

## Localizing Macintosh Programs

Localization is the process of adapting an application to a specific language, culture, and region. By planning ahead and making localization relatively painless, you'll ensure that your product is ready for international markets in the future. This section provides a brief overview of what you need to do to make it easy to localize your application. For the complete account of writing software that is compatible with Macintosh computers throughout the world, you should read the **TextEdit** section and the **Worldwide Software Overview**. You should also consult the **Worldwide Software Development** portion of the section entitled, **User Interface Guidelines**.

### General Guidelines

The key to easy localization is to store region-dependent information used by your application as resources (rather than within the application's code). Text seen by the user can then be translated without modifying the code. In addition, storing such information in resources means that your application can be adapted for a different area of the world simply by substituting the appropriate resources. Make sure that at least the following kinds of information are stored in resources:

- all text, including special characters and delimiters
- menus and keyboard equivalents for menu commands (if available)
- character, word, phrase, and text translation tables
- address formats, including zip codes and telephone numbers

When you create resources for your applications, remember the following key points:

- text needs room to grow (up, down, and sideways)
- translated text is often 50 percent larger than the U.S. English text
- diacritical marks, widely used outside the United States, may extend up to the ascent line
- some system fonts contain characters that extend to *both* the ascent and descent lines
- potential grammatical problems may arise from error messages, "natural" programming language structures, and so forth
- text location within a window should be easy to change

### Localizing With the Toolbox

In addition to these general guidelines, you need to be aware of a host of other localization issues, such as differences in script systems and measurement systems. The **User Interface Toolbox** in system 7.0 contains updated versions of several packages and managers that you can use to facilitate localization of your applications-  
**TextEdit**, the **International Utilities Package**, and the

**Script Manager.**

Perhaps the most important localization tool is the **Script Manager**, which contains routines that allow your application to function correctly with non-Roman scripts (writing systems). The **Script Manager** furnishes a standard interface that allows installation of different script systems, maintains global data structures, supports switching keyboards between different scripts, and provides a central dispatcher that gives your application access to script systems. It also contains utilities for text processing and parsing, which are useful for applications that do a lot of text manipulation. The **Script Manager** provides easy ways to translate your application into another writing system and to coordinate with the **International Utilities Package**.

The **International Utilities Package** provides routines for dealing with sorting, currency, measurement systems, and date and time formatting. These tend to vary in some degree from script to script, language to language, and region to region, and your application should take advantage of the Macintosh Operating System's ability to present this information in the correct format based on the current script. It is important that you use the routines in this package rather than the **Operating System Utility** routines such as **UpString**; the **Operating System Utility** routines do not handle diacritical marks and (because they are used by the **File Manager**) cannot be localized for different countries.

**TextEdit** provides routines that handle basic text formatting and editing capabilities, such as inserting new text or scrolling text within a window. The versions of **TextEdit** included in system software versions 6.0.4 and later contain new features that allow them to work with different scripts. For example, **TextEdit** takes advantage of the **Script Manager**'s handling of double-byte characters to display scripts (such as Kanji) with improved accuracy and consistency.

For more information about the enhanced versions of **TextEdit**, see **TextEdit**. For information on the **International Utilities Package** and the **Script Manager**, see the **Worldwide Software Overview**.