



Open this booklet for important instructions and information.

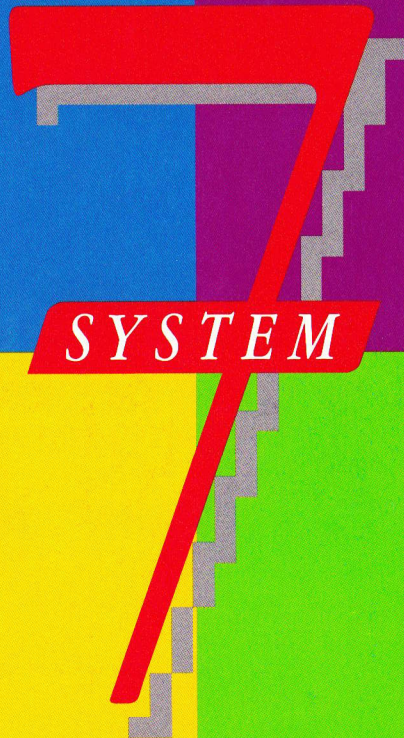
Apple Computer, Inc.
20525 Mariani Avenue, Cupertino, California 95014



Apple Developer Group

Macintosh®
System
Software

The
May 1991
Golden
Master
Release



CONTENTS

INTRODUCTION	2
WORKING WITH SYSTEM 7	3
First Steps	3
Degrees of System 7 Compatibility	6
SETUP AND INSTALLATION	8
System Configuration	8
Using the CD-ROM	9
Installing System 7	10
CONTENT OVERVIEW	14
SOFTWARE LICENSE AGREEMENT	18

Apple is pleased to deliver the Golden Master release of System 7 software and *Inside Macintosh*, Volume VI. We strongly encourage you to begin compatibility testing and development if you haven't already done so. Good luck with your development projects, and we look forward to seeing your great new applications!

For late-breaking news and information, see the Change History and Release Notes file in the Technical Documentation folder on the CD-ROM.

Apple is supplying you with this release of software and documentation in order to help you:

- Test your existing products to ensure compatibility with System 7
- Enhance your existing applications to use the new functionality of System 7
- Create new products that take advantage of System 7 features

Software License

Please read the software license agreement at the back of this booklet *before* using the enclosed CD-ROM. By using this CD-ROM, you agree to be bound by the terms and conditions of the license agreement.

First Steps

Once you're up and running under System 7, Apple recommends that you do the following:

- Ensure that your applications work with the Process Manager (known as MultiFinder® under System 6).
- Make your applications 32-bit clean.
- Ensure that your applications are AppleShare®-aware.
- Remove font size restrictions.
- Add support for required Apple® events.
- Add Edition Manager capabilities to your application.
- Implement Balloon Help.
- Add support for Core Apple events.
- Ensure that your applications are compatible with virtual memory.

Ensure That Your Applications Work With The Process Manager

To run effectively in the System 7 environment, your application should be designed so that other applications can be open at the same time and can share the available system resources, such as processing time, memory, communications channels, and so on.

Make Your Application 32-Bit Clean

A 32-bit clean application runs properly in an environment where memory addresses occupy all 32 bits of handles and pointers. To make your program 32-bit clean, refrain from creating your own handles and from directly setting flags in master pointers. Also, refrain from reading or writing directly into the Memory Manager's data structures. The

correct way to deal with handles, master pointers, and Memory Manager parameters is by calling the Memory Manager.

To make sure your application can coexist with other applications, specify a reasonable size for your program's memory partition; allow other programs to use processor time your application doesn't need; and respond to suspend and resume events so that less time is needed to switch your application to the foreground or background.

Ensure That Your Applications Are AppleShare-aware

With System 7 any Macintosh® computer connected to a network can make folders on its hard disk available to other users on the network. Any application may end

up being executed in a shared environment, so developers should understand the nature of such environments.

Remove Font Size Restrictions

System 7 introduces Apple's system of outline fonts, known as TrueType™ fonts. An outline font can be printed or displayed in any size without exhibiting the jagged appearance that bitmapped fonts take on when they are enlarged or reduced.

When using an outline font, a System 7-friendly application allows the user to specify the font size in increments of one point up to 32,768 points. To indicate that the font in use is an outline font, the application should display all the font sizes in its Size menu in outline style.

Add Support For Required Apple Events

The required Apple events are a minimal set of high-level events that the system software sends to applications, which are Open Application, Open Documents, Print Documents, and Quit Application. The Finder™ application in System 7 uses the required Apple events for launching and terminating applications. You can modify your program's main event loop to support the required Apple events, thus allowing your application to coexist with other applications that support Apple events.

Add Edition Manager Capabilities To Your Application

The Edition Manager allows your applications to share data dynamically. The document that contains the shared

data is called the edition. The area in the document that contains the original data is called the publisher; the area that contains a copy of the data is called the subscriber. When the user changes data in the publisher and saves the document, the Edition Manager notifies any open application that subscribes to the edition that new information is available. The application can then update its subscriber with a copy of the publisher's new information.

Implement Balloon Help

When the user selects Show Balloons from the Help menu, the Help Manager displays information in small help balloons as the user moves the cursor over areas such as scroll bars, buttons, menus, or parts of windows.

The Finder displays default help balloons for menu titles and menu commands in the Apple menu, Help menu, and Application menu, and for the parts of the standard window frame. The Finder provides default help balloons for your application icon and for any documents created by your applications. You can customize the help balloon for your application by providing the appropriate resource in your application's resource fork.

To take full advantage of Balloon Help, you can provide help balloons for your application's menus, dialog boxes, and alert boxes by adding appropriate resources to your resource fork. You can provide help

balloons for the other parts of your interface, such as tool palettes and rulers, either by adding resources or by using Help Manager routines.

Add Support for Core Apple Events

Core Apple events are standard Apple events that apply to all or nearly all applications. For example, the Apple events for selecting data in a document and for inserting data into a document are core Apple events.

Degrees of System 7 Compatibility

Macintosh applications can be classified by how much they interact with the new features of System 7. Applications can be 7-compatible, 7-friendly, or 7-dependent.

7-Compatible

These applications do not take advantage of any new features. They run under System 7 the same as they do under earlier versions of the system software.

7-Friendly

Although these applications can run under earlier versions of the system software, they take advantage of the special features of System 7 whenever they are running under that version.

7-Dependent

These applications require the special features of System 7 to do their jobs and cannot run effectively under earlier versions of the system software.

For additional information on what you must do to update and create applications that support System 7 and existing platforms and systems, see the Sample Code folder on the CD-ROM.

The following sections contain helpful information about using the CD-ROM. They cover system requirements, installation procedures, and the contents of the disc.

Apple recommends that you use the following basic tools with this CD-ROM:

- A hard disk
- System Software version 6.0.3 or later
- An AppleCD SC® drive or equivalent third-party CD-ROM drive
- Apple CD-ROM software version 2.0 or later (*Note: The Macintosh IIfx and IIfx require version 3.0.1 or later of the CD-ROM software.*)

System Configuration

Apple recommends the following system configuration for System 7:

- A hard disk and a minimum of four megabytes of memory for development purposes. System 7 will run on all Macintosh computers, beginning with the Macintosh Plus, with at least two megabytes of memory and a hard disk. To use virtual memory, you must have a Macintosh equipped with a 68030 processor or 68020 processor with a Page Memory Management Unit (PMMU). Virtual Memory is not supported on the Macintosh SE, Portable, Classic® or Plus.
- An AppleCD SC drive or equivalent third-party CD-ROM drive with the Apple CD-ROM soft-

ware version 3.0.2 or later. If you are using an earlier version, you can easily upgrade to the latest version, which is available on the AppleLink® network as well as on this CD-ROM. (*Note: The CD-ROM software requires System Software version 6.0.3 or later.*)

- HyperCard®, available on the CD-ROM.

Using the CD-ROM

First, turn on your CD-ROM drive, and then turn on your Macintosh. Next, place the System 7 CD-ROM into a CD-ROM caddy and insert the caddy into your CD-ROM drive. After your Macintosh boots, you should see the System 7 CD icon on your desktop.

If you have problems mounting the CD-ROM, check the following:

- Was the CD-ROM drive turned on before you turned on your Macintosh?
- Are all the SCSI cables configured correctly, and are they secure?
- Are there any SCSI ID conflicts?
- Do you have proper SCSI termination? The Macintosh IIfx uses a different terminator than earlier Macintosh models.
- Did you install the proper drivers and then restart your machine?

If you still cannot get the icon to appear, refer to your CD-ROM drive owner's manual for more troubleshooting information.

(*Note: The System 7 CD-ROM can also be mounted as a volume on an AppleShare file server to allow several people in your company to share the single CD-ROM.*)

Once you have the System 7 CD mounted on your desktop, open the Open Me First folder, then double-click the Read Me First icon. Read Me First is a TeachText document that introduces you to the contents of the CD-ROM.

To navigate through the documentation, you need HyperCard on your hard disk. Use of HyperCard is subject to certain copy restrictions as noted in the software license agreement.

You must first create a floppy disk version of HyperCard from the disk image on the CD-ROM. Open the HyperCard folder on the CD-ROM and follow these steps:

1. Double-click the HyperCard image icon. This action launches DiskCopy and loads the HyperCard disk image into memory.

2. Click the Start Copy button.
3. Insert a blank floppy disk into any disk drive.

When DiskCopy finishes writing and verifying the copy, it ejects the floppy disk and waits for another. Since you need only a single copy, proceed to the next steps:

4. Click the Stop Copy button.
5. Quit DiskCopy by choosing Quit from the File menu.

You now have HyperCard on the floppy disk. Copy the application and the Home Stack to your hard disk.

Installing System 7

Under no circumstances should you install Golden Master System 7 on top of an earlier beta version of System 7.

Installing System 7 From the CD-ROM

Open the System Software 7 folder and then open the Installer Version folder. Double-click the Installer icon to launch the Installer. The Installer gives you the option of installing on the current disk, switching disks, or customizing the installation. If you choose the default installation—Easy Install—you'll get the following:

- System Software 7
- Update to any existing printing software
- Update to any existing network software such as EtherTalk®
- AppleShare client software
- FileSharing software

You can also configure the installation for your particular machine. If you decide to customize the installation, make the appropriate choices and then click the Install button.

Once the installation is finished, the Installer presents a dialog box that allows you either to continue installing system components or to quit the Installer. If you are satisfied with the configuration, click the Quit button to return to the Finder. Then restart your Macintosh. (*Note: If you install System 7 on an external disk drive, you may have to reset your Startup Device from the Control Panel.*)

Installing System 7 From Floppy Disks

To install System 7 from floppy disks, you must first create floppy disks from the disk images on the CD-ROM. Open the System Software 7 folder and then open the Disk Image Version folder. Double-click the Install 1 image icon to launch DiskCopy and load the disk image

into memory. Proceed as follows:

1. Click the Start Copy button.
2. Insert a blank floppy disk into any disk drive.

When DiskCopy finishes writing and verifying the copy, it ejects the floppy disk and waits for another.

If you need only a single copy, proceed to the next step.

3. Click the Stop Copy button.
4. Choose Load Disk Image from the File menu.
5. From the standard file dialog box, choose the next disk image to copy.

After DiskCopy loads the disk image you choose into memory, repeat the preceding steps, beginning with clicking the Start Copy button, for each of the remaining disk images. When you have copied the final disk

image, exit DiskCopy by choosing Quit from the File menu.

You now have System 7 installation disks. After labeling them, restart your machine with the Install 1 disk. After your Macintosh boots, open the Install 1 disk and double-click the Installer icon to launch the Installer.

The Installer gives you the option of installing on the current disk, switching disks, or customizing the installation (you can get Help by clicking the Help button). If you choose the default installation—Easy Install—you'll get the following:

- System Software 7
- Update to any existing printing software
- Update to any existing network software such as EtherTalk
- AppleShare client software
- FileSharing software

You can also configure the installation for your particular machine. If you decide to customize the installation, make the appropriate choices and then click the Install button.

The Installer determines which disks it needs for the installation and begins the installation procedure. When it needs another disk, it prompts you. Once the installation is finished, the Installer presents a dialog box that allows you to either continue installing system components or to quit the Installer. If you are satisfied with the configuration, click the Quit button to return to the Finder. Then restart your Macintosh. *(Note: If you install System 7 on an external disk drive, you may have to reset your Startup Device from the Control Panel.)*

Following is an overview of the System 7 CD-ROM folder structure and contents:

Open Me First

- Read Me First—TeachText document that introduces you to the CD-ROM and its contents. It also gives basic information on getting started.
- CD Index—An index of the entire CD-ROM.
- Software License Agreement.

System Software 7

- Installer Version—Contains the necessary files to install System 7 directly from the CD, even from an AppleShare file server.
- Disk Image Version—Contains the DiskCopy images of the System 7 floppy disks.

System 7 Development Tools

- MPW® Shell—Contains the MPW (Macintosh Programmer's Workshop) 3.2 Shell. If you use MPW under System 7, this version of MPW is required for compatibility.
- MPW Interfaces—Contains the MPW interfaces and libraries necessary to build System 7 applications using MPW 3.1 or 3.2 compilers.

- THINK Interfaces—Contains the System 7 interfaces for THINK C and THINK Pascal compilers; new libraries for THINK C; patches to the THINK C and THINK Pascal environment; and a THINK C debugger that works with System 7.
- MacsBug—Contains the latest version of MacsBug, which you can use to debug your System 7 applications.
- ResEdit™—Contains ResEdit v2.1, which has editors for some of the new resource types supported in System 7.

- SADE® (Symbolic Application Debugging Environment)—Contains a release of SADE v1.3 for MPW, which is compatible with System 7.
- BalloonWriter—Contains a release of BalloonWriter v1.0. This application makes it easier to add balloon help to your applications.
- Lisp Interfaces—Contains System 7 interfaces for Macintosh Common Lisp.

Sample Code

- Contains System 7-compatible sample code, which is explained and documented in the Read Me files that accompany each sample.

Inside Macintosh

- *Inside Macintosh*, Volume VI: Online Edition—Contains *Inside Macintosh*, Volume VI, with dynamic links between the text and the System 7 Interfaces.
- Viewer Version—Contains *Inside Macintosh*, Volume VI, in Viewer format, which allows you to print the documentation in book format.
- SpInside Macintosh—Contains the HyperCard version of *Inside Macintosh*, Volumes I through V, and is cross-referenced with the Technical Notes Stack and the Q&A Stack.

- Technical Notes Stack—Contains all the Macintosh Technical Notes in HyperCard format. Technical Notes expand on and clarify the technical information found in *Inside Macintosh*; they also offer new programming tips and techniques not found in other Apple technical manuals. (Note: *The Technical Notes Stack is not specific to System 7.*)
- Q&A Stack—Contains answers to the most frequently asked development questions; referencing it can save valuable development time. (Note: *The Q&A Stack is not specific to System 7.*)
- Delta documentation—Contains updates to information in *Inside Macintosh*, Volume VI.

HyperCard

- HyperCard image—Disk Copy document that contains exact copies of HyperCard and the Home Stack.

Utilities

- CD-ROM—Contains version 3.0.2 of the Apple CD-ROM software.
- DiskCopy—Contains the DiskCopy application and documentation. DiskCopy is used to create, save, and copy floppy disk images.
- Outside Bug Reporter—Application used to report bugs to Apple.
- AppleLink—Application used to print the Viewer-format documents contained on the CD-ROM.
- TeachText—Application used to create and read simple text files.

User Documentation

- Contains end-user documentation which will help answer many of your general System 7 questions.

System 7 Goodies

- Contains additional sample programs, debugging tools, and testing tools.

Apple Computer, Inc. Software License Agreement

PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE, PROMPTLY RETURN THE UNUSED SOFTWARE TO THE PLACE WHERE YOU OBTAINED IT AND YOUR MONEY WILL BE REFUNDED.

1. License. The application, demonstration, system and other software accompanying this License, whether on disk, in read only memory, or on any other media (the "Software") and related documentation are licensed to you by Apple. You own the disk on which the Software is recorded but Apple and/or Apple's Licensor(s) retain title to the Software and related documentation. This License allows you to:

(a) with respect to the Software, except the HyperCard program, copy the Software either over a network or onto diskettes for use on Apple Macintosh computers provided all such computers are within your Site. "Site" is generally defined as the following: (i) Higher Education: All students, faculty, and administration at the university/college campus. (ii) K-12: One or more schools that make up a single school district. (iii) Business: All of a division's locations within a 25-mile radius. (iv) Government: All of an agency's/department's locations within a 25-mile radius.

(b) with respect to the HyperCard program ("HyperCard") you may make up to a maximum of 20 copies of HyperCard for use within your Site. For the purposes of calculating the total number of copies of HyperCard permitted to be made under this License, a copy of HyperCard operating on either (i) a single CPU or (ii) a single CPU shared by multiple CPUs ("Server") where HyperCard is executed from a single copy of HyperCard on the Server shall constitute one copy. For more information on the HyperCard software license, please contact Claris Customer Relations at 1-408-727-8227.

(c) make one copy of the Software in machine-readable form for backup purposes.

(d) perform the above provided you reproduce on such copies all copyright notices and any other proprietary legends that were on the original copy of the Software.

(e) transfer all your license rights in the Software and the related documentation to another party provided the other party reads and agrees to accept the terms and conditions of this License.

2. Restrictions. The Software contains copyrighted material, trade secrets, and other proprietary information and in order to protect them you may not decompile, reverse engineer, disassemble or otherwise reduce the Software to a human-perceivable form. You may not modify, network, rent, lease, loan, distribute or create derivative works based upon the Software in whole or in part.

3. Termination. This License is effective until terminated. You may terminate this License at any time by destroying the Software and related documentation and all copies thereof. This License will terminate immediately without notice from Apple if you fail to comply with any provision of this License. Upon termination you must destroy the Software and related documentation and all copies thereof.

4. Export Law Assurances. You agree and certify that neither the Software nor any other technical data received from Apple, nor the direct product thereof, will be exported outside the United States except as authorized and as permitted by the laws and regulations of the United States.

5. Government End Users. If you are acquiring the Software on behalf of any unit or agency of the United States Government, the following provisions apply. The Government agrees: (i) if the Software is supplied to the Department of Defense (DoD), the Software is classified as "Commercial Computer Software" and the Government is acquiring only "restricted rights" in the Software and its documentation as that term is defined in Clause 252.227-7013(c)(1) of the DFARS; and (ii) if the Software is supplied to any unit or agency of the United States Government other than DoD, the Government's rights in the Software and its documentation will be as defined in Clause 52.227-19(c)(2) of the FAR or, in the case of NASA, in Clause 18-52.227-86(d) of the NASA Supplement to the FAR.

6. Limited Warranty on Media. Apple warrants the disks on which the Software is recorded to be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of purchase as evidenced by a copy of the receipt. Apple's entire liability and your exclusive remedy will be replacement of the disk not meeting Apple's limited warranty and which is returned to Apple or an Apple authorized representative with a copy of the receipt. Apple will have no responsibility to replace a disk damaged by accident, abuse or misapplication. ANY IMPLIED WARRANTIES ON THE DISKS, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO NINETY (90) DAYS FROM THE DATE OF DELIVERY. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

7. Disclaimer of Warranty on Software. You expressly acknowledge and agree that use of the Software is at your sole risk. The Software and related documentation are provided "AS IS" and without warranty of any kind and Apple EXPRESSLY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. APPLE DOES NOT WARRANT THAT THE FUNCTIONS CONTAINED IN THE APPLE SOFTWARE WILL MEET YOUR REQUIREMENTS, OR THAT THE OPERATION OF THE APPLE SOFTWARE WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT DEFECTS IN THE APPLE SOFTWARE WILL BE CORRECTED. FURTHERMORE, APPLE DOES NOT WARRANT OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE APPLE SOFTWARE OR RELATED DOCUMENTATION IN TERMS OF THEIR CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY APPLE OR AN APPLE AUTHORIZED REPRESENTATIVE SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY. SHOULD THE APPLE SOFTWARE PROVE DEFECTIVE, YOU (AND NOT APPLE OR AN APPLE AUTHORIZED REPRESENTATIVE) ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

8. Limitation of Liability. UNDER NO CIRCUMSTANCES INCLUDING NEGLIGENCE, SHALL APPLE BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES THAT RESULT FROM THE USE OR INABILITY TO USE THE APPLE SOFTWARE OR RELATED DOCUMENTATION, EVEN IF APPLE OR AN APPLE AUTHORIZED REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. In no event shall Apple's total liability to you for all damages, losses, and causes of action (whether in contract, tort (including negligence) or otherwise) exceed the amount paid by you for the Software.

9. Controlling Law and Severability. This License shall be governed by and construed in accordance with the laws of the United States and the State of California, as applied to agreements entered into and to be performed entirely within California between California residents. If for any reason a court of competent jurisdiction finds any provision of this License, or portion thereof, to be unenforceable, that provision of the License shall be enforced to the maximum extent permissible so as to effect the intent of the parties, and the remainder of this License shall continue in full force and effect.

10. Complete Agreement. This License constitutes the entire agreement between the parties with respect to the use of the Software and related documentation, and supersedes all prior or contemporaneous understandings or agreements, written or oral, regarding such subject matter. No amendment to or modification of this License will be binding unless in writing and signed by a duly authorized representative of Apple.

©1991 Apple Computer, Inc.

Apple, the Apple logo, AppleCD SC, AppleLink, AppleShare, EtherTalk, HyperCard, Macintosh, MPW, MultiFinder, and SADE are registered trademarks of Apple Computer, Inc. Classic is a registered trademark licensed to Apple Computer, Inc. Finder, ResEdit and TrueType are trademarks of Apple Computer, Inc. THINK C and THINK Pascal are trademarks of Symantec Corporation.