OpenType® User Guide for Adobe® Fonts

October 2003

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www.adobe.com/type/opentype

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What is OpenType?

OpenType is a new cross-platform font file format developed by Adobe and Microsoft. OpenType is an extension of the TrueType SFNT format that can now support PostScript® font data and new typographic features. OpenType fonts containing PostScript outlines have an .otf file name suffix, while those with TrueType outlines may have a .otf, .ttf or .ttc file name suffix. This user guide deals primarily with the installation and use of PostScript flavored OpenType fonts.

OpenType fonts may include an expanded character set and layout features to provide richer linguistic support and 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.

All OpenType fonts can also be installed and used alongside PostScript Type 1 and TrueType fonts.

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.


Macintosh   *Windows*
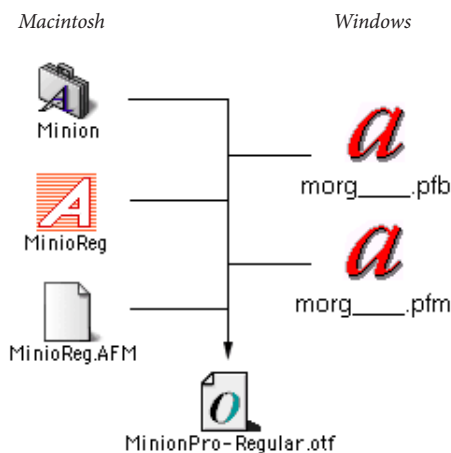
Better Language Support

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 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 the Pro fonts also contain Cyrillic and Greek character extensions in the same font.

Advanced Typography with OpenType Pro fonts

OpenType fonts may also contain more than 65,000 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 PostScript font was limited to 256 glyphs, forcing users to install and manage two or more style-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.
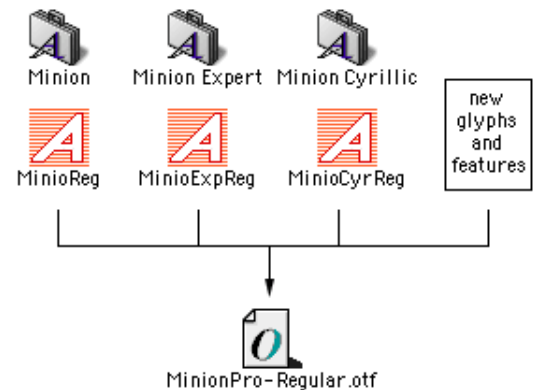
Historically, some of the highest-quality typefaces have had different designs for different print sizes. Called "opticals," these variations have been optimized for use at specific point sizes. A number of OpenType fonts from Adobe include four optical size variations. Although the exact intended sizes 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 size intended for even larger use (>72 point) is called "poster."

Unbelievable   *Caption*

Unbelievable   *Regular (Text)*

Unbelievable   *Subhead*

Unbelievable   *Display*

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.

Minimum System Requirements for PostScript flavored OpenType Fonts

Macintosh
- Macintosh with PowerPC® processor
- Mac OS 8.6 to 9.2 or Mac OS X
- ATM® Light or Deluxe, version 4.6 or later (not required for Mac OS X native)
- AdobePS printer driver 8.6 or later recommended if using a PostScript printer with Mac OS 8.6 to 9.2
- ATM updater to 4.6.1a/4.6.2a, if using AdobePS 8.8 or later
- 16 MB of RAM

Windows
- PC using a Pentium® or compatible processor
- Microsoft Windows® 95, 98, Millennium Edition (ME), Windows NT® 4 (SP 4), Windows 2000 or Windows XP
- ATM Light or Deluxe 4.1 or later (not required for Windows 2000/Windows XP)
- AdobePS printer driver 4.3 or later, if using Windows 95/98/ME with a PostScript printer
- AdobePS printer driver 5.1.2 or later, if using Windows NT 4 with a PostScript printer
- 16 MB of RAM

Note: Mac OS X, Windows 2000 and Windows XP (Home and Professional) provide native support for PostScript flavored OpenType fonts (as well as PostScript Type 1 fonts) and do not require ATM Light or the AdobePS printer driver.

Additional Software Installation

Before using your PostScript flavored OpenType fonts, users of older operating systems may need to install the latest versions of the Adobe Type Manager Light software and the AdobePS printer driver, which are both available as free downloads from the adobe.com website.

Adobe Type Manager (ATM) Light

Adobe® Type Manager® (ATM®) Light is a system software component that automatically generates high-quality screen font bitmaps from PostScript® Type 1 or PostScript flavored OpenType outline font data. With ATM, you can use Type 1 and OpenType fonts at any size, and you can also enable "font smoothing," (anti-aliasing) which further improves the appearance of your fonts on-screen. ATM Light also allows you to print your PostScript Type 1 or PostScript

flavored OpenType fonts to both PostScript and non PostScript printers.

Note: Windows 2000 and Windows XP do not require ATM Light. Mac OS X only needs ATM Light to provide support for "Classic" applications, not for Carbon or native applications.

To download ATM Light, go to: http://www.adobe.com/products/atmlight/main.html. If using AdobePS 8.8 or later, you should also update ATM to 4.6.1a/4.6.2a. The update is available at: http://www.adobe.com/support/downloads

***Note:** Adobe recommends that once you install ATM Light, you increase the utility's character cache setting (the amount of memory allocated for storing font information and drawing it to your computer screen) to at least 512K in Windows 98/ME (newer versions of Windows do not have a character cache setting), and to at least 1MB in the Macintosh version. To increase this setting in the Windows version, select the "Settings" tab in the ATM window. On the Macintosh, it is in the main control panel for ATM Light; in ATM Deluxe, select the "Preferences…" command in the File menu.*
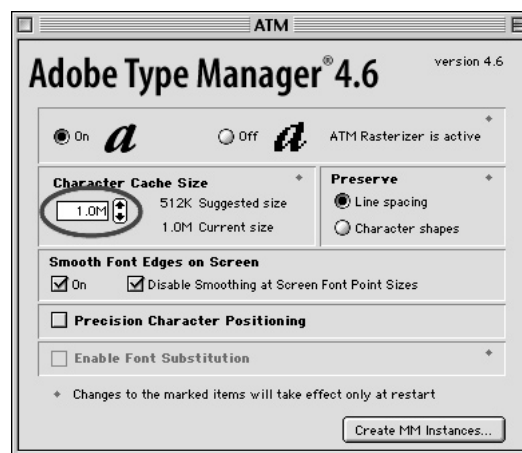
AdobePS Printer Driver

If you are printing to a PostScript printer or creating PostScript print files (perhaps for Adobe Acrobat Distiller), the AdobePS printer driver replaces your standard Mac or Windows printer driver and offers several improvements. Installation of this driver requires a PostScript Printer Description (PPD) file for your printer, which allows the driver to control all of your printer's features, such as optional paper trays, enhanced imaging modes, and duplex (two-sided) printing. More instructions are included in the Read Me file that comes with the AdobePS software.

To download the latest AdobePS printer driver for the Macintosh, point your browser to http://www.adobe.com/support/downloads/pdrvmac.htm

To download the latest AdobePS printer driver for Windows, point your browser to http://www.adobe.com/support/downloads/pdrvwin.htm

Note: Mac OS X, Windows 2000 and Windows XP include a native PostScript printer driver that supports PostScript flavored OpenType fonts.

OpenType & Font Management Utilities

Because PostScript flavored OpenType fonts are a newer format, you need to check that the version of the font management application you are using supports them. If you are using ATM Deluxe to manage your fonts, version 4.1 or higher for Windows and version 4.6 or higher for Macintosh support the activation and management of OpenType fonts. Note that font managers on Mac OS X can only activate fonts for carbon and cocoa applications (not Classic applications).

For further instructions on how to install OpenType fonts with ATM Deluxe or any other font management application, please refer to your font management application's documentation.

Windows Font Managers Supporting OpenType

Adobe Type Manager (ATM) Deluxe 4.1
Font Navigator—not supported (as of version 4)
Font Reserve 2.6.5 and higher
Font Reserve Server 1.6 and higher
Suitcase 9.2 and higher (with Windows 2000/XP only)

Mac OS Font Managers Supporting OpenType

Adobe Type Manager (ATM) Deluxe 4.6
      (only for Mac OS 8/9/Classic)
Font Agent Pro—all versions
Font Reserve 3.1 and higher (OS X only)
Font Reserve Server 1.6 and higher (OS X clients only)
Master Juggler—not yet supported
Suitcase 10 and higher (OS X only)

Installing PostScript flavored OpenType 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

Using your fonts on Mac OS 8.6 to 9.2 or Mac OS X "Classic" requires the presence of ATM Light 4.6 or later (4.6.2 for Mac OS X Classic). Mac OS X has built-in support for OpenType fonts with carbon or native applications, and only requires ATM Light for "classic" apps.

If you are running Mac OS X, decide if you want to install fonts into both the Classic environment and the OS X native environment, or only for carbon/native applications. If you want your fonts to be accessible to *both* Classic and carbon/native applications, install into the Classic environment. If the fonts only need to be accessible to carbon/native applications, install into the Mac OS X "native" environment.

Mac OS 8.6 to 9.2, or Mac OS X "Classic"

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 OpenType fonts from Adobe 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 the System Folder > Fonts folder. They must be loose inside this folder, not in a sub-folder.

The fonts are now installed and will appear in the font menus of your applications. OpenType fonts installed in Mac OS X Classic will also appear in the font menus of native and Carbon applications

Mac OS X native

Mac OS X has built-in support for PostScript flavored OpenType fonts. You do not need to install ATM Light to use fonts in the Mac OS X native environment, only for the Classic environment.

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

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

Windows 95/98/ME or NT 4 with ATM Light

1 Choose Start > Programs > Adobe > Adobe Type Manager.

2 In the ATM window, click the "Fonts" tab.

3 Choose "Browse For Fonts" from the Source pop-up menu.

4 Navigate to the folder that contains the fonts you want to install. The fonts located in a folder will appear below the folder's name.

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

5 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.
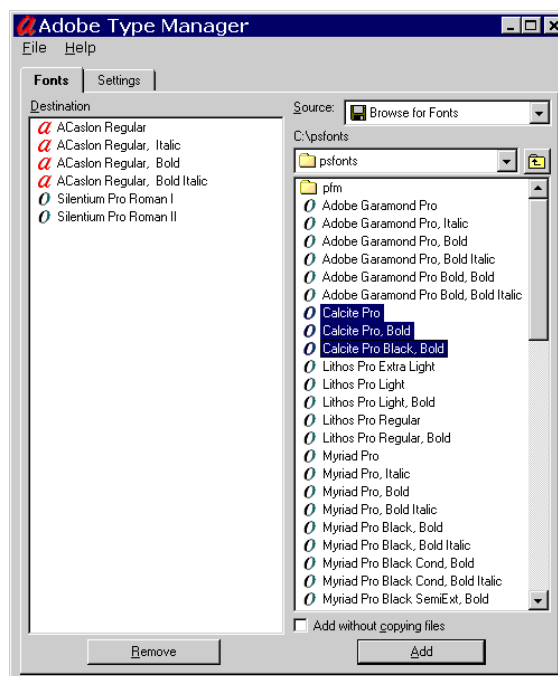
6 Press the "Add" button to install the fonts.

7 Exit ATM.

The fonts are now installed and will appear in the font menus of your applications.

Windows 2000 and Windows XP

Windows 2000 and Windows XP (Home and Professional) have built-in support for PostScript Type 1 and OpenType fonts (both .otf and .ttf). 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 PostScript 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 from Adobe purchased online 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.
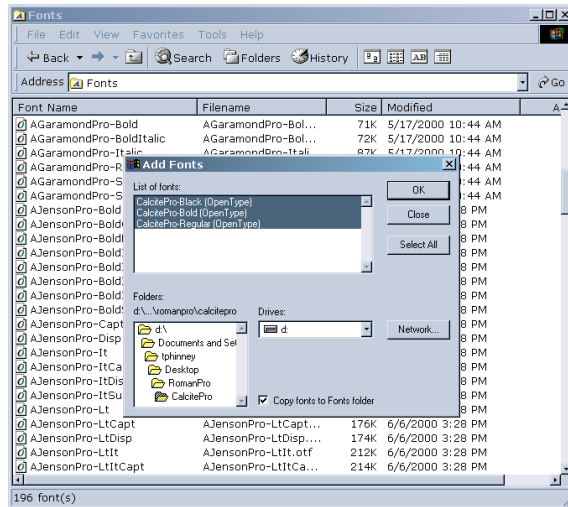
5 Press the "OK" button to install the fonts.

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.

Removing PostScript flavored OpenType 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 95/98/ME or NT 4

1 Choose Start > Programs > Adobe > Adobe Type Manager.

2 In the ATM window, click the Fonts tab.

3 Select the fonts you want to remove. 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.

4 Press the "Delete" button to remove the fonts.

5 Exit ATM.

Windows 2000 or Windows XP

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 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 Foreign Language Characters & Symbols

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 characters and special symbols in OpenType fonts, greatly simplifying multilingual typesetting. Generally, both the application and the operating system must support Unicode to access the full range of language characters and symbols in a font. Operating systems that support Unicode include Windows NT 4, 2000, XP 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 languages—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 operating systems, such as Adobe InDesign (all versions), Photoshop (6, 7, cs) and Illustrator (cs). In these cases, it does not matter whether the 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.

Character access from the OS & applications

All the Unicode-encoded glyphs in an OpenType font will show up in the Windows NT 4, Windows 2000 and Windows XP *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.*
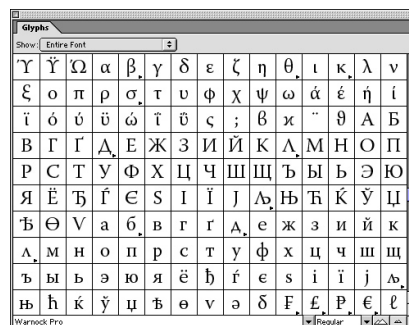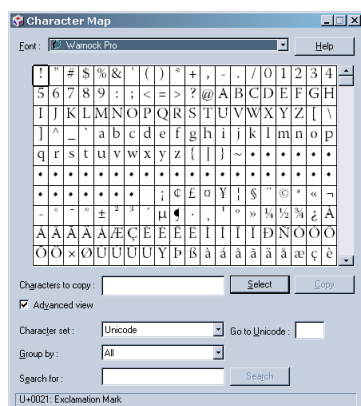
Switching between the character sets of the different languages supported by OpenType fonts can be as simple as changing the current keyboard language setting (if also supported by the application). This kind of "on-the-fly" keyboard switching with OpenType is supported by Windows NT 4, Windows 2000, Windows XP and Mac OS X. Additionally, the Windows NT, Windows 2000, and Windows XP "Character Map" accessory is Unicode-aware, and allows 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. 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.

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. In some cases, such as Microsoft Office, the Windows version of an application uses Unicode fully, but the Mac version does not.
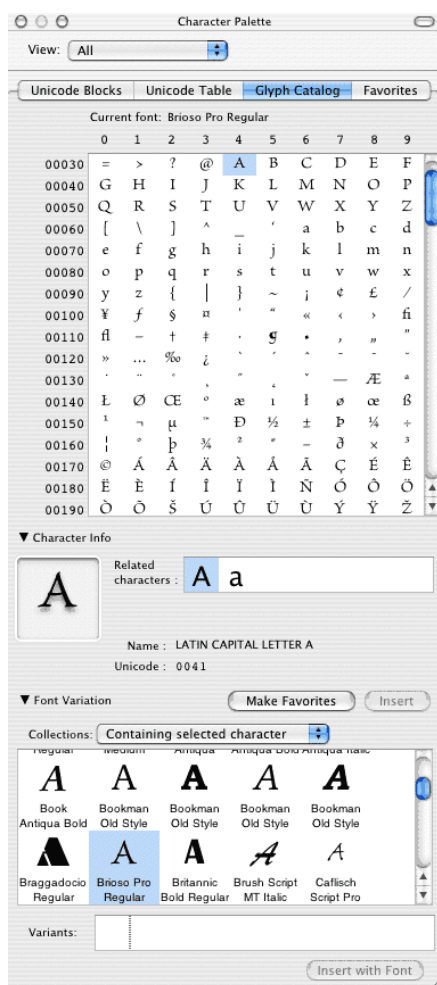
Some applications offer additional options for getting Unicode characters into the application. For example, all versions of InDesign support import of Unicode text files and Microsoft Word for Windows files containing Unicode characters. Additionally, as described at more length below, InDesign and 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.

With these 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 "ᴀ" 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.

OpenType and Adobe Applications

Current versions of InDesign, Illustrator and Photoshop all provide OpenType layout feature support. With these OpenType savvy applications, you can turn on OpenType 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 OpenType Palette (for Illustrator CS). 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 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 work only on certain characters.*

There are three features which 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. (Photoshop 6 and InDesign 1.x have no OpenType sub-menu, and also put proportional oldstyle figures on the main menu.)

In InDesign 2.0, these typographic features are 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" fea-

tures 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 triangle in the top right corner of the palette to open the flyout menu that lists possible formatting options.

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.
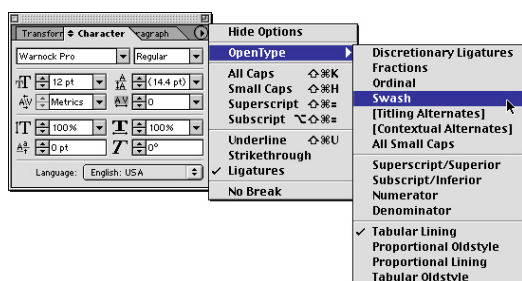
A check mark will appear next to a feature that is turned on. If the OpenType font has the desired feature and glyphs, it will be applied. Remember that not all fonts have all OpenType layout features, and that some features work only on certain characters.

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 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.

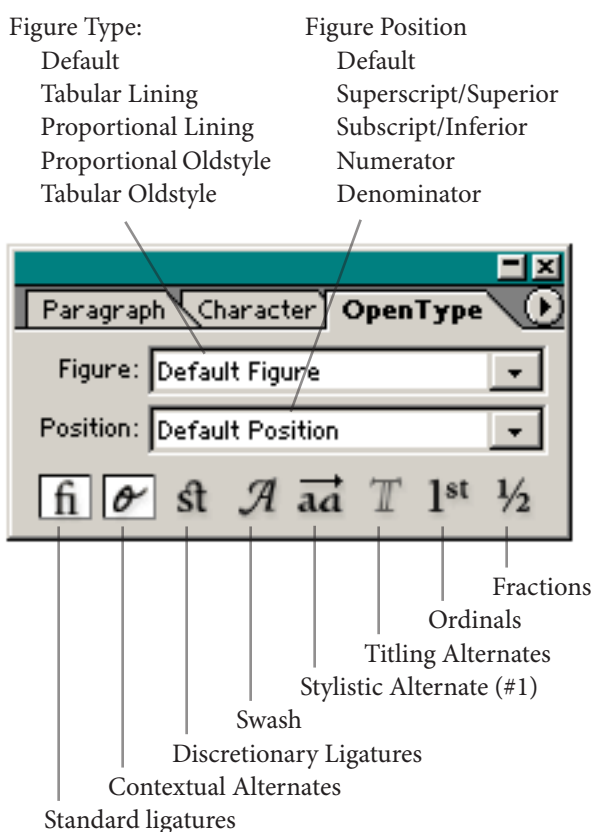**To apply OpenType layout features in Illustrator CS**

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 In the Character palette, click on the triangle 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.

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

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.

To see at a glance which features are supported by which Adobe applications, see the reference chart in the appendix at the end of this user guide.

Some effects similar, but inferior, to OpenType layout features can be created synthetically by scaling 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, 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 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 halfb
with ligatures	This office fjord halfb

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 select OpenType fonts have discretionary and historical ligatures.

without disc. lig.	Most essential effects
with disc. lig.	Most essential 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 font with a different implementation of fractions.

faux fractions	$1^1/_8$ $3^1/_2$ $^{22}/_7$ $5^{11}/_{12}$ $8^{1,234}/_{4,567}$
real fractions	$1^1/_8$ $3^1/_2$ $^{22}/_7$ $5^{11}/_{12}$ $8^{1,234}/_{4,567}$

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 let-

ters. 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 select 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 select OpenType fonts from Adobe have titling alternates.

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 (below) 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 cer-

tain 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	& $aEGMR$ $\beta\theta\varphi\pi\kappa$
with stylistic alts	& $a\in GMR$ $\beta\vartheta\phi\varpi\varkappa$

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 only 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.
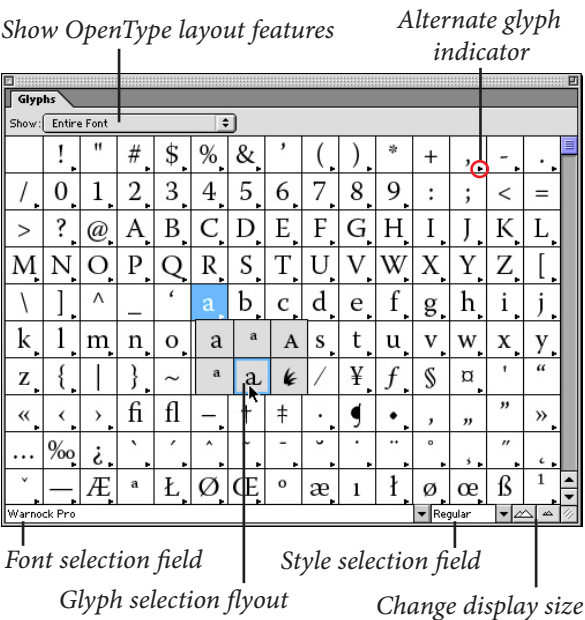
	lining	oldstyle
tabular	0123456789	0123456789
proportional	0123456789	0123456789

Default figures are whichever type are encoded as the standard figures in the font. For historical reasons, these will usually be tabular lining figures, 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.

The Glyph Palette

While OpenType layout features are primarily accessed via the OpenType menu, Adobe InDesign (all versions) and Adobe Illustrator CS also allow you to view and access all of the possible glyphs and layout features in an OpenType font through a single window, the Glyph Palette.

1 Insert your cursor in a text box.

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

Show OpenType layout features   *Alternate glyph indicator*

Font selection field   *Style selection field*

Glyph selection flyout   *Change display size*

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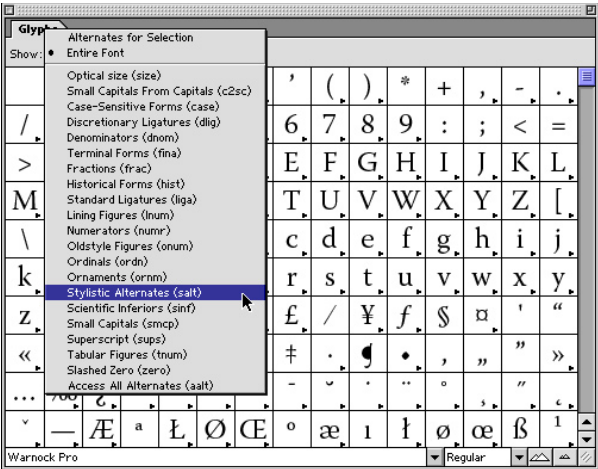
You can view only the alternate glyphs available for a single selected glyph in your InDesign document by selecting "Alternates for Selection" from the "Show" pop-up menu of the Glyph Palette. (If more than one glyph is selected, the Glyph Palette will show no alternates.)

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.

Appendix: OpenType Layout Feature Support by Application

User Interface	OpenType layout feature codes	Illustrator CS	InDesign 2/CS	Photoshop CS	InDesign 1.x	Photoshop 7	Photoshop 6
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 (by applying 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	sinf	•	•				
numerator	numr	•	•				
denominator	dnom	•	•				
ornaments	ornm			•			
stylistic alternates	salt (first alt only)	•		•			