

About This Book

This book, *Inside Macintosh: AOCE Application Interfaces*, describes the application programming interfaces (APIs) to PowerTalk system software and to services provided by PowerShare collaboration servers. The technology underlying the PowerTalk and PowerShare software is called the **Apple Open Collaboration Environment** (AOCE). In this book, the term *AOCE software* refers to the Macintosh Operating System managers, Finder extensions, and other system software that the PowerTalk desktop interface and PowerShare servers use to implement their many features. You can use the AOCE software to enhance your application's capabilities. The term *PowerTalk system software* refers specifically to the implementation of the AOCE technology for the Macintosh computer, and the term *PowerShare collaboration servers* refers to AOCE-based servers provided by Apple Computer, Inc. The PowerShare collaboration servers provide mail, messaging, catalog, security, and time services.

This book shows in detail how your application can take advantage of the system software enhancements offered by the AOCE software. It provides a complete technical reference to AOCE data structures, AOCE utility routines, the Standard Mail Package, the Standard Catalog Package, AOCE templates, the Digital Signature Manager, the Interprogram Messaging Manager, the Catalog Manager, and the Authentication Manager.

You need this book if you want to incorporate AOCE features into your application or to write AOCE templates to extend the Finder's capability to display information in an AOCE catalog. If you are interested in extending the capabilities of the AOCE system software to take advantage of services offered by external databases and messaging systems, see *Inside Macintosh: AOCE Service Access Modules*.

What to Read

The PowerTalk system software and PowerShare servers add many new capabilities to the Macintosh Operating System with which you might not yet be familiar. For this reason, you should read the first chapter, "Introduction to the Apple Open Collaboration Environment," before attempting to use any of the software described in this book. That chapter describes some of the uses of PowerTalk and PowerShare system software and introduces all of the AOCE managers. It discusses some concepts fundamental to an understanding of the AOCE software and defines many terms used throughout this book.

The AOCE software uses several complex, packed data structures whose exact contents are private. You must often work with unpacked forms of these

structures, compare packed data structures whose contents you cannot read, and convert between packed and unpacked forms of structures. For this reason, the AOCE software provides a variety of utility routines that you can use to pack, unpack, compare, and otherwise manipulate these data structures. The chapter “AOCE Utilities” describes these data structures and utility routines. You should read this chapter before reading any of the other chapters in this book.

The AOCE software provides several high-level programming interfaces that you can use to add PowerTalk and PowerShare capabilities to both existing and new applications.

The chapter “Standard Mail Package” tells you how to add PowerTalk mail capabilities to any application.

The chapter “Standard Catalog Package” tells you how to add catalog-browsing and searching services to any application.

If you want to extend the ability of the Finder to display information in AOCE catalogs, you can write a set of resource files called AOCE templates that describe the data to be displayed and the format in which it is shown. AOCE templates can include code resources that respond to user actions and manipulate data. The chapter “AOCE Templates” describes the template resources in detail and shows sample templates to help you get started writing your own.

A user can use the PowerTalk system software to add a digital signature to any file in the Finder or to sign any letter that has a PowerTalk mailer attached. In addition, if you want to allow a user to add a digital signature to your application’s documents or to any portion of a document, you can use the information in the chapter “Digital Signature Manager” to add this capability to your application.

In addition to these high-level programming interfaces, the AOCE software provides three low-level managers that you can use to implement messaging, catalog, and authentication features in your application. These interfaces are intended for use by experienced Macintosh programmers who have a good knowledge of Macintosh system software. Whereas the chapters that describe the high-level APIs all include sample code and programming hints, the chapters on the low-level managers provide less of this sort of information. As with all the chapters, they do provide a complete reference to all of the data structures and functions provided by these managers.

You can use the AOCE Interprogram Messaging Manager, described in the chapter “Interprogram Messaging Manager,” to send messages between processes or applications without user intervention. This chapter also may be of interest to anyone using the Standard Mail Package or writing a messaging service access module (MSAM). An MSAM is an interface between an external mail or messaging system and the PowerTalk system software.

The chapter “Catalog Manager” describes functions you can use to get information about AOCE catalogs and to manipulate the data in catalogs. You

can use this information to provide catalog-related functions beyond those provided by the Standard Catalog Package. This chapter is required reading for anyone writing a catalog service access module (CSAM). A CSAM is an interface between an external catalog or database and the PowerTalk system software.

The chapter “Authentication Manager” describes the functions provided by the AOCE authentication service. Some of these functions require you to use PowerShare collaboration servers. Other functions described in this chapter allow you to implement your own authentication system.

There is one appendix, “PowerTalk Built-in Templates,” which describes some of the details of the AOCE templates that are built into the PowerTalk system software. You can use this information to gain access to the information in these templates or to provide additional templates that work with and extend the built-in templates.

For your convenience, this book and *Inside Macintosh: AOCE Service Access Modules* include the same glossary of AOCE terminology. Thus, some glossary entries refer to topics that are not introduced in this book.

Format of a Typical Chapter

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

- “About the Standard Mail Package.” This section provides an overview of the features provided by the Standard Mail Package.
- “Using the Standard Mail Package.” This section describes the tasks you can accomplish using the Standard Mail Package. It describes how to use the most common routines, gives related user interface information, provides code samples, and supplies additional information.
- “Standard Mail Package Reference.” This section provides a complete reference to the Standard Mail Package by describing the data structures and functions that it uses. Each function description also follows a standard format, which gives the function declaration and a description of every parameter of the function. Some function descriptions also give additional descriptive information, such as special considerations and cross-references to other sections, chapters, and books.
- “Summary of Standard Mail Package.” This section provides the Standard Mail Package’s C interface, as well as the Pascal interface, for the constants, data structures, functions, and result codes associated with the Standard Mail Package. It also includes some assembly-language interface information.

Some chapters include additional main sections that introduce new concepts or discuss certain concepts in detail. For example, in the chapter “Digital Signature Manager,” the section “About Public-Key Certificates” describes the

public-key certificates used by the Digital Signature Manager to verify the identity of a signer. In the chapter “Interprogram Messaging Manager,” the section “Addressing IPM Messages” describes the address format used by the Interprogram Messaging Manager.

Conventions Used in This Book

Inside Macintosh uses various conventions to present information. Words that require special treatment appear in specific fonts or font styles. Certain information, such as parameter blocks, use special formats so that you can scan them quickly.

Special Fonts

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

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

Types of Notes

Four types of notes are used in this book:

Note

A note like this contains general information that is supplemental to the main text. (An example appears on page 2-6.) ♦

Special topic note

A note like this contains information about a specific topic that is supplemental to the main text. (An example appears on page 5-29.) ♦

IMPORTANT

A note like this contains information that is essential for an understanding of the main text and that might cause you problems if ignored. (An example appears on page 3-64.) ▲

▲ **WARNING**

A warning like this indicates a potential problem that you should be aware of as you design your software. Failure to heed such a warning could result in a system crash or loss of data. (An example appears on page 5-197.) ▲

Parameter Block Information

Inside Macintosh presents information about the fields of a parameter block in this format:

Parameter block

↔	inAndOut	Boolean	Input/output parameter.
←	output1	OSErr	Output parameter.
→	input1	long	Input parameter.

The arrow in the column at the far left 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 function returns values in output parameters and input/output parameters.

The second column shows the field name as defined in the MPW C interface files; the third column indicates the C 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.

Development Environment

The system software routines described in this book are available using C or Pascal interfaces. You can call most of these routines in assembly language, but no assembly-language interface files are provided. How you access these routines depends on the development environment you are using. This book shows system software functions in their C interface using the Macintosh Programmer's Workshop (MPW).

All code listings in this book are shown in C, or, for resources, in Rez input format. They show methods of using various routines and illustrate techniques for accomplishing particular tasks. Not all code listings have been compiled or tested. These code listings are for illustrative purposes only; Apple Computer, Inc., does not intend for you to use these code samples in your application.

This book occasionally uses *SurfWriter* and *SurfDB* as the names of applications for illustrative purposes; these are not actual products of Apple Computer, Inc. In addition, the name *River Change Systems* is used to represent a fictitious company.

For More Information

APDA is Apple's worldwide source for hundreds of development tools, technical resources, training products, and information for anyone interested in developing applications on Apple platforms. Customers receive the *APDA Tools Catalog* featuring all current versions of Apple development tools and the most popular third-party development tools. APDA offers convenient payment and shipping options, including site licensing.

To order products or to request a complimentary copy of the *APDA Tools Catalog*, contact

APDA

Apple Computer, Inc.

P.O. Box 319

Buffalo, NY 14207-0319

Telephone	1-800-282-2732 (United States) 1-800-637-0029 (Canada) 716-871-6555 (International)
-----------	---

Fax	716-871-6511
-----	--------------

AppleLink	APDA
-----------	------

America Online	APDAorder
----------------	-----------

CompuServe	76666,2405
------------	------------

Internet	APDA@applelink.apple.com
----------	--------------------------

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 application signatures, file types, Apple events, and other technical information, contact

Macintosh Developer Technical Support

Apple Computer, Inc.

20525 Mariani Avenue, M/S 303-2T

Cupertino, CA 95014-6299