

Welcome

To Advance through Presentation
Use Page Up and Page Down Keys



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Font Management for Applications



Font Management for Applications

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Font Manager

Why Change?

- Get fonts out of the resource chain
 - No resource map access in Carbon
- Clean interface for font utilities
- Lets us address old limitations



Limitations Removed

- Data fork-housed fonts
 - PostScript (Type 1)
 - OpenType
- More open font files
- Less dependent on Resource Manager



What's Changing?

- Font access made opaque
- Font family abstraction
- Iterators for families and font objects
- API for font management utilities
- Font activation notification



Font Families

- Abstraction for old FOND
 - The number you get from `GetFNum()`
- Family ID \neq FOND resource ID
 - Use the data accessors
- All pieces of a family in one place
 - No more `GetNextFOND()`!



Font Iteration

- Font families, font objects
- Replaces `GetResource()`, `GetNextFOND()`
- Filters
 - Type, format



Iteration Example

- Obtain the standard QuickDraw name of every font family:

```
FMFontFamilyIterator fontFamilyIterator;
```

```
FMCreateFontFamilyIterator( ..., &fontFamilyIterator );
```

```
while ( ! FMGetNextFontFamily(fontFamilyIterator, &fontFamily) )  
{  
    status = FMGetFontFamilyName(fontFamily, name);  
    ...  
}
```

```
FMDisposeFontFamilyIterator(&fontFamilyIterator);
```



Font Activation

- Activate fonts in a “container”
 - Can activate subset of fonts
- Multiple font folders
- Activation scope
 - Global, local, per-user
- Notification



Activation Examples

- Activate a specific font in a suitcase

```
FMFontContainer fontContainer;  
FMFontContainerFilter filter;
```

```
filter.filterSelector = kBasicFontContainerFilterSelector;  
filter.filter.basicFilter.dataReference = (UInt32)  
    fontFamilyResourceID;
```

```
FMGetFontContainerFromFSSpec(&fileSpec,  
    kFontSuitcaseContainerFormat,  
    &fontContainer);
```

```
FMActivateFonts(fontContainer, &filter, ...);
```



Miscellany

- Map font objects to families and vice versa
- Font data access
 - Everything looks like a table
- Standard font menu



What You Should Do

- Use the new API in Carbon applications
 - FMInitializeMenu(),
FMGetFontFromMenuSelection()
 - Activate embedded fonts yourself
- Begin developing to the API when available in Mac OS 8





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FontSync

A Million-Dollar Mistake



What's the Problem?

- Fonts don't come with the documents
- No reliable way to identify fonts
 - Font name isn't good enough



Partial Solutions

- PANOSE numbers
 - Good for font substitution
- Digital signatures
 - Covers the entire font “package”
- PDF-based workflow
 - Not always embedded
 - Not enough info



Our Solution: FontSync

- Reliable font identifier
- Derived mechanically from font data
- Irrelevant data can be ignored



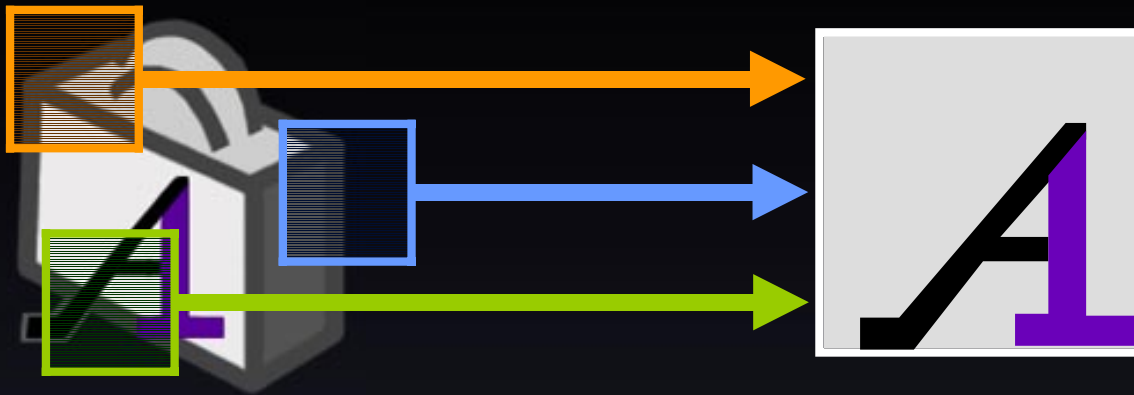
FontSync Components

- Font reference
- Font reference matching
- Font profile



FontSync Reference

- Portable font “fingerprint”



- Family + style



Saving a Font Reference

- Create a FontSync font reference
- Flatten it and store in your document

```
FNSFontReference fontRef;
```

```
err = FNSReferenceCreateFromFamily( famID, style, &fontRef, ... );
```

```
err = FNSReferenceFlattenedSize( fontRef, &flatSize );
```

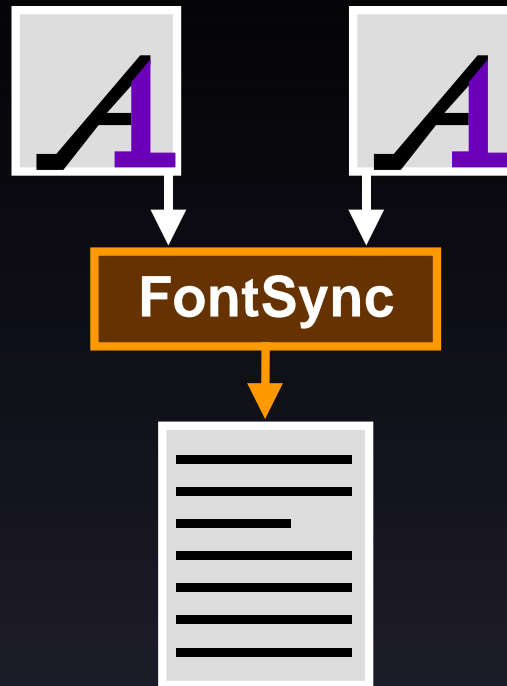
```
err = FNSReferenceFlatten( fontRef, buffer, ... );
```

```
err = FNSReferenceDispose( fontRef );
```



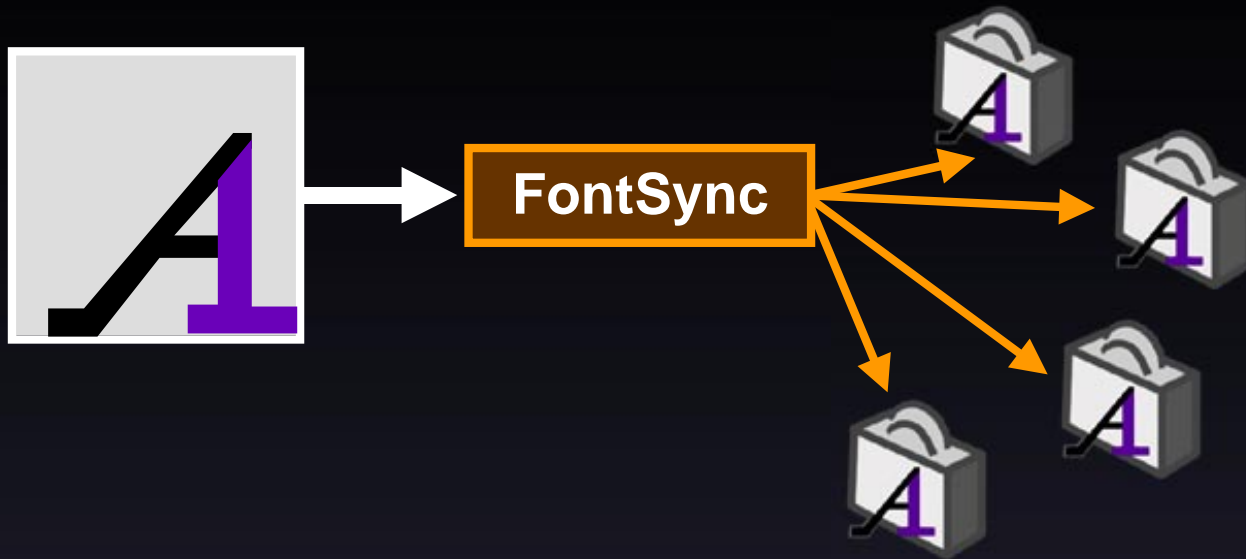
Matching Fonts

Compare two font references



Matching Fonts

Generate a list of matching fonts



Font Matching Options

Select font characteristics to match:

<input checked="" type="checkbox"/> Font Names Internal font names used by the system (not file names)	<input checked="" type="checkbox"/> Font Technology Distinguish font types, for example, TrueType and PostScript
<input type="checkbox"/> Glyphs Visual characteristics of the font: character shapes and repertoire	<input checked="" type="checkbox"/> Kerning Internal kerning tables
<input checked="" type="checkbox"/> QuickDraw Metrics The space in which a glyph sits as computed by QuickDraw Text	<input checked="" type="checkbox"/> ATSUI Metrics The space in which a glyph sits as computed by ATSUI
<input checked="" type="checkbox"/> Character Encoding Keystroke to glyph mappings	<input type="checkbox"/> Print Encoding Font and glyph names used when printing to PostScript
<input type="checkbox"/> WorldScript Layout Extra layout information specific to certain languages	<input type="checkbox"/> Advanced Layout Additional font features such as automatic ligatures



Font from Reference

- Unflatten the reference if needed
- Get a list of matching fonts

```
err = FNSReferenceUnflatten( buffer, flatSize, &fontRef );
```

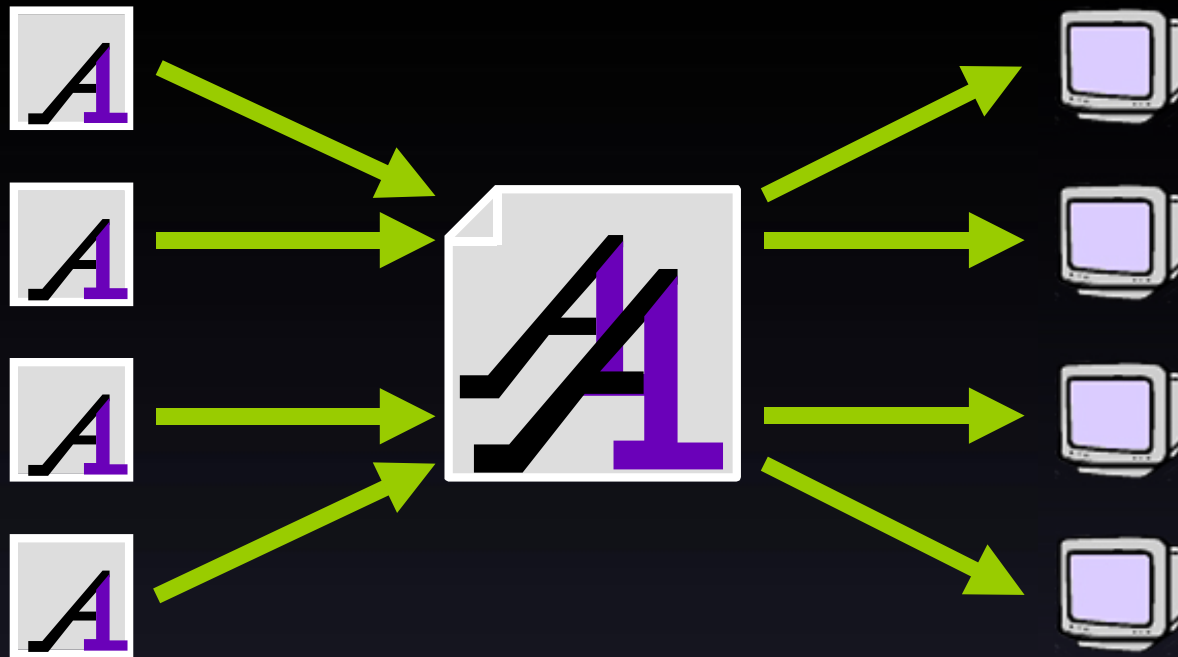
```
FMFontSpecification *fontList;
```

```
err = FNSReferenceMatchFamilies( fontRef, options,  
                                listCapacity, fontList, &numMatches );
```

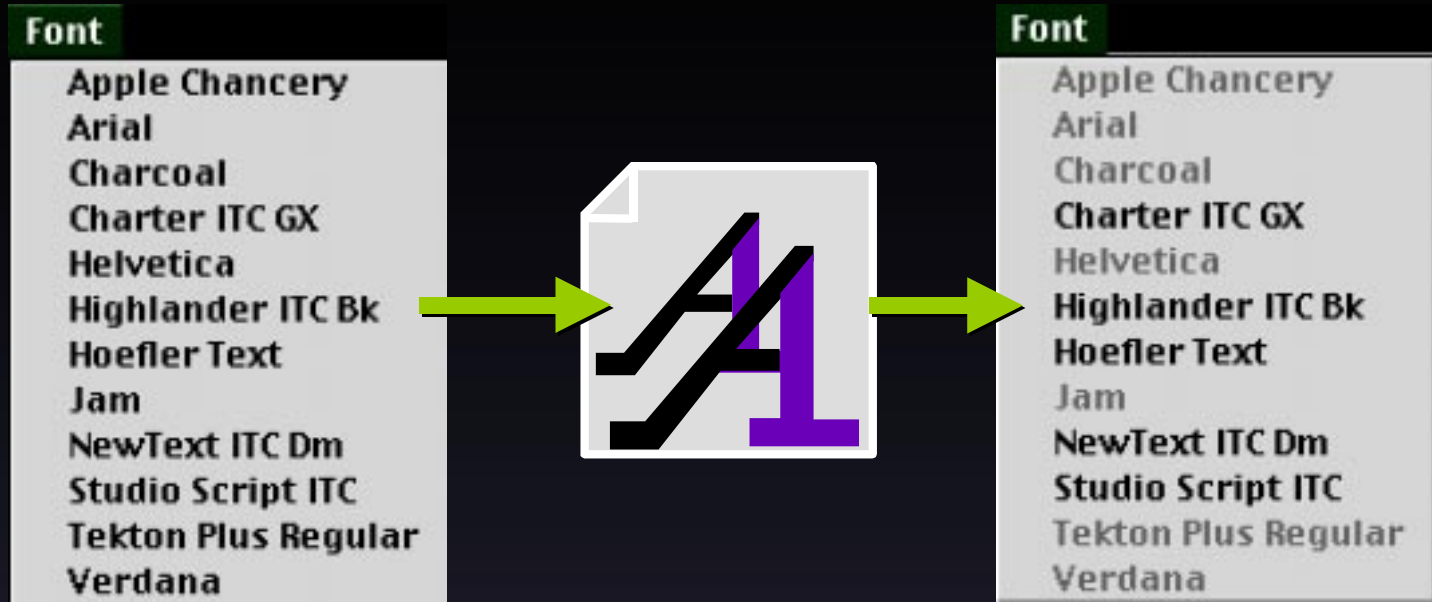
```
err = FNSReferenceDispose( fontRef );
```



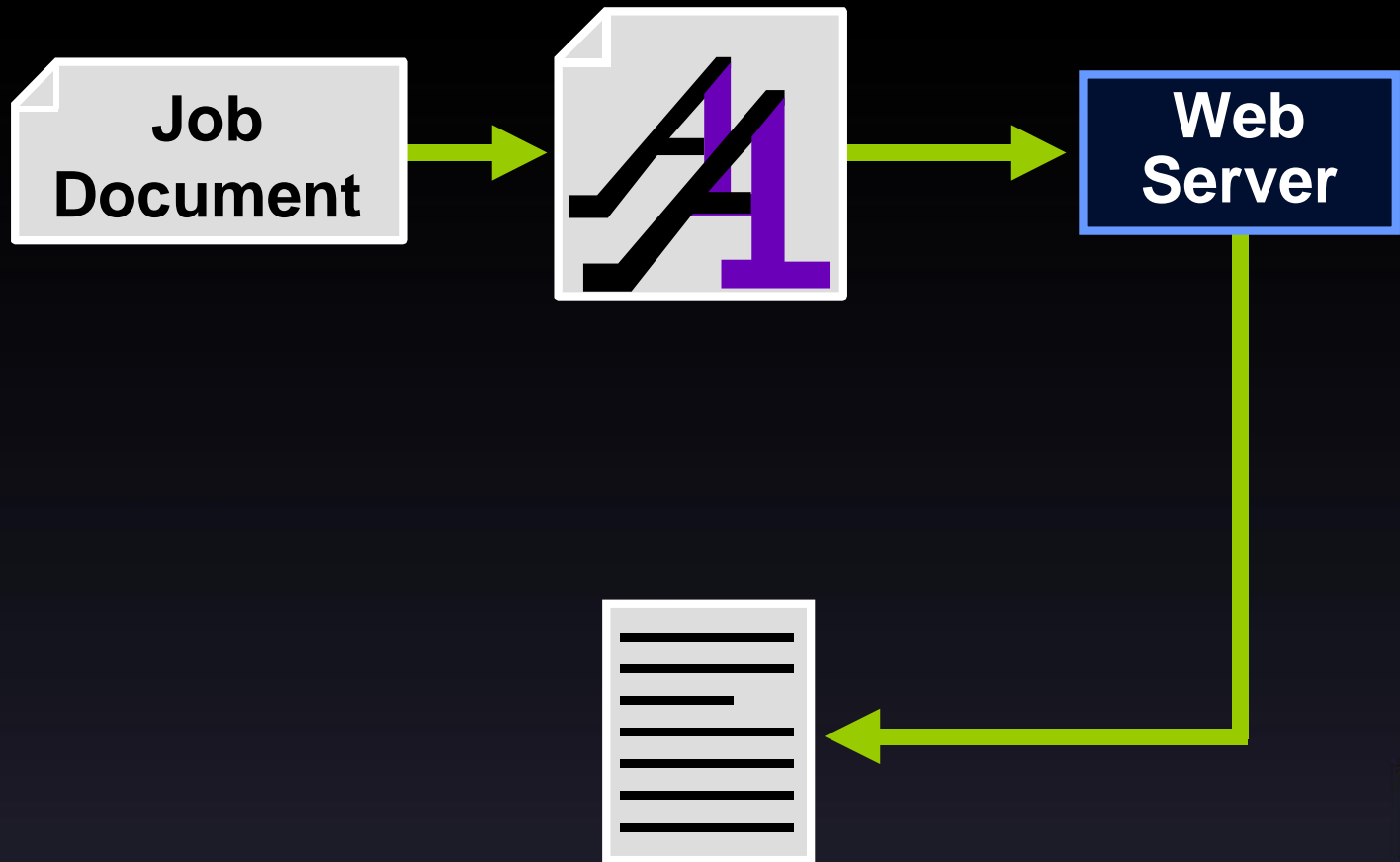
FontSync Profile



Approved Fonts for a Project



Preflighting Fonts Used



Building a Profile

- Create/open a profile
- Add font references
- Close the profile

```
FNSProfile myProfile;  
err = FNSProfileCreate( fsSpec, ..., numRefs, &myProfile );
```

```
// For each font + style combination used:  
err = FNSProfileAddReference( myProfile, fontRef );
```

```
err = FNSProfileClose( myProfile );
```



Scripting Support

- Create profile of active fonts
- Compare profile
 - Active fonts or another profile
- Set standard match options
 - Drive the FontSync control panel



Future Enhancements

- Hooks for font management utilities
- Profile utility
- More scripting support
- PDF extensions
- Printing





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Demo

Related Sessions

**Supporting
Unicode Text**

Hall C
Tues., 1:00pm

**Maintaining and
Extending Fonts**

Hall C
Tues., 4:00pm

**International
Technologies
Feedback Forum**

Hall J2
Wed., 10:15am

**International
Technologies Lunch**

Hall 3
Wed., 11:30am





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Q&A



Think different.TM



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