

About This Book

This book, *Inside Macintosh: Operating System Utilities* describes the parts of the Macintosh Operating System that allow you to manage various low-level aspects of the system software. The chapters in this book and the information they contain are summarized here.

- “Gestalt Manager” describes how the Gestalt Manager works. This chapter also describes how you can make information about your own hardware or software available to other applications.
- “System Error Handler” explains what the Macintosh Operating System does when a system error is encountered. This chapter also describes how you can provide code that can help your application recover from a system error.
- “Mathematical and Logical Utilities” discusses how you can perform low-level logical manipulation of bits and bytes, save disk space by using simple compression and decompression routines, obtain a pseudorandom number, perform mathematical operations with two fixed-point data types supported directly by the Macintosh Operating System, and convert numeric variables of different types.
- “Date, Time, and Measurement Utilities” describes a set of utility routines that you can use to operate on dates and times. You can use these routines to get and change information about the current date, time, geographic location, time zone, and units of measurement.
- “Control Panel Extensions” describes how you can create a control panel extension to add a panel to an existing control panel.
- “Queue Utilities” describes how your application can directly add elements to and remove them from operating-system queues managed by the Macintosh Operating System. This chapter also describes how you can use the Queue Utilities to operate on queues that you create.
- “Parameter RAM” describes how your application can access and modify the information used by the system software at system startup time.
- “Trap Manager” describes how the Trap Manager works and then shows how you can use the Trap Manager to check for the availability of a system software routine. This chapter also describes how you can alter the behavior of a system software routine.
- “Start Manager” describes the system initialization and system startup process performed by the Macintosh computer. This chapter also describes how you can create a system extension.
- “Package Manager” lists all the standard Macintosh packages and it describes the routines that loads the packages into memory.

Additional information about the Macintosh Operating System can be found in other Inside Macintosh books. For information about processes and tasks, see *Inside Macintosh: Processes*. For information on how to allocate, release, or otherwise manipulate memory, see *Inside Macintosh: Memory*. For information about managing files and other objects in the file system, see *Inside Macintosh: Files*.

If you are new to programming the Macintosh computer, you should also read *Inside Macintosh: Overview* for an introduction to general concepts of Macintosh programming.

Format of a Typical Chapter

Almost all chapters in this book follow a standard structure. For example, the chapter “Queue Utilities” contains these sections:

- “About Queue Utilities.” This section provides an overview of the features provided by the Queue Utilities.
- “Using Queue Utilities.” This section describes the tasks you can accomplish using Queue Utilities. It describes how to use the most common routines, provides code samples, and supplies additional information.
- “Queue Utilities Reference.” This section provides a complete reference for the Queue Utilities by describing the data structures, and routines it uses. Each routine description also follows a standard format, which presents the routine declaration followed by a description of every parameter of the routine. Some routine descriptions also give additional descriptive information, such as assembly-language information or result codes.
- “Summary of Queue Utilities.” This section provides the Pascal and C interfaces for the constants, data structures, routines, and result codes associated with Queue Utilities. It also includes relevant assembly-language interface information.

Conventions Used in This Book

Inside Macintosh uses special conventions to present certain types of information.

Special Fonts

All code listings, reserved words, and names of actual data structures, fields, constants, parameters, and routines are shown in Courier (this is Courier).

Words that appear in *boldface* are key terms or concepts and are defined in the glossary.

Types of Notes

There are several types of notes used in this book.

Note

A note like this contains information that is interesting but not essential to an understanding of the main text. (An example appears on page 1-5.) ◆

IMPORTANT

A note like this contains information that is essential for an understanding of the main text. (An example appears on page 4-6.) ▲

▲ WARNING

Warnings like this indicate potential problems that you should be aware of as you design your application. Failure to heed these warnings could result in system crashes or loss of data. (An example appears on page 1-12.) ▲

Assembly-Language Information

Inside Macintosh provides information about the registers for specific routines in this format:

Registers on entry

A0 Contents of register A0 on entry

Registers on exit

D0 Contents of register D0 on exit

In the “Assembly-Language Summary” section at the end of each chapter, *Inside Macintosh* presents information about the fields of data structures in this format:

0	what	word	event code
2	message	long	event message
6	when	long	ticks since startup

The left column indicates the byte offset of the field from the beginning of the data structure. The second column shows the field name as defined in the MPW Pascal interface files; the third column indicates the size of that field. The fourth column provides a brief description of the use of the field. For a complete description of each field, see the discussion of the data structure in the reference section of the chapter.

In addition, *Inside Macintosh* presents information about the fields of a parameter block in this format:

Parameter block

↔	inAndOut	Integer	Input/output parameter.
←	output1	Ptr	Output parameter.
→	input1	Ptr	Input parameter.

The arrow in the far left column indicates whether the field is an input parameter, output parameter, or both. You must supply values for all input parameters and input/output parameters. The routine returns values in output parameters and input/output parameters.

The second column shows the field name as defined in the MPW Pascal interface files; the third column indicates the Pascal data type of that field. The fourth column provides a brief description of the use of the field. For a complete description of each field, see the discussion that follows the parameter block or the description of the parameter block in the reference section of the chapter.

The Development Environment

The system software routines described in this book are available using Pascal, C, or assembly-language interfaces. How you access these routines depends on the development environment you are using. When showing system software routines, this book uses the Pascal interface available with the Macintosh Programmer's Workshop (MPW).

All code listings in this book are shown in Pascal or assembly language. They show methods of using various routines and illustrate techniques for accomplishing particular tasks. All code listings have been compiled and in many cases tested. However, Apple Computer, Inc., does not intend for you to use these code samples in your application.

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If you provide commercial products and services, call 408-974-4897 for information on the developer support programs available from Apple.

For information on registering signatures, file types, and other technical information, contact

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