

# New Technical Notes

## Macintosh



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Developer Support

### Fonts and the Script Manager

#### Text

M.TE.FontsAndScripts

Written by: John Harvey & Peter Edberg

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This Technical Note describes how the Script Manager uses the font family ID to determine a script code.

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The traps `_FontScript`, `_IntlScript`, and `_Font2Script` all use a font family ID to determine the script interface system code that they return. This Note describes the process, the way the Script Manager renumbers the Chicago font for non-Roman systems, and the equation for calculating Script IDs from font family IDs.

On a Roman system the Chicago 'FOND' is numbered zero, but this causes no confusion since Chicago is also the system font. Non-Roman systems must renumber Chicago so that it will not interfere with the mapping of 'FOND' ID = 0 to the correct system 'FOND'. Typically Chicago is renumbered to 16383.

In *Inside Macintosh*, Volume V-293, The Script Manager, the descriptions of `_FontScript`, `_IntlScript`, and `_Font2Script` state that the current font identification number (e.g., 'FOND' ID) is used to calculate the correct script code. The equation for calculating script codes from 'FOND' IDs is as follows:

$$\text{script} = ((\text{FONDid} - \$4000) \text{ DIV } 512) + 1$$

For a specific example, consider the Kyoto font which is one of the fonts included in KanjiTalk. Its 'FOND' ID is 16385. Plugging that value into the equation above, we get:  $\text{script} = ((16385 - 16384) \text{ DIV } 512) + 1$ . Which results in a value of one, the script code for the Kanji script system.

Note that this means that script systems other than Roman can only have 512 separate font families. Furthermore, Roman font families (FOND) must not have an ID greater than 16383, and 'FOND' ID 16383 is reserved for Chicago on non-Roman systems.

### So How Do They Work?

`_FontScript`, `_IntlScript`, and `_Font2Script` begin by setting two Script Manager globals, `Forced` and `Default` to false. Then the two special font family ('FOND') numbers zero and one are mapped to the System and Application font.

Next the 'FOND' ID is tested to see if it is an international font. `_FontScript` and `_IntlScript` simply take the value out of the `txFont` field of the current `grafPort`. `_Font2Script` uses the value passed to it. The test is simply:

```
IF FONDid < $4000 {16384}
    script is Roman so return 0
ELSE
    script is international so calculate script id using equation described above
```

Once the script code has been determined, the routine looks at the the Script Manager globals `FontForce` and `IntlForce`.

If the currently installed script is Roman and `fontForce` is true, or if `intlForce` is true and the routine called was `_IntlScript`, then the value returned will be the current system script. If the installed script is not Roman; the script code calculated will be returned when the routine called was `_IntlScript`, `intlForce` is true, and the script code does not equal the system script.

Once the script code to be returned as been calculated, a final check is made to be sure that the script is installed and enabled. If it is not; Roman is returned, and `Forced` is set to false and `Default` is set to true.

## What's This Forced Stuff?

Two Script Manager globals, `fontForce` and `intlForce`, are flags that support compatibility. Turning `fontForce` on will cause Roman fonts to be interpreted as belonging to the system script. This provides compatibility for applications that hard-code font numbers.

For example, the Arabic script interface system provides a `cdev` which lets a user turn `fontForce` on. When a user does this, any Roman fonts will be mapped to an Arabic font. Note this is only a partially effective measure since the user still does not have complete control over fonts.

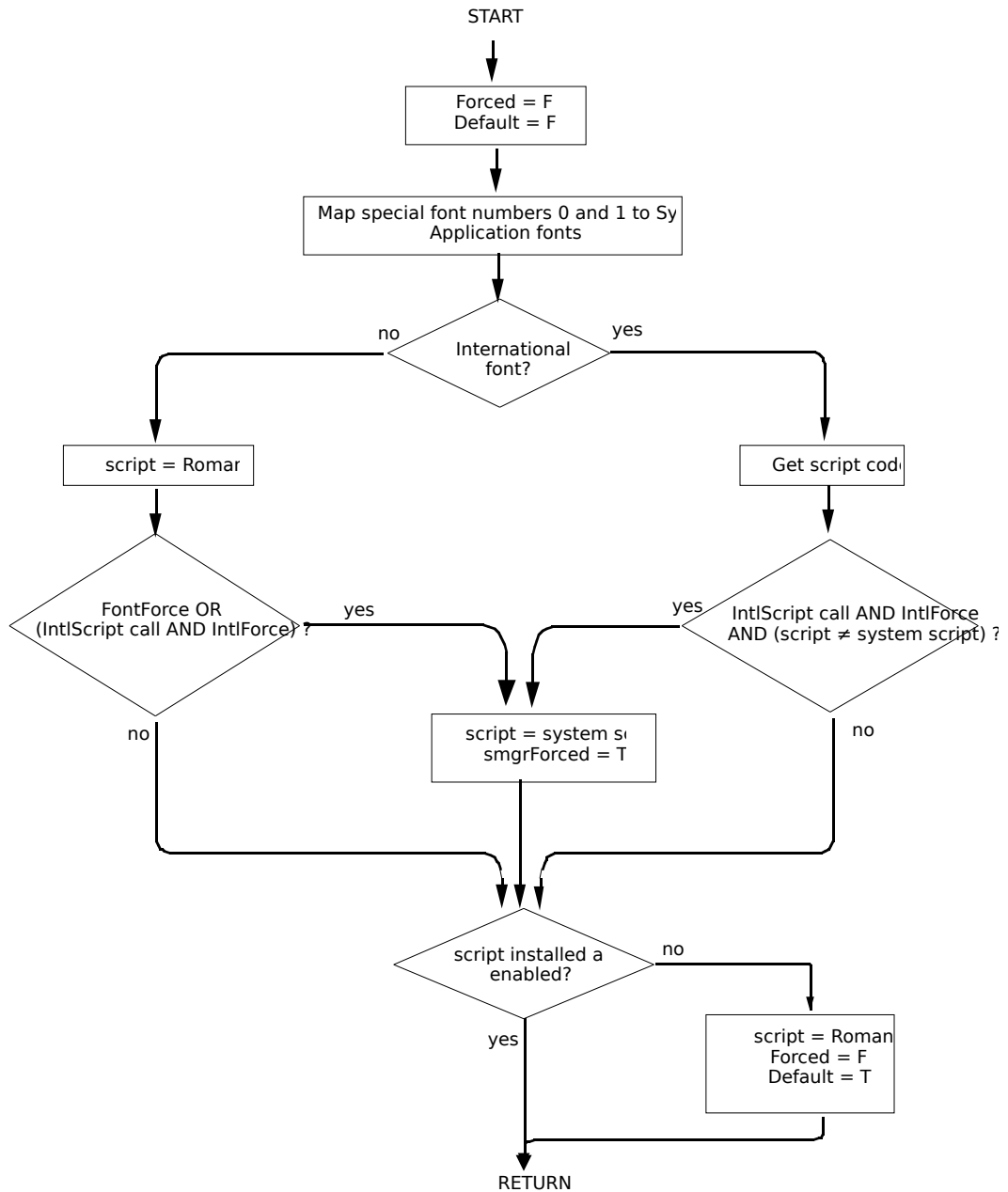
It should also be noted that if a user sets `fontForce` on via the `cdev`, values returned for fonts with family IDs in the range \$0002 to \$3FFF (Roman 'FOND' ID range) may vary. This is not a good feature for applications that allow mixed text. To avoid this problem, an application can turn the `fontForce` flag off before calling `_Font2Script` or `_FontScript`. The flag value should be saved before turning it off, and restored later.

The `intlForce` flag determines how the call `IUGetIntl` behaves. If this flag is on, `IUGetIntl` will always return the international resources ('itlx' where x is 0-2) corresponding to the system script. When `intlForce` is off, the font in the current port will be used to determine which international resources will be returned. This flag lets an application control what date formats, sorting routines, etc. will be used.

For that reason, before calling any of the international utility routines or using the binary to decimal routines, an application should verify that `thePort` and `thePort^.txFont` are set correctly, or that `intlForce` is set properly.

### Let's Look at a Picture

The flowchart in Figure 1 illustrates the operation of `_FontScript`, `_IntlScript`, and `_Font2Script`, and how they are affected by the global flags `fontForce` and `intlForce`.



**Figure 1—Operation Flowchart**

#### Further Reference:

- *Inside Macintosh*, Volume I-493, The International Utilities Package
- *Inside Macintosh*, Volume V-293, The Script Manager
- *Inside Macintosh*, Volume V-287, The International Utilities Package