

How to Install System 7

John Norstad
Academic Computing and Network Services
Northwestern University
j-norstad@nwu.edu

May 27, 1991

This document gives instructions for installing System 7 on your Macintosh.

We have tried to achieve a reasonable compromise between the conflicting goals of brevity, clarity, and completeness in this document. The information presented here should be enough so that you can install System 7 on your own and begin using it. We pay particular attention to special things you need to do to get some of the popular networking programs to work correctly.

We wrote this document both to help ACNS staff members upgrade their Macs to System 7 and to help other Mac users on campus upgrade. Some of the instructions below are intended primarily for ACNS staff members. If they don't apply to you, just skip them.

System 7 requires a Mac Plus or later model with at least two megabytes of RAM and a hard drive. If you only have two or two and a half megabytes of RAM, System 7 will work fine, but you will quickly discover that you have much less free memory than you did under System 6. You may want to consider a memory upgrade to at least four megabytes.

System 7 should only be installed on workstation Macs. Don't try to install it on server Macs. The AppleShare file server and most other server software products are not yet compatible with System 7.

We will try to keep this document up-to-date as we learn more about System 7. If you have any suggestions, please send them to the author.

After you have installed System 7 using this document, you should read the companion document "How to Use System 7" to learn about all the new features of the system.

• Get a copy of System 7.

The System 7 installation disks are available on the Plato file server, in the folder System Software:System 7.0. You will need ten 800K floppy disks. The files are in "disk image" format. To make a copy, double-click on a disk image file. This will open a program named "DiskCopy" which you use to copy the image onto your floppy.

If you prefer, you can bring ten 800k floppy disks to the Information Center, and the consultants will make the copies for you.

ACNS can only give you the ten installation floppies. We cannot give you the new Apple System 7 manuals. If you want the manuals, you will have to purchase either the System 7 Personal Upgrade Kit or the System 7 Group Upgrade Kit from the Microcomputer Product Center. The kits include the disks and the manuals. Contact the MPC at 491-3889 for more information.

The System 7 upgrade kits also include a new version 2.1 of HyperCard. We are not permitted to distribute HyperCard. You must buy it from Claris or the MPC. HyperCard 2.1 is not required to run System 7.

Several books on System 7 are beginning to appear in the bookstores. You may wish to get one of these books as an alternative to buying an upgrade kit.

You can also find many articles about System 7 in the trade press. Back issues of MacWeek, MacWorld, and MacUser are available in the Information Center at Vogelback.

• Update the printer drivers on your network.

If your Mac is on a network and you share one or more LaserWriters with other Macs on the network, you need to upgrade the LaserWriter printer drivers on all the Macs on the network. Use the System 7 "Printing" disk to do this. Insert the disk and run the Installer program. Do this on each Mac on the network. The special installer will upgrade only the LaserWriter driver, nothing else.

The reason for doing this is to avoid the dreaded "LaserWriter wars," where incompatible versions of the LaserWriter driver on the network cause the LaserWriters to frequently reinitialize. The System 7 LaserWriter driver was designed to work under System 6 for just this reason.

If you use the Apple Print Spooler on your network, you also need to install the new System 7 LaserWriter printer drivers

on the spooler Mac. To do this, copy the four files named “LaserWriter,” “PrintMonitor,” “Laser Prep,” and “Backgrounder” from the System 7 “Printing” disk into the System Folder or Server Folder on your spooler Mac. Then restart the spooler Mac. Copy these files by hand—don’t try to use the Installer.

Once you have installed the System 7 LaserWriter driver on each Mac on the network, each person on the network can then upgrade to System 7 at his or her leisure. You don’t all have to upgrade at the same time.

- **Back up your hard drive.**

Use your backup utility program to back up your hard drive. In the unlikely event that something disastrous happens, you can use your backups to restore your old system.

- **Run the “Before You Install System 7” HyperCard stack.**

Insert the “Before You Install System 7” disk and run the stack on the disk with the same name. One part of this stack will give you a guided tour of some of the new features of System 7. The second part of the stack will check all of the software on your hard drive and produce a compatibility report telling you which programs are compatible and which are incompatible.

The Compatibility Checker is very conservative. It will probably tell you that many of your older programs are incompatible. Don’t let this discourage you. Our experience is that most of them will work just fine under System 7.

We know of two errors in the Compatibility Checker. In some circumstances, it may report that Disinfectant 2.4 is incompatible with System 7. This is not true—both Disinfectant 2.4 and the Disinfectant 2.4 INIT work fine with System 7. Also, it reports that Suitcase II version 1.2.9 is compatible. This is not true—you need version 1.2.10.

- **Check your hardware for compatibility.**

If you have an Ethernet card, an accelerator card, any other kind of specialized hardware NUBUS or direct slot card, or any kind of special SCSI device, check the compatibility checker report carefully for each such device. If a device does not appear in the report, contact the hardware vendor to make certain the device and its drivers are compatible with System 7 before attempting to install the system.

- **Make room on your hard drive.**

You will need at least four free megabytes on your hard drive to install System 7. If your disk is full, you’ll need to delete or archive to floppies some of your old files to make room.

- **Deactivate your old System Folder.**

We recommend that you install a completely clean new System Folder, even though in theory it is possible to install System 7 on top of your old System 6.

The basic idea is to first install a plain vanilla System 7 and make certain it works properly. Then reinstall all of your old networking software, INITs, control panels, fonts, and DAs. Reinstall and test these things one at a time. This way, if something goes wrong, you will know exactly which piece of software is causing the problem.

This process is more laborious than just installing System 7 on top of your old System 6, but it’s safer. There are two other benefits to this approach. First, it gives you an opportunity to refamiliarize yourself with all of the nasty junk that has accumulated in your old System Folder, and to clean it up. Second, it gives you an opportunity to become familiar with the new organization of the System Folder under System 7.

You first must “deactivate” your old System Folder. Drag the Finder outside of your old System Folder. You can drag it to any other folder. Then rename your System Folder to “Old System Folder.”

- **Install System 7.**

Restart your Mac using the System 7 “Install 1” floppy disk. Run the Installer. The Installer will prompt you to insert the other installation disks as they are needed.

When the Installer is finished, you should have a new System 7 System Folder on your hard drive.

- **Restart and experiment.**

Restart your Mac. You should come up in System 7. Experiment with the new Finder to begin familiarizing yourself with the system and to make certain that basic operations are working.

Note that your new System Folder does not yet contain any of your old INITs, control panels, fonts, DAs, preference files, etc. If you are on a LocalTalk network, you should be able to access AppleShare file servers and network printers, but most of your other networking software isn't going to work yet.

- **Familiarize yourself with your new System Folder.**

Open your new System Folder. You will see five subfolders which are new in System 7.

The "Control Panels" folder contains all of your control panels under System 7. Open it and look at the standard System 7 control panels. Double-click on the control panels to open them and experiment (but please do not turn on virtual memory or 32-bit addressing in the new "Memory" control panel.) This new folder replaces the old System 6 Control Panel desk accessory.

The "Extensions" folder contains all of your "system extensions." "System extension" is a new term which includes what used to be called "INITs" or "startup documents" as well as printer drivers, Communications Toolbox tools, and other add-on software which enhances the functionality of your Mac. Open this folder to see the standard System 7 extensions.

The "Apple Menu Items" folder contains all the objects which appear in the Apple Menu. In System 6, you could only put desk accessories in the Apple Menu, and you had to use the Font/DA Mover program to do this. In System 7, you can put any kind of object in the Apple Menu, including DAs, applications, documents, and the new System 7 aliases (we will discuss aliases in the next section.) Open your Apple Menu Items folder and look at the standard System 7 Apple menu items. Pull down the Apple menu. You will see that the items listed in the Apple menu are exactly the items present in the Apple Menu Items folder. To add items to the Apple Menu, you simply drag icons into the folder. To remove items from the Apple Menu, you simply drag icons out of the folder. Try dragging some icons out of and back into the Apple Menu Items folder to see how this works.

The "Preferences" folder contains preference files used by various programs.

The "Startup Items" folder contains all the objects you want to open automatically every time you restart your Mac. This new System 7 folder replaces the old System 6 "Set Startup" command. At this point, this folder should be empty.

Unfortunately (but understandably), old programs which were designed for System 6 often don't use these new System 7 folders properly. For example, most programs will still expect to find their preferences files in the System Folder proper, not in the new Preferences folder. Similarly, some old control panels and extensions will only work properly under System 7 if they are placed in the System Folder proper, even though they really belong in the new Control Panels or Extensions folders.

Another new feature of System 7 is that it is "smart" when you drag an object onto the System Folder icon. Instead of simply placing the object inside the System Folder proper, System 7 will attempt to determine if the object really belongs in one of the new subfolders. For example, if you drag a control panel onto the System Folder icon, the system will ask if you want to place it in the new Control Panels folder.

If you do not want an object to be placed in one of the new subfolders, do not drag it on top of the System Folder icon. Instead, open the System Folder and drag the object directly into the System Folder window.

This is important in many of the steps below. When we tell you to drag an object "into" the new System Folder, we mean that the object should be placed in the System Folder proper, not in one of the new subfolders.

In System 7, the System file is a new kind of object called a "suitcase." Suitcases are very similar to folders in that they contain objects and can be opened to display the contained objects. Try double-clicking on your System file to open it. A window will appear listing all of the fonts and sounds installed in the system! You no longer need the Font/DA Mover under System 7. Fonts are installed by simply dragging them onto the System Folder icon, onto the System file icon, or into the System file window. Fonts are removed by dragging them out of the System file window. Try moving a font out of and then back into your System file window to see how this works.

- **Learn about aliases.**

"Aliases" are a major new feature in System 7. We will need to refer to them in some of the steps which follow. An alias is an icon which stands for or "points to" some other icon. When you open an alias, the original file is opened. Aliases are very similar to the notion of "links" in the UNIX operating system, but they are more powerful. You can create aliases for files, folders, disks, and even servers.

As an example, open your Control Panels folder and click on the "Mouse" control panel icon to select it. Then select the "Make Alias" command from the "File" menu. A new icon will appear named "Mouse alias," with the name in italics to indicate that it's an alias. Now double-click on the alias file. The Mouse control panel should open. Try moving the alias file to some other folder and double-click on it again. Again, the Mouse control panel will open. When you're done experimenting, drag the alias icon to the trash to delete it. This deletes only the alias, not the original file.

Open your Apple Menu Items folder and look at the "Control Panels" icon. This icon is actually an alias to the Control Panels folder! When you select the "Control Panels" command from the Apple Menu, the system opens the Control Panels folder. Then you can double-click on a particular control panel icon to open it. Try selecting the "Control Panels" command from the Apple menu to see how this works.

- **Reinstall EtherTalk.**

If your Mac is on an Ethernet, you need to reinstall EtherTalk. The way you do this depends on whether your network is using Phase 1 or Phase 2, and on what kind of Ethernet card you use. Contact your network administrator for assistance. If you are a network administrator, contact John Norstad.

After you have reinstalled EtherTalk, restart and make certain you can access your file servers and network printers.

- **A hint on dragging files.**

In many of the remaining steps, you will be dragging files from your old System Folder or some subfolder to your new System Folder or some subfolder. The easiest way to do this is to open the old folder, set it to view by name, make it as tall as your screen, make it half as wide as your screen, and position it on the left side of your screen. Then open the new folder and do the same thing, except position it on the right side of the screen. This makes it easier to drag icons from the old window on the left to the new window on the right.

You can also close your main hard drive window and any other open windows at this point. All the remaining work will be done inside the old and new System Folders.

As you proceed through the instructions which follow and open and close windows, try to keep all the old windows on the left side of the screen and all the new windows on the right side of the screen. This will help prevent confusion.

- **Reinstall QuickMail.**

If you use CE Software's QuickMail, you should use the regular QuickMail 2.2.3 user installer disk to reinstall the software. ACNS staff members can get this disk from Marck Bailey or John Norstad. Other people should get it from their local network administrator.

First open the "Preferences" folders inside both your old and new System Folders. You should see a folder named "QuickMail Stuff" inside your old Preferences folder. Drag the "QuickMail Stuff" folder from your old Preferences folder into your new Preferences folder. This will copy over all of your QuickMail address books, groups, forms, personal folders, and preferences.

Now insert the QuickMail user installer disk and run the "QuickInstall" program.

Restart your Mac. Experiment with QuickMail to make certain it works properly.

Note: The installer will place the "QuickInit" file in the System Folder proper. Don't try to move this file into the Extensions folder, even though that is where it really belongs under System 7.

Note: The installer will place the QuickMail DA in the System file. Don't try to move it out of the System file and into the Apple Menu Items folder, even though that is where it really belongs under System 7.

Note: QuickMail does not work properly if you turn on the new "32-Bit Addressing" option using the System 7 "Memory" control panel.

CE has announced a new version 2.5 of QuickMail which will fix all of the problems mentioned above. QuickMail 2.5 should be available sometime in June.

- **Reinstall In/Out.**

If you use CE Software's In/Out, you should use a special System 7-compatible version of the In/Out installer disk to reinstall the software. Insert the disk and run the "In/Out™ Install" program. ACNS staff members can get this special installer disk from Marck Bailey or John Norstad. If anybody else on campus is using In/Out, they should contact John Norstad for more information.

Restart your Mac. Experiment with In/Out to make certain it works properly.

Note: The installer will place the "In/Out™" file in the System Folder proper. Don't try to move this file into the Extensions folder, even though that is where it really belongs under System 7.

Note: In/Out uses a special piece of software called the "CE Toolbox." The special System 7-compatible version of the In/Out installer disk contains a new version 1.6 of the CE Toolbox. The regular In/Out installer disk contains an old version of the CE Toolbox which does not work properly under System 7. Make certain you use the special new System 7 installer disk.

- **Reinstall MacTCP and TCP/IP networking programs.**

If you use NCSA Telnet, SU-MacIP, Eudora, HyperFTP, NetNews, Network Time, or any other networking programs which use MacTCP, you must reinstall MacTCP.

Open both your old and your new System Folders. Drag the files “MacTCP” and “MacTCP Prep” from your old System Folder into your new System Folder. If you have a “Hosts” file also drag that file over. Also drag over your “config.tel” file (for NCSA Telnet) and your “Eudora Folder” if you have them.

Restart your Mac. Experiment with your networking programs to make certain they work properly.

Note: The MacTCP file must be located in the System Folder proper, not in the Control Panels folder, even though that is where it really belongs under System 7. You will probably want to make an alias to the MacTCP file and place the alias in the Control Panels folder, so that you can access it easily. To do this, click on the MacTCP file icon to select it, then select the “Make Alias” command from the File menu. This will create a file named “MacTCP alias.” Move this file into your Control Panels folder. If you wish, you can now edit the alias icon name to remove the word “alias” from the end of the name.

Note: MacTCP is not compatible with the new System 7 virtual memory feature. Do not turn on virtual memory.

Apple has announced a new version 1.1 of MacTCP which will fix both the problems mentioned above. It is scheduled for release in the 3rd quarter of 1991.

• **Reinstall the Communications Toolbox.**

If you use dialup Eudora or any other program which uses Apple’s Communications Toolbox, you must reinstall the communication tools.

The Communications Toolbox proper is a standard part of System 7 and you don’t have to do anything to install it. The separate “communication tools,” however, do need to be installed. In System 7, these tools should be placed in the new Extensions folder.

Open both your old and new System Folders. You should find a folder named “Communications Folder” inside your old System Folder. Open this folder. Drag all the tools from inside this folder to inside your new Extensions folder.

• **Reinstall the Disinfectant INIT.**

If you use the Disinfectant INIT, open both your old and your new System Folders. Drag the file “◊ Disinfectant INIT” from your old System Folder into your new System Folder.

Restart your Mac. The Disinfectant INIT icon should appear as the last icon at the bottom of your screen during startup.

Note: The Disinfectant INIT must be located in the System Folder proper, not in the Extensions folder, even though that is where it really belongs under System 7.

• **Reinstall preferences and other miscellaneous files.**

Open both your old and new System Folders. Set your old System Folder to view by kind. Drag all of your old preferences and other miscellaneous document files and folders from your old System Folder into your new System Folder. Do not, however, drag over any of the following objects:

Any file which is already present in your new System Folder.

Any files with kind = “system extension”

Any files with kind = “chooser extension”

Any files with kind = “control panel”

Any files with kind = “Foreign File Access”

Backgrounder

Communications Folder

DA Handler

Finder Startup

Key Layout

LaserWriter Prep

MacinTalk

Macros

MultiFinder

Preferences

PrintMonitor

Spool Folder

System

If you have a Preferences folder in your old System Folder, open it. Also open the Preferences folder in your new System Folder. Drag over any remaining preferences files from your old Preferences folder to your new one.

Restart your Mac and make certain it still works properly.

- **Reinstall your old desk accessories.**

Open both your old and new System Folders. Double-click on your old System file to open it. You will see all of your old desk accessories listed. Open your new Apple Menu Items folder. Drag your old desk accessories from your old System file window into your new Apple Menu Items window. Do not, however, drag over any of the following:

Any DA which is already present in the new Apple Menu Items folder.

Access Privileges

Alarm Clock

Battery

Calculator

CD Remote

Chooser

Control Panel

FastFind

Find File

Key Caps

Note Pad

Puzzle

QuickMail

Scrapbook

Test all of your desk accessories. You may discover that some of them no longer work properly under System 7. You should remove the ones that no longer work. Open the Apple Menu Items folder in your new System Folder and drag any offending DAs to some other location (the trashcan might be a good place.)

- **Reinstall your old fonts.**

Open both your old and new System Folders. Double-click on both your old and new System files to open them. Drag your old fonts from your old System file window into your new System file window. Do not, however, drag over any fonts which already exist in the new System file window, because you don't want to replace a new System 7 version of a font by the old System 6 version.

- **A preliminary note on extensions and control panels.**

In the two steps which follow you will be reinstalling your old extensions (INITs) and control panels.

System extensions and control panels are the most likely pieces of software to break under System 7. Test them carefully and be prepared to abandon the ones which no longer work.

An extension or control panel may even be so incompatible with System 7 that it causes your Mac to crash during startup. Don't panic! There's yet another new feature in System 7 which you can use to recover from this situation. Restart your Mac again with the Shift key held down. This will disable all control panels and extensions. When your Mac comes up, open your System Folder and drag the offending extension or control panel to any location outside the System Folder (the trashcan might be a good place.) Then restart one more time.

- **Reinstall your old extensions.**

Open your old System Folder and set it to view by kind. Open your new Extensions folder. Drag your old system extensions (INITs) and chooser extensions (e.g., Public Folder) from your old System Folder into your new Extensions folder. Do not, however, drag over any of the following:

Any file which already exists in your new Extensions folder

ADSP

Apple CD-ROM

AppleShare

CE Toolbox

CD Remote INIT

Desktop Manager

In/Out™

LaserWriter

QuickINIT

Responder

TrueType™

Drag over one extension at a time. Restart after dragging each file and test it to see if it still works.

If an extension does not work properly, try dragging it out of the Extensions folder and into the System Folder proper.

Then restart and test it again.

- **Reinstall your old control panels.**

Reinstalling your old control panels is very similar to the process you just went through to reinstall your old extensions. The only difference is that you put control panels in the new Control Panels folder rather than in the Extensions folder.

Open your old System Folder and set it to view by kind. Open your new Control Panels folder. Drag your old control panels from your old System Folder into your new Control Panels folder. Do not, however, drag over any of the following:

Any file which already exists in your new Control Panels folder

CE Toolbox

Color

Easy Access

General

init cdev

Keyboard

Map

Monitors

Mouse

Network

Portable

QM Menu™

Sound

Startup Device

Drag over one control panel at a time. Restart after dragging each file and test it to see if it still works.

If a control panel does not work properly, try dragging it out of the Control Panels folder and into the System Folder proper. Then restart and test it again. If it works, you should create an alias to the file and place the alias in the Control Panels folder.

- **Throw away your old System Folder and Finder.**

At this point, you should have finished moving everything useful over from your old System Folder to your new System Folder. The only items remaining in your old System Folder should be files which were replaced by newer versions in System 7, ones which serve no useful purpose in System 7, or ones which don't work in System 7.

Check to make certain that there's nothing left in your old System Folder that you need to keep, then drag it to the trash. You can also delete your old System 6 Finder file (the one you dragged out of your old System Folder earlier).

- **Notes on virtual memory and 32-bit addressing.**

Two of the new features of System 7 are virtual memory (VM) and 32-bit addressing. Both of them are off by default, and are turned on and off with the new "Memory" control panel. Unfortunately, some programs and hardware devices are not yet compatible with either of these new features. We recommend that you leave these features turned off until compatible versions become available, or at the very least you experiment with them cautiously.

In particular, MacTCP is not yet compatible with VM, and QuickMail is not yet compatible with 32-bit addressing. Both of these products will be upgraded in the near future to fix these problems.

Also, disk drivers and other hardware drivers often must be upgraded to be compatible with VM.

If you have Apple hard drives, you can use the "Disk Tools" disk to upgrade your Apple disk drivers to the latest VM-compatible versions. Restart your Mac from this disk, run the "Apple HD SC Setup" program, and use the "Update" option to upgrade each of your Apple hard drives.

- **Notes on other popular software and hardware products.**

The HP Deskwriter is incompatible with VM. Don't turn on VM! Also, if you use a Deskwriter, it may sometimes cause icons to appear goofy on your screen.

The MacTCP version of NCSA Telnet 2.3 works with System 7, but the commands in the Apple menu don't work properly. You will have to switch to the Finder or some other program before you can open any items in the Apple menu. This problem should be fixed in version 2.4.

If you use SU-MacIP, you should get the new version 4.01. It's available on Plato, in the folder Networking Software:Licensed Software:SU-MacIP.

If you have an Apple CD-ROM drive, you should install the new version 3.1a3 of the software. It's available on Plato, in

the folder System Software:System 7.0:CD-ROM Setup 3.1a3.

If you use Suitcase II, you should be aware that most of the features of the program are no longer needed, since they are now a standard part of System 7. If you wish to continue using it anyway, you should upgrade to version 1.2.10. An updater program is available on Plato, in the folder System Software:System 7.0:Suitcase II Updater 1.2.10. Note that there is an error in Apple's Compatibility Checker stack. The stack claims that 1.2.9 is compatible, but you really do need 1.2.10.

If you have any of the CE Software products which use the "CE Toolbox," you will need version 1.6 of the Toolbox. It's available on Plato, in the folder System Software:System 7.0:CE Toolbox 1.6.

Icom Simulation's popular "OnCue" program is completely incompatible with System 7. This is not a major problem, since most of the features of OnCue are now built into the system anyway.

Pete Resnick's "Network Time" control panel works under System 7, provided you place the control panel in the System Folder proper, not in the Control Panels folder. You may wish to make an alias to the control panel and place the alias in the Control Panels folder. Also, the background option doesn't work under System 7.

If you use an INIT manager, including the popular freeware "init cdev" program, you should be aware that none of them will work properly under System 7, because Apple has reorganized the way that INITs are managed. If you wish, you can use a new freeware program named "Extensions Manager" which was designed specifically for System 7. It's available on Plato, in the folder System Software:System 7.0:Goodies.

Your screen saver and/or menu clock may not work under System 7. You might like to try Moire, a shareware screen saver, and SuperClock!, a freeware menu clock. Versions of both of these programs which work under System 7 are available on Plato, in the folder System Software:System 7.0.

If you use the SCSIProbe control panel, you need to get the new version 3.0. It's available on Plato, in the folder System Software:System 7.0:SCSIProbe 3.0.

If you use ResEdit, you need version 2.1. If you use MacsBug, you need version 6.2. They are available on Plato, in the folder System Software:Programming Tools.