacy forms: U+0061 LATIN SMALL LETTER A U+0067 LATIN SMALL LETTER G U+01E5 LATIN SMALL LETTER G WITH STROKE	a / a g / g g / ɠ
<i>Small v-hook alternate</i> (ID=1033)	Provides an alternate for U+028B LATIN SMALL LETTER V WITH HOOK.	v / v
<i>Capital Y-hook alternate</i> (ID=1034)	Provides an alternate for U+01B3 LATIN CAPITAL LETTER Y WITH HOOK.	Y / Y
<i>Capital N-left-hook alternate</i> (ID=1035)	Provides an alternate for U+019D LATIN CAPITAL LETTER N WITH LEFT HOOK.	N / N
<i>Small ezh-curl alternate</i> (ID=1036)	Provides an alternate for U+0293 LATIN SMALL LETTER EZH WITH CURL.	Ʒ / Ʒ
<i>Capital T-hook alternate</i> (ID=1037)	Provides an alternate for U+01AC LATIN CAPITAL LETTER T WITH HOOK.	T / T
<i>Capital H-stroke alternate</i> (ID=1038)	Provides an alternate for U+0126 LATIN CAPITAL LETTER H WITH STROKE.	H / H

<i>Capital R-tail alternate</i> (ID=1039)	Provides an alternate for U+F215 LATIN CAPITAL LETTER R WITH TAIL.	Ŕ / Ŗ
<i>Small p-hook alternate</i> (ID=1040)	Provides an alternate for U+01A5 LATIN SMALL LETTER P WITH HOOK.	ḡ / ḣ
<i>Romanian-style diacritics</i> (ID=1041)	Provides alternates for Romanian-style variants: U+015E LATIN CAPITAL LETTER S WITH CEDILLA U+015F LATIN SMALL LETTER S WITH CEDILLA U+0162 LATIN CAPITAL LETTER T WITH CEDILLA U+0163 LATIN SMALL LETTER T WITH CEDILLA	Ș / ș ș / ș Ț / Ț ț / ț
<i>Capital Ezh alternates</i> (ID=1042)	Provides alternates for: U+01B7 LATIN CAPITAL LETTER EZH U+04E0 CYRILLIC CAPITAL LETTER ABKHASIAN DZE	Ʒ / Ʒ Ѹ / Ѹ
<i>Ogonek alternates</i> (ID=1043)	Provides straight form alternates (Value = 1) for characters using the ogonek rather than curved forms (Value = 0).	ė / ė
<i>Modifier apostrophe alternates</i> (ID=1044)	Provides large alternates for: U+02BC MODIFIER LETTER APOSTROPHE U+F21D MODIFIER LETTER STRAIGHT APOSTROPHE	’ / ’ ' / '
<i>OU alternates</i> (ID=1045)	Provides open top alternates for: U+0222 LATIN CAPITAL LETTER OU U+0223 LATIN SMALL LETTER OU	Ů / Ů ů / ů
<i>Empty set alternates</i> (ID=1046)	Provides an alternate for U+2205 EMPTY SET.	∅ / ∅

AAT

An AAT-enabled version (for Macintosh) of the Doulos SIL font may be available at some future date. The current version works fairly well in applications that fully support Unicode, such as TextEdit and Mail on Mac OS X, but diacritic placement may be less than ideal because of the lack of AAT tables.

Conversion

In order to use this font with existing data that was created for use with fonts developed using the *Encore Fonts* system, or with custom-encoded fonts created by other means, it is necessary to re-type or convert data to produce data that is encoded in conformance with the Unicode Standard. TECKit is one program that can be used for character encoding conversion. TECKit allows users to write their own custom conversion mappings.

The TECKit package is available for download from SIL's TECKit Web site:
http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&item_id=TECKitIntro

Some TECKit mapping files have already been created for some of the more widely used SIL legacy fonts and they can be downloaded from:

http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&item_id=MappingFiles

Keyboarding

The ability to obtain full benefits of this font is also dependent upon having means for Unicode character input. This package does not include keyboard input methods. Most current operating systems provide keyboard input methods for a number of different languages that have writing systems based on the Roman or Cyrillic scripts. Various means may be available for different operating-system platforms to create additional input methods for other languages. For instance, Microsoft Keyboard Layout Creator (<http://www.microsoft.com/globaldev/tools/msklc.mspx>) or Tavultesoft Keyman (<http://www.tavultesoft.com>) version 5 or later can be used for this purpose on Microsoft Windows. Some existing Keyman keyboards can also be downloaded from: http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&item_id=SILKeyboards. For the Mac, version 10.2 of Mac OS X includes a mechanism for users to create custom Unicode keyboard layouts (see <http://developer.apple.com/technotes/tn2002/tn2056.html>).

Technical Support

Note:

Updates to this font, FAQ and Known-issues list will be available online. Go to <http://scripts.sil.org/> and click on “Font Downloads” in the sidebar.

Frequently Asked Questions

Question: Will font and glyph metrics stay the same in future versions?

Answer: We do not guarantee to keep metrics stable in future versions. The practical result of this means that you should expect to have different line lengths, paragraph length may be different, and line spacing may even be different. *You should not expect your document to have the same page layout as you do with the current font.*

Question: Do I still need to use the “SIL Unicode IPA font beta” (SILDoulosUnicodeIPA) font or can I just use “Doulos SIL”?

Answer: With a few exceptions, everything in the “SIL Unicode IPA font beta” is included in the “Doulos SIL” font so you no longer need the IPA font.

Exceptions include:

U+0334 was in “SIL Unicode IPA font beta” and is not in “Doulos SIL Regular”. Precomposed characters should be used.

U+2191 UPWARDS ARROW and U+2193 DOWNWARDS ARROW were used for “Upstep” and “Downstep” respectively in the “IPA Unicode 1.0” Keyman keyboard. These no longer have the same glyph in “Doulos SIL Regular” as they did for “SIL Unicode IPA font beta”. It is recommended that U+F19C MODIFIER LETTER RAISED UP ARROW and U+F19D MODIFIER LETTER RAISED DOWN ARROW, respectively, are used for “Upstep” and “Downstep”.

Question: Why don't my tonebars ligate?

Answer: See [“Why don't my diacritics position properly?”](#)

Question: When I type data, I get the proper characters, but the stacked diacritics show up on top of one another, rather than stacked, and not properly centered. What am I doing wrong?

Answer: See [“Why don’t my diacritics position properly?”](#)

Question: Why don’t my diacritics position properly?

Answer: Cause 1: The application you are using is neither Graphite-aware nor OpenType-aware, or your Uniscribe needs to be updated, or you are using characters from the PUA in a Uniscribe-based application.

More info:

In order for complex behaviors such as diacritic positioning and ligatures to work, the application must be able to use the Graphite or OpenType tables in the font. For example, until Microsoft Office 2003 was released there were no versions of Microsoft Office and of the system component Uniscribe that had the ability to use either of these for Latin script. Unfortunately, even the latest versions of Uniscribe ignore OpenType information for characters from the PUA area, so neither diacritic positioning nor ligation occur. Microsoft says this is by design.

Cause 2: If you are using Word 2000 or Word XP with an updated version of Uniscribe, some kinds of display problems can be fixed by saving and reopening the file.

Cause 3: While some of these problems are font errors (that we want to know about), another common cause is formatting issues within the application. In order for diacritic positioning or ligatures to work correctly, the application must render the complete character sequence in one operation. The most common reason for this condition to fail is if some characters in the sequence have different formatting than the others. If there is any difference at all in the formatting (e.g., in character spacing or color, font names or sizes, etc.) the application may have to break the sequence into separate runs.

Solution: In order to rule out formatting problems, make absolutely sure that the characters in the sequence are formatted identically. Some applications let you copy the affected text to the clipboard and then use **Edit / Paste Special** to paste unformatted text back into the document. Another approach, available in Microsoft Word, is to select the text and press **Ctrl** – **space** to reset all character formatting to the paragraph default. (This assumes your default paragraph style is formatted with Doulos SIL).

Note

In Word, even formatting such as Complex Scripts font and Asian Text font settings must match exactly for the entire sequence, even though these settings aren’t actually used to render Latin text.

Question: Why don’t my diacritics positioned above or below characters appear onscreen, but they do show up in print?

Answer: Solution: The vertical metrics for this font have been set to accommodate the majority of situations, but in some scenarios, especially with stacking diacritics, you may get clipping onscreen. You may be able to overcome this by adjusting the line spacing in the application. For example, in Microsoft Word select **Format / Paragraph** and set the line spacing to use the **Exactly** setting and a value approximately twice the font size. For example, if the font size is 12

pt, select line spacing of **Exactly** 24 pt. You can adjust the value up or down depending on how many diacritics you need to stack.

Question: Why don't the PUA characters work properly (diacritic positioning, tone ligation, etc)?

Answer: Uniscribe ignores complex behaviors that have been provided in fonts for PUA characters, and thus in Uniscribe-based applications such as Paratext 6 and Microsoft Word the PUA characters will not display correctly.

Question: In certain combinations, two upper diacritics (e.g., tilde over macron) display in a fixed order (the tilde below the macron), no matter what order they are typed in. Why is that?

Answer: See [“Combining mark sequences may be incorrectly rendered”](#).

Question: Why aren't there any overlaid combining marks in the font?

Answer: See [“The following overlaid combining marks are not present in the font”](#).

Question: Why don't some of my characters render in Internet Explorer?

Answer: See [“Some characters do not render properly in Internet Explorer”](#).

Question: Why are some of my diacritics colliding with nearby letters?

Answer: When combined with some narrow glyphs (such as ‘i’), wide diacritics (such as the tilde) may collide with adjacent glyphs. In many cases this is not a problem (it is sometimes OK for glyphs to collide). If this causes difficulty with the legibility of the text, then manually space those letters apart in your text using manual kerning or character spacing settings in your application. We do not have a generally feasible solution for this problem, but will continue to look for one.

Known Issues

Some characters do not render properly in Internet Explorer

This is a problem in Internet Explorer for the following characters:

- U+02C8 MODIFIER LETTER VERTICAL LINE
- U+02C9 MODIFIER LETTER MACRON
- U+02CA MODIFIER LETTER ACUTE ACCENT
- U+02CB MODIFIER LETTER GRAVE ACCENT
- U+02CC MODIFIER LETTER LOW VERTICAL LINE
- U+F198 MODIFIER LETTER CHINANTEC TONE MARK DOT VERTICAL BAR
- U+F199 MODIFIER LETTER CHINANTEC TONE MARK DOT SLASH

Microsoft has been alerted but we do not know a solution as yet.

The font does not support the overlaid combining marks

The following overlaid combining marks are not present in the font:

U+0334	COMBINING TILDE OVERLAY
U+0335	COMBINING SHORT STROKE OVERLAY
U+0336	COMBINING LONG STROKE OVERLAY
U+0337	COMBINING SHORT SOLIDUS OVERLAY
U+0338	COMBINING LONG SOLIDUS OVERLAY

Cause: This is by design. For various technical reasons it is best to avoid using overlay combining marks. That is why, for instance, Unicode does not define a decomposition of U+026B LATIN SMALL LETTER L WITH MIDDLE TILDE to U+006C LATIN SMALL LETTER L + U+0334 COMBINING TILDE OVERLAY.

For reasons similar to the overlay diacritics, U+0321 COMBINING PALATALIZED HOOK BELOW and U+0322 COMBINING RETROFLEX HOOK BELOW are also absent from the font ... by design. In this and the overlay diacritic case, Unicode (or the SIL PUA area) provide for most uses of these marks through precomposed characters.

Combining mark sequences may be incorrectly rendered

This is not a bug in the font, but it is a Uniscribe bug which has been reported to Microsoft. It will only be a problem in applications using OpenType, not applications using Graphite. Failure depends on surrounding text. The following table lays out which character sequences will be a problem.

First combining mark		Second combining mark								
		0301	0302	0303	0304	0306	0307	0308	030A	030C
		Acute	Circumflex	Tilde	Macron	Breve	Dot	Diaeresis	Ring	Caron
0300	Grave		AaEeOo		EeOo	Aa		Uu		
0301	Acute		AaEeOo	OoUu	EeOo	Aa		IiUu	Aa	
0303	Tilde		AaEeOo			Aa				
0304	Macron			Oo			AaOo	AaOo		
0307	Dot	Ss								Ss
0308	Diaeresis			Oo						
0309	Hook		AaEeOo			Aa				
030C	Caron							Uu		

Base characters for which the indicated combining mark sequence may be incorrectly rendered.

Dotted digraphs with diacritics:

Unicode specifies that, unlike i or j, etc., these characters do not lose their dots:

- U+0133 ij LATIN SMALL LIGATURE IJ
- U+01C8 Lj LATIN CAPITAL LETTER L WITH SMALL LETTER J
- U+01C9 lj LATIN SMALL LETTER LJ
- U+01CB Nj LATIN CAPITAL LETTER N WITH SMALL LETTER J
- U+01CC nj LATIN SMALL LETTER NJ