

OpenType-CID/CFF CJK Fonts: ‘name’ Table Tutorial

1.1 Introduction

This tutorial is intended for font developers who build OpenType-CID/CFF CJK fonts—specifically, fonts that are built from CIDFont resources that are based on character collections, such as Adobe-Japan1-6 for Japanese—regardless of whether they use Adobe-supplied tools that are made available in AFDKO* (*Adobe Font Development Kit for OpenType*) or their own tools. This document is designed to provide guidance that goes beyond the standard OpenType documentation and specifications with regard to setting the ‘name’ table strings, and in effect, offers a more easily understood interpretation of those documents. Please note that this document is not to be considered a substitute for the standard documentation and specifications, but rather complements them.

While this document is written in English, translations into Chinese, Japanese, and Korean may be provided in the future. Until such translations are made available, please note that the English version was specifically written to be clear, concise, and easy-to-understand.

1.1.1 Conventions

Unicode values are indicated through the use of the common “U+” prefix notation, which correspond to Unicode scalar values, and while this does notation not imply a specific Unicode encoding method, it does imply UTF-8, UTF-16, or UTF-32. For example, U+0020 represents an ASCII “space,” U+4E00 represents the CJK Unified Ideograph that means *one*, and U+20000 represents the first character in Plane 2, which also happens to be a CJK Unified Ideograph. The specific encoded values for the three examples are shown in the table below:

Unicode Scalar Value	UTF-8	UTF-16 (Big Endian)	UTF-32 (Big Endian)
U+0020	<20>	<00 20>	<00 00 00 20>
U+4E00	<E4 B8 80>	<4E 00>	<00 00 4E 00>
U+20000	<F0 A0 80 80>	<D8 40 DC 00>	<00 02 00 00>

Non-Unicode values are represented using the “0x” prefix followed by hexadecimal digits in multiples of two.

1.1.2 PostScript Names for OpenType-CID/CFF CJK Fonts

When establishing the PostScript name for the source CIDFont resource, which is recorded as its /CIDFontName string, and which becomes the CFF.FontName string in an OpenType-CID/CFF font, care must be taken so that a CMap resource name does not constitute one of its components. In particular, the use of “-H” (an abbreviated form of “-Heavy”) as the final portion of the /CIDFontName string conflicts with the CMap resource with the same name (the CMap resource that has its /CMapName string set to “H”), and should thus be avoided.

* <http://www.adobe.com/devnet/opentype/afdko/>

The reason such strings should be avoided is to reduce the likelihood of CIDFont/CMap resource name parsing errors. Some clients are unable to distinguish CIDFont resource and CID-keyed font (CIDFont resource name + one or two hyphens + CMap resource name) usage, and apply CIDFont/CMap resource name parsing to both. For those developers who wish to use “-H” as an abbreviated form of “-Heavy,” the workaround is to instead use “-Hv” as an abbreviated form, which is explicitly listed in Adobe Tech Note #5088[†] (*Font Naming Issues*).

1.2 Platform, Script & Language IDs

The ‘name’ table of an OpenType font contains strings that are used for values such as copyright or trademark attribution, menu names, and the PostScript name. Besides the string value itself, each ‘name’ table entry is associated with four identifiers. The first three values specify the operating system (*PlatformID*), encoding (*ScriptID*), and language (*LanguageID*) for which each string is to be used. The fourth value is the NameID that specifies the intended use of the string.

The table below shows the only Platform, Script, and Language ID combinations that should be used in the ‘name’ tables of OpenType-CID/CFF CJK fonts, along with the meanings of each individual value:

Values (Hexadecimal)	PlatformID	ScriptID	LanguageID
1,0,0 (0x01,0x00,0x00)	Macintosh	Roman	English
1,1,11 (0x01,0x01,0x0B)	Macintosh	Japanese	Japanese
1,2,19 (0x01,0x02,0x13)	Macintosh	Traditional Chinese	Traditional Chinese
1,3,23 (0x01,0x03,0x17)	Macintosh	Korean	Korean
1,25,33 (0x01,0x19,0x21)	Macintosh	Simplified Chinese	Simplified Chinese
3,1,1028 (0x03,0x01,0x0404)	Microsoft	Unicode BMP	Traditional Chinese (Taiwan)
3,1,3076 (0x03,0x01,0x0C04)	Microsoft	Unicode BMP	Traditional Chinese (Hong Kong)
3,1,1033 (0x03,0x01,0x0409)	Microsoft	Unicode BMP	English (American)
3,1,1041 (0x03,0x01,0x0411)	Microsoft	Unicode BMP	Japanese
3,1,1042 (0x03,0x01,0x0412)	Microsoft	Unicode BMP	Korean
3,1,2052 (0x03,0x01,0x0804)	Microsoft	Unicode BMP	Simplified Chinese

The two shaded rows represent the ‘name’ table Platform, Script, and Language ID combinations that must, at a minimum, be present for the NameID fields described in this document. Throughout this document, decimal values shall be used when referring to Platform, Script, and Language ID combinations; the use of a “0x” prefix indicates the use of a hexadecimal value.

1.3 Copyright Symbol Usage

Because the ‘name’ table can represent non-ASCII characters, it is no longer necessary to represent a copyright symbol using “c” or “C” enclosed by parentheses. In fact, such practice should be avoided, and is considered invalid from a legal perspective. The symbol “©” should thus be used. How the copyright symbol is encoded requires special attention because it is outside the scope of the ASCII character set.

[†] <http://www.adobe.com/devnet/font/pdfs/5088.FontNames.pdf>

The table below provides the appropriate copyright symbol values for each Platform, Script, and Language ID combination:

Values	Character Code
1,0,0 (Macintosh,Roman,English)	0xA9
1,1,11 (Macintosh,Japanese,Japanese)	0xFD
1,2,19 (Macintosh,Traditional Chinese,Traditional Chinese)	0xFD
1,3,23 (Macintosh,Korean,Korean)	0x83
1,25,33 (Macintosh,Simplified Chinese,Simplified Chinese)	0xFD
3,1, <i>all</i> (Microsoft,Unicode BMP, <i>all</i>)	U+00A9

Note that all Unicode strings, meaning PlatformID=3 (*Microsoft*) and ScriptID=1 (*Unicode BMP*), use the same value for the copyright symbol, specifically U+00A9.

1.3.1 Copyright String (NameID=0)

When setting the NameID=0 (*Copyright*) string, multiple versions must typically exist, due to the inclusion of Unicode and non-Unicode (Macintosh) strings, and because the copyright symbol is encoded differently depending on the non-Unicode encoding, as described in the previous section. For example, a Korean font may contain three instances of NameID=0 to handle the following three combinations:

Platform/Script/Language IDs	Copyright Symbol Encoding
1,0,0 (Macintosh,Roman,English)	0xA9
1,3,23 (Macintosh,Korean,Korean)	0x83
3,1,1042 (Microsoft,Unicode BMP,Korean)	U+00A9

1.4 Microsoft/Unicode Menu Names

The NameIDs 1 (*Family*), 2 (*Style*), 4 (*Full*), 16 (*Preferred Family*), and 17 (*Preferred Subfamily*) strings need to be set for PlatformID=3 (*Microsoft*) and ScriptID=1 (*Unicode BMP*). These strings must have their LanguageIDs set for English at a minimum, and also for Chinese (Simplified or Traditional), Japanese, or Korean, depending on the intended language or locale of the font.

1.4.1 Microsoft/Unicode English Menu Names

The NameIDs 1 (*Family*) and 4 (*Full*) strings shall be set the same as the concatenation of NameID=16 (*Preferred Family*) and NameID=17 (*Preferred Subfamily*) with an intervening “space” (U+0020) character.

The NameID=2 (*Style*) string shall be set to “Regular” as a fixed string unless the head.MacStyle and OS/2.Selection fields are set to values that indicate bold, in which case the string shall be set to “Bold” as a fixed string.

The NameID=16 (*Preferred Family*) and NameID=17 (*Preferred Subfamily*) strings shall be set in the Family/Face style, whereby the two strings would form a hierarchical structure in an application's font menu, first showing the font family (NameID=16), followed by one or more styles or weights (NameID=17).

The same technique for handling fonts that represent single-face families shall be applied, specifically that NameIDs 1 and 16 shall be set the same (and NameID=16 is thus omitted, based on the following paragraph), and NameID=2 shall be set to "Regular" as its string value.

If the NameID=16 string is identical to the NameID=1 string, it is omitted. And, if the NameID=17 string is identical to the NameID=2 string, it is omitted.

There are two special circumstances that require special attention, as follows:

- If the string that results from concatenating NameID=16 and NameID=17 with an intervening "space" (0x20 or U+0020, depending on the PlatformID) is 31 characters in length or greater, a shorter form shall be specified.
- If NameID=2 is set to "Bold," the NameID=1 string shall be set to the same value as the NameID=1 string of the base font to which the bold font is style-linked.

1.4.2 Microsoft/Unicode CJK Menu Names

These CJK menu names should be set in the same way as those for English, but composed using Unicode character codes for Simplified Chinese, Traditional Chinese, Japanese, or Korean, and with the LanguageID set appropriately.

The same technique for handling fonts that represent single-face families shall be applied, specifically that NameIDs 1 and 16 shall be set the same (and in this case, NameID=16 is omitted), and NameID=2 shall be set to "Regular" as its string value.

1.5 Microsoft/Unicode PostScript Name (NameID=6)

The NameID=6 (*PostScript*) string shall be set to be the same as the CFF.FontName string. This needs to be set only for *Microsoft,Unicode BMP,English (American)* (3,1,1033).

1.6 Macintosh Menu Names

NameID strings need to be set for PlatformID=1 (Macintosh), and for the appropriate Script and Language IDs. The rules are the same as those outlined in the entire "Microsoft/Unicode Menu Names" section, so they are not repeated here.

1.6.1 Macintosh CJK Menu Names

These CJK menu names should be set in the same way as those for English, but composed using non-Unicode character codes for Simplified Chinese (EUC-CN encoding), Traditional Chinese (Big Five encoding), Japanese (Shift-JIS encoding), or Korean (EUC-KR encoding).

The same technique for handling fonts that represent single-face families shall be applied, specifically that NameIDs 1 and 16 shall be set the same (and in this case, NameID=16 is omitted), and NameID=2 shall be set to "Regular" as its string value.

1.7 Macintosh PostScript Names (NameIDs 6 & 20)

There are two types of PostScript names that need to be set for PlatformID=1 (*Macintosh*).

First, the NameID=6 (*PostScript*) string shall be set to be the same as the CFF.FontName (aka, CIDFontName) string. This needs to be set only for *Macintosh,Roman,English* (1,0,0).

Second, because the underlying font is CID-keyed, based on a static character collection, the NameID=20 (*PostScript CID findfont name*) string shall be set to the CFF.FontName string plus an appropriate CMap resource name that corresponds to a Macintosh encoding, and separated by a single hyphen (0x2D). The PlatformID shall be set to 1 (*Macintosh*), the ScriptID shall be set to the appropriate value (1 for Japanese, 2 for Traditional Chinese, 3 for Korean, or 25 for Simplified Chinese), and the LanguageID shall be set to 0xFFFF (65535).

The table below details the CMap resource names that should be used for the NameID=20 string, for each of the four language combinations:

Value	CMap Resource Name	Example
1,1,0xFFFF	83pv-RKSJ-H	KozMinProVI-Regular-83pv-RKSJ-H
1,2,0xFFFF	B5pc-H	AdobeMingStd-Light-B5pc-H
1,3,0xFFFF	KSCpc-EUC-H	AdobeMyungjoStd-Medium-KSCpc-EUC-H
1,25,0xFFFF	GBpc-EUC-H	AdobeSongStd-Light-GBpc-EUC-H

1.8 UniqueID String (NameID=3)

The NameID=3 (*UniqueID*) string shall contain a string that is unique, and not shared by another font. Ideally, it should also be unique from different versions of the same font.

The convention used by Adobe Systems is to concatenate the head.FontRevision number, OS/2.Vendor string, and CFF.FontName separated by semicolons (0x3B or U+003B, depending on the ScriptID). The following is an example of a NameID=3 string:

```
6.009;ADBE;KozGoPr6N-Medium
```

For PlatformID=3 (*Microsoft*), this string is set only for *Unicode BMP,English (American)* (1,1033), and for PlatformID=1 (*Macintosh*), this string is set only for *Roman,English* (0,0).

1.9 Version String (NameID=5)

The NameID=5 (*Version*) string shall contain a version number, usually the same value as indicated in the head.FontRevision field, after the word “Version” and a “space” (0x20 or U+0020, depending on the PlatformID). Because this is a string value, it’s possible to add more information, such as the version number of the CFF (CFF.Version), and the version number of the tool (or tools) that were used to build the font.

The convention used by Adobe Systems is to concatenate the head.FontRevision number, the CFF.Version number, and the version numbers of the tools or libraries used to build the font. The following is an example of a NameID=5 string:

```
Version 6.009;PS 6.003;hotconv 1.0.64;makeotf.lib2.0.25650
```

At a minimum, the NameID=5 string must exist for both *Microsoft,Unicode BMP,English (American)* (3,1,1033) and *Macintosh,Roman,English* (1,0,0). This string may be specified for other languages, although they are not currently used by any software.

1.10 Other Strings

Other string values—such as for NameIDs 7 (*Trademark*), 8 (*Manufacturer Name*), 9 (*Designer*), 10 (*Description*), 11 (*URL Vendor*), 12 (*URL Designer*), 13 (*License Description*), and 14 (*License Info URL*)—should be set according to the specification, if desired.

If the strings contain no characters specific to a CJK character set, they need to be set only for *Microsoft,Unicode BMP,English (American)* (3,1,1033) and *Macintosh,Roman,English* (1,0,0). It is, of course, possible to include both English and non-English versions of some of these strings, such as for NameIDs 7, 8, 9, 10, and 13.

1.11 AFDKO Usage Notes

Adobe Systems' AFDKO represents a suite of command-line tools for building OpenType fonts from legacy PostScript font data. Menu names for the OpenType font are specified in a plain-text file called "FontMenuNameDB," and the OpenType GSUB and GPOS features, along with additional 'name' table values, are provided by a plain-text file called the "features" file.

1.11.1 AFDKO "FontMenuNameDB" File Settings

The "FontMenuNameDB" file provides a way to set menu names by specifying English menu names, along with Unicode and non-Unicode strings for non-English (CJK) menu names.

Three single-letter identifiers—"f," "s," and "l"—are used to set the Family, Subfamily, and Compatibility menu names. The Compatibility menu name is generally the same as the Full name, made by concatenating the Family and Subfamily names with a "space" (0x20 or U+0020, depending on the PlatformID) between them. The table below shows how these fields relate to NameID strings on a per-PlatformID basis:

Field	Macintosh	Microsoft/Unicode
f	NameID=16	NameID=16
s	NameID=17	NameID=17
l	NameIDs 1 & 4	NameIDs 1 & 4

The notation that is used is based on the principal that ASCII characters represent themselves, regardless of encoding. For Platform/ScriptID 3,1 (*Microsoft,Unicode BMP*), all non-ASCII characters are represented by a backslash followed by four hexadecimal digits. For PlatformID=1 (*Macintosh*), any byte value that is 0x80 or greater is represented by a backslash followed by two hexadecimal digits.

Below are typical examples of "FontMenuNameDB" file entries for Simplified Chinese, Traditional Chinese, Japanese, and Korean fonts:

Simplified Chinese:

```
[AdobeHeitiStd-Regular]
f=3,1,0x804,Adobe \9ed1\4f53 Std
s=3,1,0x804,R
```

```

l=3,1,0x804,Adobe \9ed1\4f53 Std R
f=1,25,33,Adobe \ba\da\cc\e5 Std
s=1,25,33,R
l=1,25,33,Adobe \ba\da\cc\e5 Std R
f=Adobe Heiti Std
s=R
l=Adobe Heiti Std R

```

Traditional Chinese:

```

[AdobeFanHeitiStd-Bold]
f=3,1,0x404,Adobe \7e41\9ed1\9ad4 Std
s=3,1,0x404,B
l=3,1,0x404,Adobe \7e41\9ed1\9ad4 Std B
f=3,1,0xC04,Adobe \7e41\9ed1\9ad4 Std
s=3,1,0xC04,B
l=3,1,0xC04,Adobe \7e41\9ed1\9ad4 Std B
f=1,2,19,Adobe \c1\63\b6\c2\c5\e9 Std
s=1,2,19,B
l=1,2,19,Adobe \c1\63\b6\c2\c5\e9 Std B
f=Adobe Fan Heiti Std
s=B
l=Adobe Fan Heiti Std B

```

Japanese (Adobe-Japan1-6 example):

```

[KozGoPr6N-Medium]
f=3,1,0x411,\5c0f\585a\30b4\30b7\30c3\30af Pr6N
s=3,1,0x411,M
l=3,1,0x411,\5c0f\585a\30b4\30b7\30c3\30af Pr6N M
f=1,1,11,\8f\ac\92\cb\83S\83V\83b\83N Pr6N
s=1,1,11,M
l=1,1,11,\8f\ac\92\cb\83S\83V\83b\83N Pr6N M
f=Kozuka Gothic Pr6N
s=M
l=Kozuka Gothic Pr6N M

```

Japanese (Adobe-Identity-0 example):

```

[KazurakiSP2N-Light]
f=3,1,0x411,\304b\3065\3089\304d SP2N
s=3,1,0x411,L
l=3,1,0x411,\304b\3065\3089\304d SP2N L
f=1,1,11,\82\a9\82\c3\82\e7\82\ab SP2N
s=1,1,11,L
l=1,1,11,\82\a9\82\c3\82\e7\82\ab SP2N L
f=Kazuraki SP2N
s=L
l=Kazuraki SP2N L

```

Korean:

```

[AdobeGothicStd-Bold]
f=3,1,0x412,Adobe \ace0\b515 Std
s=3,1,0x412,B
l=3,1,0x412,Adobe \ace0\b515 Std B
f=1,3,23,Adobe \b0\ed\b5\f1 Std
s=1,3,23,B
l=1,3,23,Adobe \b0\ed\b5\f1 Std B
f=Adobe Gothic Std
s=B
l=Adobe Gothic Std B

```

Note that the “features” file, described next, cannot be used to override menu name strings. The tool in AFDKO that builds OpenType fonts by reading the “FontMenuNameDB” and other control files, called *makeotf*, builds the ‘name’ table’s menu name strings according to the specifications outlined in this document.

1.11.2 AFDKO “features” File Settings

The “features” file can control ‘name’ table strings other than the menu name strings, and is also used to control other data and strings. Setting ‘name’ table overrides is the preferred way in which the ‘name’ table is populated with useful information, beyond the menu name strings that are specified in the “FontMenuNameDB” file. The syntax begins with the string “nameid” followed by the NameID identifier. What follows that either assumes or specifies the Platform, Script, and Language IDs. If none is specified, *Microsoft,Unicode BMP,English (American)* (3,1,1033) is assumed. If only PlatformID=1 (*Macintosh*) is specified, Script/LanguageID 0,0 (*Roman,English*) is assumed. For all other Platform, Script, and Language IDs, it must be explicitly stated. What follows is the actual string value, terminated by a semicolon. The notation that is used is identical to what is used in the “FontMenuNameDB” file.

The head.FontRevision number, used in NameIDs 3 and 5, is set as follows as a ‘head’ table override:

```
table head {
  FontRevision 6.009;
} head;
```

The OS/2.Vendor string, used in NameID=3, is set as follows as an ‘OS/2’ table override:

```
table OS/2 {
  Vendor "ADBE";
} OS/2;
```

The following is a typical example of a properly set ‘name’ table description in a “features” file:

```
table name {
  nameid 0 "Copyright \00a9 2001-2010 Adobe Systems Incorporated. All Rights Reserved.";
  nameid 0 1 "Copyright \a9 2001-2010 Adobe Systems Incorporated. All Rights Reserved.";
  nameid 0 1 1 11 "Copyright \fd 2001-2010 Adobe Systems Incorporated. All Rights Reserved.";
  nameid 7 "Kozuka Gothic is either a registered trademark or trademark of Adobe Systems Incorporated in the United States and/or other countries.";
  nameid 7 1 "Kozuka Gothic is either a registered trademark or trademark of Adobe Systems Incorporated in the United States and/or other countries.";
  nameid 8 "Adobe Systems Incorporated";
  nameid 9 "Masahiko Kozuka \5c0f\585a\660c\5f66";
  nameid 9 1 "Masahiko Kozuka";
  nameid 9 1 1 11 "Masahiko Kozuka \8f\ac\92\cb\8f\b9\95F";
  nameid 11 "http://www.adobe.co.jp/products/type/";
  nameid 11 1 "http://www.adobe.co.jp/products/type/";
  nameid 14 "http://www.adobe.com/type/legal.html";
  nameid 14 1 "http://www.adobe.com/type/legal.html";
  nameid 20 1 1 65535 "KozGoPr6N-Medium-83pv-RKSJ-H";
} name;
```

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Publishing Date

August 5, 2010