OpenType® User Guide for Adobe® Fonts

October 2008

www.adobe.com/type/opentype

Adobe

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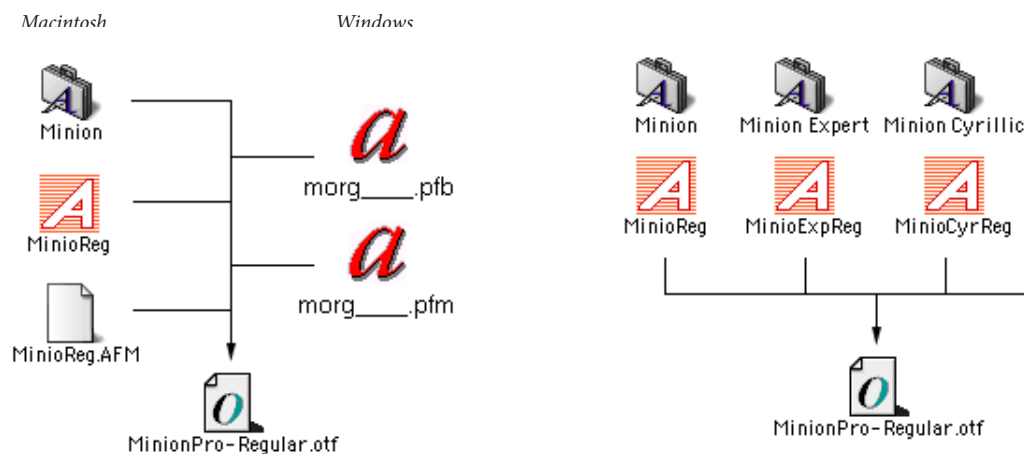*ffi*
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What is OpenType?

OpenType is a cross-platform font file format introduced by Adobe and Microsoft in the late 1990s. OpenType is an extension of the TrueType sfnt format that can have either Type 1 ("PostScript®") or TrueType font outlines, and supports additional typographic and linguistic features. OpenType fonts containing Type 1 outlines have an .otf file name suffix, while those with TrueType outlines may have a .otf, .ttf or .ttc file name suffix. OpenType fonts with Type 1 outlines use the "Compact Font Format" or CFF to store those outlines—the same way Type 1 fonts are stored in Adobe PDF files. This user guide deals primarily with the installation and use of OpenType CFF fonts.

OpenType fonts may include an expanded character set and layout features to provide richer linguistic support and/or advanced typographic control. OpenType fonts from Adobe with support for central European (CE) languages can be distinguished by the word "Pro," which is part of the font name and appears in application font menus. OpenType fonts that do not contain central European language support are labeled "Standard," and are designated by an "Std" suffix in the fonts' menu names. Although Adobe "Pro" fonts frequently include extended typographic support, it is not a requirement, and "Std" fonts may also have extensive typographic features.

All OpenType fonts from Adobe can also be installed and used alongside Type 1 ("PostScript") and TrueType fonts; as part of converting the Adobe Type Library to OpenType, the fonts' names were changed so as to avoid conflicts.

One Cross-Platform Font File

All OpenType fonts use a single font file for all of their outline, metric, and bitmap data (if any), making file management simpler. The file names for OpenType fonts from Adobe are clearly descriptive. In addition, the same font file works on Macintosh and Windows computers, improving cross-platform portability for documents. Although the same font file works on multiple plaforms, different platforms have different ways of handling font menu names. In particular, "typical" Windows applications do not show all fonts as separate entries in their font menus. However, many Adobe applications use a consistent approach to font menus on all platforms. See the **OpenType readme** for more details.

Better Language Support

Based on Unicode, an international multi-byte character encoding that covers virtually all of the world's languages, OpenType fonts can make multilingual typography easier by including multiple language character sets in one font. All normal alphabetic OpenType fonts from Adobe include the standard range of Latin characters used throughout the western world, and several international characters, including the euro currency symbol (€), "estimated" (℮), and litre (ℓ). Adobe's "Pro" fonts add a full range of accented characters to support central and eastern European languages, such as Turkish and Polish. Many of Adobe's Pro fonts also support Cyrillic and Greek languages in the same font, and some support Vietnamese and others as well.

Advanced Typography with OpenType Pro fonts

OpenType fonts may also contain up to 65,536 glyphs, unleashing exciting typographic capabilities. Many non-standard glyphs, such as oldstyle figures, true small capitals, fractions, swashes, superiors, inferiors, ornaments, titling letters, contextual and stylistic alternates, beginning and ending letterforms and a full range of ligatures may also be included in a single font. In the past, a typical Western Type 1 font was limited to 256 encoded glyphs, forcing users to install and manage two or more related fonts in order to access "expert" or other supplemental characters. OpenType significantly simplifies font management and the publishing workflow by ensuring that all of the required glyphs for a document are contained in one cross-platform font file throughout the workflow.

Historically, some of the highest-quality typefaces have had different designs for different print sizes. Called "opticals" at Adobe, these variations have been optimized for use at specific point sizes. A number of OpenType fonts from Adobe include four or five optical size variations. Although the exact intended sizes vary by family, the typical size ranges include: caption (6–8 point), regular (9–13 point), subhead (14-24 point) and display (25–72 point). If present, a font intended for even larger use (>72 point) is called "poster," while a "small text" font might be intended for use at about 9–10 point. Please see the optical size page on Adobe.com for additional information.

Unbelievable   *Display*

Unbelievable   *Subhead*

Unbelievable   *Regular (Text)*

Unbelievable   *Caption*

Overall, OpenType provides richer support for the world's languages, more powerful typographic capabilities, better cross-platform compatibility, as well as simplified font management. For more information on OpenType, please refer to the Adobe web site at http://www.adobe.com/type/opentype.

System Requirements for TrueType OpenType Fonts

Macintosh
- Macintosh with Intel® or PowerPC® processor
- Mac OS X

Windows
- PC using a Pentium® or compatible processor
- Microsoft Windows® 3.1, 95, 98, Millennium Edition (ME), Windows NT® 4 (SP 4), Windows 2000, Windows XP or Windows Vista.

Note: On older versions of Mac OS, users of many Adobe applications (including most versions of InDesign, Illustrator and Photoshop) can use TrueType OpenType fonts by placing them in a folder called "fonts" in the application's folder.

System Requirements for OpenType CFF Fonts

Macintosh
- Macintosh with Intel® or PowerPC® processor
- Mac OS X; also supported on older operating systems: see earlier User Guide for details.

- RAM required - fonts are system resources and do not require additional RAM beyond that needed to run your operating system. However, having very large numbers of fonts activated/installed may slightly increase the memory requirements of your operating system.

Windows
- PC using a Pentium® or compatible processor. Also supported on older operating systems: see earlier User Guide for details.
- Microsoft Windows® Vista®, Windows XP, Windows 2000.
- RAM required - fonts are system resources and do not require additional RAM beyond that needed to run your operating system. However, having very large numbers of fonts activated/installed may slightly increase the memory requirements of your operating system. Be aware that using the /3GB startup switch on Windows will reduce the memory available to the Windows OS kernel, and may not be compatible with having very large numbers of fonts active.

OpenType & Font Management Utilities

For further instructions on how to install OpenType fonts with you font management application, please refer to your font management application's documentation.

Installing OpenType CFF Fonts Without a Font Manager

All the information required for OpenType fonts is contained in a single file with an ".otf" suffix at the end of the filename. This font file is a cross-platform file, and can be installed on both the Macintosh and Windows platforms.

Note that for both Mac OS and Windows, if you only need to use the fonts in select Adobe applications (such as InDesign, Illustrator and Photoshop), you may place the fonts in the applications' font folder, or in the Adobe common font folder. This approach bypasses the operating system altogether, so that the normal system requirements no longer apply.

Installing on Mac OS

Mac OS X has built-in support for OpenType CFF fonts. You do not need to install ATM Light to use fonts in the Mac OS X native environment, only for the Classic environment. Note that only Mac OS X 10.4 and higher give support for OpenType layout features to non Adobe applications.

Fonts installed under the Mac OS X native environment will only by available to carbon and native applications running in OS X (not Classic applications). Depending on how they are installed, they can be accessed by (a) any user or (b) just by an individual user.

1 Before installing your OpenType fonts, quit all active applications.

2 Locate the folder that contains the OpenType fonts you want to install.

   If you have purchased your fonts online, they will have been decompressed to a folder on your hard drive. If you have purchased multiple font packages, each will have its own folder.

3 Copy or move all the OpenType font files from their individual font folders into either of the following locations.

   (a) <Volume>/Library/Fonts/
   Note: you must be logged on as an "Administrator" to place fonts in this location. Fonts in this location can be used by any user.

   (b) <Volume>/Users/<username>/Library/Fonts/
   Note: fonts in this location can be used only by the specified user.

The fonts are now installed and will appear in the font menus of Carbonized or native applications.

Installing on Windows

Windows 2000, XP and Vista have native support for OpenType fonts; you can use the operating system's Fonts control panel to install or remove new OpenType fonts. Installing your fonts on Windows 95/98, ME or NT 4 requires ATM Light 4.1 or later.

Windows Vista

Like Windows XP and 2000, Windows Vista has built-in support for Type 1 and OpenType fonts (both CFF and TrueType). ATM and multiple master fonts are not supported on Vista. Use the Windows Fonts control panel or a third party font management utility to install all Type 1, TrueType, and OpenType fonts. To install your fonts with the Windows Fonts control panel:

1 Select "Control Panel" from the Start menu. Select "Appearance and Personalization." Select "Fonts."

2 In the Fonts window, right-click in the list of fonts, and choose "Install New Font."

3 Navigate to the folder that contains the fonts you want to install.

   OpenType fonts purchased online from Adobe will be in the location where you decompressed them.

4 Select the fonts you want to install. You can click to select one font, Control-click to select several fonts, or Shift-click to select a contiguous group of fonts.

5 Press the "OK" button to install the fonts.

6 Close the Fonts control panel when you are finished.

   The fonts are now installed and will appear in the font menus of your applications. NOTE: Type 1 fonts will not be available in Windows applications that use GDI+ or Windows Presentation Foundation. Such applications are not common at this time.

Windows XP & Windows 2000

Like Windows Vista, Windows XP and Windows 2000 have built-in support for Type 1 and OpenType fonts (both CFF and TrueType). Unless you wish to use multiple master fonts, ATM Light is not required on these OSes (however, the font management features of ATM Deluxe may still be helpful). Use the Windows Fonts control panel to install all Type 1, TrueType, and OpenType fonts.

1 Double-click on "My Computer." Then double-click on the "Control Panels" icon, and then the "Fonts" icon.

2 In the Fonts window, select the File menu, and choose "Install New Font."

3 Navigate to the folder that contains the fonts you want to install.

   OpenType fonts purchased online from Adobe will be in the location where you decompressed them.

4 Select the fonts you want to install. You can click to select one font, Control-click to select several fonts, or Shift-click to select a contiguous group of fonts.
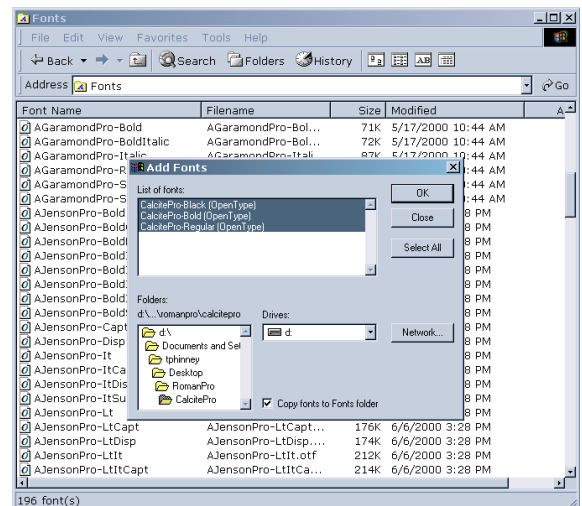
5 Press the "OK" button to install the fonts.

6 Close the Fonts control panel when you are finished.

The fonts are now installed and will appear in the font menus of your applications. NOTE: Type 1 fonts will not be available in Windows applications that use GDI+ or Windows Presentation Foundation. Such applications are not common at this time.

Removing OpenType CFF Fonts Without a Font Manager

Mac OS (all versions)

1 Open the folder you installed the fonts into.

2 Drag the OpenType font files that you want to remove out of the folder and into a non-system folder or into the Trash.

Windows Vista, Windows XP or Windows 2000

1 Double-click on "My Computer." Then double-click on the "Control Panels" icon, and then the "Fonts" icon. (If using Windows Vista, Select "Control Panel" from the Start menu, then "Appearance and Person-alization" and then "Fonts."

2 In the Fonts window, select the Fonts you want to remove, and choose "Delete" from the file menu. You can click to select one font, Control-click to select several fonts, or Shift-click to select a contiguous group of fonts. You may also elect to copy the fonts to another location before deleting them.

3 Close the Fonts control panel when you are finished.

Unicode and Access to Symbols & Multi-lingual Characters

Unicode and non-Unicode environments

Applications and operating systems that make use of the Unicode standard for text processing can provide easy access to the wide range of accented and other language characters and special symbols which may be present in OpenType fonts, greatly simplifying multilingual type-setting. Generally, both the application and the oper-ating system must support Unicode to access the full range of characters and symbols in a font. Operating systems that support Unicode include Windows Vista, XP, 2000 and NT 4, and Mac OS X.

When the operating system and ATM combination, or the application, does not fully support Unicode (such as Windows 95/98/ME or Mac OS 8 and 9), applications will be limited in their ability to access all the characters of an OpenType font.

In such cases, generally the application can only access and print the basic 256 characters of western lan-guages—the Win-ANSI (codepage 1252) or MacRoman range—even though the fonts themselves may support additional languages.

The exceptions are applications which provide their own font and Unicode support independently of the oper-ating systems, such as Adobe InDesign (all versions), Photoshop (6, 7, CS, CS2, CS3, CS4) and Illustrator (CS, CS2, CS3, CS4). In these cases, it does not matter whether the operating system supports Unicode.

OpenType fonts which are strictly "pi" or symbolic fonts may not have any characters in the Win-ANSI or Mac-Roman range. With such a pi font, if an application does not support Unicode, then none of the characters of the font would be accessible in the application. For more information on such fonts, see the Pi Font Readme: **http://www.adobe.com/type/browser/pdfs/PiFontInfo. pdf**

Character access from the OS & applications

All the Unicode-encoded glyphs in an OpenType font will show up in the Windows Vista, Windows XP, Win-dows 2000 or Windows NT 4, *Character Map* accessory, allowing direct copying and pasting of any OpenType glyphs into any application that supports Unicode.
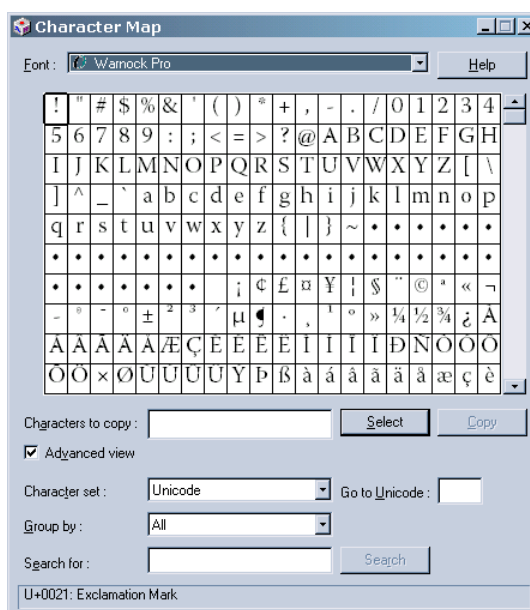

On Mac OS X, the *Character Palette* performs a similar function. OS X users can also install and select a Unicode keyboard that allows direct access to any Unicode character, within most applications that support Unicode. *Note: the Character Palette may not work consistently with Adobe applications prior to the CS series. Also, if you experience difficulties inserting characters, compatibility may be enhanced by having the*

same font selected in the character palette as in the application, prior to trying to insert the desired character(s).
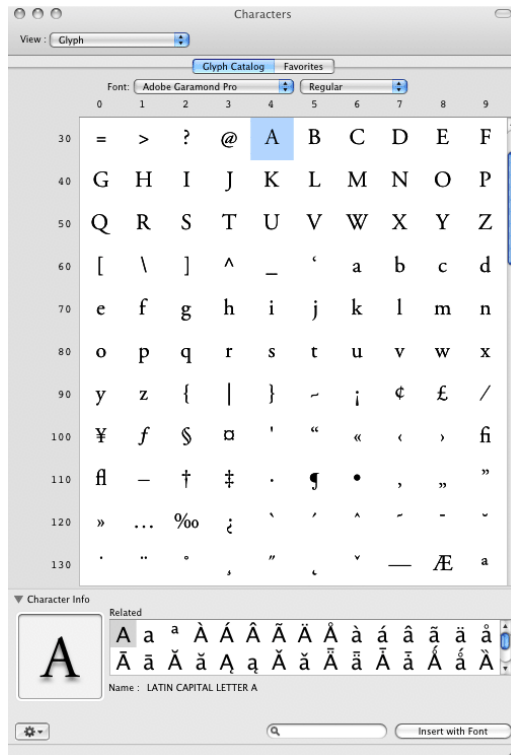
Some applications offer additional options for getting Unicode characters into the application. For example, InDesign supports import of Unicode text files (UTF-16 encoded) and Microsoft Word for Windows files containing Unicode characters. Additionally, as described at more length below, InDesign and Illustrator's Glyph Palette allows access to any glyph in the font, even glyphs that are unencoded and not accessible in the Windows Character Map or Mac OS Character Palette.
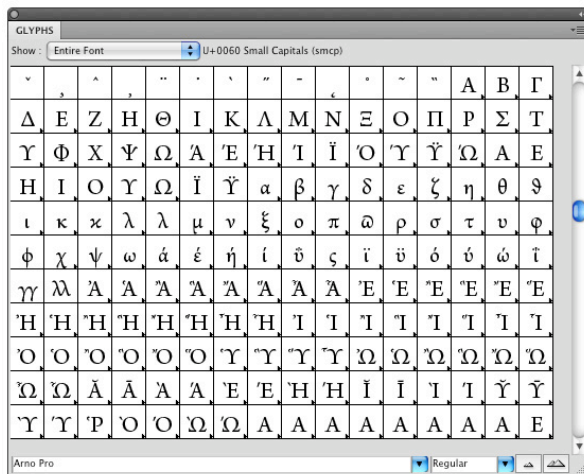
Switching between the character sets of the different languages supported by OpenType fonts can be as

simple as changing the current keyboard language setting (if also supported by the application). This kind of "on-the-fly" keyboard switching with OpenType is supported by Windows Vista, Windows XP, Windows 2000, Windows NT4, and Mac OS X. Additionally, the Windows Character Map and Mac OS Character Palette are Unicode-aware, and allow you to directly access any encoded character in an OpenType font.

Language switching in Adobe applications

In some current-generation Adobe applications, Unicode and language support are handled independently of the operating system. Unicode savvy versions of InDesign, Illustrator and Photoshop, for example, support direct keyboard input of a wide range of languages beyond the usual western European set, including Greek, Cyrillic, and central and eastern European languages. For support of Middle Eastern languages such as Arabic and Hebrew, one must have a separate "ME" version of the application (for CS3 and earlier versions).

Platform-specific Mac and Windows Characters in applications

Applications with Unicode support in both their Mac and Windows versions can access any standard character on any platform. With these applications, you can create a file using any character on either platform, and continue to view and edit the same characters on the other platform. Similarly, Adobe Acrobat can view any characters embedded in a PDF file, regardless of platform. However, many widely used applications are not as savvy, and can only access the standard single-byte character set for the current operating system. With Microsoft Office, the Windows version of the applications has long supported Unicode fully, but the Mac version did not until Office 2004.

With these older applications, this means that even though an OpenType font may have all the standard characters for both operating systems, the applications cannot access the Mac-specific characters when on Windows, or the Windows-specific characters when on the Macintosh. Therefore, you are advised against using platform-specific characters in such applications, if the document might need to be viewed or worked on on a different platform.

Note: The most common Mac-specific characters are the fi and fl ligatures, and some mathematical symbols, particularly those commonly substituted from the "Symbol" font. The most common Windows-specific characters are the ¼, ½ and ¾ fractions, and the superiors [1], [2] and [3].

Application Support for Advanced OpenType Features

Characters and Glyphs

The distinction between characters and glyphs is central to a discussion of advanced OpenType layout feature support. *Characters* are the code points assigned by the Unicode standard, which represent the smallest semantic units of language, such as letters. *Glyphs* are the specific forms or shapes that those characters can take in a font.

A key point is that one character may be represented by any of several different glyphs. For example, lowercase "a," small cap "a" and an alternate swash lowercase "a" are all the same character—namely the lowercase "a"—but they are three separate glyphs.

Additionally, although the relationship between glyphs and characters is often one-to-one, it may be many-to-one, one-to-many, or many-to-many. For example, sometimes several characters may be represented by one glyph, as in the case of the "ffi" ligature, which corresponds to a sequence of three characters: f, f and i. Alternately, one character may be represented by several glyphs. For example, "é" is often considered a single character, but might be assembled on the fly from separate glyphs for the base character and the accent.

OpenType layout features can be used to position or substitute glyphs. For any character, there is a default glyph and positioning behavior. Applying layout features to one or more characters may change that default positioning or substitute a different glyph. For example, the application of the "small capitals" feature to the "a" would substitute the small cap "A" glyph for the usual lowercase "a" glyph.

OpenType layout features

To access alternate glyphs or apply alternate positioning with an OpenType font, an application must understand OpenType layout features and present a user interface that allows end users to select and apply different layout features to text.

Operating System Support for Advanced Layout Features

It is much easier for third parties to support advanced layout features of OpenType on operating systems that offer such support.

Mac OS X

Mac OS X 10.4 and higher offers OpenType layout support to applications that use the Apple Advanced Typography (AAT) programming interfaces, such as Pages and Keynote. The OS X support of advanced OpenType layout features is generally limited to western-language features, and does not include contextual features such as contextual alternates and contextual ligatures.

Windows

Previous versions of Windows have offered some Open-Type layout feature support via Uniscribe (for advanced typographic features needed for language support) and OpenType Layout Services (OTLS, an optional component available separately from Microsoft).

At the same time as Windows Vista, Microsoft has launched a new mode for applications called "Windows Presentation Foundation" (WPF) which is available to both Vista and XP applications. Applications using WPF can easily support a wide range of OpenType typographic functionality. However, applications must be written specifically to take advantage of WPF. At this time, few major WPF applications are available.

OpenType and Adobe Applications

Current and recent versions of InDesign, Illustrator and Photoshop all provide OpenType layout feature support (see pages 9-12 for feature descriptions, and p. 13 for features by application and application version). With these OpenType savvy applications, you can turn on Open-Type layout features that automatically substitute alternate glyphs in an OpenType font, such as automatic ligatures, small capitals and proportional oldstyle figures.

This support simplifies the use of professional typographic features once considered cumbersome, and providing exciting new typographic capabilities.

Those layout features that have some effect even on non OpenType fonts (such as all caps, small caps, and ligatures) are on the main flyout from the InDesign character palette. However most OpenType layout features are accessed either by the OpenType sub-menu of the character palette flyout (for InDesign) or from the Open-Type Palette (for Illustrator CS, CS2, CS3 and CS4). The many OpenType formatting options are discussed in detail below.

To gain a better understanding of the features supported in each OpenType font, in InDesign or Illustrator CS/CS2/CS3/CS4 you can use the Glyph Palette to view the glyphs available for each feature (see section below). *Remember that not all fonts have all OpenType layout*

*features, and that some features may work only on certain characters.*

There are three features which may have an effect on non-OpenType fonts, but do more with OpenType fonts that have relevant layout features. These features—ligatures (which are on by default), all capitals, and small capitals—are directly accessible from the main flyout of the InDesign character palette.

In InDesign 2.0, these typographic features were included on the main pop-up menu because they can sometimes be used with non-OpenType fonts. See the individual feature descriptions for details.

Note: In Adobe applications, selecting the Superscript and Subscript options on the Character palette's main flyout will create these glyphs by scaling full-size numbers, even if the selected font contains designed superscript/subscript glyphs. To access designed glyphs contained in an OpenType font, you should instead use the "Superscript/Superior" and "Subscript/Inferior" features on the OpenType flyout menu or palette. See the *OpenType layout features glossary* below for details.

To apply OpenType layout features in InDesign or Photoshop

1 Insert your cursor in a text box to apply the feature to new text, or select existing text you wish to format.

2 Select an OpenType font from the Character palette or via the Type > Font menu.

3 In the Character palette, click on the button near the top right corner of the palette to open the flyout menu that lists possible formatting options. In Adobe CS2 and earlier applications (below, top), this is a triangular button; in CS3 and CS4 (below, center and bottom) it became a very small downwards-pointing triangle with lines next to it.
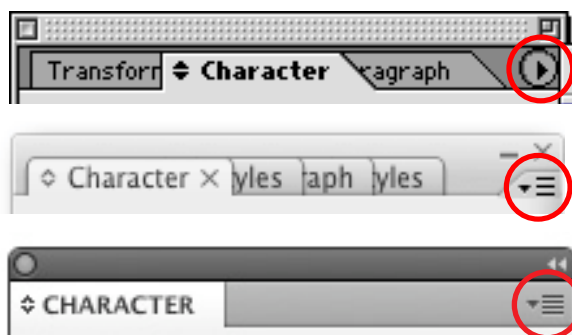
4 Either select a formatting item on the main flyout that may activate OpenType features, or (in InDesign only) select the OpenType sub-menu, and a formatting option on that sub-menu.
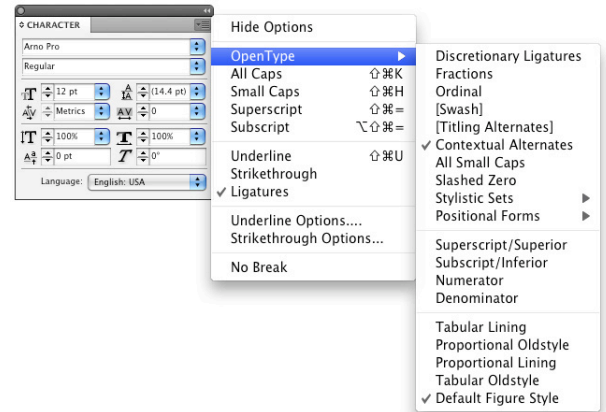
A check mark will appear next to a feature that is turned on. If the OpenType font has the desired feature and glyphs, it will be applied. Remember that not all fonts have all OpenType layout features, and that some features work only on certain characters.

For example, text with the "Discretionary Ligatures" feature turned on might automatically replace certain character combinations such as "ct" or "st" with a ligature such as "ct" or "st."

If an OpenType layout feature appears in square brackets [like this], then the currently selected font does not support that particular feature.

A *dash* next to an advanced OpenType layout feature means that you have selected a block of text that has an OpenType layout feature applied to *some* of the text. A *check mark* will appear next to a feature that is turned on for *all* the selected text.

To apply OpenType layout features in Illustrator CS through CS4

1 Insert your cursor in a text box to apply the feature to new text, or select existing text you wish to format.

2 Select an OpenType font from the Character palette or via the Type > Font menu.

3a As described and shown above for InDesign and Photoshop, in the Character palette, click on the symbol in the top right corner of the palette to open the flyout menu that lists possible formatting options. Select a formatting item on the main flyout that may activate OpenType features, such as All Caps or Small Caps.

A check mark will appear next to a feature that is turned on. If the OpenType font has the desired feature and glyphs, it will be applied.

OR

3b Use the OpenType Palette (which can be found grouped with the character and paragraph palettes) to select desired features.
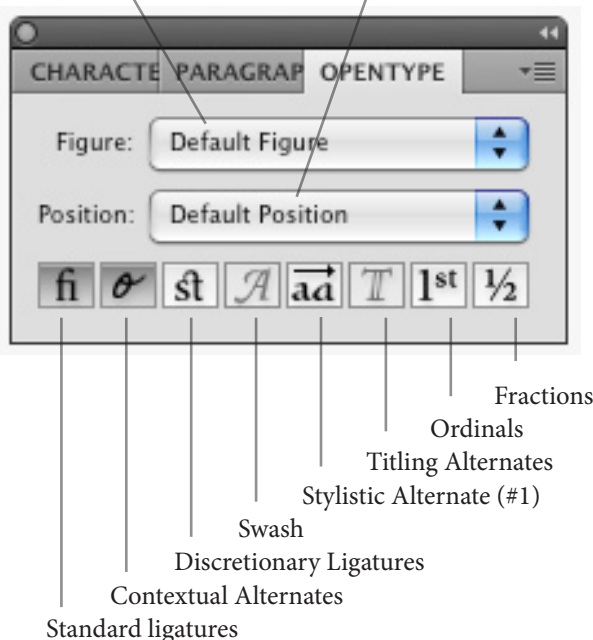
Features may be turned on with the selection boxes (for figure type and position) and the icons (for all other features). The selection boxes show the current state of the figure type and position. Features that have icons and are turned on are highlighted in the palette. Icons cannot be selected when they are not supported in the currently selected font; the cursor will turn into a "no entry" symbol when placed over such an icon.

OpenType layout features glossary

Below are descriptions of the OpenType layout features supported by Adobe applications, and guidance on how and when to use these features. See the last page for details on which applications support which features.

Some effects similar, but inferior, to OpenType layout features can be created synthetically by scaling, and sometimes repositioning, regular-size glyphs. Because these effects do not use real, designed glyphs, these are referred to as *faux* effects ("faux" is a French word meaning "false"). Layout features which may have faux equivalents include small caps, fractions, ordinals,

Figure Type:
   Default
   Tabular Lining
   Proportional Lining
   Proportional Oldstyle
   Tabular Oldstyle

Figure Position
   Default
   Superscript/Superior
   Subscript/Inferior
   Numerator
   Denominator

Fractions
Ordinals
Titling Alternates
Stylistic Alternate (#1)
Swash
Discretionary Ligatures
Contextual Alternates
Standard ligatures

superscript/superior, subscript/inferior, numerators and denominators. For the best results, whenever possible

you should access real designed glyphs via OpenType layout features.

All Caps: With both OpenType and other fonts, this function formats the text in uppercase. With OpenType fonts, it also applies OpenType layout features for alternate uppercase positioning of punctuation, and spacing designed for all-cap use.

typed uppercase	¿QUE? ‹ROMA-PARIS› (I)
formatted all caps	¿QUE? ‹ROMA-PARIS› (I)

Small Caps: With both OpenType and other fonts, this formats lowercase text as small caps. (Note: compare with "All Small Caps" feature below.) If the font has OpenType small caps, these will be used. If the font has a companion Expert Set font, InDesign may be able to tell that the font is associated with the base font, and use the small caps from the Expert font. For other fonts, either small caps will not work, or the application will synthesize small caps from capital letters. Observe how these "faux" small caps look light and spindly next to the capitals, while the designed small caps match the appearance of their full-size siblings.

faux small caps	LIFE IS BUT A POOR PLAYER
real small caps	LIFE IS BUT A POOR PLA

Ligatures: This activates any standard ligatures in an OpenType font (ligatures that the type designer suggests should be customarily used). In an OpenType font, these can be any ligatures the type designer chose to create. The major reason for standard ligatures is to avoid awkward collisions between letters, creating more elegant text (see example below). Standard ligatures are on by default in Adobe applications that support them.

In non-OpenType fonts, InDesign (only) will still activate any of the basic f-ligatures that are in the font. In many fonts, this is only the fi and fl ligatures, though InDesign may also recognize the ff, ffi and ffl ligatures if they are present.

Many Adobe Pro fonts include a large set of standard ligatures, such as fi, fl, ffi, ffl, ff, fj, ffj, Th, and others. Most other OpenType fonts from Adobe have at least fi and fl, and some have fi, fl, ff, ffi and ffl.

without ligatures	This office fjord affign
with ligatures	This office fjord affign

Discretionary Ligatures: In supporting Adobe applications, this activates discretionary and historical ligatures, both of which should be used sparingly for special effects. These ligatures may include ct, sp, st, and several historical "long s" ligatures such as fh. Only some

OpenType fonts have discretionary and historical ligatures.

without disc. lig.	Most effects
with disc. lig.	Most effects

Fractions: Turns on fractions. Some OpenType fonts from Adobe only have three basic pre-built fractions (½, ¼, ¾), while others have a larger set, often including ⅛, ⅜, ⅝, ⅞, ⅓ and ⅔. The extent of pre-built fractions may vary between fonts. Select OpenType fonts can also support any arbitrary fraction such as $^{11}\!/_{12}$ or $^{7,402}\!/_{12,597}$. In all these cases, these designed fractions match the weight of the rest of the font better than fractions which are fauxed by scaling regular-size numbers.

Note: You should only apply the fraction feature to the specific text you want to turn into a fraction. Applying the fraction feature to other numbers may result in unexpected effects—either initially, or later if the text is switched to a different or just newer font, with a different implementation of fractions.

faux fractions	$1\frac{1}{8}$ $3\frac{1}{2}$ $^{22}\!/_{7}$ $5^{11}\!/_{12}$ $8^{1,234}\!/_{4,567}$
real fractions	$1\frac{1}{8}$ $3\frac{1}{2}$ $^{22}\!/_{7}$ $5^{11}\!/_{12}$ $8^{1,234}\!/_{4,567}$

Ordinals: Switches regular glyphs to designed superscripted glyphs, such as the "st"' in 1st, "nd" in 2nd, and so on. Virtually all Adobe fonts have the masculine and feminine ordinals required for Spanish segunda/segundo (2ª, 2º), but not all have the full set of superscripted glyphs needed for English ordinals. In OpenType fonts from Adobe, the № (number) character and the "h" required for ordinals such as "4th" are generally present only in Pro fonts. Some Adobe Pro fonts also have the superior "g" and "é."

Some applications, such as word processors, can automatically synthesize ordinals by scaling regular letters. As always, real designed ordinal glyphs are a better match for the full-size numbers than the faux ordinals created by simple scaling.

faux ordinals	1st 2nd 3rd 4th 2ª 2º
real ordinals	1st 2nd 3rd 4th 2ª 2º

Note: Like fractions, the ordinal feature should not be applied globally, but only where needed. Some fonts may use contextual rules to implement ordinals, while others will turn them on for all selected text. Also, ordinals work best with lining figures, rather than oldstyle figures, because of the constant vertical position of the ordinals.

Swash: Substitutes swash glyphs (stylized letterforms with extended strokes; see below). Even if this feature is globally turned on, it may only apply swashes in certain cases, such as when a character is at the end of a word. Swashes should be used sparingly for special effect. Only some OpenType families contain swash glyphs, and in families which do contain swash glyphs, they are often present only in the italic faces within the family.

without swash	*Aidan Sue Veronica*
with swash	*Aidan Sue Veronica*

Titling Alternates: Substitutes specially-designed glyphs to be used for large-size settings such as titles, usually all in capitals. Only some OpenType fonts from Adobe have titling alternates. Having a separate "display" typeface with a full character set is sometimes an alternative to titling alternates (see p. 3).

without titling	FINESSE **BEAUTY**
with titling	FINESSE BEAUTY

Contextual Alternates: In supporting Adobe applications, this substitutes both alternate glyphs and ligatures that only occur depending on what letters are nearby. This feature is on by default in InDesign and Illustrator. Contextual forms can have striking effect in those select OpenType fonts that make use of them. For example, Caflisch Script Pro uses contextual forms to create variety and a realistic calligraphic handwriting appearance.

without contextual	*new azaleas bloom where*
with contextual	*new azaleas bloom where*

All Small Caps: Unlike the traditional small caps feature, which turns only lowercase into small caps, this substitutes small capitals for all characters typed or selected—both uppercase and lowercase letters.

"All small caps" should be used instead of "small caps" whenever the underlying text is uppercase, as with certain acronyms and abbreviations such as USA, UNICEF, FBI, GDP or MADD. (See also "Small Caps," previous.)

Stylistic Alternates: Substitutes the first stylistic alternate (if there is one) for the selected glyph(s). Stylistic alternates is a feature for stylistic variations that are not covered by other features, and do not affect the entire font. Although it is possible to have more than one stylistic alternate for a given character in a font, Adobe's current approach accesses only the first one. The example below shows stylistic alternates from several different fonts.

without	& ª E G M R β θ φ π κ
with stylistic alts	& α ∈ G M R ϑ ϑ ϕ ϖ ϰ

Stylistic Sets: Replaces some specific glyphs within the selected text with other specific glyphs, intended to achieve a particular overall change in appearance for the text. One font may have multiple stylistic sets, and the effects may be cumulative, either on the same characters or different ones. The effects of stylistic sets are essentially arbitrary and are likely to vary dramatically from one typeface to another. In the example below with Poetica, Stylistic Set 2 affects the lowercase, while the other 12 stylistic sets create increasing levels of swashiness with the capitals.

default forms	*This is Poetica with Stylistic Sets*
stylistic set 2	*This is Poetica with Stylistic Sets*
stylistic set 1	*This is Poetica with Stylistic Sets*
stylistic sets 2+4	*This is Poetica with Stylistic Sets*
stylistic sets 2+10	*This is Poetica with Stylistic Sets*

Slashed Zero: Substitutes a slashed form of the zero (if there is one) for zeros in the selected text. Even if the font has a slashed zero, it may not have it for all forms of the zero (e.g. proportional, oldstyle, superscript, etc.). The example below shows slashed zeros from several different fonts.

without	0 0 **0** *0* 0 **0**
with slashed zero	Ø Ø **Ø** *Ø* Ø **Ø**

Superscript/Superior: Substitutes designed superscripted glyphs. These designed glyphs match the weight of the regular letters and numbers better than synthesized (faux) superscript glyphs. Note that the select OpenType fonts from Adobe which support this feature do not have all characters available in superscript form. Instead, they generally have the letters "abdeilmnorst," plus a full set of numbers and basic punctuation. Pro fonts generally add the "h" as well. This subset of the alphabet represents all the characters needed for ordinals and common superscripting needs in western languages.

faux superscript	$x^{14}y^{37}$ πr^2 4^a
real superscript	$x^{14}y^{37}$ πr^2 4^a

Subscript/Inferior: Much like superscript (above), but for subscripted characters. However, the select Adobe fonts which support subscripts generally have only numbers and punctuation, with no letters.

faux subscript	H_2O CH_4 n_{37}
real subscript	H_2O CH_4 n_{37}

Numerator: Substitutes designed numerator glyphs (the top part of a fraction) for numbers. Those OpenType fonts from Adobe that support this feature generally have a full set of digits and basic punctuation in numerator form. However, it is generally more convenient to simply apply the fraction feature.

Denominator: Just like numerators, but for denominators (the bottom part of a fraction).

Figure (number) Types: *Tabular* figures are all of equal width. They are only needed when the figures must all line up from one line to the next, as in a table. *Proportional* figures have varying widths, just like most letters; each number has a width appropriate to its design. Unless there is a special need for tabular figures, you should use proportional figures.

Lining figures are all the same height, usually similar to that of capital letters. They are needed for use with all-capital settings, or when a particularly modern look is desired. *Oldstyle* figures are of varying height. They are appropriate for use with lowercase or mixed-case text, and especially if a classic or refined look is desired.

Figure Types	*lining*	*oldstyle*
tabular	0123456789	0123456789
proportional	0123456789	0123456789

Default figures are whichever type are encoded as the standard figures in the font. For historical reasons, these are usually tabular lining figures in Adobe fonts, though the decision is up to each font manufacturer. Because tabular lining figures are rarely the best choice for a document, we recommend actively choosing figure types for each particular usage. Proportional oldstyle figures are a good default for normal mixed-case text.
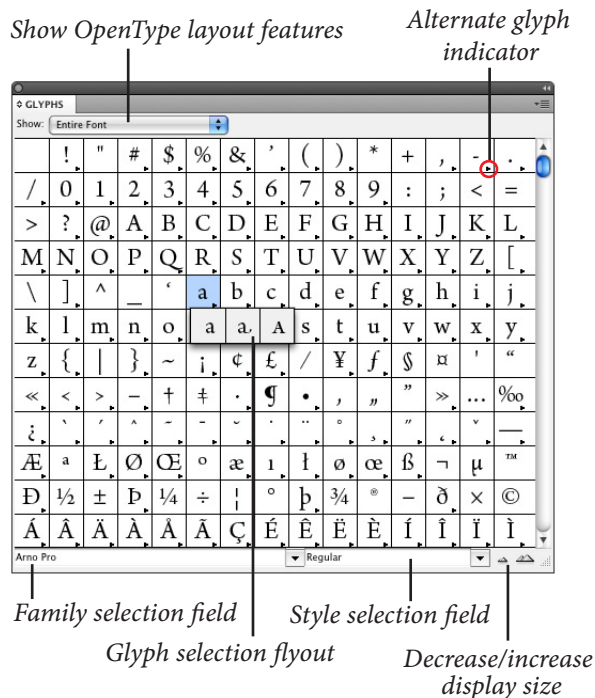
Mark Attachment: Applications with this capability support fonts that have separate marks (accents etc.) and base characters, and can dynamically attach separate marks to base letters. This allows font developers to make fonts with fewer glyphs, and is also a basic requirement for supporting some complex languages.

Positional Forms: Enables glyphs to take different shapes depending on whether a letter is by itself, or in a beginning, middle or ending position in a word. Required for certain non-Latin languages such as Arabic, but also enables better behaviors for "script" style fonts in English and other western languages.

The Glyph Palette

While OpenType layout features are primarily accessed via the OpenType palette (Illustrator) or the OpenType flyout of the Character palette, Adobe InDesign (all

versions) and Adobe Illustrator CS–CS4 also allow you to view and access all of the possible glyphs and layout features in an OpenType font through the Glyph Palette.

Show OpenType layout features

Alternate glyph indicator

Family selection field

Style selection field

Glyph selection flyout

Decrease/increase display size

1 Insert your cursor in a text box.

2 Select Type > Insert Glyphs… The Glyph Palette will appear.

3 Select a font in the font selection field. Select the appropriate font weight or style in the style selection field. All of the possible glyphs in the font will appear.

   You can also click on the size icons to increase or decrease the point size of the glyph samples in the window.

   If there are alternate forms of a glyph available via an OpenType layout feature, a small triangle will appear in the lower right corner of the glyph cell. Clicking and holding on such a glyph cell will activate a flyout showing all the alternate glyphs.

4 Double click on a glyph cell, or if there is a flyout, click-hold and select the desired alternate glyph. The glyph will then be inserted in your document wherever your text cursor was positioned.

You can filter the glyphs displayed in the dialog by using the OpenType layout features pop-up menu. This pop-up menu will display all of the substitution features supported by the currently selected OpenType font. After choosing an OpenType font in the font selection field, select a layout feature, such as discretionary ligatures or swash, from the pop-up menu and the dialog will display only those glyphs that are available through that layout feature.

You can view only the alternate glyphs available for a single selected glyph in your InDesign document by selecting "Alternates for Selection" from the "Show" pop-up menu of the Glyph Palette. (If more than one glyph is selected, the Glyph Palette will show no alternates.)

Adobe applications remember the last OpenType layout feature you used the next time you activate the Glyph Palette. To return to a view of all the glyphs in the font, select Entire Font from the pop-up menu.
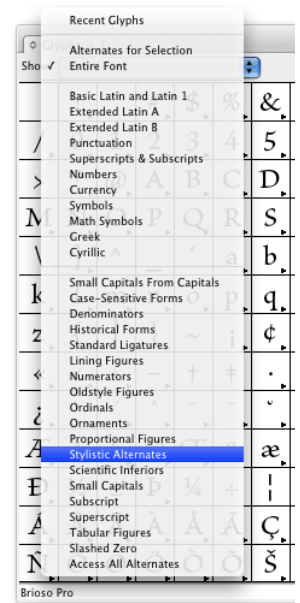
For more information about the Glyph Palette, please refer to the Illustrator or InDesign User Guide, as appropriate.

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Appendix: OpenType Layout Feature Support by Application

User Interface Label	OpenType Layout Feature Codes	Flash® Player 10	InDesign® CS3/CS4	InDesign CS2	Illustrator® CS–CS4	Photoshop® CS–CS4	InDesign 2/CS	InDesign 1.x	Photoshop 6/7
Font metrics kerning	kern	•	•	•	•	•	•	•	•
Oldstyle (proportional oldstyle)	pnum + onum	•	•	•	•	•	•	•	•
Ligatures	liga	•	•	•	•	•	•	•	•
Discretionary Ligatures	dlig + hlig	•	•	•	•	•	•		
All Caps	case, cpsp	•	•	•	•	•	•	•	•
Small Caps	smcp	*	•	•	•	•	•	•	•
All Small Caps	smcp + c2sc	*	•	•			•		
All Alternates (via glyph palette)	aalt		•	•	•		•	•	
Glyph Palette	most other features (via filters)		•	•	•		•	•	
Tabular Lining	tnum + lnum	•	•	•	•		•		
Proportional Lining	pnum + lnum	•	•	•	•		•		
Tabular Oldstyle	tnum + onum	•	•	•	•		•		
Fractions	frac		•	•	•	•	•		
Ordinals	ordn		•	•	•	•	•		
Titling Alternates	titl	•	•	•	•		•		
Swash	swsh + cswh		•	•	•	•	•		
Contextual Alternates	calt + clig	•	•	•	•	•	•		
Superscript/Superior	sups		•	•	•		•		
Subscript/Inferior	subs if present, else sinf		•	•	•		•		
Numerator	numr		•	•	•		•		
Denominator	dnom		•	•	•		•		
Stylistic Alternates	salt (first alt only)					•	•		
Ornaments	ornm (first ornament only)						•		
Stylistic Sets (1-20)	ss01-ss20		•	•					
Slashed Zero	zero	•	•	•					
(no UI) Mark Attachment and language-specific processing	mark, mkmk, mset, locl, rlig, ccmp	•	•						
Positional Forms	init, medi, fina, isol	•	•						

* Flash Player 10 does small caps and all small caps by means of case conversion plus 'c2sc'.

Fireworks CS4 supports OpenType layout features, but only in text pasted from Illustrator or Photoshop.