GETTING STARTED

INTRODUCTION

Welcome to Resorcerer!

This chapter lets you know what Resorcerer is, what equipment and software the program is compatible with, and how to install Resorcerer into your system.

If you are unfamiliar with what a resource is, you will definitely want to read the next chapter, “About Resources”, which explains this essential part of the file system.

IMPORTANT!

If you want to jump in and try the program before reading any of the manual, you should at least follow the installation directions in this chapter before you run your copy.

WHAT IS RESORCERER?

Resorcerer is a general file system utility of interest to anyone who needs to view, search, or edit binary data structures in a MacOS™ file. The most common data structures it edits are system or application resources kept in the file’s resource fork; however, it can edit standard data fork data, as well as various file system attributes.

The application consists of several integrated components:

- a ***File System Browser***,
- a ***File Editor***,
- an collection of plug-in and dedicated ***Data Structure Editors***,
- a powerful template-driven ***Data Editor***,
- a general-purpose ***Hex Editor***,
- a simple ***Script Interpreter***.

The **File System Editor** lets you find and browse any or all volumes, folders, and files in your hierarchical file system. It provides you with a

generic outline view of your system's hierarchical file/folder tree, and lets you immediately see all file system attributes for any file, folder, or volume.

The **File Editor** lets you view, search, edit, compare, and print all information about the various resources that any given file might have, including any data kept in the file's data fork. Any number of files can be open simultaneously, and any number of resources can be open as well. A visible and editable accumulating clipboard makes cutting and pasting groups of resources easy, and Resorcerer can automatically include related resources in any selection you make. Resource attributes are always visible and can be set individually or in groups. Any set of resources can be searched and opened or marked. And you can easily edit the file's attributes, such as MacOS Finder information. The File Editor also lets you see which resources you've worked on, and which ones are currently being worked on.

The File Editor, however, knows very little about the formats of the data contained in any individual resource or data file. Therefore, one of its most important functions is to give you access to the collection of **Data Structure Editors**, which let you create and edit the data in the individual resources of a file. The most important of these editors, the **Data Editor**, is a powerful, general-purpose, template-driven data structure editor that can edit a wide variety of custom data structures. In addition, Resorcerer has many well-designed individual editors to aid you in creating the most common Macintosh resource types, such as dialogs, menus, color icons, scripting dictionaries, cursors, strings, etc. There is also a general purpose **Hex Editor** for low-level raw editing of any data.

Finally, the **Script Interpreter** lets you write simple text file scripts to help automate the building of large or variant project resource files.

DATA STRUCTURE EDITORS FOR MACOS RESOURCES

Resorcerer comes installed with data structure editors dedicated to these standard MacOS resource data types:

- 'aete' and 'aeut' resources (AppleScript terminology dictionarys)
- 'ALRT', 'DLOG', 'WIND', 'DITL', 'CNTL' and 'nrct' resources (alerts, dialogs, windows, dialog item lists, controls, and rectangle lists for Control Panels)
- 'vers', 'SIZE', 'BNDL', 'FREF', and signature resources (versions, partition sizes, bundles and file references)

- 'MENU', 'cmnu', 'mctb', and 'Mcmd' resources
  (menus, menu color tables, menu commands)

- 'STR ', 'STR#', 'TYP#' and 'TMPL' resources
  (strings, string lists, type lists, and templates)

- 'acur', 'CURS', 'crsr', 'ICON', 'SICN', 'PAT ', 'ppat', and 'PAT#'s
  (cursors, icons, small icon lists, patterns, pattern lists)

- 'ICN#', 'icl8', 'icl4', 'ics8', 'ics4', 'icm8', 'icm4', and 'cicn' resources
  (Finder color icon families, general color icons)

- 'aete' and 'aeut' resources (AppleEvent scripting dictionaries)

- 'PICT', 'bmap', and 'snd ' resources
  (pictures (versions 1 and 2), bitmaps, and sounds)

- 'TEXT', 'WSTR', and 'HEXA' resources
  (text, word length-encoded strings, and general hex data)

- 'Txtr' resources (Text Traits or other user-interface styles)

- 'pltt' and 'clut' (and all synonyms) resources
  (palettes, color lookup tables)

Whenever possible and appropriate, an Editor will edit groups of related resources in an integrated way, so that you can think of the group as a single entity. For instance, the Menu Editor lets you rearrange an entire menu by choosing the **Reorder** command and simply clicking on the menu items in the order you want them to appear. Since the Editor also edits the menu's optional color table resource at the same time, the entries in the color table will also be reordered.

Editors that deal with pictorial resources ('PICT's, 'bmap's, 'cicn's, 'ICON's, 'PAT 's, 'PAT#'s etc.) allow you to copy directly from any size rectangle on the Macintosh desktop (screen), which is very useful, since you can then easily use your favorite paint program to design the graphic, and then copy it directly into the resource. Most of these editors let you keep a visible snapshot history while you're working.

TEMPLATES AND CUSTOM DATA STRUCTURES

For the less common resource types, and for your own private resources, Resorcerer's Template Editor lets you easily create general resource

data structure descriptions, called templates, for use by the Data Editor. Each template is kept in a 'TMPL' resource.

Resorcerer templates support numbered bits and bit fields; byte, word, and long integers; single, double, extended 80-bit, and extended 96-bit floating point values; various fixed point formats; RGB colors; date fields; QuickDraw points and rectangles; sizeof and count fields; C and Pascal style strings; etc. Resorcerer templates remain upwardly compatible with all field types that Apple's ResEdit™ 2.13 (and earlier versions) supports, while implementing four times as many field types.

Resorcerer templates let you design all variety of lists, including byte-, word-, and long-counted lists; recursive lists (tree-structured resources); offset-counted lists. In addition, it's easy to create packed alternate structures that depend on special key values (i.e. equivalent to Rez language `switch` statements).

You can incorporate symbolic constant information directly into the template fields, which greatly simplifies editing them. The list of possible symbolic values of any field is always available as a popup menu to choose from. All of this is done in a unified, 32-bit, list-based editor that can easily handle large resources with thousands of fields.

Resorcerer comes with a folder containing some 200 templates, describing everything from animated cursor ('acur') resources, all of Balloon Help ('hmnu', 'hdlg', etc.) resources, Apple Installer script resources, MacApp 'view' resources, etc.. It includes a complete template for parsing, editing, and re-assembling 'PICT' resources.

THE DIALOG EDITOR AND STARTER CODE GENERATOR

Resorcerer's Dialog Editor is one of the most important editors you'll use, and is certainly its largest and most complicated editor. Dialogs, alerts, windows, and Control Panel dialogs are edited as they would look in an application – no extraneous or distracting controls or other information – it's just you and the dialog. You can open any number of dialogs or alerts simultaneously. All items in the dialog, including the Dialog window type, are displayed in a WYSIWYG (What You See Is What You Get) manner, although for small screens, you can open a window showing a half-size overview of the items. The Editor supports both List Manager lists and PopUp Menu items. Color information is easily editable, even if you don't have a color system.

Dialog items can be selected, cut, pasted, dragged, hidden, grown from

any corner, or grouped by simple mouse and keyboard actions. Any group of items can be finely positioned a pixel at a time. You can stretch an entire dialog while keeping all items in their same relative positions to one another, or you can stretch each item in any group of similar items. Any range of items can be selected via their item numbers, and hidden items are easily selected and unhidden. Items can be forced to snap to a grid (visible or invisible). Any item that displays text can be easily set to display it in any font, size, or style, or color.

During editing, you can run the dialog directly through the Mac's Dialog Manager to get a better feel for how the dialog will operate, including any of its custom controls and its balloon help. The Editor also lets you decompile the dialog's various resources. The decompiled source text is copied directly to the Mac's clipboard.

One of the nicer features of the Dialog Editor is that item numbers are not only optionally visible, but easily reset with just a sequence of mouse clicks. The Editor checks the consistency of your item number assignments before you save them and lets you know of any problems.

Many other non-standard conditions, such as when an item exists but is not visible in the dialog window, are also checked and reported to you at appropriate times.

Finally, the Dialog Editor will create a complete C language source file that operates the dialog you've designed. The starter code generator supports any number of one-dimensional List Manager lists, any number of pop-up menu items, and any number of radio button groups.

OTHER EDITORS

Although later chapters in the manual explain in complete detail the operation of each of Resorcerer's installed editors, here are some of the important features of other installed Resource Editors.

The AppleScript Dictionary Editor ('aete', 'aeut') lets you edit AppleEvent terminology dictionaries, which are required to build a scriptable Mac OS application. All suite, event, parameter, class, property, element, key form, comparison operator, and enumeration information is editable in a simply browser interface.

The Menu ('MENU', 'cmnu', 'Mcmd') Editor displays a list of your menu items (command names) so that you can make complicated selections of items. However, the actual menu being edited is always installed in the

menu bar, along with any hierarchical sub-menus it references, allowing you to see exactly how it will look in your application at all times. All color editing is integrated, including menu bar colors.

Resorcerer's color icon, cursor, and pattern pixel Editors support sophisticated pixel selection techniques, dithering, anti-aliasing, screen-copying, and much more. The animated cursor editor supports both color and 1-bit cursors, and the Cursor Editor has support for frame-flipping to make it easy to look at adjacent frames in an animation.

The Picture ('PICT') Editor lets you create either Version 1 or Version 2 pictures using its screen snapshot capability. When a particular 'PICT' resource is open for editing, you can copy directly from another picture editing application (when MultiFinder is running) into the picture data while keeping the picture frame and the resource attributes and ID number the same. The Picture Data Template lets you create simple pictures by simply entering the opcode commands.

The 'STR#' Editor shows you each string along with its index in the resource, and allows you to open any number of strings from the list, each in its own window for easy comparison. Any selection of strings can be cut and pasted, and strings can be displayed in any font

The styled Text Editor is a standard text editor in a growable and zoomable window that lets you choose whether to use word wrap or not, text color, and display font. 'TEXT' resources up to 32K in size are supported. You can create text-only 'PICT' resources with it for use in balloon help messages or elsewhere.

The Bundle ('BNDL') Editor edits your Finder bundle and all the 'FREF' resources it refers to, showing you which icons are associated with which file types. Resorcerer will automatically look up an application file's autograph resource type from its bundle, and let you edit the autograph as a string.

Although alert, dialog, and window color lookup tables are normally edited integrally as part of the alert, dialog, or window resource they belong with, the Color Lookup Table ('clut') Editor will edit these types by themselves also. You can create 'clut' or palette resources by copying from the screen.

Both 'SIZE' and Version ('vers') resources have Editors designed for them.

The general-purpose Hex Editor edits any resource regardless of its

type. All internal offsets are kept in 32-bit long words, so that even very large resources can be viewed. You can display data offsets in either hex or decimal, and relative to any byte in the resource. The editing dialog is growable and zoomable to let you see as much data as possible. A unique feature is the ability to format the hex data into any number of paragraphs (fields) for easier marking and analysis. Searching in either hex or ASCII is supported. Its features are available to edit your file's data fork as easily as any resource.

Integrated into the Hex Editor is a full 68040 instruction disassembler that lets you view any type of assembled or compiled code resource. The Code Editor lets you navigate by subroutine name, and has support for making simple bug patches easily.

In conjunction with the Hex/Code Editor, Resorcerer contains a value converter accessory that lets you view, edit, and convert among any 32-bit value in any of a dozen standard Macintosh formats (character, signed byte, signed word, signed long, unsigned long, float, fixed, fract, point, octal, hex, and binary).

REQUIREMENTS

Resorcerer is shipped on CD, so a CD-ROM drive is needed. You should be using the latest System and Finder from Apple; version 2.0 will run under System 7.0 or later. Certain capabilities may only be available when running the native PowerPC version, as opposed to the 68K version. You will only need 2-4 megabytes of disk space to store the application and its related folders, unless you also wish to store the online manual. The application itself takes up about 1-2MB of space on disk, but only a portion of this is in memory at any one time while the program is running, depending on how many different types of data you are editing simultaneously.

All data editing is done in main memory, however, so that certain large resources or data forks may not be editable if there is not enough memory to load them. Resorcerer attempts to use the system's temporary memory when possible to help alleviate this problem. The size of the available free memory can be found by choosing **About Resorcerer...** from the menu.

INSTALLING RESORCERER

Installation instructions are in the Read Me file in the top level folder of your distribution CD.

Once you have installed a Resorcerer folder on your hard disk, you will see next the application a folder named "Resorcerer Templates" that contains Resorcerer's 'TMPL' resources. Normally, you should keep the templates folder in the same folder as Resorcerer is in, although you can also keep it in your System folder if you want to keep Resorcerer on the desktop.

Note: If you do not want to keep a "Resorcerer Templates" folder, you can simply paste all the 'TMPL' resources in the files in the folder back into your copy of Resorcerer, and then throw the "Resorcerer Templates" folder away. If you do this, make sure there are no 'TMPL' resource ID conflicts before you paste. To collect all the templates in all the files in the folder into one file, drag and drop the Resorcerer script "All Templates.rc" onto your copy of Resorcerer.

There will also be a folder named 'Private Templates" which is initially empty. You should place any files of templates for your own private data structures in here. For instance, if you have custom ResEdit 'TMPL' resources installed in ResEdit, you can install them into Resorcerer by adding the templates to an empty resource file and dropping the new file into the "Private Templates" folder. Make sure that you're not duplicating a 'TMPL' that's already in one of the files in the template folders already.

Finally, there will be a folder entitled "Apprentices", in which plug-in extensions, naturally called apprentice editors, to Resorcerer are kept. The distribution CD-ROM has a a software development kit (SDK) for getting into trouble building your own apprentices.

PERSONALIZING RESORCERER

When you run Resorcerer the first time, it will ask you to sign your copy. This puts your name into Resorcerer in much the same way that you might write your name on the inside cover of a new book. Personalizing the program you've bought enables you to make as many backup copies of it as you want, but discourages others from making unauthorized copies.

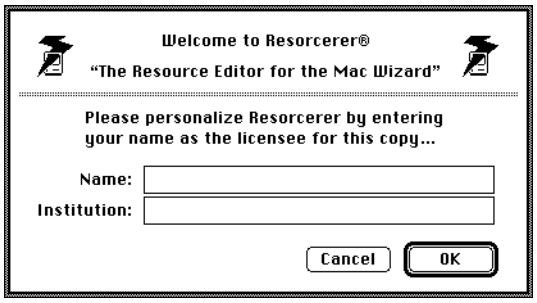
The demonstration version of Resorcerer, however, may be distributed freely to satisfy the urge to share neat stuff, as well as to help us market our application in a world where our competition is given away free.

In addition, there is a field in which you can place your Resorcerer software registration number. You can find your serial number either on or in your Resorcerer CD packaging.

Double-click on the Resorcerer icon in its folder window to run Resorcerer the first time.

Resorcerer will ask you to enter your name and the name of your institution. You can leave either the name or the institution name blank if it isn't applicable, but you must enter one or the other. You must place at least a blank in the serial number field.

Caution is advised, since you will not have another opportunity to change the text you enter. Click on the **OK** button to permanently install your signature; a click on the **Cancel** button will send you back to the Finder in case you're not sure what to enter.



The licensee of any given copy of Resorcerer is always shown in Resorcerer's About Box. The About Box is displayed every time the program starts up, as well as when you choose **About Resorcerer...** from the menu.