FONTFONT OPENTYPE® USER GUIDE

SECTIONS

- A | Introduction to OpenType®
- **B** | FontFont OpenType Categories
- c | Language Support
- □ Layout Features



SECTION A INTRODUCTION TO OPENTYPE®

WHAT IS OPENTYPE?

OpenType is the most modern font file format. The two main benefits of the OpenType format are its cross-platform compatibility – you can work with the same font file on Mac®, Windows® or other computers – and its ability to support widely expanded character sets and layout features which provide rich linguistic support and advanced typographic control.

Each OpenType FontFont is accompanied by a font-specific FF Info Guide listing all the layout features and languages supported by that particular font. The font and FF Info Guide will be delivered as a compressed zip file.

This document covers the basics of the OpenType format. Section C explains the language support of OpenType fonts. In Section D you will find a glossary of all OpenType layout features that may be supported by FontFonts.

If you look for information about layout features and language support of a specific OpenType FontFont please read the comprehensive font-specific FF Info Guide for that font.

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Text typeface: FF Unit

SECTION A INTRODUCTION TO OPENTYPE®

CROSS-PLATFORM COMPATIBILITY

By using one font file only for its entire glyph, metric and bitmap data, OpenType fonts simplify font management. The same file works on Mac, Windows and other operating systems so you can move font files between platforms for the use in any documents that use type.

LANGUAGE SUPPORT

OpenType fonts are based on the Unicode Standard, a multi-byte character encoding that covers nearly all the world's languages. With OpenType it is possible to include multiple language character sets in one font, thus simplifying multilingual text processing. Section C lists all code pages and languages that may be supported by OpenType FontFonts. For information about language support of a specific OpenType FontFont please refer to the respective font-specific FF Info Guide.

LAYOUT FEATURES

Traditional PostScript® fonts are limited to 256 glyphs, forcing the user to install and manage two or more style-related fonts in order to access additional characters. OpenType fonts can contain more than 65 000 glyphs in one cross-platform font file, making font management and publishing workflows much easier and more flexible.

A single font file may contain many non-standard glyphs, such as old-style figures, tabular figures, small capitals, fractions, swashes, superiors, inferiors, titling letters, contextual and stylistic alternates, a full range of ligatures, symbols and ornaments. The OpenType layout features allow automatic positioning or substitution of glyphs. Section D lists and describes the layout features that may be supported by OpenType FontFonts.

USE OF OPENTYPE FONTS

The installation of OpenType fonts is similar to other font formats. Please refer to your operating system manual. OpenType-savvy applications provide a user interface that allows applying OpenType layout features to text. Applications that don't support OpenType layout features can still access the full range of encoded characters and symbols in OpenType fonts if application and operating system support Unicode (e. g. Windows 2000, XP, Vista®, 7; Mac OS® X). When using non-Unicode-savvy operating systems or applications only the first 256 characters in the font may be accessed.

FONTFONT
OPENTYPE
CATEGORIES

FONTFONT OPENTYPE CATEGORIES

Even though the OpenType format is cross-platform compatible, there are differences in the way how operating systems and applications handle the various characteristics of OpenType fonts. For this reason, FSI has started to offer different kinds of OpenType fonts:

PostScript-flavoured OpenType fonts with file extension .otf (OT Standard and OT Pro), *OT* fonts for short, are optimized for users who work with desktop publishing software such as InDesign® or QuarkXPress®.

TrueType-flavoured OpenType fonts with file extension .ttf (Offc Standard and Offc Pro) are optimized for most office applications, such as Microsoft® Word, Powerpoint® or OpenOffice.

Web FontFonts are based on TrueType-flavoured OpenType fonts which are 'wrapped' into a Web Open Font Format (WOFF) or Embedded OpenType® (EOT) file. Two different webfont formats are necessary because of varying browser support.

Please see next page for a detailed description of the current FontFont Open-Type categories.

FONTFONT OPENTYPE CATEGORIES



OPENTYPE CFF STANDARD and PRO.



These fonts allow advanced typographic control through special layout features like automatic contextual ligatures, Small Caps and alternate glyphs. The outline format is CFF (Compact Font Format), i. e. the fonts are PostScript-flavoured.

OT Standard fonts have at least the character sets for 58 Western languages such as English, French and Spanish, while OT Pro fonts support at least 36 more Latin-based languages (e. g. Czech, Turkish, Latvian). Many OT Pro fonts also contain Greek or Cyrillic. OT Standard and Pro fonts are style-linked by their family names.



OPENTYPE TTF OFFC STANDARD and PRO.



These fonts don't contain any layout features and are TrueType-flavoured to comply with most Office applications. Offic Basic Sets consist of four style-linked Regular, Italic, Bold and Bold Italic fonts. Styles outside these Basic Sets are linked to their italic counterparts, e. g. Light to Light Italic. The default figure set is Tabular Figures (TF). Small Caps with Oldstyle Figures (OsF) are available as separate fonts.

Offc Standard fonts have at least the character sets for 58 Western languages such as English, French and Spanish, while Offc Pro fonts support at least 36 more Latin-based languages (e. g. Czech, Turkish, Latvian). Many Offc Pro fonts also contain Greek or Cyrillic.



OPENTYPE TTF WEB STANDARD and PRO.



Web FontFonts are based on TrueType-flavoured OpenType fonts and are delivered in two different formats, *Web Open Font Format* (WOFF) and *Embedded OpenType* (EOT) because of varying web browser support. Their default figure set is Tabular Figures (TF). Small Caps with Oldstyle Figures (OsF) are available as separate fonts.

Web Standard fonts have at least the character sets for 58 Western languages such as English, French and Spanish, while Web Pro fonts support at least 36 more Latin-based languages (e. g. Czech, Turkish, Latvian). Many Web Pro fonts also contain Greek or Cyrillic.

FONTFONT OPENTYPE CATEGORIES



OPENTYPE CFF ARABIC.

These fonts allow advanced typographic control through special layout features like automatic contextual ligatures, Small Caps and alternate glyphs. The outline format is CFF (Compact Font Format), i. e. the fonts are PostScript-flavoured.

OT Arabic fonts have the character sets for the non-Latin script systems Arabic, Persian and Urdu and for Western languages such as English, French and Spanish. They contain all OpenType layout features necessary for Arabic typesetting.



OPENTYPE CFF MIN.

These fonts allow advanced typographic control through special layout features like automatic contextual ligatures, Small Caps and alternate glyphs. The outline format is CFF (Compact Font Format), i. e. the fonts are PostScript-flavoured.

OT Min fonts have at least the character sets for 58 Western languages such as English, French, Spanish, but some non-essential glyphs such as mathematical operators have been omitted.

ACCESSING EXTENDED CHARACTERS

Applications and operating systems that make use of the Unicode Standard for text processing can provide easy access to the wide range of encoded accented characters and special symbols in OpenType fonts, thus greatly simplifying multilingual typesetting. All OpenType FontFonts have at least the character sets of the code pages MS Windows 1252 and Mac OS Roman.

All Unicode-encoded glyphs in an OpenType font will show up in the Windows Character Map accessory, allowing direct copying and pasting of any OpenType glyph into any application that supports Unicode. On Mac OS X the Character Palette offers a similar function. OS X users may also install and select a Unicode keyboard layout that allows direct access to any Unicode character in most Unicode-supporting applications.



The font has support for the FontFont Western encoding (all OpenType FontFonts do, the icon may be omitted).



Support for FontFont CE encoding (including the former Central European, Baltic and Turkish encodings).



Support for FontFont Latin Extended encoding.



Support for FontFont Greek encoding.



Support for FontFont Greek Polytonic encoding.



Support for FontFont Cyrillic encoding.



Support for FontFont Cyrillic Extended encoding.



Support for FontFont Arabic encoding.



 ${\bf Support\ for\ FontFont\ Hebrew\ encoding.}$

SUPPORTED CODE PAGES

STANDARD/MIN*











WINDOWS

MS WINDOWS 1252 WESTERN

MAC

MAC OS ROMAN

IS0

ISO 8859-1 LATIN 1 WESTERN
ISO 8859-15 WEST EUROPE LATIN 9

IBM

IBM 037 UNITED STATES - EBCDIC (IBM 28709)

IBM 273 GERMANY - EBCDIC

IBM 277 DENMARK, NORWAY - EBCDIC
IBM 278 FINLAND, SWEDEN - EBCDIC

IBM 280 ITALY - EBCDIC

IBM 282

IBM 284 SPAIN, LATIN AMERICA – EBCDIC

IBM 285 UNITED KINGDOM - EBCDIC

IBM 297 FRANCE - EBCDIC

IBM 500 INTERNATIONAL - EBCDIC

IBM 871 ICELAND - EBCDIC

IBM 1047 OPEN SYSTEMS - EBCDIC

ADDITIONAL SUPPORTED CODE PAGES

PRO









WINDOWS

MS WINDOWS 1250 EASTERN EUROPEAN

MS WINDOWS 1254 TURKISH
MS WINDOWS 1257 BALTIC

MAC

MAC OS CENTRAL EUROPE MAC OS CROATIAN

MAC OS ROMANIAN
MAC OS TURKISH

TSO

ISO 8859-2 C EU LATIN 2

ISO

ISO 8859-3 TU, MALT, GAL, ESP, LATIN 3
ISO 8859-9 W EU+TURKISH LATIN 5

ISO 8859-13 BALTIC LATIN 7

ISO 8859-16 SOUTHEAST EUROPE LATIN 10

IBM

IBM 921 BALTIC IBM 922 ESTONIA

IBM 1112 BALTIC - EBCDIC

ŋ

ISO

ISO 8859-4 BALTIC LATIN 6

ISO 8859-10 SCANDINAVIAN LATIN 6

α

WINDOWS

MS WINDOWS 1253 GREEK

MAC

MAC OS GREEK

ISO

ISO 8859-7 GREEK

IBM

IBM 875 GREECE EBCDIC

Ж

WINDOWS

MS WINDOWS 1251 CYRILLIC

MAC

MAC OS CYRILLIC

MAC OS UKRAINE

ISO

ISO 8859-5 CYRILLIC

IBM

IBM 1025 CYRILLIC - EBCDIC

IBM 1123 IBM 1124

^{*} Min supports the same code pages as Standard, but some non-essential glyphs may have been replaced with placeholder glyphs (see also Min language support, next page).

STANDARD









SUPPORTED LANGUAGES



AFRIKAANS KARAIM (LATIN) ALBANIAN KAZAN TATAR (LATIN) ARVANITIKA (LATIN) KURDISH (LATIN) ASTURIAN LADIN BARABA TATAR LOW GERMAN BISLAMA LUXEMBOURGIAN BRETON MALAGASY CATALAN MALAY (LATIN) CHAMORRO MANX GAELIC DANISH NORWEGIAN OCCITAN DUTCH PORTUGUESE ENGLISH ESTONIAN RHAETO-ROMANCE FAEROESE ROMANSCH FINNISH SAMI, SOUTHERN FRANCO-PROVENÇAL SAMI, UME FRENCH SOMALI

FRISIAN SOTHO, NORTHERN FRISIAN, EAST SOTHO, SOUTHERN FRISIAN, NORTH SPANISH FRISIAN, WEST SWEDISH FRIULIAN TAGALOG GAELIC, SCOTTISH TAHITIAN TSAKHUR (LATIN) GALICIAN GERMAN TSONGA GREENLANDIC TSWANA ICELANDIC WALLOON INDONESIAN XHOSA INTERLINGUA YAPESE IRISH zulu

MIN

MIN

ITALIAN

SUPPORTED LANGUAGES

Min supports the same languages as Standard. However, some nonessential glyphs such as mathematical operators and mathematical Greek characters may have been replaced with placeholder glyphs.

PRO

ARUMANIAN







ADDITIONAL SUPPORTED LANGUAGES

ę

BASQUE BOSNIAN (LATIN) BELARUSIAN (LATIN) COOK ISLANDS MAORI CRIMEAN TATAR (LATIN) ${\tt CROATIAN}$ CZECH

ESPERANTO GAGAUZ (LATIN) HAWAIIAN HUNGARIAN ISTRO-ROMANIAN KASHUBIAN KURMANJI LATVIAN LITHUANIAN

MALTESE MAORI

MARSHALLESE MOLDAVIAN (LATIN)

POLISH ROMANIAN SAMI, INARI SAMI, LULE ${\tt SAMOAN}$

SERBIAN (LATIN) SLOVAK SLOVENIAN SORBIAN, LOWER SORBIAN, UPPER

TONGAN TURKISH ивукн VÅMHUSMÅL VEPSIAN WALLISIAN

ARAGONESE AZERBAIJANI (LATIN) CHECHEN (LATIN) CHICHEWA

GREENLANDIC (PRE-1973) LADINO (LATIN) LATIN

PORTUNHOL ROMANI (LATIN) SAMI, NORTHERN SARDINIAN WELSH WOLOF

GREEK MONOTONIC TSAKONIAN MONOTONIC ARVANITIKA (GREEK)

GREEK POLYTONIC

Ж

ABAZA кимук

KURDISH (CYRILLIC) BALK BOSNIAN (CYRILLIC) MACEDONIAN BULGARIAN MOKSHA BELARUSIAN (CYRILLIC) NANAI ERZYA NOGAY KARACHAY-BALKAR RUSSIAN KARAIM (CYRILLIC) RUSYN KAZAN TATAR (CYRILLIC) UKRAINIAN

ADYGHE KHINALUG ARCHI KRYTS AVAR LAK BOTLIKH LEZGI

MONGOLIAN (CYRILLIC) BUDUKH

BURYAT RUTUL CHECHEN (CYRILLIC) TABASARAN DARGIN TAJIK DUNGAN TATAR INGUSH TATI

KABARDIAN TSAKHUR (CYRILLIC)

KALMYK TURKMEN KARA-KALPAK TUVINIAN UZBEK KAZAKH

ARABIC PERSIAN URDU



HEBREW

OpenType layout features can be used to automatically position or substitute glyphs for more typographic flexibility. Glyphs are the specific visual forms or shapes that characters can take. Characters are the code points assigned by the Unicode Standard which represent the smallest semantic unit of languages, such as letters. One character may correspond to several glyphs: the lowercase 'a', a small capital 'A' and an alternate lowercase 'a' are all the same character but three different glyphs. In case of ligatures one glyph may also represent more than one character, for instance the 'ffi' ligature is one glyph but corresponds to three characters: 'f', 'f' and 'i'.

For any given character there is a default glyph and positioning behaviour. By applying OpenType layout features to one or more characters you can change the positioning or substitute glyphs. For example, the application of the Small Capital feature to a lowercase 'a' will replace it by the small cap 'A'. Below are descriptions and examples for each layout feature that may be supported by OT FontFonts. A listing of layout features for a specific OT FontFont can be found in the respective font-specific FF Info Guide.

PostScript-flavoured OpenType fonts may include some layout features which are not accessible in all applications. Users are encouraged to read application documentation to determine which OpenType features are supported in their specific workflow and update applications to the latest versions which often include additional support.

OPENTYPE LAYOUT FEATURE

EXAMPLE



AALT

ACCESS ALL ALTERNATES

This feature makes all variations of a selected character accessible, e. g. via the Glyph Palette.

 $n \triangleright N^n n.n.$



CONTEXTUAL ALTERNATES

This feature replaces default glyphs with alternate forms which provide better joining behavior.

first ► first

OPENTYPE LAYOUT FEATURE

EXAMPLE



STYLISTIC ALTERNATES

This feature replaces the default forms with stylistic alternates. Many fonts contain alternate glyph designs for a purely aesthetic effect; these don't always fit into a clear category like swash or historical.





LIGA

STANDARD LIGATURES

The feature replaces a sequence of glyphs with a single glyph which is preferred for typographic purposes. This feature is applied by default.





CONTEXTUAL LIGATURES

Replaces a sequence of glyphs with a single glyph which is preferred for typographic purposes. Unlike other ligature features, the Contextual Ligatures feature specifies the context in which the ligature is recommended.





DISCRETIONARY LIGATURES

This feature replaces a sequence of glyphs with a single glyph which, in contrast to the Standard Ligatures feature, may not be desired in all text settings.

$$ct \triangleright ct$$



HISTORICAL FORMS

This feature replaces the default (current) forms with the historical alternates.

OPENTYPE LAYOUT FEATURE

EXAMPLE



HLIG

HISTORICAL LIGATURES

This feature replaces the default (current) forms with the historical alternates.

 $\int S \rightarrow \int S$



UNIC

UNICASE

This feature maps upper- and lowercase letters to a mixed set of lowercase and small capital forms, resulting in a single case alphabet.

aBove ► aBove



 SMCP

SMALL CAPITALS

Turns lowercase characters into Small Capitals. Forms related to Small Capitals, such as Oldstyle Figures, may be included.

abc ► ABC



SMALL CAPITALS FROM CAPITALS

This feature turns capital characters into Small Capitals. It is generally used for words which would otherwise be set in all caps, such as acronyms, but which are desired in small-cap form to avoid disrupting the flow of text.

ABC ► ABC



PETITE CAPITALS FROM CAPITALS

Turns capital characters into Petite Capitals.

ABC ► ABC

OPENTYPE LAYOUT FEATURE

EXAMPLE



PETITE CAPITALS

Some fonts contain an additional size of capital letters, shorter than the regular Small Caps and whimsically referred to as Petite Caps. This feature turns lowercase characters into Petite Capitals. Forms related to Petite Capitals, such as specially designed figures, may be included.

abc ► ABC



CASE SENSITIVE FORMS

By default, glyphs in a text face are designed to work with lowercase characters. This feature shifts various punctuation marks up to a position that works better with all-capital sequences or sets of lining figures. This feature also changes Oldstyle Figures to Lining Figures.





CAPITAL SPACING

The Capital Spacing feature adjusts inter-glyph spacing for all-capital text. Most typefaces contain capitals and lower-case characters, and the capitals are positioned to work with the lowercase. When capitals are used for words, they need more space between them for legibility and aesthetics.

ABC ► ABC



00

TITI

TITLING

This feature replaces the default glyphs with corresponding forms designed specifically for titling.

ABC ► ABC

OPENTYPE LAYOUT FEATURE

EXAMPLE



SWASH

This feature replaces default character glyphs with corresponding swash glyphs.

FONT > FONT



CONTEXTUAL SWASH

This feature replaces default character glyphs with corresponding swash glyphs in a specified context.

Font ► Font



FRACTIONS

The feature replaces figures separated by a slash with common (diagonal) fractions. The number of fractions in a font may vary. OpenType Standard FontFonts include at least fractions for 1/4, 1/2 and 3/4.

2 13/16 ► 2¹³/16



AFRC

ALTERNATIVE FRACTIONS

This feature replaces figures separated by a slash with an alternative (nut fraction) form. E. g. if you enter 3/4 in a document you will get a specified three-quarter nut fraction.

 $1/4 \blacktriangleright \frac{1}{4}$



ORDINALS

This feature replaces default alphabetic glyphs with the corresponding ordinal forms for use after figures.

 $1st \triangleright 1^{st}$

OPENTYPE LAYOUT FEATURE

EXAMPLE



NUMR

NUMERATORS

This feature replaces selected figures which precede a slash with numerator figures, and replaces the typographic slash with the fraction slash.

4/ ► ⁴/



DENOMINATORS

Replaces selected figures which follow a slash with denominator figures in order to build additional fractions.



SCIENTIFIC INFERIORS

This feature replaces Lining or Oldstyle Figures with inferior figures (smaller glyphs which sit lower than the standard baseline, primarily for chemical or mathematical notation). May also replace lowercase characters with alphabetic inferiors.





SUPS

SUPERSCRIPT

Lining or oldstyle figures are replaced with superior figures (primarily for footnote indication), and lowercase letters are replaced with superior letters (primarily for abbreviated French titles).



SUBSCRIPT

This feature will replace a default glyph with a subscript glyph.

OPENTYPE LAYOUT FEATURE

EXAMPLE



OLDSTYLE FIGURES

Changes selected figures from the lining style to the oldstyle form

167 ► 167



LNUM

LINING FIGURES

This feature changes selected figures from oldstyle to the lining form.

289 ► 289



PROPORTIONAL FIGURES

This feature replaces figure glyphs set on uniform (tabular) widths with corresponding glyphs set on glyph-specific (proportional) widths.



TABULAR FIGURES

This feature replaces figure glyphs set on proportional widths with corresponding glyphs set on uniform (tabular) widths.



SLASHED ZERO

ZERO

Some fonts contain both a default form of zero and an alternative form which uses a diagonal slash through the counter. Especially in condensed designs, it can be difficult to distinguish between O and O (zero and capital O) in any situation where capitals and lining figures may be arbitrarily mixed. This feature allows the user to change from the default O to a slashed form.

on 08 ► on 08

OPENTYPE LAYOUT FEATURE

EXAMPLE



MATHEMATICAL GREEK

This feature replaces standard typographic forms of Greek glyphs with corresponding forms commonly used in mathematical notation.





ALTERNATE ANNOTATION FORMS

Replaces default glyphs with various notational forms (e.g. glyphs placed in open or solid circles, squares, parentheses, diamonds or rounded boxes).

123! ► **0000**



ORNM

ORNAMENTS

This is a dual-function feature which uses two input methods to give the user access to ornament glyphs (e. g. fleurons, dingbats and border elements) in the font. One method replaces the bullet character with a selection from the full set of available ornaments; the other replaces specific lower ASCII characters with ornaments assigned to them.





LOCALIZED FORMS

This feature replaces certain glyphs with a different preferred form depending on the language of the text.

AŞ ► AŞ

OPENTYPE LAYOUT FEATURE

EXAMPLE



OPTICAL SIZE

If a font family comes in various design sizes, this feature allows an application to automatically choose the design best suited for a specific text size instead of simple linear scaling.

abc abc ▶ abc abc



STYLISTIC SETS

This feature replaces the default forms with stylistic alternates organised in one or more corresponding sets. A font can contain up to 20 stylistic sets, each of which can be switched on separately.

Age 24 **② ●** ► Age 24



ISOLATED FORMS

Replaces a glyph with its isolated form. Like the other positional forms features it is mainly used in the Arabic writing system.

◄ ع



INITIAL FORMS

This feature replaces a glyph with a different form used at the beginning of words.

ہ ≥ ء



MEDIAL FORMS

This feature replaces a glyph with a different form used in the middle of words.

۷ ◄

OPENTYPE LAYOUT FEATURE

EXAMPLE



FINAL FORMS

This feature replaces a glyph with a different form used at the ending of words.

ع





REQUIRED LIGATURES

This feature replaces a sequence of glyphs with a single glyph which is not only preferred for typographic purposes like in the Standard Ligatures feature, but is required.





CCMP

GLYPH COMPOSITION/DECOMPOSITION

This feature contains information on how to compose and decompose accented glyphs.





MARK

MARK TO BASE POSITIONING

This feature contains information on where to position diacritical marks in relation to their base glyphs.





MARK TO MARK POSITIONING

This feature contains information on where to position diacritical marks in relation to other diacritical marks, e. g. for stacked diacritics.



COMBINING LAYOUT FEATURES

Layout features may be combined, allowing access to additional glyph forms not found in any single feature.

May 6, 2007
$$\stackrel{13}{\triangleright}$$
 May 6, 2007 $\stackrel{13}{\triangleright}$ May 6, 2007 $\stackrel{13}{\triangleright}$ May 6, 2007