

SIXTH EDITION

Extensis™

Font Management IN MAC OS® X

Best Practices Guide



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So what's all the hubbub?

In Mac OS X, professional workflows involving fonts have become seemingly more difficult and confusing, resulting in delays and problems for users.

Fonts in OS X are located in a myriad of locations on the system, and fonts are activated by a very specific font hierarchy that can make it very challenging for users to accurately verify when and if the correct fonts are in use.

Several fonts are also required for Mac OS X to properly function. Removing these fonts can affect the stability of your system.

What can I do about it?

This guide contains detailed recommendations and instructions that can help you work efficiently with fonts in Mac OS X, configure your system to minimize font problems and improve your workflow. It covers:

- *How to organize your fonts*
- *Where Mac OS X system fonts are stored*
- *Which fonts are required by Mac OS X*
- *How to cleanup your fonts*
- *The font activation hierarchy*
- *Techniques to workaround font issues*

We presume that you have made the decision to use a professional font manager to manage your fonts. A font management tool is an integral part of making sense of your font mess.

If you are unclear on the need for a professional font manager, please take a moment to review the *Why Professional Font Management?* document (PDF):

<http://dl.extensis.com/downloads/SC/EN/P/Font-Management-What-the-Pros-Use.pdf>

If you manage a workgroup of multiple users, you may significantly benefit from the use of a server-based font management system, such as Universal Type Server. To download white papers, documentation and related information about the benefits of server based font management solutions, please visit the Extensis website: <http://www.extensis.com>

NOTE

This guide covers the best practices for font management of Latin-based languages. Font management best practices for Asian and other languages can vary from what is in this document.

Step 1: Organize Your Font Files

One of the first things you should do is to organize your font files into a neat, systematic and central location.

To do this, you need to create a folder – for example a folder called **My Fonts** – and keep it somewhere locally on your hard drive. A good location to place this folder is in the **/Users/Shared** folder, because that way your font library will be accessible to all the users on the machine.

You should also decide whether you want to manually organize your font files, or use a font manager to do this for you. Suitcase Fusion 2 comes with a product called FontDoctor which, among other things, can organize all your font files. Suitcase Fusion 2 can also organize all your font files for you automatically in a secure location called the Font Vault. Even if you do this, so that you're sure that you have gathered all of the fonts on your system, it's a good idea to organize your fonts with Font Doctor before adding them to your font manager.

To organize fonts alphabetically with FontDoctor:

1. Launch **FontDoctor**.

Font Doctor is included with Suitcase Fusion 2, or can be purchased separately from the Extensis website: <http://www.extensis.com/fontdoctor>.

2. In FontDoctor dialog box, click the **Organize** button.
3. In the **Search Disks/Folders** pane, enable disks and add folders to the list by using the Add (+) button.

Warning: If you choose to scan an entire disk, you may wish to manually clean up your application font folders before scanning the entire disk.

4. If you want to keep an entirely clean font library, it is good to remove the original font files, so that the fonts in your library are the only ones available for use. To do so, enable the **Delete Original Files After Copy** option.
5. Click the **Organize Fonts** button.
6. To create a new font library click **New**.
7. FontDoctor prompts you to choose a location for your new font library. Navigate to your My Fonts location and click **Save**.
8. Click **Proceed** to confirm the settings. FontDoctor searches the selected locations and groups all of the fonts in the new library.

To manage fonts with Suitcase Fusion 2:

When fonts are added to Suitcase Fusion 2, by default the fonts are copied into a central location, called the **Font Vault**. To tell Suitcase Fusion 2 to organize your fonts, do the following:

1. Launch Suitcase Fusion 2.
2. Choose **Suitcase Fusion 2 > Preferences**.
3. In the Preferences dialog box, choose the **Copy added fonts to the vault** option. This copies the font files into the vault, leaving the original files untouched.
4. Click **OK** to accept the new preferences.
5. Add your fonts to Suitcase Fusion 2.

About Font Book

Do not delete Apple's Font Book! Although you may use a professional font management application to manage your fonts, Font Book is integrated with Mac OS X and provides important functionality, even if you don't use it to activate and deactivate fonts or sets of fonts.

Manually organizing your fonts

If you prefer to manually organize your fonts, you can organize all of your fonts in the Finder, change the Suitcase Fusion 2 vault preference to **Add fonts leaving them in place**, and then add the fonts to Suitcase Fusion 2.

If you decide to manually organize your fonts, it is best to choose a strategy before you set out to organize your font library. The following are some typical strategies that users implement to organize physical font files. Keep in mind that some levels of organization are better suited for implementation in a font manager.

Alphabetically by family name: Often used by designers or creative professionals, this is often the easiest way to find a particular font. With this method, the library is often further divided into a number of subfolders within the My Fonts folder, for example A-D, E-H, etc. If you like this method, FontDoctor can automatically organize fonts like this for you.

By classification: Often used by typographers, or designers who are well versed in typography. Depending on the level sophistication a set of subfolders with names such as Serif, Script, or Ornamental can be used.

By job name or number: Often used in production environments like service bureaus or print shops, create sets of folders for each job name or number in your workflow.

By client: Often used in design shops with many clients, where each client uses a specific set of fonts for all their jobs. In these environments, it is sometimes required to physically separate the different font files for each client. Suitcase Fusion 2 includes the ability to add fonts in separate libraries or even font vaults to keep fonts used for each client in a separate location.

Whichever way you decide to organize your font library, you must ensure that you keep all PostScript Type 1 font components (suitcase fonts and outline fonts) together in the same folder. Mac OS X requires that the suitcase font files and corresponding outline font files to be in the same physical folder in order to function correctly. This level of organization is typically managed by your font manager, for example Suitcase Fusion 2 won't even allow orphan fonts (PostScript Type 1 fonts missing a component) into the Font Vault.

Step 2: Manage Your System Font and Application Font Folders

When not using a font manager, fonts are stored in any of the Mac OS X System Font folders or in any of the Application Font folders. These folders are managed by the operating system and applications.

The number of locations for fonts in Mac OS X can lead to confusion and cause problems. Within the professional creative, print and publishing environments, it is strongly recommended that you use a font management tool to manage **all** of your available fonts, with the exception of required system fonts.

For detailed information about the many locations where Mac OS X and applications can place and store fonts, see the **Font Locations** section of this guide.

To help you manage which fonts are active in your system font folders, Suitcase Fusion 2 includes features that allows you to activate and deactivate Mac OS X System Fonts.

Mac OS X 10.5 Font Book preferences

Font Book is the built-in font utility for Mac OS X. Font Book version 2.1 that is included with Mac OS X 10.5 (Leopard) includes some new features that can interfere with professional font management.

Two Font Book auto activation preferences act like system-wide system preferences in Mac OS X 10.5. Depending on your choice of font management applications, these options may need to be adjusted to avoid activation conflicts.

Suitcase Fusion 2 automatically disables these Font Book preferences, so if you're using Suitcase Fusion 2 to manage your fonts, you can skip the following procedure.

To update Font Book preferences:

1. From the Applications folder, launch Font Book.
2. Choose **Font Book > Preferences**.
3. From the Preferences dialog box, disable the following options:
 - **Automatic font activation** - *this option interferes with automatic font activation done by professional font managers and does not allow for automatic font activation across all applications. Your font manager should still allow you to use plug-in based automatic activation for each supported application.*
 - **Alert me if system fonts change** - *when enabled, this option will automatically place "protected" fonts back into your system font folders even if you remove them. It also can prevent a professional font manager from effectively managing or overriding your system fonts.*

Manually cleaning up your System Font and Application Font folders

In order to manually clean up your System Font and Application Font folders, it is necessary to remove all fonts that are not absolutely required for Mac OS X to operate.

If you manually clean out these folders, we recommend that you create a folder named **Moved from System Font Folders** within your **My Fonts** folder (the folder you created in Step 1). Whether you will be using these fonts in the future or not, it is good practice to save these fonts and not discard them just in case you do need them at a later date.

To manually clean up your system fonts:

1. For **Local Domain Fonts**, create a folder called **Library Fonts** within the **Moved from System Font Folders** folder.
2. Move all fonts that you find in **/Library/Fonts** to your new **Library Fonts** folder.
3. For **User Domain Fonts**, create a folder called **User Fonts** within the **Moved from System Font Folders** folder.
4. Move all fonts that you find in **/Users/[name]/Library/Fonts** to your new **User Fonts** folder.
5. If you have a **Classic System Folder**, a "system folder" that has an OS 9 icon at the root of your startup disk, these fonts should be moved if you want them to be managed with your font manager in Mac OS X. Please remember that fonts moved out of the Classic System Folder will no longer be available for Mac OS 9 applications, unless activated by a font manager.

Create a folder called **Classic Fonts** within the **Moved from System Font Folders** folder.

Font Book Preferences

*Two Font Book auto activation preferences act like system-wide system preferences in Mac OS X 10.5 - **Automatic Font Activation** and **Alert me if system fonts change** preferences.*

Move all fonts that you find in **/System Folder/Fonts** to your new folder, **except** the following fonts:

Fonts Required in the Classic System Folder			
Charcoal	Chicago	Geneva	Monaco

These fonts are required to normal system operation of Mac OS Classic, and removing these fonts may cause Classic and Classic applications to behave erratically. In no event should these fonts be moved from **System Folder/Fonts**.

You may also wish to leave any OpenType fonts that you want to use in the Classic environment in the **System Folder/Fonts** location. All Mac OS X font managers are not able to activate OpenType fonts for Classic applications.

- To move **System Domain Fonts**, you must authenticate with Mac OS X as a user with Administrator rights. If you aren't sure your login level, check the Accounts page of the System Preferences. For more information, see your Mac OS X documentation.
- Create a folder named **System Domain Fonts** folder in your **Moved from System Font Folders** folder.
- WARNING:** Removing required fonts from your System Domain Fonts folder can have adverse effects. This includes not being able to launch the operating system, and in case of a mistakenly deleted font could require you to reinstall the operating system.

Review the required operating system fonts listed on the next two pages with care. These fonts are required by the operating system. Other fonts may be required by other applications that you have installed, so remove fonts from the System Domain Fonts folder **with caution**.

Select only fonts in the **System/Library/Fonts** folder that are not listed on the chart, and that you know are not required by other applications.

Required System/Library/Fonts by OS				
Font file name	10.3	10.4	10.5	10.6
Apple Braille Outline 6 Dot.ttf				C
Apple Braille Outline 8 Dot.ttf				C
Apple Braille Pinpoint 6 Dot.ttf				C
Apple Braille Pinpoint 8 Dot.ttf				C
Apple Braille.ttf				C
Apple Symbols.ttf				C
AppleGothic.dfont	√	√		C
AppleGothic.ttf			√	C
AquaKanaBold.otf	√	√	√	C
AquaKanaRegular.otf	√	√	√	C
Courier.dfont*	√	√	√	C
Geeza Pro.ttf				C
Geeza Pro Bold.ttf				C
Geneva.dfont	√	√	√	B
Helvetica LT MM and HelveLTMM		√	√	C
Helvetica.dfont*	√	√	√	B
HelveticaNeue.dfont*			√	B
Keyboard.dfont	√	√	√	A
LastResort.dfont	√	√	√	A
LucidaGrande.dfont	√	√	√	A
Monaco.dfont	√	√	√	A
Osaka.dfont	√	√	√	
OsakaMono.dfont	√	√	√	
Symbol.dfont*	√	√	√	C

10.6 Required Fonts by Importance

A: Super Critical System Fonts - fonts that every Mac OS X system can't live without.

B: Critical System Fonts - fonts that are required for key applications that also have user interface dependencies

C: Core System Fonts - less critical fonts that have application and user interface dependencies.

WARNING

When removing fonts from the system fonts folders, follow our instructions very carefully. Removing critical fonts can cause severe consequences, even requiring you to reinstall the operating system.

Required System/Library/Fonts by OS				
Font file name	10.3	10.4	10.5	10.6
Thonburi.ttf				C
ThonburiBold.ttf				C
Times LT MM and TimesLTMM		√	√	C
Times.dfont*	√	√	√	C
ZapfDingbats.dfont*	√	√	√	C
ヒラギノ丸ゴ Pro W4.otf (Hiragino Maru Gothic Pro W4)	√	√		C
ヒラギノ明朝 Pro W3.otf (Hiragino Mincho Pro W3)	√	√		C
ヒラギノ明朝 Pro W6.otf (Hiragino Mincho Pro W6)	√	√		C
ヒラギノ明朝 ProN W3.otf (HiraMinProN-W3)			√	C
ヒラギノ明朝 ProN W6.otf (HiraMinProN-W6)			√	C
ヒラギノ角ゴ Pro W3.otf (Hiragino Kaku Gothic Pro W3)	√	√		C
ヒラギノ角ゴ ProN W6.otf (Hiragino Kaku Gothic Pro W6)	√	√		C
ヒラギノ角ゴ ProN W3.otf (HiraKakuProN-W3)			√	C
ヒラギノ角ゴ ProN W6.otf (HiraKakuProN-W6)			√	C
儷黑 Pro.ttf (LiHei Pro)				C
华文细黑.ttf (STXihei)				C
华文黑体.ttf (STHeiti)				C

* These fonts are OK to replace with another version of the font. For example, you can substitute an identically-named PostScript Type 1 version of the font for the .dfont. However, some version of the font must be kept in the System/Library/Fonts folder at all times.

NOTE: If you run applications requiring additional language support, other fonts may be required.

- Copy the selected fonts from the **System/Library/Fonts** folder to your new **System Domain Fonts** folder.
- Move the selected files from the System Folder to the trash. At the prompt, enter your Mac OS X Administrator password and click **OK**.

International Fonts

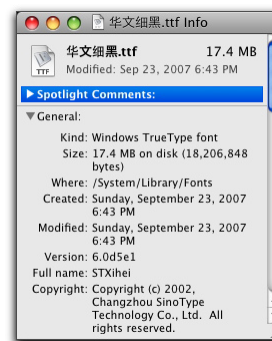
Mac OS X also comes with a number of international fonts for use when a non-Latin language is the preferred language. The required fonts for each language are listed in the chart.

If you have difficulty reading the font name, select the font and choose **File > Get Info** (Command-I). The full name is listed in the Get Info dialog box.

About Helvetica and Helvetica Neue

While Helvetica and Helvetica Neue are not required system fonts, some applications still require an active version of these fonts in order to operate correctly. If you regularly use any or documents that require these fonts, once you remove them from your system font folders, be sure to activate your preferred versions using your font manager. It doesn't matter which font format you use (PostScript Type 1, TrueType or .dfont), but we recommend being sure that whatever version you use has all the styles that you require, and if intended to replace a system font, it must have an identical name.

Working with Helvetica and Helvetica Neue is different in Mac OS X 10.5 (Leopard) and later. In Mac OS X 10.5, Apple introduced a new feature called System Font Protection. This feature is always enabled and prevents a user from removing critical fonts from the **/System/Library/Fonts** folder by automatically replacing them with backup copies.



Protected fonts in Mac OS X 10.5			
Geneva.dfont	HelveticaNeue.dfont	LastResort.dfont	Monaco.dfont
Helvetica.dfont	Keyboard.dfont	LucidaGrande.dfont	

Except as noted below for Helvetica and Helvetica Neue, do not remove any of these fonts.

In fact, doing so will prevent your system from functioning properly.

However, the versions of Helvetica and Helvetica Neue supplied with Mac OS X 10.5 can cause problems if you are already using different versions of these fonts in documents, or if you want to use more styles of the typeface than are supplied with OS X. If you are working in a professional print or publishing environment, you may want to replace these with another version. You have two options for activating your chosen replacements:

1. Override these system fonts with your font manager. (Suitcase Fusion has the ability to do this.) The only risk associated with this option is, if you disable the version you activate with your font manager, the .dfont version will silently reappear. You may also see more than one choice for these fonts, which can be confusing. This may be your only option, if you do not have permission to remove the .dfont versions of Helvetica and Helvetica Neue.
2. Remove the font from both **/System/Library/Fonts** and the system's ProtectedFonts folder. Then put the replacement font(s) in **/System/Library/Fonts**. Alternatively, you may keep your preferred version of the fonts that were removed permanently active in your font manager (always on), although this is slightly riskier. Some version of Helvetica and Helvetica Neue **must always be active** for Mac OS X 10.5 to function properly.

If you want to remove Mac OS X 10.5 protected fonts, the versions of Helvetica and Helvetica Neue you choose as a replacement must contain at least as many styles as Regular, Bold, Italic, Bold Italic, etc. It should also be a modern, high-quality font. For most purposes, Extensis recommends a PostScript Type 1 font. OpenType versions of these fonts usually have a new and distinct menu name scheme, allowing them to be installed alongside .dfonts without issue. However, they cannot replace the .dfonts, as differently-named fonts are not automatically substituted for the removed .dfonts.

To remove Helvetica.dfont and HelveticaNeue.dfont from /System/Library/Fonts:

1. Log-into your Mac OS X computer with an Administrator account.
2. Open Font Book.
3. Choose **Font Book > Preferences**
4. Disable the **Alert me if system fonts change** preference.
5. Copy the following folder to a safe, backup location on your hard drive:

/System/Library/Frameworks/ApplicationServices.framework/Versions/A/Frameworks/ATS.Framework/Versions/A/Resources/ProtectedFonts

NOTE: **Never delete your backup copy of the ProtectedFonts folder**, in case they are required by a document or application you encounter in the future.

6. Open the original ProtectedFonts folder listed above and select only Helvetica.dfont and HelveticaNeue.dfont and move them to the Trash.
7. Authenticate with your Administrator username and password.
8. Open the **/System/Library/Fonts** folder and move **Helvetica.dfont** and **HelveticaNeue.dfont** to the Trash.

9. Open your font manager and permanently activate (always on) your preferred versions of Helvetica and Helvetica Neue.

10. Restart your computer.

Microsoft Core web fonts

There are a number of common fonts used by browsers to display web pages as intended by the designer. These fonts were part of the Microsoft Core Web fonts initiative, and are included with Mac OS X and Microsoft applications. It is a good idea to have a version of the following fonts active on your system not only for web pages, but also for many Microsoft applications.

Microsoft Core web fonts			
Andale Mono	Comic Sans MS	Impact	Verdana
Arial	Courier New	Times New Roman	Webdings
Arial Black	Georgia	Trebuchet MS	

These fonts are commonly installed by Microsoft Office in **Users/[Name]/Library/Fonts** and by Mac OS X in **Library/Fonts**. These can be removed from either location and managed with a font manager.

Microsoft Office fonts

In addition to the Microsoft Core web fonts, Microsoft Office 2004 applications require a number of additional fonts to operate properly.

Microsoft Office Fonts				
Batang.ttf	MS Gothic.ttf	MS PGothic.ttf	MT Extra PMingLiU.ttf	Wingdings
Gulim.ttf	MS Mincho.ttf	MS PMincho.ttf	SimSun.ttf	

The first time that a user launches an Office application, these required fonts, as well as others are automatically copied into the **Users/[Name]/Library/Fonts** folder. This only happens the first time every Mac OS X user launches any Office application on the machine, yet not thereafter. To prevent this from happening, you can rename the source folder of these files. Office will continue to function properly after doing so. For data integrity, do not delete these files, just keep them in a renamed folder.

To prevent Office from automatically reinstalling these fonts:

1. Close all Microsoft Office applications.
2. Rename the following Fonts folder:

/Applications/Microsoft Office 2004/Office/Fonts

3. Add the Microsoft Office fonts to your font manager and ensure that the required fonts are active before launching any Office applications.

NOTE: Additional fonts may be required when using templates installed with Office or from the web.

Adobe Application Fonts

It is likely that you have a number of applications from Adobe installed on your system. Adobe places fonts on your system that are required for Adobe applications to function properly.

Adobe Creative Suite 2 required fonts:

Adobe CS2 installs font files in a location that is only available to Adobe applications. You may remove most font files from `/Library/Application Support/Adobe/Fonts`. However, do not remove any folders, non-font files or the following fonts from the **Reqrd** folder.

Adobe CS2 Required Fonts				
MyriaBol	MyriaBolta	Myriad	Myrialta	MyriaRom

Other fonts in this folder can be removed and managed with a font manager.

Adobe Creative Suite 3 and 4 required fonts:

Adobe CS3 and CS4 includes required fonts within the Adobe Illustrator and InDesign application packages. These fonts are required and should not be removed.

Fonts in the **Illustrator package/Required/Fonts/**

Adobe Illustrator CS3 and CS4 Required Fonts			
AdobeInvFon	AdobeMyungjoStd-Medium.otf	MyriaBolIta	MyriaRom
AdobeInvisFont.bmap	AdobeSongStd-Light.otf	Myriad	
AdobeMingStd-Light.otf	MyriaBol	Myrialta	

Fonts in the **InDesign package/Contents/MacOS/Required/fonts/**

Adobe InDesign CS3 and CS3 Required Fonts		
Adobe Sans MM	AdobeSansMM	KentenGeneric.otf

Apple Mail Font

If you use Apple's Mail application with Mac OS X 10.5 (Leopard), an additional font is required in **Library/Fonts** to use of the Notes feature. If the font is missing, the Notes feature will not work until it is replaced, or the font required is changed in Mail preferences.

Apple Mail Font
MarkerFelt.dfont

Step 3: Cleanup your Font Library

Cleaning up your font library is probably the most diverse and certainly the most difficult task of font management. Many font problems encountered in Mac OS X occur because of problem fonts. Any number of errors can occur because a font is actually corrupt, missing a outline font file, or is a duplicate of another font you already have in your library. Having a clean, healthy font library is your best bet to a seamless, problem free workflow.

Corrupt Fonts

Suitcase Fusion 2 comes with a full copy of FontDoctor. The main function of FontDoctor is to validate fonts, to fix any corrupt fonts that it is able to fix, and warn you about problems that it is unable to fix.

Suitcase Fusion 2 also performs font corruption checking and repair as you add fonts. Even so, for that extra level of security, FontDoctor is recommended to ensure that your fonts are healthy and that missing components are identified and regrouped, if possible.

Any fonts that are found to be corrupt should be discarded. Find and reload a healthy version of the font from the original media whenever possible, and only use the repair functions of FontDoctor if you can't find a healthy original version.

Orphan Fonts

PostScript fonts are comprised of a suitcase font file (sometimes referred to as the bitmap or screen font file) and a corresponding outline font file (sometimes referred to as the printer font). A single suitcase file can contain the bitmaps corresponding to multiple outline font files. If either of these components is missing, the remaining component is referred to as an orphan font. Different applications deal with these orphan fonts in different ways, but to ensure a trouble free workflow, both components are required. So one of the steps you should take in cleaning up your font library, is to either discard any orphan fonts you have in your library, or replace the orphans with copies of the fonts from the original media.

Once again, FontDoctor can help in this regard by locating and matching suitcase and outline fonts together. The final check is done when you add your font library to Suitcase Fusion. If you are adding fonts to the Font Vault, orphan fonts are not allowed and thus not added to the Suitcase Fusion vault.

Step 4: Add your fonts to your font manager

Once you have all your font files organized, and have removed all unnecessary fonts from the various System Font and Application Font folders, the next step is to add all these fonts to your font manager, so you can activate them as you need them.

Before you add your fonts to a font manager, you will likely need to decide how you will add the fonts. Suitcase Fusion 2 contains a secure font vault that can be used to keep fonts. The vault ensures that fonts are complete and safe from corruption.

If you have organized all your font files into a single folder hierarchy, you may want to add these fonts in place to your font manager. To do so, change the Font Vault option to **Add fonts leaving them in place**. After changing the preference, you can drag the entire My Fonts folder into the Fonts pane in Suitcase Fusion to have all the fonts added to the font manager.

Another decision you need to make is whether you want to follow your physical organization of files by creating corresponding sets in Suitcase Fusion 2, or simply add the fonts and organize them into sets at a later time. For example, if you have organized your font files by client or by job name, you may want to create a separate set for each client or job. To do this, simply drag each client or job folder into the **Sets** pane. Suitcase Fusion 2 only adds fonts once, and makes references to the original font file thereafter. So, there's no danger of adding duplicate fonts.

For detailed instructions about adding fonts, see the **Suitcase Fusion User Guide**.

Step 5: Clean Duplicate Fonts

Two fonts that have the same name are considered duplicates because it is often difficult to determine what – if anything – is different between the fonts. Font libraries often contain many duplicate fonts, sometimes out of necessity (different versions of these fonts may be needed), sometimes simply because they have accumulated over time. To avoid confusion and errors, it is best to keep only the fonts – and the versions of fonts – that you need.

Once all your fonts have been added to your font manager, you should decide which of these fonts – especially duplicates – you want or need to keep, and which you should discard. For example, most people have multiple versions of Helvetica – likely PostScript Type 1, TrueType and .dfont versions, and even possibly multiple PostScript Type 1 versions of Helvetica from a single foundry, such as Adobe. This is not uncommon. There are, in fact, many versions of Helvetica available. If you work on client jobs using client provided fonts, then you will need to make sure you have the versions of these fonts provided by the client. So, if Client A requires Helvetica “A,” and Client B requires Helvetica “B,” it is necessary to keep copies of both Helvetica “A” and Helvetica “B” in your library.

Suitcase Fusion can help you determine if fonts are identical and thus true duplicates. Font Sense technology examines fonts and gives you a unique identifier for each font. This way, even if fonts appear to be similar, you can be certain that they are unique.

While determining duplicates can be a time consuming process, it is definitely worth your while to examine your duplicates and decide which you need and which you do not need.

If you do need to keep multiple versions of fonts in your library, you should probably use the keyword features of your font manager to tag your duplicate fonts with information to help identify the fonts required for each client and job.

If you are completely in charge of the fonts you use, you should only keep one version of each font and remove the duplicate fonts from your font manager as well as removing the duplicate font files from your system. Within a professional creative, print and publishing environment, fonts with PostScript style outlines (either Type 1 or OpenType format) are the most commonly preferred. Although biases against TrueType are mostly for historical rather than practical issues. You might instead choose to keep the version of the typeface that has the most styles, or the most glyphs per font, or is from the most reputable vendor.

Font Locations

With Mac OS X, fonts may be stored and used by the system or by applications in a number of locations.

System Domain **/System/Library/Fonts**

Fonts in this folder are used by the OS, available to all users of the system, and in general should be left alone. Some of the fonts in this folder are absolutely required by the OS and removing them will cause the OS or certain applications to crash or behave erratically. Other fonts may be safely removed from this folder. See **pages 7 and 8** of this guide for a list of required fonts that cannot be removed. Fonts stored in this location are always active and available to the OS and all applications.

Duplicates

*For detailed instructions about examining duplicate fonts and Font Sense attributes in Suitcase Fusion, see the **Suitcase Fusion User Guide**.*

Local Domain
/Library/Fonts

This folder houses any fonts available to any user who logs-on to the system. Fonts stored in this location are always active and available to the OS and all applications.

User Domain
/Users/[name]/Library/Fonts

Fonts in this folder are not required and available only to the specific user who logs-on to the system. Each individual user who has an account on the system has his/her own User Fonts folder. Fonts stored in this location are always active and available to the OS and all applications.

Classic Domain
/System Folder/Fonts

This folder exists only on PowerPC machines with the Classic environment installed, and houses fonts available to all users of the system. These fonts are specifically for use with the Classic environment. See **page 7** of this guide for a list of required Classic fonts that cannot be removed.

NOTE: Fonts in this folder are active even if the Classic environment is not running.

Application Fonts
/Library/Application Support

In addition to these system font folders, individual applications sometimes also store fonts in certain locations for their own use. With Mac OS X, applications can keep a private store of fonts for their own use.

Of particular importance to the professional creative, print and publishing community, are the Adobe CS2 (and earlier) applications, which store fonts in:

/Library/Application Support/Adobe/Fonts

These fonts are active and available to any Adobe CS application running in Mac OS X which uses the core Adobe font engine – but not available to non-Adobe applications. Adobe CS3 and CS4 applications store their own fonts in the /Library/Fonts folder, but they still recognize and access fonts in the Adobe fonts folder.

Font Hierarchy

Can duplicate fonts be retained in the various system and application font folders? Yes, but it's not a good idea.

If duplicate fonts are stored in multiple font locations, Mac OS X will use the first instance of the font based on the following hierarchy:

1. A specific Application's font folder: /Library/Application Support
2. The User font folder: /Users/[name]/Library/Fonts
3. The Local font folder: /Library/Fonts
4. The Network font folder (if configured by a network administrator) /Network/Library/Fonts
5. The System font folder: /System/Library/Fonts
6. The Classic font folder: /System Folder/Fonts

The Application Support font folder is the “highest” font location, and the classic font folder is the “lowest” font location. This means, for example, that if you have a font of the same name (a duplicate font) in both the `/Users/[name]/Library/Fonts` folder, and the `/System/Library/Fonts` folder, Mac OS X (and all running applications) uses the version of the font in the `/Users/[name]/Library/Fonts` folder, since that is the “higher” font location.

Adobe applications which use the shared Adobe font engine do not use the standard Mac OS X font location hierarchy. InDesign’s process for resolving font conflicts is described here:

http://blogs.adobe.com/typblography/2008/05/indesign_font_conflicts.html.

For Adobe applications such as Illustrator and Photoshop, the result of font conflicts is undefined.

Font Formats

Following is a synopsis of font formats supported by Mac OS X:

Mac PostScript Type 1

These were long the de-facto standard for professionals in the creative, print and publishing environments.

Each PostScript Type 1 font is made up of two parts, a suitcase font file containing bitmaps and metrics (sometimes called the “screen font”) and the corresponding outline font file (sometimes called the “printer font”). Both the suitcase and corresponding outline files must be in the same physical folder in order to work properly in Mac OS X. Note that one suitcase file may contain the bitmaps and metrics for multiple outline fonts.

Mac PostScript Type 1 fonts have resource forks, which can be an issue for file transfer and backup/restore: see “File Issues” below.

PostScript Type 1 fonts for Windows consist of a paired .pfb and .pfm file for each font. Windows PostScript Type 1 fonts are supported by neither Mac OS X, nor by font management applications, although some Adobe applications can make use of these fonts if they are placed in a private Adobe application fonts folder.

Multiple Master

This special kind of PostScript Type 1 font allows modifications of one or more font parameters to create variations of the original font, such as varying weight or width. While multiple master (MM) fonts are supported by Mac OS X 10.2 and later, they are no longer sold or supported by Adobe, the original creators of the format. Uneven support for MM fonts has been known to cause various issues and problems in professional workflows, so we recommend not using them, if possible. Adobe has made OpenType equivalents of all its former MM fonts so there are alternatives available:

<http://www.adobe.com/type/browser/mmoffer.html>

Type 1 fonts have resource forks, which can be an issue for file transfer and backup/restore: see “File Issues” below. Mac PostScript Type 1 MM fonts have resource forks, which can be an issue for file transfer and backup/restore: see “File Issues” below.

As with regular PostScript Type 1 fonts, there is a separate Windows flavor of MM fonts. Windows MM fonts are not supported on Mac OS X. However, some Adobe applications can make use of these fonts, if the fonts are placed in an Adobe application fonts folder.

Classic Mac TrueType

Classic Mac TrueType fonts consist of a suitcase, containing outlines and (optionally) bitmaps, as well as all the required font metrics, making them easier to use than PostScript Type 1 fonts. A single TrueType font suitcase may contain multiple TrueType fonts. TrueType fonts can contain thousands of glyphs, enabling extended language support in a single font.

Mac TrueType fonts have resource forks, which can be an issue for file transfer and backup/restore: see “File Issues” below.

Originally, TrueType fonts were not as widely accepted in professional creative, print and publishing environments. However, most TrueType fonts will function properly in a professional workflow.

.dfont

With Mac OS X, Apple introduced another way of packaging system fonts. The .dfont (Data Fork TrueType Font) is simply a different way of packaging a Mac TrueType font, to avoid the resource fork structure by packaging that information in the data fork. Apple’s .dfonts are generally high-quality fonts, but this format is essentially only used by Apple for their system fonts. Unlike other new font formats, the .dfont format only works on Mac OS X (not in Classic, and not on Windows), and equivalent Windows fonts are not generally available; therefore these fonts should be avoided in any potentially cross-platform workflows (for example, if your printer or service bureau is doing output from Windows).

TrueType (.ttf)

Mac OS X also supports TrueType fonts with the .ttf extension, which are a cross-platform format originally developed for Windows. Beginning with Mac OS X 10.6, many OS X system fonts are in this format. These fonts are roughly equivalent to Mac TrueType fonts, but with a different file structure (they lack the “resource fork” and its associated data, or that data is placed inside a special table within the data fork). Each .ttf file is a single, complete TrueType font.

TrueType Collection (.ttc)

TrueType Collection files contain multiple .ttf fonts in a single file. TrueType Collections allow multiple fonts to share glyphs or other tables, and can create a significant saving of file space. Windows typically uses TrueType Collections for East Asian languages, while Mac OS X uses them for many purposes. Although this format was originally developed for Windows, beginning with Mac OS X 10.6, many Mac OS X system fonts are in this format. Older versions of Mac OS X appear to have less well developed support for TTC fonts.

OpenType (.otf or .ttf)

OpenType is the newest major font format, and the format to which OS vendors seem to be converging. The file format is based on the Windows version of TrueType, but an OpenType font can contain either PostScript (.otf) or TrueType (.ttf or .otf) outline data, meaning that professional publishing environments can continue to use PostScript outlines if they are so inclined.

There are several advantages to OpenType. As with TrueType (.ttf), one font is one file, and this file is cross platform – the same file can be used on a Mac or Windows platform with consistent results. Like TrueType, an OpenType font can contain thousands of glyphs. Not only can this enable extensive language support in a single font, but ligatures, swashes, true small caps, and other advanced typographical alternate glyphs can be built into a single font, and are accessible in compatible applications. Finally, OpenType fonts are based on Unicode, the universal cross-platform character encoding standard. These are significant benefits over PostScript Type 1, which is limited

to 256 encoded characters, and does not directly support Unicode. Font vendors often offer information on compatibility or upgrade availability, such as this FAQ from Adobe:

http://www.adobe.com/type/opentype/T1_to_OTF_FAQ.htm

Mac OS X natively supports OpenType fonts and Unicode information, making OpenType an excellent choice for new font purchases. However, unless your budget allows for re-licensing all your existing fonts, you may want to migrate only gradually, as you cannot simply convert your existing PostScript Type 1 or TrueType fonts to OpenType and get the same results as with freshly licensed OpenType fonts. Most font vendors now sell OpenType versions of their font collections, and some are developing only OpenType fonts at this point.

Apple Advanced Typography (AAT)

Apple Advanced Typography (AAT) is an alternative to OpenType for encoding advanced typographic information in a font. AAT features may be coded in a Mac or Windows TrueType font, a .dfont, or an OpenType font. Many Apple system fonts have AAT features for advanced typography. Such features are accessible only in AAT-savvy applications. Few vendors other than Apple have created AAT fonts, and other than Apple's own iWork applications (such as Pages and Keynote), few major applications support AAT typographic capabilities.

File Issues

Mac OS supports a special way of storing file information, in which what a user sees as a single file can have both arbitrary information (the “data fork”) and specially structured information (the “resource fork”). This can create problems because typical Windows and Unix platforms, as well as many network and backup solutions, don't understand the resource fork data.

Unfortunately, older Mac font file types make use of the resource fork, such as the Mac flavors of PostScript Type 1 (including multiple master) and TrueType. If the resource fork of such a font is deleted, moved or damaged (for example, reduced to zero bytes), the font will generally become unusable.

Files including Mac resource forks will usually not survive file transfers via SMB/CIFS, and may not survive archiving with .ZIP. More recent ZIP support in OS X Tiger and later is capable of preserving resource forks, but does not necessarily do so by default on an HFS+ file system—consult your documentation.

Just formatting a disk as Mac OS Extended is not, in itself, enough to guarantee that resource forks will be successfully copied to that disk. If, for example, one is using Windows-based backup solutions or Windows-based underlying backup infrastructure, you might be missing support for resource forks. Check your documentation or test restoring a file to verify that resource forks are supported.

Unicode

You've probably heard the term “Unicode” used in one way or another, but may not know exactly to what it refers. Unicode is a universal character encoding scheme that provides unique character mappings for all the world's languages, as well as many other kinds of symbols—about 100,000 characters today.

The Unicode format specifies exact character mappings for all characters, including letters and symbols, providing predictability across fonts. Prior to Mac OS X, the predominant character

Mixing Font Formats

*There is no inherent issue with using fonts of multiple, differing formats in the same document. The only problems arise from having multiple fonts with the same name, whether they are in the same format or different formats. (See **Duplicate Fonts** above.)*

encoding for fonts and text on Mac OS was MacRoman or other single-byte encodings, not Unicode. These legacy encodings each had only 256 slots for characters, so the same “slot number” could mean different things in different encodings. Characters not present in any of these encodings would have to be mapped to some encoded character to allow for output. For example, a non-Unicode dingbat font might map a variety of symbols to the letters A-Z.

Many font formats can handle up to 65,535 unique glyphs per font, and support Unicode encoding built into the font. This includes all forms of OpenType and TrueType fonts, and CID-keyed PostScript Type 1 fonts. However, “regular” PostScript Type 1 fonts (including multiple master fonts) can only encode 256 characters per font and rely on pre-defined single-byte encodings.

Just because a font is in TrueType or OpenType format does not mean it has extended language support. It may have been converted from a MacRoman or WinANSI font without adding any new characters, or not many. You’ll need to check specific fonts to see if they support the particular languages you need.

Once you have a font with some degree of extended language support, your application must be “Unicode compliant” to access those additional characters. Otherwise the application will only see a limited subset of the characters in the font, such as those corresponding to the MacRoman portion of Unicode. Modern Mac OS X applications are usually Unicode compliant, while older applications written with for earlier standards are not as likely to be compliant.

Font cache issues

If your fonts occasionally appear garbled or you are seeing other strange behavior with your fonts, you may be seeing a problem with one or more of your “font caches.” The OS X operating system makes use of these, as do vendors such as Adobe, Microsoft and Quark. A font cache is a file that stores key information about the currently installed fonts, speeding up operations because applications and operating systems don’t have to keep on reading that information from the individual fonts. The system font cache files can affect any font-using application, while the vendor-specific caches only affect each vendor’s own applications.

Because the font cache files are merely an on-the-fly optimization, deleting them is not harmful: the operating system and applications can regenerate them. Just close all the vendor-specific applications (Adobe, Microsoft and Quark) before deleting their respective font caches. If you delete the OS X font caches, you should not only quit all your applications first, but you’ll also need to restart your computer afterwards.

Because there are many different locations for font cache files with many different names, we recommend that you use a utility such as FontDoctor (comes with Suitcase Fusion, or available from FontGear at <http://www.fontgear.net/fontdoctor.html>), FontNuke (<http://www.jamapi.com/pr/fn/>) or Font Finagler to purge the cache files. However, such utilities do not always handle the very latest versions of the cache files, so we provide information for doing it manually.

FontDoctor and FontNuke have the ability to purge font cache files for Mac OS X itself, and also Adobe, Quark and Microsoft applications.

To clean cache files with FontDoctor, choose **Tools > Clean Font Cache Folders**. Administrator authentication is required to clear font caches.

Cache Cleaning

FontDoctor 7.7 and can clear font caches for Mac OS X 10.4, 10.5, 10.6 QuarkXPress 6/7/8, Adobe CS3, CS4, and Microsoft Office X/2004/2008

System font caches

If your fonts occasionally appear garbled or you are seeing other strange behavior with your fonts, you may be seeing a problem with the Mac OS X font cache.

You can use FontDoctor or FontNuke to clear the system font caches (recommended), or you can manually clear your system font caches by deleting the appropriate cache files. Depending on which operating system that you are using, delete the appropriate files below and restart your computer.

Mac OS 10.5

```
/private/var/folders/*/*/-Caches-/com.apple.ATS
```

Mac OS 10.3 - 10.4

```
/System/Library/Caches/com.apple.ATS.System*
/System/Library/Caches/com.apple.ATSServer*
/System/Library/Caches/fontTablesAnnex*
/Library/Caches/com.apple.ATS
```

Mac OS 10.2

```
/System/Library/caches/com.apple.FCache*
/System/Library/Caches/com.apple.ATSServer*
/System/Library/Caches/fontTablesAnnex*
/Library/Caches/com.apple.FCache*
[Home]/Library/Caches/com.apple.ATSServer*
[Home]/Library/Caches/com.apple.FCache*
```

Restart your computer after removing the files above.

Adobe font caches

If your font display problems are limited to Adobe applications, it may be due to a corrupt Adobe-specific font cache. FontDoctor can be used to clear Adobe font caches, or you can manually clear the font caches. For more information, see the following Adobe Knowledge base articles:

Troubleshoot font problems (Mac OS X)

<http://kb.adobe.com/selfservice/viewContent.do?externalId=327791>

How to rebuild a corrupt font cache on a Macintosh

http://kb.adobe.com/selfservice/viewContent.do?externalId=tn_16763

To manually clear the Adobe font caches:

1. Close all open Adobe applications.
2. Remove the **AdobeFnt*.lst** files from the following locations. Depending upon which applications you have installed, every location may or may not exist.

Note: The “*” in the filename represents any numerical value, for example, AdobeFnt10.lst, AdobeFnt11.lst, etc.

Warning: Do not delete AdobeFnt.db, FntNames.db or any other files from these folders.

```
/Library/Application Support/Adobe/Fonts/Reqrd/CMaps/
/Library/Application Support/Adobe/PDFL/8.0/Fonts/
/Library/Application Support/Adobe/PDFL/8.0/CMaps/
/Library/Application Support/Adobe/TypeSupport/CMaps/
```

```
[Home]/Library/Application Support/Adobe/Fonts/
[Home]/Library/Application Support/Adobe/TypeSpt/
[Home]/Library/Application Support/Adobe/TypeSupport/
```

```
[Home]/Library/Caches/Adobe/Fonts/
[Home]/Library/Caches/Adobe/TypeSpt/
[Home]/Library/Caches/Adobe/TypeSupport/
[Home]/Library/Caches/Adobe/TypeSupport/CMaps/
```

- Depending on your version of InDesign clear **AdobeFnt*.lst** files from the following locations:

```
/Applications/Adobe InDesign CS2/Fonts/
/Applications/Adobe InDesign CS3/Fonts/
/Applications/Adobe InDesign CS4/Fonts/

[Home]/Library/Preferences/Adobe InDesign/Version 5.0/CompositeFont/
```

- Depending upon your version of Illustrator, clear the **IllustratorFnt*.lst** file from the following locations:

```
[Home]/Library/Application Support/Adobe/Adobe IllustratorCS3/
[Home]/Library/Application Support/Adobe/Adobe IllustratorCS4/en_US/
```

- Depending upon your version of Acrobat, clear the following files.

```
[Home]/Library/Caches/Acrobat/AcroFnt*.lst
[Home]/Library/Caches/Acrobat/8.0_x86/AcroFnt08.lst
[Home]/Library/Caches/Acrobat/9.0_x86/AcroFnt09.lst
[Home]/Library/Acrobat User Data/8.0_x86/AdobeSysFnt*.lst
```

- Relaunch the affected Adobe application. The Adobe applications automatically create new clean copies of the removed font cache files.

QuarkXPress JAWS font cache

QuarkXPress uses the JAWS PDF generation engine to create PDF files from documents. This PDF creation engine places cache files on your system that can become quite large and cause stability issues. To prevent and solve these issues, the JAWS folder can be cleaned. QuarkXPress will automatically regenerate any necessary files.

To clear the JAWS folder:

- Close all Quark applications.
- Remove the contents of the following folder based on the version of QuarkXPress installed.

QuarkXPress 7.1, 8 and newer stores the cache in each user's home folder:

```
[Home]/Library/Preferences/Quark/QuarkXPress 7.0/jaws/
[Home]/Library/Preferences/Quark/QuarkXPress 8/jaws/
```

Versions earlier than QuarkXPress 7.1 store the cache in the Application folder:

```
/Applications/<QuarkXPress folder>/jaws/ttfont/
```

- Re-launch QuarkXPress.

If clearing QuarkXPress' caches don't address your problem, updating Mac OS X may help. Mac OS X 10.4.11 (and later), includes an important update that improves compatibility when using OpenType fonts in QuarkXPress.

Quark also offers a free FontFace XTension for QuarkXPress 6.x that prevents incorrect substitution of a font face when a font face within a font suitcase is deactivated.

To download the FontFace XTension:

For **QuarkXPress 6.5.2**

<http://www.quark.com/service/desktop/downloads/details.jsp?idx=581>

For **QuarkXPress 6.1** and **6.1.1**

<http://www.quark.com/service/desktop/downloads/details.jsp?idx=590>

Microsoft Office font cache

If Microsoft Office documents are not displaying or printing fonts correctly, you may need to manually clear the Microsoft Office font cache.

To clear the Microsoft Office font cache:

1. Close all Microsoft Office applications.
2. Depending upon your version of Office, remove the following files:
 - [Home]/Library/Preferences/Microsoft/Office Font Cache (11)*
 - [Home]/Library/Preferences/Microsoft/Office 2008/Office Font Cache (12)*
3. Re-launch the affected Office application.

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