

# **Macintosh Troubleshooter**

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**COLLABORATORS**

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**REVISION HISTORY**

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# Chapter 1

# Macintosh Troubleshooter

## 1.1 Contents

MACINTOSH TROUBLESHOOTER GUIDE

Version 2.0, Jan/Feb 1999

By Michael S Hutchison

email: MadMike@blizzard.u-net.com

All corrections/additions made since version 1.5, are highlighted in *italic*.

### C O N T E N T S

Introduction & Important Notices	
Whats New in v2	NEW
Finding & Recognising the Problem	
Common Macintosh Problems	
Hard Disk & SCSI Problems	
Boot-up Problems	
CD-ROM Problems	
Crashing Problems	
File & Icon Problems	
VIRUS Related Problems	
Modem & Internet Problems	
Printing Problems	
Network Problems	NEW
General MacOS Problems & Queries	

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Miscellaneous Problems  
Maintenance & Information

Maintenance & Data Protection Guide

Viruses in Detail

Error Codes Explained

Useful MacOS Information           NEW

Useful Mac Software

Useful Mac Internet Sites

Jargon

HELP Me, to Help You!

## 1.2 intro

### INTRODUCTION

This guide gives you solutions to most of the problems you'll come across whilst ←  
emulating the  
Macintosh. I've also included information about the MacOS, so that you can ←  
understand it better.

I have not (and will not) be covering problems on setting up Mac emulation - ←  
that is where it's own  
documentation comes into play, so read it all thoroughly, first - you'll be glad ←  
you did!

I haven't covered troubleshooting for individual programs, or for all the System ←  
versions, I don't  
own them all, although I do have experience with Systems 7.0 through to 7.55, and ←  
MacOS 8.0 to 8.1.

If you find an error in this guide, a problem you cannot solve or even contribute ←  
to this guide, then  
by all means email me at; MadMike@blizzard.u-net.com. Or post your problem to one ←  
of these  
Newsgroups; comp.sys.amiga.emulations or comp.sys.mac.misc.

### LATE BREAKING NEWS!!

System 7.53 is now available to download, from Apple's web site. See " ←  
Miscellaneous MacOS Problems"  
section, under the title "Where can I download free Macintosh System software?", ←  
click;

.

\* This Guide is best read on a 640x512/480 screen, using the Xen font (supplied) \*

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#### Disclaimer

I WILL NOT TAKE ANY RESPONSIBILITY FOR DAMAGE DONE TO YOUR DATA OR COMPUTER, ←  
WHILST UNDERTAKING  
GUIDANCE FROM THIS TEXT. IT IS UP TO YOU TO TAKE PROPER PRECAUTIONS, BEFORE YOU ←  
TRY TO REPAIR YOUR  
DISK OR FILES IN WHATEVER SHAPE OR FORM THEY MAY TAKE.  
NOR CAN I GUARANTEE THAT ANY OF MY SOLUTIONS WILL COVER ALL EVENTUALITIES.

## 1.3 whatsnew

### WHAT'S NEW IN VERSION TWO

Version 2 has had a major overhaul since v1.5. Macintosh Troubleshooter Guide v2 ←  
.0, now includes up to  
250% more information than last times guide! And has also been updated to include ←  
ShapeShifter 3.10  
issues and compatibility with System 8 (yes, you heard me correctly, it IS ←  
compatible), plus more on  
Fusion as well - dotted throughout the guide.

### NEW TO THE GUIDE

The Entire System Folder in Detail

This can be found in the "Useful MacOS Information" section:

- \*All standard System Folder items and folders, you should expect to see.
- \*All Apple standard Control Panels explained.
- \*All Apple standard Extensions explained.
- \*System Enablers explained.
- \*The whole 68k Macintosh range listed. The list includes; systems software they ←  
supported (that are  
compatible with ShapeShifter and Fusion), the CPU, 24 or 32bit addressing modes ←  
used, and some ROM  
versions. With suggestions for best compatibility with ROM images.
- \*Plus, information about the Mac's Operating System.

### Networking

Everything to do with Ethernet connection; problems, software needed and setting ←  
up suggestions.

### AMENDS & ADDITIONS

- Error Codes - now explains even more System errors.
  - Internet Web Pages - more useful WWW pages, and useful programs to download/buy.
  - Listed All Systems - every MacOS version listed, from v1 right up to v8.5. See ←  
the section entitled  
"General MacOS Problems & Queries".
  - CD-ROM Problems - much more information added, for Fusion owners as well.
  - Printing Problems - a lot more info added, covering; Postscript & bitmap printing ←  
; proper connection  
setup to a Printer; printing via Ethernet; and a few problems solved, thrown in.
  - Internet Problems - info on how to connect to the web, via Classic Networking or ←  
Open Transport.
  - Lots more Problems Solved - littered throughout the guide.
  - Useful Mac Programs - more useful Mac programs listed, including several ←  
additional backup programs
-

- (in the "Maintenance & Data Protection Guide" section).
- Jargon - this section includes even more of those Mac words and terms.
  - MacOS Manuals - I've listed places as to where to download manuals & information ↔ on the Mac OS.  
See "General MacOS Problems & Queries" for details.
  - And more corrections were made, all over the place!
  
  - Contributions; John Blyth (Australia), and Marius Lichte (Germany), thanks guys!

## 1.4 problem

### FINDING AND RECOGNISING THE PROBLEM

Most problems occur when you introduce new applications onto your computer. 50% are usually software related, 48% for hard disk directory & file corruption ↔ and SCSI errors, and the rest are hardware faults, ie. hard drive failure, chips/RAM blown, battery and ↔ power supply problems.

#### The Cause of the Problem

##### General Crashes

This is a software related problem most of the time, no matter what anybody tells ↔ you, this is the first area you should try to resolve first. You may experience all manner of weird ↔ and spectacular crashes; freezes, system bomb messages, start-up crashes, odd behaviour or even ↔ pesky viruses. Whatever the cause, this is only a short term problem, so don't be alarmed.

##### Hard Disk Errors

This can be anything from a flashing question mark (at boot-up) to a full hard ↔ disk head crash. To recognise this type of error, you need to look out for; abnormal disk accessing ↔ , file corruption when copying files, default icons, programs not loading properly, and ↔ fragmentation (slow boot-up and loading of software). A more serious problem is with directory errors, which causes; files/folders ↔ disappear, programs not to load, data corruption, copying corruption or even a total loss of the ↔ entire hard disk's contents (some viruses erase the directory structure).

##### Hardware Failure

A circuit board type problem can be easily spotted, your Amiga simply won't work. This is the case if it is intermittent or persistent. Only an qualified engineer ↔ can fix this.

##### Hunting Them Down

About nine times out of ten you will be able to sort it out by yourself. But ↔ before you dive into the problem, you need to know how to find it first.

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## What to Associate the Error With

- 1) If your Mac crashes.....Its a program error, extension conflict, ←  
a virus  
or a SCSI problem.
- 2) If hard disks don't mount or boot-up...Use a disk repair utility, don't ←  
reformat it.
- 3) If programs won't load.....Its a PowerPC program, or the ←  
application is damaged.
- 4) If a program crashes constantly.....The program and/or it's modules are ←  
damaged. A virus?  
Your 040/060 libraries need updating, on ←  
the Amiga side.
- 5) If your computer seems slow.....A System, network, printer problem, a ←  
highly fragmented  
hard disk, a nearly full HD or just a ←  
slow Amiga.
- 6) The MacOS crashes constantly.....It could be a virus, system corruption ←  
or both.
- 7) Disks & devices refuse to work.....A SCSI associated problem, or a virus ←  
has wiped the disk.
- 8) Your Mac freezes unexpectedly.....It's either a SCSI termination problem, ←  
a hard error, or the  
current program is buggy or corrupted ( ←  
check for viruses).

## Other weird problems (take down notes)..

- 1) What error message does it display?....Check the Error Code list, for the ←  
corresponding code.
- 2) What happens exactly?.....Then check this with the "What to ←  
Associate It With" list  
above, to determine what caused it. Then ←  
check out possible  
solutions further on in this guide.

**1.5 harddisk**

## HARD DISK &amp; SCSI PROBLEMS

Can I setup a RAID drive on my emulated Mac?

In theory, yes, so long as you have the correct hardware and software. It will ←  
have to be a software  
based RAID, because there are no dedicated RAID controllers for Amigas, and the ←  
Mac RAID software  
would not be able to recognise the controller anyway. Recommended specifications:  
-A 68040/060 CPU - it will not work on a slow computer.  
-A SCSI 2, or faster controller.  
-Two or more identical hard disks (the same manufacturer and capacity, ideally).  
-The software; there are a few commercial packages out there at the moment (there ←  
is no RAID shareware  
control programs). I'll list some of the good ones;  
\* RAID Toolkit, from FWB ([www.fwb.com](http://www.fwb.com)).  
\* Charismac RAID, from Charismac ([www.charismac.com](http://www.charismac.com)).  
\* Remus, from Adaptec ([www.adaptec.com](http://www.adaptec.com)).

Will I be able to mount/format other external hard disks in Mac emulation?

Yes, in theory (haven't done this myself), if they are connected to the SCSI bus. ←  
You should be able  
to format it straight from the Mac side, and without formatting it on the Amiga ←  
side. However you  
might need 3rd party SCSI hard disk formatting software, if the System software ←  
doesn't come up with  
message asking you whether you want to initialise it. Also note that Apple's ←  
formatting utility Apple  
HD SC Setup will only accept Apple branded hard disks, so don't bother using it. ←  
However you might  
have better luck with Drive Setup which recognises quite a few hard disks, a copy ←  
of it can be  
downloaded off Apple's Tech Library web site: [www.info.apple.com](http://www.info.apple.com).  
Remember that ShapeShifter and Fusion only needs the setup info for the bootup ←  
partition, and not  
necessarily for each and every device you have for your Mac, such as Zip drives, ←  
scanners etc.

Is it possible to repartition a volume without having to re-initialise it again?

No it is not possible. You have to reformat (high-level format = re-initialise) ←  
the hard disk again to  
setup the hard disk parameters properly, otherwise you will run the risk of ←  
trashing the entire  
contents of the hard disk, and you can forget about recovering any data.  
If this affects the startup volume, then you'll have to repartition it on the ←  
Amiga side first, then  
format it again on the Mac.

What if I accidentally initialised my hard disk.. how can I retrieve my files?

- 1) If you installed Norton Utilities' Filesaver and set it up to actively scan ←  
your drives regularly,  
then you could use Norton's Volume Recover utility to restore the Directory ←  
structure back to how  
it was the last time Filesaver saved the Master Directory.
  - 2) If however, the first option is not going to work for you, try using Norton's ←  
Unerase program, to  
undelete files individually, or all the ones it finds. Note: if your hard disk ←  
contains a lot of  
fragmented files, it will not be able to retrieve and merge the other fragments ←  
as it does not  
know where they are. Tech Tool Pro has a undelete feature as well, but will ←  
less features.
  - 3) Try this rather good program, called Data Rescue, for more information go to;  
<http://www.wildbits.com/rescue/>.
  - 4) Restore from your last backup. Only do this if you are not bothered about ←  
losing any new files, as  
you are highly unlikely to recover any of those files, as they will now be ←  
overwritten.
  - 5) You could go to a professional data recovery service, beware, they can be quite ←  
expensive - best
-

if you get a quote off them first. Try these companies for starters:

-Advanced Data Solutions LLC (USA), <http://www.adv-data.com>.

-Data Quest International (UK), Tel/fax: (+44) 1705 671330, email: [dataq@globalnet.co.uk](mailto:dataq@globalnet.co.uk).

-DNA Computer Services Ltd (UK), Tel: 0831 295099 & 0385 261258.

-Or look inside your Mac magazine for repair shops.

How big can a Mac disk be?

HFS volumes can go up to 9gig (safely) however I would recommend an upper limit of 4gig in HFS,

otherwise it'll start to waste a lot of disk space due to massive block sizes

. HFS+ can go up to

2 terrabytes (2000 gigabytes), and uses a standard 4k block size on all HDs/partitions above 1gig.

However, it all depends on your Amiga setup, and what controllers (SCSI or IDE) you are using

for the boot partition(s) and what filing system patches you have installed which can recognise

sizes above 4gig. You may have to update FFS to FFS TD64 from Aminet, to use 4gig+ IDE hard disks,

or another filing system altogether, such as Professional Filing System 2 (PFS2 - Great Effects

Development, [www.greed.nl](http://www.greed.nl)), which can handle huge hard disks.

How can I format a PC formatted Zip disk, as a Mac disk?

As you may have noticed, you cannot format a PC Zip disk as Mac HFS disk via the Erase Disk feature,

in the Finder's Special menu, if the PC Exchange control panel is activated. It will only reformat

it as a PC disk again.

You can either switch off the aforementioned control panel and then use the Finder's Erase Disk or,

use a hard disk formatting utility such as Iomega's Zip Tools, which can be downloaded from the

Iomega's web site; [www.iomega.com](http://www.iomega.com). The main Zip utility is called Tools and lets you set certain

formatting parameters as well as update the current disk driver (Rigid Disk Block)

.

How can I tell if this volume is formatted as a HFS+ disk?

For MacOS8.1 users..

Highlight the disk's icon and press Amiga+i for "Get Info". Near the top of the panel is a subject

called Format, it'll list the disk's format as; Mac OS Standard (HFS), or Mac OS Extended (HFS+).

You may not see much difference in block size, for hard disks below 250mb.

For MacOS7.x/8.0 users..

A HFS+ disk used on any system below 8.1 will only see a text file on the disk, with no other icons

displayed, the Simpletext doc will be named "Where have all my files gone". It'll tell you that this disk is an HFS+ disk, and you cannot access any files except in OS8.1. However you will be able to see and use a HFS+ volume connected to a Macintosh FileServer. See the section on HFS+ for more details.

The hard disk icon doesn't appear on the desktop, what happened?

Either the hard disk has not been formatted or an error has developed on the HD..

- 1) The Desktop File has become corrupted. To rebuild the Desktop, you need to press and hold any Amiga+Alt keys, just before the Finder loads up.
- 2) The Master Directory Block is damaged - run a repair program, to fix the directory structure.
- 3) The hard disk driver is not functioning properly. You may have to repair the disk or even re-initialise it (ShapeShifter uses it's own driver info).
- 4) There is a poor power/SCSI connection to the hard disk, check all cables are firmly in place (even internal drives).

#### General SCSI Problems

SCSI can cause a lot of problems, especially with Macintosh emulation. It mainly causes; a freeze, the watch spins forever, and inevitably causes data/directory corruption. To avoid any unnecessary problems, check through this list first, then use your disk repair utility;

- 1) Make absolutely sure the SCSI bus is terminated on powered up devices only.
- 2) You can safely use some devices even though some have been switched off, and it'll still be usable - although it isn't recommended.
- 3) All SCSI devices need to be switched on before the computer is powered up. Otherwise the controller will not see these peripherals.
- 4) Make sure all SCSI device IDs have their own unique numbers. No more than one device can have the same ID number, otherwise you'll have all manner of problems.
- 5) Do not use very long SCSI cables. SCSI can only have a maximum chain length of about 10m or so (this is not accurate, only a rough guide).

My Mac displays a message saying it wants to initialise the disk I've just inserted, what can I do to get it to recognise the disk properly?

Again you need the services of your favourite disk repair program to recover the disk and its data, assuming of course, that it has already been formatted for the Mac.

If your utility was not able to repair the disk, you'll have to copy the files off the disk, then

reformat it again.

If it is a PC disk (PC Exchange control panel should be active), then there's nothing you can do to repair the disk, only a PC can fix a PC formatted disk.

Note: many Macintosh disk repair programs cannot repair PC disks. However, if you have a PC emulator, you can repair the disk with the appropriate PC program.

How come I get random system errors and freezes when using a SCSI device?

These are in no particular order, although I'd recommend you check nos.1, 2, 3, 6 and 10 first.

- 1) Check for viruses, from a clean write protected anti-virus floppy disk.
  - 2) Check your SCSI setup for proper termination. This means that your entire set of devices, no matter how many there are, should be terminated at each end of the bus. One for the internal chain of devices (usually a CD drive or hard disk), and one for the external chain. Both must be terminated at the very end of the chain.  
If your Amiga crashed while using a device, it can damage the Finder and/or the System file, this may cause it to boot up no further than the happy Mac screen. See the section on crashing for boot-up crashes, for a remedy to the problem.
  - 3) Check all SCSI IDs have a different ID number. If any two or more have the same ID, it will either not be recognised by the controller, or it will cause a system freeze, depending on which devices are effected.
  - 4) Check all SCSI cables are connected properly. Switch off all peripherals first. It could be that a cable is faulty, as in, the wire inside is broken. The only way to track this down is to use a working device as a benchmark, and then check all cables, by attaching them one at a time to it, and see what happens.
  - 5) A removable hard disk, eg. optical, Zip, may have serious errors in it's directory, use the disk repair program.
  - 6) It could be a extension conflict. You'll have to disable a few at a time, to find out which one is causing the problem. You may have to reinstall the extension/control panel again, if it worked fine before this problem occurred.
  - 8) Rebuild the Desktop file on all regularly used HDs/removable disks.
  - 9) Update the drivers on all regularly used disks, except for Finder formatted hard disks - you'll have to re-initialise it, to up-date it. It can have a drastic effect on the Mac's performance, if it is damaged. Do this via the utility that formatted the disk. All it is doing is updating the Rigid Disk Block with the correct information.
  - 10) Check the hard disk with your disk repair program, the directory structure may be damaged.
-

When I copy files across to other disks, they become corrupted, what can I do?

This can be caused by one of two things; bad blocks or the hard disk's maximum transfer is set too high, a limit of 0X1FE00 = 128k is a normal setting. Use HDToolBox (Amiga) to key in a new value (activate the advanced options button). You won't need to reformat the drive. It could also be caused by faulty SCSI cables (internal or external), or the Mac's directory structure is damaged - run your repair program on the disk, just to make sure. And while you're at it, rebuild the Desktop(s) of your Mac hard disks, and scan your disks for viruses as well, this may have caused some system damage.

## 1.6 bootup

### BOOT-UP PROBLEMS

The flashing "? disk" screen appears when I startup the Mac, why won't it boot?

This means that the Mac cannot find a bootable or valid System Folder on any local drives. You need a bootable floppy or CD-ROM disk, to get the Mac up and running. If the your main hard disk is not booting-up as it should, check out these possibilities:

- 1) Check that your hard disk icon is selected in the Startup Disk control panel.
- 2) Zap the PRAM (Parameter RAM); press and hold any Amiga key+Alt+P+R keys, right at the beginning of the boot-up sequence - before the happy Mac icon appears.
- 3) The System file is damaged, either re-install the entire System Folder again or just the System file, from either a backup or an archive of the System Folder.
- 4) You're trying to bootup with an incompatible System folder. Reinstall the System again.
- 5) The hard disk information block needs repairing (you cannot update the "HD driver" on the Mac side, because the host computer (Amiga) generated it's own disk driver info).
- 6) If none of the above works, then your hard disk needs repairing with Norton Utilities 3.5 or similar program. If that fails, you may need to re-initialise (high-level format) the hard disk. Use the Finder's Erase Disk feature, found in the Special menu.

Why won't the new System I've just installed boot-up?

You have installed an incompatible version of the Operating System. ShapeShifter (up to v3.9) won't work with MacOS8, I KNOW, because I tried it myself. The correct version to install, is a Custom System Folder, eg. "System for this Macintosh", not

a universal one, as this might not have all of the necessary resources for it to work with your particular processor, eg. a 68060.

ShapeShifter 3.10, will now let you to startup with System 8.0/8.1, however, when you first install the System and reboot, you need to disable the Extensions (hold the Shift key down until it says "Extensions Disabled" in the "Welcome to Macintosh" screen), then take out the AppleShare extension (and any other useless stuff) from the Extensions Folder, and reboot.

The computer totally froze when booting-up, why?

This is either a SCSI problem, or you have a corrupt System file. This can be caused by a virus, a crash that needed a hard reboot, or it crashed while the disk was active.

1) Check SCSI termination is correctly setup.

The SCSI chain must be terminated at both ends of the chain. That means one at the end of the internal chain and one at the end of the external chain.

2) Check all SCSI devices have a different ID number. If any two or more have the same ID, it will not be recognised by the controller, or it will cause a system wide freeze.

3) If it is not a SCSI problem, then try these:

- \* Repair the disk.

- \* Rebuild the desktop: press and hold the Amiga+Alt keys in the middle of the startup sequence.

- \* Trash the Finder prefs.

- \* Bin the ShapeShifter PRAM file.

- \* The Finder and/or the System file is damaged, in which case you'll have to bin it, and then

install a new working copy. I suggest you either get one from a archive, a backup or do a complete System reinstall.

4) If the Mac froze just before the Desktop icons appear, then the Desktop File (contains icon info)

is severely damaged. Restart the Mac, then initiate a Desktop Rebuild (press Amiga+Alt).

If this does not work, then there will be no way to mount this disk, even from another startup

disk. So what you'll have to do is to make a bootable floppy disk with a repair program on it

(Norton Utilities has such a floppy or disk image). When this boots-up, it will bypass the Finder

and load straight into the repair program - hopefully it should be able to make the disk usable

again. Once the repair is complete, I strongly recommend that you rebuild the Desktop File, the

next time you restart.

5) One of the Extensions (inc. Control Panels) is damaged. Just bootup again with the Shift key

pressed down to disable all extensions, and then manually, take out any new or suspicious

extensions and restart the Mac.

You can find out more in

Crashing

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, under the heading "The system "bombed" or froze whilst booting up the Mac".

The Mac boots-up to the Happy Mac screen, but doesn't go any further, why?

I suspect that the last time you used the Mac emulation, it crashed. This normally corrupts the

Finder preference file. In all cases, you need a bootable floppy or CD-ROM disk.

- 1) Delete the Finder preference file, and reboot.
- 2) Zap the PRAM. Press any Amiga key+Alt+P+R before the Happy Mac screen appears, this will delete the previous semi-permanent System data (for certain control panels). Or delete the PRAM file in the ShapeShifter folder.
- 3) A directory error, use a disk repair program to fix it.
- 4) Improper SCSI termination, switch everything off and recheck your setup.
- 5) The System file is damaged, reinstall again (do this last, if nothing else works).

I recommend, that you make an archive of a good system folder, so that you don't have to reinstall the whole lot from scratch again.

- 6) You have an incompatible Macintosh ROM image for the version of System software you're using..

See

ROM versions

for more information on supported Systems.

What is a extension conflict, and how can I resolve it?

Well, first you need to know what all those

Extensions

do in the System folder.

The trouble with the MacOS installer, is that 50% of all the extensions installed are not even necessary.

What you need is information about them, so that you know what you need and what you can safely

bin. You can get it from two excellent shareware documents; Extension Overload and InformINIT.

Both cover Systems 7.x to 8.x, from Apples's standard set to all known third party extensions and

control panels - both have additional info concerning other topics as well. They can be downloaded

from most Mac magazine CDs or from any good, Macintosh internet site.

An extension conflict is basically two or more extensions that are attempting to use the same

System resource. This usually results in no startup, a crash during bootup or even odd behaviour

while using the computer. The only way to rectify the problem is to either boot-up with all extensions

disabled or (if your Mac is usable) by trial and error. This means remove some extensions at a time to

see if the problem goes away.

If you have Conflict Catcher (commercial, £57), this will make life much easier, as it does most



of the work for you. It monitors what happens and is able to give you information ←  
on what is causing ←  
the problem. There is a copy of this utility on [www.shareware.com](http://www.shareware.com), I think it is ←  
for ←  
evaluation purposes only.

The Mac won't boot-up as normal, instead it displays the flashing "X disk", what ←  
gives?

This means that the bootable disk you've inserted, or the hard disk's System ←  
Folder is not compatible ←  
with this type of Macintosh (in emulation it's either a Quadra or IIci). Again, ←  
you need a bootable ←  
floppy or CD-ROM disk, so that you can access the hard disk. If this happens when ←  
you've either just ←  
installed a new System Folder, or the current System now refuses to boot, then it ←  
maybe one of these ←  
listed errors...

- 1) The System file on that disk is damaged - reinstall a System file.
- 2) It can also be caused by a virus, corrupting the System file, therefore ←  
disabling your Mac. The ←  
solution is simple, get an anti-virus program immediately, to eradicate it.
- 3) The System folder on the disk, will not work with your Mac. The wrong System ←  
was installed, or it ←  
is completely incompatible with your Mac, ie. a PowerMac System folder. Use a ←  
universal System ←  
installer, ie. a System CD from any retailer, and not a System disk that came ←  
with a real Mac, as ←  
these are specific to that Mac only - especially floppy disk sets.
- 4) There is no System folder on that disk, and it will be ejected or not used.
- 5) The boot block may be damaged (rigid disk block), try using a disk repair ←  
program first. If that ←  
fails, then you will need to reformat the disk. You can reformat any removable ←  
or external hard ←  
disk, which has not been specified by ShapeShifter or Fusion as the main boot ←  
disk, with a ←  
Macintosh formatting program, or by the Finder's Erase Disk feature.  
If it is a specified hard disk, you'll have to format it as an Amiga FFS ←  
partition again, and ←  
then re-initialise it on the Mac side. Only do this as a last resort, because ←  
if you have any data ←  
which has not been backed up recently, you will not be able to get it back.

See

"What if I accidentally initialised the hard disk.." for more ←  
information.

Can I have TWO System Folders on a single partition?

This would be highly inadvisable, it would totally confuse your computer, ←  
especially if you copy a ←  
System by hand onto the main startup disk. It'll have difficulty booting-up next ←  
time, and will ←  
probably show you the flashing "? disk" screen. However you can install a system ←  
folder on a different ←

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partition, or onto as many disks as you like.

Will my Mac emulation ever display the Sad Mac bomb screen?

No, it can't possibly show this screen, as this is a hardware check feature for real Macs.

Since Mac emulation is via software, and the host computer (Amiga) is a different animal altogether,

a hardware diagnostic obviously cannot work, therefore you will never get this dreaded screen. The

most you'll experience is a startup freeze.

## 1.7 cdrom

### CD-ROM PROBLEMS

I can't mount any Mac CDs in emulation, why?

ShapeShifter v3.9 & v3.10 now has the capability of recognising a CD-ROM drive by using it's own

built-in generic driver (in the SCSI setup window). Just go into the SCSI setup screen and switch on

the button next to "Use generic CD-ROM driver". However you still need the CD filing system data files

found in the extensions folder, these are; Foreign File Access, High Sierra File Access, Audio CD

Access and ISO 9660 File Access.

Fusion is very picky when it comes to SCSI, as you may know already, however some old SCSI CD-ROM

drives may not be compatible with Fusion, or it cannot recognise it properly. In order to mount this

drive, you'll require special Mac software, such as FWB's CDROM Toolkit, which supports a lot of CD

drives. See their site for a list of supported drives ([www.fwb.com](http://www.fwb.com)).

Fusion also has a generic CD driver, go to the setup window, and set these options

...

1) Under the heading Peripherals, select "CD-ROM"

2) The ROM type should be HFS/PC.

3) Device Driver = ATAPI.device or SCSI.device (whatever the driver is for your SCSI controller).

4) Unit = x (whatever it should be for ATAPI).

Don't forget those CD-ROM Filing System data files in the System Extensions folder, see above.

On Microcode Solution's web pages, there is a CD driver which is usually updated every so often,

download it, if you still cannot mount any Mac CDs, the name of the archive is MSCD.LHA.

Go to: [www.microcode-solutions.com/amiga/amiga.html](http://www.microcode-solutions.com/amiga/amiga.html) - under the title "Latest Software Downloads".

For questions concerning IDE CD-ROM support, for ShapeShifter, see the AmigaGuide document KSSFAQ13,

(Klaatu's ShapeShifter Guide & FAQ v1.3), which can be found on Aminet.

Why can't I boot up from my CD drive?

- 1) The CD contains a System Folder which is incompatible with your Amiga setup, eg  
. System 8 will not work with ShapeShifter.
- 2) Some real 68k Macintosh computers do not support booting from CD-ROM, this is  
to do with the ROM, so if you have one of these ROMs, you may be effected:
  - Macintosh 128k, 512k, 512ke
  - Macintosh Plus
  - Macintosh SE & SE/30
  - Macintosh Portable
  - Macintosh Mac II, IIX, IICx
  - Macintosh Mac Classic

Why won't FWB CD-ROM Toolkit mount any CDs on my Mac?

CD Toolkit has certain minimum System requirements before it'll work on your  
computer, these are;  
System 7.01 or higher, an 020 or higher processor, a SCSI CD drive, and a hard  
disk.  
Note that version 3.02 and above, requires System 7.53 or higher, and 4mb of  
free RAM. However it now supports ATAPI drives as well as SCSI.

I cannot seem to install MacOS from CD, using ShapeShifter/Fusion, what's wrong?

CD's with the Mac OS (7.5, 7.5.5 update, 7.6.1) are CD's with multiple data tracks  
. Under SS and using the generic CD-ROM driver fresh installs to an empty HD (and most likely  
updates as well) will FAIL because the later sections of the data cannot be read.  
To install from CD it is best to BOOT with a Disktools floppy, and have EMPCD:  
enabled under Device Disks. The multiple data sessions will now be seen and the installs from CD  
will work OK. You can then change back from EMPCD: to whatever CD activation you require under SS  
once it has all gone through OK. NOTE: This may not be the rule, rather the exception.  
by John Blyth, Australia

Where can I download Mac CD drivers?

- 1) There is a generic CD-ROM driver on Apple's web site, this works with some non-  
Apple CD drives:  
[www.apple.com/Apple\\_Support\\_Area/Apple\\_Software\\_Updates/US/Macintosh/Apple\\_CD-  
ROM\\_5.4.img.bin](http://www.apple.com/Apple_Support_Area/Apple_Software_Updates/US/Macintosh/Apple_CD-ROM_5.4.img.bin)  
This is a disk image, so you'll need DiskCopy or Shrinkwrap (this utility  
mounts the disk image onto the desktop). Both can be downloaded from any Mac shareware  
site.

- 2) Apple's System 7.x CD-ROM Setup software:  
ftp.info.apple.com/Apple.Support.Area/Apple.Software.Updates/US/Macintosh/Display.and.Peripheral.Software/CD-ROM.Setup.5.0.1.img.sea.hqx
- 3) Alternatively, you could download a freeware generic driver called CD-Sunrise at:  
ftp://mirrors.aol.com/pub/info-mac/cfg/cd-sunrise-22c.hqx
- 4) Try these three, one from NEC and two from Pioneer web sites (for NEC or Pioneer drives only):  
http://www.pioneer-eur.com/drivers/mac220.220 - http://www.pioneer-eur.com/drivers/mac402.hqx  
ftp://ftp.nectech.com/pub/peripherals/mac-cd/SPEEDYCD.HQX
- 5) There are all the known Macintosh CD-ROM drivers available today;
  - ~CorelSCSI!, from Corel (www.corel.com).
  - Anubis CD-ROM, from Charismac (www.charismac.com).
  - CDROM Toolkit £53, from FWB (www.fwb.com).
  - CD-ROM Extension, from Charismac (www.charismac.com).
  - CD Autocache \$79, from Charismac (www.charismac.com).
  - CDTECH 1.x.x, from CD Technology.
  - Drive7Rem or DriveCD, from Casa Blanca Works.
  - MetroCD INIT 1.x.x, from MetroCD.
  - NecCDDrvr or DriveCD NEC, from Charismac (www.charismac.com).
  - CLD Access, from Pioneer (www.pioneer-eur.com/drivers/).
  - PLICDDrvr, from Charismac (www.charismac.com).
  - Rapid-CD £35, from Insignia Solution.
  - RapidTrak-CD, from MacPeak (www.macpeak.com).
  - SCSI-CD driver, from Corel (www.corel.com).
  - SpiritTMCD, from OAC.
  - TSLCDDrvr, from Trantor.
  - Toshiba CD-ROM Driver 1.x.x, from Toshiba (www.toshiba.com).
  - TurboCD-ROM Init, from Charismac (www.charismac.com).

## 1.8 crashing

### CRASHING PROBLEMS

Why are some programs suddenly quitting?

You've given too much memory for your application(s), and the System does not have any spare memory to expand into. If this is the case, then the best thing to do is to leave 1-3mb of free RAM for the System to "grow".

Or it could just be a case of the program not being able to access one of its own files or a System Library, and it quit itself - although this will probably cause a crash.

Why doesn't Norton Utilities 3.5's CrashGuard work?

Because it is a PowerPC only application, and a good one as well. All it does, is to catch a crash, before it takes down the whole system, it'll keep a log of all crashes and when one happens, it will give you three choices: Fix It, Quit the Application or Reboot the Mac.

What causes my Mac to crash/freeze?

For starters, don't assume that the Mac emulation has frozen, it may be just taking it's time to complete an operation or loading up files - be patient. Remember your dealing with slow 68k apps not PowerMacs. A good sign that the Mac emulation is going Ok, is when you can still move the pointer about the screen. Here are some tips to help you with a crashy situation:

- 1) To get out of an infinite loop type situation, press Apple+." keys (cancel operation) or Apple+ Option+Escape keys (Force Quit out of emulation).
- 2) A corrupt preference file can often cause many a crash, just delete the application's preference file in the System Folder, and re-setup your prefs for that program.
- 3) The program could be accessing a damaged Library extension, or trying to access a Library extension that isn't in the System Folder - in either case, reinstall the Library file(s).
- 4) An extension conflict is another common suspect when a Mac crashes. All you have to do is see what programs or other System enhancement utilities/extensions you have, and take them out of the Extensions Folder, then restart the Mac, see if this cures it. It could also be damaged!
- 5) Document files may also become corrupted, and often causes instability in the MacOS/application. I'm afraid, if the file is far too gone to salvage, you'll have to recreate the file from scratch, assuming you haven't done a backup recently.
- 6) Viruses, can also reek havoc on your Mac, so be vigilant with downloaded programs, scan them first before you execute it.
- 7) If your Mac hard disk is not looked after regularly, it could develop so many faults in the directory structure (or bad blocks) that files and applications will automatically cause crashes, due to the unstable state of the partition(s). Do regular hard disk checks to prevent this.

My Mac has started to crash a lot, how come, it was alright not long ago?

- 1) You may have installed a later version of the 040/060 libraries on the Amiga, this can certainly break some Mac programs, or at least cause some features to crash out on you. Try using an older version, eg. v41 to v43.0 are pretty stable. You may have to switch off SuperScaler (NS) and the Memory Buffer (NB), on an 060 computer using Fusion, but this would degrade performance by 25-50%. NS & NB are CPU settings; to use any of these commands, you can only do it through the Shell, as a temporary measure, or via the Startup Sequence script - preferably executed early in the script.

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- To use a certain setting, type `cpu040 xx` or `cpu060 xx` (Phase5 accelerators),  
OR `cpu xx` for 68000/  
020/030 CPUs. To call up a list of all available options/settings, type `cpu ?`  
(000/020/030s),  
OR, `cpu040 ? / cpu060 ?` (Phase5).
- 2) A program has installed additional/newer versions of system extensions? Your  
Mac doesn't like them.  
Restart the Mac with all system extensions disabled, then press the Shift key  
right away,  
until the message "Extensions disabled" appears under "Welcome to Macintosh".  
Now remove any NEW  
extensions and/or control panels, and reboot. This may render some program  
inoperable.
  - 3) The program is very buggy. It could be a Beta version, best wait until the next  
official release  
for that particular application.
  - 4) Run your disk repair utility over the system and application hard disks. It may  
have developed an  
error in the main Directory, which can cause instability.
  - 5) The program has become corrupted, check for viruses, then reinstall the program  
.
  - 6) Has the application got enough allocated memory? Highlight the program, while  
in the Finder, and  
press `Amiga+i`, this will show you, at the bottom of the information panel, the  
memory allocation  
fields. The one you need to amend, is the Preferred Memory value, it needs to  
be bigger  
than the Suggested Memory figure (the numbers represent Kilobytes).
  - 7) This new software requires an FPU, which you either don't have or it doesn't  
seem to like the one  
you've got. Install the freeware program SoftwareFPU. This control panel  
emulates an FPU  
extremely well. Download it from any shareware internet site.
  - 8) Your Mac doesn't have enough memory to function properly, with or without  
additional programs  
loaded as well. You need a minimum of 8mb for the MAC, this will accommodate a  
bare bones system  
(2-3mb) and one medium-weight (3-4mb) program. OR you have not allocated enough  
RAM to a regularly  
used program. To use additional memory, select the program's icon and press  
`Amiga+i` keys, to access  
the Get Info panel. Now go down to the "Preferred Size" box and type in a  
number (1=1k), it has to  
be equal or more than the minimum value.
  - 9) A bitmap or TrueType font has become corrupted in the System's Fonts folder,  
replace the suitcase  
with the master copy.  
See  
"Some fonts don't appear to work.." for more info.
  - 10) The program is incompatible with your emulated Mac or the System version you're  
using.
  - 11) Check for viruses, these can easily cause sudden crashes and bootup failures.  
Eradicate the virus  
first, then see if any programs crash repeatedly, if they do, bin the whole  
application folder,  
because the virus has damaged it, and reinstall again.
-

The system "bombed" or froze whilst booting up the Mac?

Make a note of when (during the boot procedure) it happened, this will  
differentiate between a duff

System/Finder/extension or an extension conflict. To find out which one it is, is  
simple, all folders

then extensions, always load-up alphabetically;

- the System and Finder Preference files
- then the extensions
- then the control panels with it's preference file
- then the Finder
- and finally, the Startup Item folder.

- 1) If it happened before any icons started to appear during boot-up, the System  
file or Finder  
preference file is damaged (bin the prefs first, leave the system for now).
- 2) If it froze or crashed whilst the extensions are loading, then the last icon  
will give you a  
good idea as to which one is the troublemaker, because it is either the last  
extension that loaded  
before the crash or the one after it. Remember that not all extensions and  
control panels display  
it's icon at boot-up. Simply find and disable any suspect extension, and  
continue to do this  
until the crashing stops.
- 3) If it shows a System Error message, freezes or just restarts, after the  
extensions etc. have  
loaded, then the Finder program is damaged. Just reinstall it.
- 4) Beware of viruses, this is a  
symptom  
of infection, as they nearly always infect the  
System file or even the Finder, so scan the hard disk with a bootable CD (it  
cannot be infected)  
or a locked anti-virus diskette.
- 5) Another cause is a corrupt font suitcase, which can prevent the System from  
booting, by freezing on  
the Happy Mac screen. The only way out of this situation is to boot from a  
different disk, then  
look inside all the suitcases in the System's Font folder, and see if each  
suitcase opens and that  
each font size (when you double click on it) shows the correct font and style -  
if it shows a  
default font, ie. Geneva, it's damaged. Bin all corrupted fonts and restart the  
Mac again.
- 6) It may have been caused by a SCSI ID clash between the boot disk and another  
device, recheck the  
IDs on all external devices and change to a different number. Also check SCSI  
termination is  
switched ON, for the last device in the chain.

The Mac is behaving erratically and files don't open - what's doing this?

- 1) THE most likely cause for a very unstable Mac, is the Master Directory and the  
Volume Bitmap on

the hard disk has incorrect data concerning the number of files and space available on the disk. ←

Do not continue to use the hard disk, as this may cause damage to files and applications. Use a ←

disk repair program to correct it.

- 2) The Desktop File has become corrupted - either use your repair utility, or restart the Mac and hold ←

down the Alt+Shift keys just after the extensions have loaded, this will display the message "Do ←

you want to rebuild the desktop of [disk name]", click OK. The disk's directory structure could be ←

corrupted, give it a scan, & repair any damage.

- 3) Also check your hard disk for viruses, and do not attempt to load any more programs, as this may ←

cause further infection. The virus could be in the Desktop or System files. CDEF is the only ←

virus

that infects the Desktop file.

## 1.9 files

### GENERAL FILE, FONTS & ICON PROBLEMS

Is there a Mac utility that can convert Amiga IFF images to standard picture formats? ←

Yep! I recommend a shareware program called GraphicConverter, it is capable of converting many ←

different types of image file formats (SGI, Mac, PC and Amiga formats, to name a few). It also has ←

image editing, slideshow and batch conversion features.

Also note (to those who can afford it) that Photoshop 4.0 (last version that supports 68k CPUs) also ←

caters for Amiga's IFF format - Photoshop 4 came out in the last quarter of 1997!

How do I make fonts available?

There are two methods; a simple way - for the occasional user; and one for managing a large number of ←

fonts via 3rd party software.

First, the simple method: gather up all the fonts you want to use, they must be either Macintosh ←

Type1 fonts with it's suitcase (screen fonts), or Truetype fonts. Then move them into the System's ←

Font folder, there is no need to restart the Mac, but you will need to quit and reload the programs ←

you wish to use them with.

Second method is to buy a commercial or shareware utility that will manage your fonts for you. ←

These programs often allow you to open fonts that are not even on the same volume as the System ←

Folder, so you can open and close them at the same time you are using a program.

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Here are a few products available; Symantec's Suitcase (commercial), Master Juggler (commercial), Adobe's ATM Deluxe (commercial), or Font Manager (shareware).

How can I secure data on my Mac?

You can either buy a commercial package, such as Norton Disklock, FileGuard or Private File, OR download a shareware program - these can take the form of a disk lock-out or a file encryption utility with a password protection. For 100% protection of sensitive data, I'd suggest you buy a commercial product (such as the one mentioned).

To erase data completely, you need a utility that overwrites the file with random binary so as to make it completely unreadable, as well as remove it from the disk's directory. Such as Norton Utilities' WipeInfo, or by simply saving unimportant text/data of similar size or more over the original file via any program, but not by placing a file of the same name over the original in the Finder. This will only delete the file from the hard disk's directory, and the confidential data will still be recoverable.

I cannot get a file to open, how can I get it to load?

It is most likely a default dog-eared icon, which you won't be able to open by double clicking on it. Instead, load up the program you know can access it (if you know what type of file it is), THEN load-up the file via the Open dialogue box. If you don't know what program created it, then see File Characteristics for information about the file Type code.

If it does not load at all, then it may be damaged. However you could;

- 1) Restore a previous version from your backups.
- 2) If the file is text based, then you can recover most of the text by using Norton Disk Doctor's Recover File (only text can be recovered) feature. This will save the text into a separate file.
- 3) If it is a Quark Xpress document, then you can buy a repair program from Markzware, called MarkzTools2. See their web pages: [www.markzware.com](http://www.markzware.com).

When I copy files across to other disks, they become corrupted, what can I do?

This can be caused by one of two things; bad blocks or the hard disk's max. transfer is set too high, a limit of 0X1FE00 = 128k is an average setting. Use HDToolBox (Amiga) to reset the limit, in the advanced options window.

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It could also be caused by faulty SCSI cables (internal or external), or the Mac's directory structure is damaged - run your repair program on the disk, just to make sure. And while you're at it, rebuild the Desktop(s) of your Mac hard disks. Scan your disks for viruses as well, it may have damaged the system file.

How can I transfer files (large or small) from a PC to a Mac?

To physically transport the files from the PC to a Mac;

- 1) Email the file(s) to your self.
- 2) PC formatted Zip disk (use the PC Exchange control panel to mount it).
- 3) Syquest removable disks (use the PC Exchange control panel to mount it).
- 4) High density floppy disks (use the PC Exchange control panel to mount it).

If the file(s) are very big, you could split the archive over a number of floppy disks, then rejoin them once you've copied it onto the Mac.

To make sure they are not corrupted, when copied onto alien filing systems:

- 1) Copy them as they are, without modification. These type of files are cross platform compatible, such as, image file formats; JPEG, GIF, EPS, PCX and TIFF; text in ASCII format; and some program documents; Quark Xpress, MS Word, MS Excel, Pagemaker, Freehand, Adobe Illustrator, to name a few. However the file must have a 3 character extension, on the end of the file, for easy recognition.
- 2) As a hexadecimal encoded archive, known as a HQX file (this is it's dot file extension). This archive type uses ASCII characters to encode the data, which is also a universally recognised format, and therefore totally safe to store it until you can copy it to the destination computer. It usually necessary to compress the file first, because a HQX archive can and often does, increase the size of the original file by as much as 30%. It might be a good idea to encode large individual files so that they'll fit on a 1.4mb PC disk. Here are some programs that can encode and/or decode HQX files:
  - Stuffit Lite (shareware)
  - Stuffit Deluxe (Commercial)
  - Stuffit Expander (freeware, expands .cpt .sit .hqx .uu & .bin files)
  - ZipIt (shareware)
  - Compact Pro (shareware)
  - BinHex 4&5 (freeware, expands/encodes HQX files only).
- 3) Use a cross platform compatible archive program, such as;
  - pkZip (PC) and Zipit (Mac)
  - LHA archive program (Mac shareware programs are available)
  - Stuffit (both for PC & Macs).

What type of compression formats are there for the Mac, and how can I recognise them?

There are 10 common archive formats for the Macintosh, and they usually add a 3 character extension

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onto the end of the filename, eg. archive.sit. Stuffit Expander is THE program to have, it can expand 2 common Mac archive types, SIT & CPT, and 3 file conversion types, BIN, HQX & UU. You can download a free expander for all the other compression types, either from the publisher of the software or from any shareware site.

See

here

for program, publisher and web site information.

Extension	TYPE code	Compression program that created it
xxxx.bin.....	MB2P.....	MacBinary format (combines the resource and data forks into one file).
xxxx.dd.....	DD??.....	Disk Doubler (??=other various characters).
xxxx.cpt.....	CPCT.....	Compact Pro.
xxxx.gz.....	Gzip.....	MacGzip.
xxxx.hqx.....	ASCI.....	BinHex (there are lots of other HQX creation programs on the internet)
xxxx.pit.....	PIT.....	PackIt.
xxxx.sea.....	APPL.....	Self Expanding Archive (expands itself, when you double click it).
xxxx.sit.....	SIT!.....	Stuffit Deluxe/Lite.
xxxx.uu.....	UU??.....	UUencoded file, a bit like HQX archives in nature.
xxxx.zip.....	ZIP.....	Zipit (is PC pkZIP compatible).

How can I tell what type of file this dog-eared page icon is?

As you may have already found out, it is useless to double click on a file which has reverted back to a default document icon, it simply won't launch any program.

This is what you can do to correct the problem; rebuild the entire desktop or use Norton Utilities

v3+ to update a single file or files. This feature can be found in the menu of Norton's Disk Doctor, under the heading "Add file to Desktop".

If this does not produce an icon, then either you don't have the program that created the file (see

File Types & Creators

on how icons are created), or the file in question has no

Creator code in it's Finder flags. However, you can view it's codes by using Norton Utilities, on the

main menu screen, look in the File menu for "Get Info For.." and highlight it, now find and select the file.

The Creator or file Type may give you a good indication as to what it is, for example, File

Type = JPEG, this means that the file is an image format.

There is a database document for the Mac, called Type/Creator Database which can be

found on any Macintosh shareware internet site, or go to the authors site: [www.anglefire.com/il/szekely/index.html](http://www.anglefire.com/il/szekely/index.html)

How come all of the icons on my hard disks have defaulted to generic icons?

The Desktop file which stores information about all the icons on that hard disk has either become corrupted or it cannot update it any more, due to a bad block or bad Desktop file. All you need to do is to rebuild the Desktop file. To do this, you have to restart the Mac and then hold down the Alt+Amiga (any combination) keys just before the last extension is loaded. The Finder will detect this key combination, and will ask you if you want to rebuild the desktop for the main system disk and then for any other mounted volumes, everything should be back to normal.

If the Desktop fails to rebuild, you need to make the current invisible "Desktop DB" and "Desktop DF" files visible, these are located in the root directory. Use a File editor such as Norton Disk Doctor or FileBuddy to switch off the invisibility Finder flag, and then put them into the Trashcan. Then restart, the Finder should generate the Desktop file automatically. Now, empty the Trashcan.

TIP: If an application defaults to a generic form, you do not need to rebuild the entire desktop. Use any program that can add a file to the desktop, such as Norton Disk Doctor 3.5 x, and update just the application with this feature. The rest of the apps associated files and documents will appear properly upon the next reboot.

Some fonts don't appear to work, or I cannot move them out of it's suitcase or folder?

It is more than likely that the bitmap or truetype font(s) in the suitcase (commonly known as a screen font if used inconjunction with Postscript Type-1 fonts, or Printer fonts) are damaged or do not work properly. This type of error does not effect the Printer fonts, they are separate files. There or two manual ways to find out if a font does not work; a) Try to move the suitcase to another folder, if an error message appears, then the suitcase is corrupted, or it won't let you move individual font sizes out of the suitcase - both good indicators that the suitcase is damaged, and usually cannot be repaired. b) Look inside every suitcase that is normally loaded up, including the System's Font folder, then double click on each font size icon to view the font style & size. Now see if all of the fonts inside the suitcase show the proper font. A bad font will always display a default font, such as Geneva. A dead give-away is that an italicised font is not only a generic font but also not in italics.

There is a way to get rid of any suitcases that refuse to be moved, simply create a file with the

same name as the suitcase and move it into the same folder as the damaged file, it should overwrite it. Just in case the System does not allow you to do this, you can use a file eraser utility, ie.

Norton Utilities-Wipe Info. You may have to startup with all extensions disabled first.

On a further note: check that the Adobe Type Manager (ATM) control panel (if you are using it) has enough allocated memory for rendering text, something like 256k or above is usually adequate.

While I'm on the subject of ATM, is it functioning properly? This is another possible as to why fonts are not displaying properly. The only way to tell, is that large on-screen type is not being rendered accurately. Extremely blocky type means that ATM has been switched off or it is damaged, you may have to reinstall ATM again.

How can I make an invisible file, visible?

You need a utility to edit the file's Finder flags, such as File Buddy (shareware) or Norton Utilities (under File menu "Get Info for.."). I suggest you only switch on/off the "invisible" flag only, the meddling with any of the other flags could damage the file.

See

File Characteristics  
for more info concerning Finder flags and what they do.

How can I retrieve deleted files?

Use Norton Utilities Filesaver and Unerase features, to manage deleted files. Filesaver remembers up to 500 files that have been erased. However, over a period of time, ie. up to 2 days of constant use, the oldest binned files will be over-written by the Mac, so if you need recover a trashed file, you better rescue it soon. If a directory search does not recover the entire file, you'll have to revert to a backup.

How can I convert a special text document, eg. Word, into another format?

You need a text file type converter program, such a MacLink+ from Dataviz (which can be found on the System 7.53 CD) or similar program. This program will convert any supported word processor formatted doc into a similar Mac format.

The only other way, is for the person who sent it, to resave it as an ASCII text file. This would remove any text formatting, or you could open this document with a text editor and remove the junk surrounding the text by hand, and then resave it.

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## 1.10 infection

### VIRUS INFECTIONS & SYMPTOMS

What is the safest way to eradicate a virus on my Mac?

First you need a good, up-to-date virus checker. There are about 3 commercial packages: ←

- Norton AnitiVirus, from Symantec.
- Dr Solomans AntiVirus, from Dr Solomans.
- Virex, from Datawatch.

and 2 shareware programs:

- Disinfectant 3.71, is freeware, but was discontinued in July 1998. OK for starters, but it doesn't ←
- recognise all viruses.
- VirusScan from McAfee, this is shareware, and recognises most viruses.
- There are quite a few virus specific eradicators on the internet.

While you wait for the anti-virus software, there are a few simple steps you can take to prevent any further damage (remember, you could have a really nasty virus that could either destroy files, or format the disk). You can; not use your Mac emulator, full stop, or use a boot disk that cannot be infected by a virus, eg. a bootable CD-ROM disk. ←

If you do use your Mac this way, don't launch any programs on the infected disk, as all of the executable software will no doubt be infected, and will cause further damage/ infection. Do not copy any files off the infected disk either, some viruses infect documents/files as well. If you really need them, make sure the destination Mac has a virus scanner on it, so that the diskette can be repaired. ←

Once you have it, you need to create an anti-virus bootable floppy disk, and it has to be write protected, otherwise the virus will infect the floppy disk and all software on it, making it ineffective. Do this on a "clean" Mac, in other words one that you know is free from any virus. Then scan all other floppy disks and removable HDs. ←

All you have to do now, is to set up the software, to make regular checks of the hard disk and to automatically check any disks that are mounted on the desktop. ←

### SYMPTOMS

I'm experiencing; unexpected delays; some of my files have disappeared or won't open; and long disk accesses. What the hell is going on? ←

There is a destructive virus on your Mac. Get an anti-virus program immediately. If you don't have an up-to-date virus detection program, all you can do is to switch off the Mac, until you receive the ←

software. This will render the virus inoperable for the duration. When you have ←  
the anti-virus  
utility, make sure the emergency disk is write protected, so that the virus cannot ←  
infect it,  
otherwise it'll be completely pointless trying to repair files with an infected ←  
disk/program.

Check all your Macintosh disks, so that it is utterly eradicated. Don't forget ←  
to use your backups  
with caution, as these may also contain infected programs/files, depending on when ←  
the virus got onto  
the hard disk. See

Viruses in Detail

.

What does "This disk needs minor repairs" mean, and what should I do?

It could be a virus misinforming you to write enable it, so that it can infect the ←  
disk, sneaky or  
what! Instead, cancel the requester and eject the disk, then restart the computer ←  
with all extensions  
disabled (this will not disable the virus, but will reduce further infection just ←  
a bit). Now scan  
your main hard disk with an anti-virus program. Also scan the floppy disk for good ←  
measure.

If you know for definite, that a virus is not the cause, then repair it with the ←  
Finder (iffy  
method), or use your disk repair utility (recommended method).

Some applications refuse to launch, or crashes, how come?

Some old programs may not work with later Mac operating systems, or the program is ←  
incompatible with  
the Amiga's processor, particularly 68000/040/060s. I strongly recommend you get ←  
an up-to-date  
version of that software.

It could be a virus attack. Most viruses change or damage the code in every ←  
program it infects,  
rendering it either unusable or unstable. Once you have completely eradicated the ←  
infection, I suggest  
you bin the useless applications, then install them again.

See the section on

Crashing

for more information.

Virus Facts & Information

The European Institute for Computer Anti-Virus Research (EICAR)

<http://www.eicar.org/>

Mac Viruses FAQ

[http://www.cis.ohio-state.edu/hypertext/faq/usenet/computer-virus/macintosh-faq/ ←  
faq.html](http://www.cis.ohio-state.edu/hypertext/faq/usenet/computer-virus/macintosh-faq/faq.html)>

<http://www.faqs.org/faqs/computer-virus/macintosh-faq/>

<http://emt.doit.wisc.edu/macvir/macvir.html>

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<http://www.macvirus.com/reference/>  
<http://webworlds.co.uk/dharley/>

Symantec Antivirus Research Centre - Virus Encyclopedia  
<http://www.symantec.com/avcenter/vinfodb.html>

Mac Virus  
<http://www.macvirus.com/reference/viruses.html>

Network Associates (was McAfee Associates) - Virus Information Library  
<http://www.nai.com/vinfo/>  
[http://www.nai.com/vinfo/f\\_13707.asp](http://www.nai.com/vinfo/f_13707.asp)

University of Hamburg, Virus Test Centre, Macro Virus List (THE definitive listing ↔  
)  
<ftp://agn-www.informatik.uni-hamburg.de/pub/texts/macro/>  
<http://agn-www.informatik.uni-hamburg.de/vtc/eng.htm>  
OR  
<ftp://ftp.informatik.uni-hamburg.de/pub/virus/texts/viruses/>  
<ftp://agn-www.informatik.uni-hamburg.de>

Dr Solomon's Mac Viral Zoo - Virus Encyclopedia  
<http://www.drsolomon.com/products/virex/zoo/maczoopg.html>

Dr Solomon's Software Ltd  
<http://www.drsolomon.com/vircen/enc/>

Central Command  
<http://www.avpve.com/viruses/macro/>

Data Fellows  
<http://www.datafellows.com/macro/>

## 1.11 WWW

### INTERNET CONNECTION PROBLEMS

To find out more information on Open Transport, Classic Networking and where to ↔  
download relevant  
files and software updates, click  
here

.

What software do I need to connect to the internet?

You have two choices, Classic Networking (CN) or Open Transport (OT). Both require ↔  
certain Control

Panels and Extensions, as listed below:

CLASSIC NETWORKING...

MacPPP and ConfigPPP (Control Panels), or FreePPP (Control Panel), MacTCP (Control ↔  
Panel).

OPEN TRANSPORT...



Open Transport PPP (Control Panel) or FreePPP (Control Panel), Modem (Control Panel), and TCP/IP (Control Panel).  
Open Transport v1.1 Extensions: Open Tpt AppleTalk Library, Open Tpt Internet Library, Open Transport Library, OpenTptAppleTalkLib, OpenTptInternetLib, OpenTransportLib.

How do I get my modem "on-line"?

You will find that Classic Networking will work much better than Open Transport, for most Mac emulation setups - use Open Transport, only as a last resort!  
Go to the PPP control panel (whatever it is you're using), and press the Connect button. Now you can use your internet browser, email or newsgroup program, that's it! Assuming of course that you have setup the PPP control panel correctly, ie. you've supplied all the relevant data into it.  
Also make sure that the modem port is free, as in, the printer is not currently setup to use that port at the moment - if it is, switch off the printer and plug in the modem and switch it on, then retry connecting via the PPP control panel.

Where do I type in the settings for internet access?

The two control panels you'll need to setup are the TCP/IP (Transport Control Protocol/Internet Protocol) and PPP (Point of Presence Protocol). All settings are saved in these two, however in OT, it has a modem control panel, which stores information on the exact modem you're using.  
Please note that FreePPP will work with both CN and OT standards, except that it will be a little slower under OT, due to it not being fully OT optimised.  
Don't forget that in MacOS 8, it has a program that will take the hassle out of setting up internet access, it is called Internet Setup Assistant, and can be found in the Apple menu (or do a search via the Find command in the File menu, in the Finder). You still need to know information about your Internet Provider and your modem etc, so that you can type it in the relevant boxes.

What type of files can I download from the internet?

You have two choices; as an archive, or as "is" (unarchived and unencoded). There are many different types of archive that are pretty much standard on Macs: HQX, MacBinary, Zip, Compact Pro, Stuffit, UUencoded and Disk Doubler being the most common.

Some files can be transported as they are, because they do not have a resource fork, only a data

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fork, therefore they cannot be damaged when transported onto different platforms. ↔  
 The type of files  
 I've managed to download from the net, onto my Amiga, and then onto my Mac, are: ↔  
 PDF (Adobe Acrobat)  
 files; SIT (Stuffit), GZIP, ZIP and LHA archive files; all types of image files ( ↔  
 they really need a 3  
 character extension on the filename, for file type recognition). There may be ↔  
 others, but you're best  
 sticking to these file types, and archiving any files your not sure about, before ↔  
 you upload them.  
 See  
     File Problems  
     for further information on transferring files to/from a foreign ↔  
     platform,  
 and about archive types that are used on the Mac today.

## 1.12 wwwinfo

### INTERNET INFORMATION

#### Downloadable Software

FreePPP and MacPPP can be obtained from:  
<ftp://ftp.tibits.com/pub/tidbits/tisk/tcp/com/mac-ppp-201.hqx> or [free-ppp-105.hqx](ftp://ftp.tibits.com/pub/tidbits/tisk/tcp/com/free-ppp-105.hqx).  
 -MacPPP & ConfigPPP is on the System 7.53 CD (v1.1).  
 -<http://www.info.apple.com/> - Most of the CN extensions/control panels can be ↔  
 found here, or  
 in the System 7.0/7.01 disk image sets.

Open Transport can be found at/in:

- the System 7.53 CD (v1.1).
- the System 7.6 CD (v1.11).
- the System 8.0/8.1 CD (v1.2)
- <http://www.info.apple.com/> - Open Transport v1.x installer + associated files.
- <http://www.tucows.com/> - OT updaters to v1.11 & v1.12.

Internet browsers:

- Internet Explorer
- Netscape Navigator both can also be downloaded from a lot of internet sites, and ↔  
 from mag CDs.

Emailers:

- Endora Lite - from most internet site, this is the shareware version (I think).
- Endora - is the commercial version, much more features than Endora Lite.

Other commercial software:

- CE Quickmail Pro (£53) - commercial only.
- CE Quickmail LAN (£116) - commercial only.
- Claris EMailer v2 (£45) - commercial only.

Modem Compatibility:

Download an updater program called Modem Updater v1.3, this contains the profiles ↔  
 of all modems  
 known modems (v1.21 is for USA users), however you need the updater for your ↔  
 particular country:

ftp://ftp.info.euro.apple.com/Apple\_Support/Area/Apple.Software.Updates/English-  
British/Macintosh/  
Modem/ - the last few parts is obviously for us Brits!

Open Transport PPP

System requirements: Open Transport v1.11 or above, and Systems 7.1, 7.11, 7.12,  
7.53  
or later (Systems 7.5, 7.51 and 7.52 are not compatible), and only TCP/IP control  
panel with work  
with OT PPP.

Open Transport PPP can be downloaded from Apple's web site (www.info.apple.com)  
or from Tucows web  
site (www.tucows.com).

Internet Config Extension

This extension comes as part of System 8, it is also freely downloadable from many  
Mac shareware  
sites. What this useful utility does (comes with a small program to setup your  
preferences) is to  
allow access to your personal internet setup to all other internet applications,  
saving you the hassle  
of having to setup each program individually. Most browsers, email etc, accept  
Internet Config as  
standard now a days.

## 1.13 print

### PRINTING PROBLEMS

For more info on printing, click  
here

.  
For internet links to manufacturers printer driver web pages, click  
here

.  
Why won't my printer print anything?

It is a known fact that printing in ShapeShifter is at best a lost art, it is very  
picky about how  
you've setup your System - Classic Networking will have better success than Open  
Transport will.  
If you have OT installed but not Classic, then I'd recommend you to reinstall your  
System Folder  
again, this time without OT (it stores OT code in the System file, which may  
interfere with the  
connection process to the printer, and a modem).

I've tried OT and printing, and it doesn't work with my Epson Stylus 500, at all  
! As for Fusion,  
well, this is much less hassle to setup and get working

1) Check that the printer is switched on, cabled up properly, and the parallel  
port is selected

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- in ShapeShifter's/Fusion's setup window, before you select the driver icon in the Chooser.
- 2) If it is a dot matrix printer, then you can try Chucks Printer Driver, it can be downloaded from any internet site. It is basically a generic printer driver - it does work.
  - 3) Did you get a Macintosh printer driver disk supplied with the printer? If you did, then all you need to do is to install/copy it into the System's Extensions folder. You should see it in the Chooser after you have restarted the Mac. It is imperative that you use a driver for your model of printer, otherwise it will not work properly.  
Many manufacturers supply their printer drivers on their web sites, so you may need to download the latest version. See their documentation for the web address, or go to "Peter's Amiga Homepage" at [www.blizzard.u-net.com](http://www.blizzard.u-net.com), which contains a wide selection of printer driver links/URLs to either the manufacturer's web site or to 3rd party web pages.
  - 4) Try an older version of the driver. The one you're using could be incompatible with Mac emulation, or your particular version of MacOS.
  - 5) Is the correct printer driver and the Printer Port, selected in the Chooser? If you don't select these in the Chooser, the data cannot be directed through the parallel port.  
Or you could try Power Print, from Infowave, it allows you to use parallel printers - it's a lot like the Amiga's TurboPrint package.
  - 6) Make sure AppleTalk is Inactive. If it is On, switch it off via the Chooser, and restart the Mac.
  - 7) Are you using the correct version of Laserwriter, version 7.x is Postscript Level 1 compatible, while Laserwriter 8.x is Postscript Level 2 compatible.
  - 8) You can only use Ethernet or parallel port compatible printers.

I'm trying to print a document, but it keeps giving me error messages, or crashing ?

It is highly likely that there is something wrong with the file that you're trying to print;

- 1) The doc is using a corrupt font -  
See "Some fonts don't appear to work.." for info on how to find a damaged font suitcase.
  - 2) Check the Page Setup, has the correct printer settings. If you're using a PS printer, make sure the correct PPD (or whatever description file you're using) is selected.
  - 3) If you are using Background Printing, the spooled print job file may be damaged - delete it and try it again. If this still doesn't work, run a disk repair program on the System hard disk.
  - 4) You may be trying to use PostScript fonts on a non PostScript printer, only TrueType fonts work with bitmap and PostScript printers.
-

- 5) There may be a corrupt element in the document you're trying to print. Resave the doc with a different filename, or copy all elements out and into a brand new document, now try and print it. ←
- 6) There maybe a picture in the document that the printer is having trouble rendering. Try simplifying the image, ie. reduce the resolution/filesize of the pic, and/or reduce the number of colours it is using, say, to 256 colours. ←
- 7) Have you setup the Print options correctly... such as the proper paper size eg. A4 (sometimes called Letter), and the correct printer dpi. ←

Can you print using an Ethernet card and compatible printer, in SS/Fusion?

Yes, provided you have set up all the networking equipment correctly (the Amiga Ethernet card, the Amiga driver software, plus cables), for ShapeShifter and Fusion. ←

You should be able to set up Ethernet software from 7.1 with the Tune-up updater, up to 7.55 with classic networking (no Open Transport). ←

Open Transport requires System 7.5 and above, this is probably much easier to setup, than classic network software. ←

by John Blyth (Australia)

As for Ethernet compatible printers, most of them are Postscript (PS) laser printers, although they are quite hard to find they are gradually growing in number. I'll list a few: ←

-Apple Laserwriter IIG  
 -Epson Stylus Colour1520....1440dpi A2 PS colour inkjet.....£451 ex VAT  
 -GCC Elite 12/600.....600dpi B&W A4 PS laser printer.....£849 "  
 -GCC Elite 1212.....1200dpi B&W A4 PS laser printer.....£999 "  
 -GCC ELite XL616.....600dpi B&W A3 PS laser printer.....£1299 "  
 -Lexmark SC1275.....600dpi Colour A4? PS laser printer..£2419 "

NOTE: It is impossible to print via LocalTalk, on a standard Amiga.

Do I need any special software for Ethernet printing to work?

Yes, just the printer driver software for your make of printer.

Postscript printing via an Ethernet card to either a directly connected printer, or even a ←

networked printer, all work as per standard Mac OS printing procedures; everything is handled by the ←

driver. It will also work with Desktop Printer icons.

by John Blyth (Australia)

Do I require a PPD file for my printer?

No. Only Postscript Level 2 printers use PPDs, all other types of printer just require it's printer ←

driver. The printer driver always affects how the Print window will look, it is different for all ←

makes of driver, in layout and what options are available to you.

## POSTSCRIPT PRINTING PROBLEMS

Laserwriter 8.x doesn't work with System 7.6x, how come?

All 68k Macs cannot use Laserwriter v8.43 in System 7.6 without the CFM-68k  
Runtime Enabler v4 extension installed in the System Folder. This applies to all versions of  
Laserwriter v8.4 and upwards. This extension may also be worth while installing for older versions of  
Laserwriter v8.x, it'll reduce crashing to an absolute minimum. Look in Apple's web site (www.apple.  
com) to download some later versions of Laserwriter 7 and 8.  
Note: System 8.x does not require this extra extension, as it is now built into  
the System file.

Nothing will output from my laser printer, or the Mac crashes regularly when  
printing, why?

Some programs may not like your current version of Laserwriter 8 or PSPrinter, in  
which case use an older version. The oldest (but non buggy) versions I'd recommend using, are;  
Laserwriter v8.43 and/or PSPrinter v8.31. As for Laserwriter 7, use v7.2 or later.

## 1.14 printinfo

### PRINTING INFORMATION

The Chooser

Allows you access to devices connected to a normal Mac's Modem or Printer ports (  
parallel or serial ports to you and me). It is also the only way to choose a printer as the current  
output device - you have to select a printer driver in the Chooser, before you can print anything.

This is also where Background Printing and AppleTalk can be turned off or on.  
Amigas cannot support AppleTalk, because it is a hardware feature of real Macs.

The left hand side of the Chooser window lists all available Printer Drivers,  
Network Drivers, and any other driver icon that'll use the Printer and/or Modem Ports, except for  
modems, which only requires the PPP and TCP/IP Control Panels. Just click on any driver icon to  
activate it - now go to the right hand side of the window. This panel should list either the Modem or  
Printer port icons, if your printer is connected directly to your mac, or any networked printers, it  
should appear as a list. All you have to do is to highlight the printer name or the port it is  
currently connected to.

If your network has Zones (individual network groups that are connected together  
) , then these

will appear underneath the printer and network driver panel. To select a Zone, simply highlight the Zone name, and then go the right hand side again to make your printer or server selections again.

#### Printer Drivers

All Mac compatible printers come with a floppy disk, with the printer driver on it (usually with an installer present). The Printer Driver always goes in the System Folder/Extensions, and is accessed via the Chooser (via the Apple icon menu). For every model of printer, there is usually a different printer driver for it, don't assume one will work with another similar make, because it won't.

At the moment there are two Postscript (PS) Level 2 printer drivers that work with every PS printer, and they are Apple's Laserwriter 8 and Adobe's PSPrinter. Laserwriter v7.x will only work with Postscript Level 1 printers. Also note, that some programs prefer PSPrinter rather than Laserwriter, such as Pagemaker (also from Adobe).

The best versions of these two postscript printer drivers, are: Laserwriter v7.2 upwards, Laserwriter v8.34 upwards and PSPrinter v8.31 and above (Laserwriter 8.4+ requires the Finder Scripting Extension, in order to work properly) - these have must of the bugs ironed out of them. To get the latest version, visit Apples web site: [www.info.apple.com/](http://www.info.apple.com/)

#### Printing Software

PowerPrint v4.0 (\$99) is a software package that is similar to the Amiga's TurboPrint package, basically what it allows the Mac to print to serial or parallel port compatible printers. See Infowave's web site: [www.infowave.net](http://www.infowave.net).

Note that the latest version (4.5) requires that you use the Mac to PC cable converter, this will not work on the Amiga, instead try and get v4.0.

Another useful utility from Infowave is StyleScript (£70). This program allows you to use Postscript with Postscript incompatible inkjet printers - it basically converts the PS language into a bitmap image before it goes to the printer.

#### Background Printing

This spools the print job to the hard disk and then proceeds to send the data to the printer as a background task, allowing you to do other things. The program that usually handles this is Print

Monitor (an Apple program), which is located in the Extensions folder.

To enable background printing, either call up the Chooser in the Apple menu, and click the On button under the title Background Printing. Or, when using Laserwriter 8.x, go to the "Print" window in any application, and select Background Printing, in the pop-up menu and activate it from there.

### PPDs

These are Postscript Printer Description files, and are used in conjunction with Postscript Level 2 printers and the Laserwriter 8 printer driver. PPDs contain device specific information, so that you can setup certain options in any application, such as paper and resolution. Other types of printers do not require PPDs, just the printer driver in the Chooser window.

### Desktop Printer Icons

These are introduced in System 7.6 upwards, they allow easier access to printer selection and printing of documents via drag and drop.

### PostScript

Is an industry standard printer language. It describes an entire document (when sent to the printer) as a list of instructions, which explains how the page(s) should be printed. This means it is "resolution independant", as in it can be scaled and output in any number of different ways and still retain it's EXACT layout without any loss what's so ever.

### Printer Fonts

This term actually refers to the Postscript fonts (stored on your hard disk). These are downloaded to the printer, at the same time you send your document. You can always tell if a file is a Postscript font, by the icon, and by it's "kind" in the Get Info window.

## 1.15 printerdrivers

### PRINTER DRIVER WEB PAGES

This is a complete list of manufacturers, and where you can download their printer drivers.

Apple	<a href="http://www.apple.com/laserwriter/">http://www.apple.com/laserwriter/</a>
Atari	<a href="http://www.lapd.demon.co.uk/">http://www.lapd.demon.co.uk/</a>
Brother	<a href="http://www.brother.com/eu-printer/dlupdate.html">http://www.brother.com/eu-printer/dlupdate.html</a>
Canon	<a href="http://www.europe.canon.com/drivers/printers/">http://www.europe.canon.com/drivers/printers/</a>
Citizen America	<a href="http://www.citizen-america.com/drivers/index.htm">http://www.citizen-america.com/drivers/index.htm</a>
C.Itoh	<a href="ftp://www.citoh.com/">ftp://www.citoh.com/</a>
Dataproducs	<a href="http://www.dpc.com/market/tec_drvr.html">http://www.dpc.com/market/tec_drvr.html</a>
Digital digital/	<a href="http://www.pc.digital.com/~ftp/options/printer/">http://www.pc.digital.com/~ftp/options/printer/</a>



Epson Printer	<a href="http://www.epson.co.uk/support/download/">http://www.epson.co.uk/support/download/</a>
Fargo	<a href="http://www.fargo.com/support/driver_list.html">http://www.fargo.com/support/driver_list.html</a>
GCC Technologies	<a href="http://www.gcctech.com/support/swol.html">http://www.gcctech.com/support/swol.html</a>
Hewlett Packard	<a href="http://www.hp.com/cposupport/nonjsnav/prhome.html">http://www.hp.com/cposupport/nonjsnav/prhome.html</a> Printer driver name: HPDJ 3.1 - By Marius Lichte ( ↔ Germany)
IBM	<a href="http://www.printers.ibm.com/driver.html">http://www.printers.ibm.com/driver.html</a>
Kyocera	<a href="http://www.kyocera.co.uk/htdocs/drivers.htm">http://www.kyocera.co.uk/htdocs/drivers.htm</a>
LaserMaster	<a href="http://www.lasermaster.com/tech/arch.html">http://www.lasermaster.com/tech/arch.html</a>
Lexmark	<a href="http://drivers.lexmark.com/drivers.nsf">http://drivers.lexmark.com/drivers.nsf</a>
Microsoft Printer	<a href="http://www.microsoft.com/uk/">http://www.microsoft.com/uk/</a>
NEC Printer	<a href="http://cssweb.nectech.com/drivers/printers.htm">http://cssweb.nectech.com/drivers/printers.htm</a>
Okidata	<a href="http://www.okidata.com/drivers/drv-main.html">http://www.okidata.com/drivers/drv-main.html</a>
Panasonic	<a href="http://www.panasonic.com/host/support/drivetop.htm">http://www.panasonic.com/host/support/drivetop.htm</a>
Olivetti html	<a href="http://www.olivettilexikon.com/uk/software/index.">http://www.olivettilexikon.com/uk/software/index. ↔</a>
Olympus Printer download.html	<a href="http://www.olympusamerica.com/printers/downloads/">http://www.olympusamerica.com/printers/downloads/ ↔</a>
QMS	<a href="http://www.qms.com/www/QMS_Soft.html">http://www.qms.com/www/QMS_Soft.html</a>
Star Micronics	<a href="http://www.starmicronics.com/">http://www.starmicronics.com/</a>
Radio Shack	<a href="http://support.tandy.com/soft.htm">http://support.tandy.com/soft.htm</a>
Tektronics	<a href="http://www.tek.com/Color_Printers/">http://www.tek.com/Color_Printers/</a>
Texas Instruments	<a href="http://www.ti.com/printer/docs/p20a.htm">http://www.ti.com/printer/docs/p20a.htm</a>
Toshiba	<a href="http://www.toshiba.com/">http://www.toshiba.com/</a>
Xerox	<a href="http://www.xerox.com:80/soho/drivers.html">http://www.xerox.com:80/soho/drivers.html</a>

## 1.16 network

### NETWORKING PROBLEMS

#### CONNECTING TO A MAC NETWORK

To find out more information on Open Transport, Classic Networking and where to  
download network ↔

related software updates, click  
here

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Can I use Amiga Ethernet with Mac emulation?

Yes, as long as you don't want to use any TCP/IP based programs simultaneously, ←  
because the hardware  
doesn't appear to be able to discern between the Mac & the Amiga (they both want ←  
the same hardware  
address for the same sort of packets). AppleTalk/Ethertalk, AMIGA TCP/IP and the ←  
Mac based Novell  
(nds) client will all happily coexist. The Novell client for the Mac does require ←  
ShapeShifter 3.9  
to work fully (its fairly sensitive to the internal Ethernet calls).

You also have to manually choose the right protocol in the MacIPX control panel ←  
(it sometimes gets  
stuck - just delete the MacIPX prefs and start again).  
by John Blyth (Australia)

What software do I need for networking?

You have two choices, Classic Networking (CN) or Open Transport (OT). Both require ←  
the standard  
MacOS Ethernet driver extensions, and Open Transport or Classic Networking control ←  
panels;

CLASSIC NETWORKING...

Control Panels: MacPPP+ConfigPPP or FreePPP, MacTCP, Users & Groups, and Sharing ←  
Setup.  
Extensions: Ethertalk Phase 2, Network Extension, File Sharing Extension and ←  
AppleShare.

OPEN TRANSPORT...

Control Panels: PPP or FreePPP, Modem, TCP/IP, Users & Groups, and Sharing Setup.  
Open Transport v1.1 Extensions: Open Tpt AppleTalk Library, Open Tpt Internet ←  
Library, Open  
Transport Library, OpenTptAppleTalkLib, OpenTptInternetLib, OpenTransportLib.  
Other Extensions: Ethertalk Phase 2, Network Extension, AppleShare, and File ←  
Sharing Extension,  
and Printer Share (if you plan to share the printer connected to your Amiga).  
\*Do not use these extensions: Ethernet CS, Ethernet NuBUS or Ethernet LC. Also, ←  
AppleShare versions  
3.64 and 3.65 in System 7.6x, it will cause ShapeShifter (any version) to freeze, ←  
use v3.62 from  
System 7.53-7.55.  
\*by John Blyth (Australia)

How do I connect to a network, via Classic Networking?

Make sure that you have installed the CN control panels, the Ethernet driver, and ←  
network server  
extensions (if you need it), and that your Ethernet card is working.

Now go and open the Network control panel, you should see the Ethernet/Ethertalk icon, select it it should tell you that the previous network connection is now unavailable, press OK (CN allows you to use only one type of network at any one time).

Now open the MacTCP control panel, and select the protocol you wish to use, Ethernet in this case (note that some internet settings are located here as well), click on the more button to fine tune your settings. You are now connected to the Ethernet network.

If you get a message saying that you cannot connect to an Ethernet network, then check;

- 1) The Ethernet card is functioning properly.
- 2) ShapeShifter/Fusion, has the correct Ethernet driver is selected.
- 3) That you have all the appropriate extensions in your System Folder (see above).
- 4) The File Sharing control panel, it should have an Owner Name, and a Computer Name, if they don't, then filled them in (any name you like) - networking will not work without these user names.

How do I connect to a network, via Open Transport?

Open the AppleTalk control panel, and select Ethernet from the pop-up menu (this will display all available communication ports open to you), now go into the Options screen and make any additional settings. Also check that the TCP/IP control panel's settings for Ethernet are also correct. You may need to get some information from your Network Administrator, such as passwords and the current protocol that is in use.

Check the File Sharing control panel has an Owner Name, and a Computer Name, if they don't, then fill them in with your name and the computer's name (it doesn't need to be anything specific).

All you need to do now is to select a network service (Server or Printer etc) from the Chooser.

Should I use Open Transport or Classic Networking software?

This depends on the emulator you're using. If you're using ShapeShifter, then Classic Networking will work - Open Transport just refuses to play along. However, if you're using Fusion, then you should be able to use both OT and CN. Again CN is much more compatible in emulation than OT.

How do I connect to a single Mac?

This is done via the File Sharing control panel.

Check that AppleTalk is enabled (in the Chooser). Open the control panel called Network, you have two choices, LocalTalk or Ethertalk, select Ethertalk (it should display the AppleTalk and Ethertalk versions, also in this window).

Your next port of call is the Sharing Setup control panel. Enter the owner of the Mac and give it an unique name. This name will later be shown in the list of available Mac servers in the Chooser. All you have to do now is to click on the Start button in File Sharing, then restart the Mac.

Note: whenever you disable or re-enable AppleTalk, you have to restart the Mac.

In the Users & Groups Control Panel, give the guest account full access. Now enter the Chooser again and select the AppleShare Icon. In the right window there should be the other Mac Servers. Select the one you want to connect to and change the log-in from "registered user" to "guest". Now you have a list of all the volumes on this server that you can connect to. Now choose the volume you want to mount. The selected hard disk should immediately show up on the desktop.

If all has gone to plan, you should be able to copy files to and from the "shared" volume or load programs directly from the other Mac. If you want to disconnect from the shared hard disk, all you need to do is to drag the volume's icon into the trashcan.

By Marius Lichte (Germany)

What is the best way to get it up and running, without much trouble?

- 1) \*Use the latest version of your emulation program, eg. ShapeShifter 3.10 or Fusion 3.1.
  - 2) \*Make sure your Ethernet setup is connected, and terminated.
  - 3) You should be able to install OT on top of your present System, provided you do it via the installer, it will not work by simply copying the extensions over, since the System file needs modifying as well. CN just requires the appropriate control panels and Ethernet drivers. If you still have problems, especially with System 7.53/7.55, reinstall the System software again except this time install both OT and CN - don't forget that you need the Network Software Selector program, to switch between Open Transport or Classic Networking (which is also installed with OT).
  - 4) \*Don't use the AppleShare extension that comes with System 7.61 - if you propose to use your emulated Mac on a network under ShapeShifter up to 3.9, it'll freeze your Amiga when you bootup. To stop it from loading, press the SHIFT key right at the beginning of the startup sequence to disable all extensions. Take out MacOS7.61's AppleShare and put in an older version, eg. from System 7.55, and reboot.
- \*by John Blyth (Australia)

#### CONNECTING TO A PC NETWORK

How do I connect my Mac emulator to a Windows95/98 PC?

The problem here is to make both computers speak the same language. Macs use AppleTalk, while Windows uses SMB (Server Message Block). There are two ways to get these computers to talk :

- 1) Make Windows speak AppleTalk, by installing PC MacLAN on the PC. PC MacLAN is a commercial software available from Miramar (info at: [www.brainworks.de](http://www.brainworks.de)). There is also a time limited demo version you can download (it works with SS).
  - 2) Make the Macintosh speak SMB, by installing Dave on the Mac. Dave is a commercial software available from Thursby, (info at: [www.thursby.com](http://www.thursby.com) or [www.prismaexpress.de](http://www.prismaexpress.de)). Unfortunately Dave doesn't work very well in SS, it crashes a lot.
- By Marius Lichte (Germany)

How do I connect my Mac emulator to a Windows NT4 Server?

This only works with the "NT4 Server" version. The Volume to be exported should be in NTFS Format because of the long filenames. Windows NT has Macintosh support already built-in. This can be installed under Network/Properties. Click Services and then ADD, then choose Services for Macintosh in the upcoming list view. After the installation is complete, the NT Server shows up in Chooser/AppleTalk on the Mac. NT Volumes can be exported via the FileManager (MacFile/Create new volume) They are accessible in the same manner as MacVolumes.

By Marius Lichte (Germany)

How do I connect my Mac emulator to a Novell Netware Server?

I won't explain the installation of the Server here. This is recommended for advanced users as the installation is quite difficult. You'll want to connect to an existing Netware Server. Ask your Netware administrator if the Mac Namespace is enabled on the Server. First you need the Netware Installation CD. Insert it while ShapeShifter is running. Open the CD Icon and start the MacOS Clients Installer. Select Netware Client for MacOS. After the Installation has completed restart the Mac. Check the status of MacIPX is running on Ethernet. The title bar should have a new symbol (the tree). Select configure to find your favourite Netware Server. Ask your Netware administrator about the entries in the context field. You can mount the Netware volumes on the Mac with the Netware Volume Mounter in the folder Netware Client Utilities. With the Netware Directory Browser you can search the whole NDS tree for volumes and printers to mount.

I have used this and it works very well, even under System 7.1.

By Marius Lichte (Germany)

How do I connect my Mac emulator to a Linux box?

I can't tell you anything about installation or usage, but only the required software for Linux. The software is called Macintosh, It is part of many Linux distributions. Macintosh is , as all Linux software, free to use.  
By Marius Lichte (Germany)

## 1.17 networkinfo

### NETWORKING INFORMATION

#### About Ethernet

There are two types of Ethernet (usually supplied on separate cards), they are; 10 Base-T (10 megabits per second) standard Ethernet, and 100Base (100 megabits per second) fast Ethernet .  
Ethernet is just a type of hardware networking, it doesn't effect standard network protocols. Also, you only require the MacOS installed network extensions, and the Amiga's own drivers for the card, then all you have to do is set it up in Fusion or ShapeShifter.

#### About Classic Networking

This can be installed on all Systems up to MacOS 7.55, it is still possible to use it in 7.6 to 8.1 (Open Transport (OT) is standard in these OSs), and you need the Network Software Selector program, to switch between one or the other, you cannot use both OT & Classic Networking (CN) at the same time.  
It consists of two control panels and Ethernet system extensions (Apple drivers) . Classic Networking is biased towards AppleTalk as it's main communications protocol, this meant that all other protocols were translated into AppleTalk, before being sent over the network.

#### About Open Transport

Requirements: a 68030 processor or higher; compatible with Systems 7.1, 7.11, 7.12, 7.53 and above; and a minimum of 5mb of total RAM.  
Open Transport is much faster than Classic Networking, and is not biased towards any one protocol, instead, it supports them all. OT uses two control panels, AppleTalk instead of Network, and TCP/IP instead of MacTCP, plus all the OT library files (you may have less libraries with later versions of OT). Note that you cannot use OT and CN control panels at the same time, the System will remove both of the CN control panels after the next restart, permanently! Also note that you can use FreePPP with OT, instead of Open Transport PPP, but not both at the same time - do not mingle the two standards of networking, it'll cause a lot of crashing.

The latest version that can be downloaded from the internet is v1.12 (this is only an updater), you need an installed version of Open Transport 1.1 or 1.11, to begin with. It can be obtained from, [www.tucows.com](http://www.tucows.com) or [www.info.apple.com](http://www.info.apple.com). and can be installed from these System CDs: System 7.53 CD (OT v1.1), System 7.6 CD (OT v1.2) and System 8.0/8.1 CD (OT v1.3).

#### The Chooser

Is the only application that allows access to any networked printers and Server volumes. You can also turn Background Printing and AppleTalk on or off (Amigas do not support AppleTalk, because it is a hardware feature of real Macs).

The left hand side of the Chooser window lists all available Printer and Network drivers, just click on the AppleShare driver icon to activate it - now go to the right hand side of the window. This panel should list all network Servers and any "shared" hard disks/volumes in your particular zone. To select a Server volume or shared hard disk, double click on the Server's name (the one that owns the volume you want to mount on your desktop), it will show another window with a list (assuming it is not password protected) of all the Server or Mac's partitions and hard disks. Highlight the ones you want (Shift+click) and press OK. They will now appear on your desktop, and should be fully accessible.

If your network has more than one Zone, eg. different departments with their own network, then these will appear underneath the printer and network driver panel. To select a Zone, simply highlight the Zone name, and then go the right hand side again to make your printer or server selections.

#### File Sharing

This term actually describes an individual user enabling his Mac's hard disk to be accessed over a network, by all other networked users. This is NOT a File Server, but more of a temporary way to gain access to a specific hard drive.

Also note, that when you share a disk (any local volume on that Mac), you can set certain privileges that other users have to use, eg. read-only, access to a specific folder or read & write to any part of the disk. This is all accomplished via th File Sharing control panel.

## 1.18 macos

### GENERAL MACINTOSH SYSTEM PROBLEMS

Where can I download free Macintosh System software?

You can download a set of disk images from Apple's web site at: [www.apple.com/products/](http://www.apple.com/products/).

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Here's some directions for getting to the download page... while in the Products page, click on

Software Downloads, then click on Macintosh which is for 68k Macintoshes.

Once the this page is loaded, click on System, then click on Older System and finally click on

System 7.0x to display the list of complete Mac Systems available.

If you require MacOS 7.0, you need to download 8 floppy disk images, these are called;

SSW 7.0-1of8.sea up to SSW 7.0-8of8.sea.

If you require MacOS 7.01, you need to download 6 floppy disk images, these are called;

SSW 7.0.1-1of6.sea up to SSW 7.0.1-6of6.sea.

If you require updaters for later MacOSes then you can download them from the main Software

Download page (see above for directions).

SYSTEM 7.53 IS NOW AVAILABLE TO DOWNLOAD!! Go to this web address (search engine):

<http://asu.info.apple.com/> - and type "System 7.5" in the search field, this should give you

the full set of System 7.5 related downloadable files, including most of the MacOS 7.5 updaters.

Note that, System 7.53 consists of NINETEEN high density disk images. Also, make sure you select the

correct country (in the Language pop-up menu in the Search page), before you start to download any

files, otherwise you'll be using a System catered for the USA (the default setting).

How come there isn't a manual for MacOS 7.5 to 8.x?

A manual came with MacOS 7.0, all other OSs are in fact updates of this - even MacOS8 could be

considered an update of System 7. After all, OS8 shares a lot of its appearance and features with

System 7, so therefore it doesn't really need a manual - either way, this is what Apple have done, to

the annoyance of it's users. However there is on-line help, in the form of an Apple Guide, look under

the ? for "Macintosh Guide" in OS7.5x, and under the Help menu in OS8.x.

There are other sources, such as:

-Books:

\*The Macintosh Bible - 6th edition (Peachit Press)

\*Guide to Macintosh System 7.5 (Hayden)

\*MacWorld OS7.6 Bible (IDG Books), or

\*The Mac OS8 Bible (IDG Books)

You can buy these on-line at: Computer Manuals, web site: [www.compman.co.uk/as.cgi/768](http://www.compman.co.uk/as.cgi/768).

-Download PDF manuals/literature files:

\*FREE Guide.Macintosh (freeware, from any web site) - contains a lot of useful info about MacOS.

\*Extension Overload (shareware), has some info on MacOS, but not much.

\*InformINIT (shareware), has quite a bit of info on MacOS.

\*Apple's Tech Library web site, it has hundreds of freely downloadable documentation, in PDF format.

The web site is at: [www.info.apple.com/support/sitemap.html](http://www.info.apple.com/support/sitemap.html) - then select "Apple Manuals" from



the pop-up menu, this'll take you to a search web page, where you can browse or search for a particular document, by part code, title or content. Try these PDFs, they're worth a read!

-Macintosh Reference (Part No: n/a, Pages: 165, Filesize: 1s171K).

-Mac OS 8 (Part No: U-97609-001A, Pages: 52, Filesize: 748K).

-Mac OS 8 Software Update (Part No: 033-0609-A, Pages: 47, Filesize: 910K).

-Macintosh System 7.5 (Update Manual) (Part No: 96608-001A, Pages: 126, Filesize : 1084K).

-PowerMac Emergency Handbook (Part No: n/a).

-Third party web pages:

\*[www.mactimes.com/lowend/](http://www.mactimes.com/lowend/)

\*[www.webaccess.net/~mrpedri/index.html](http://www.webaccess.net/~mrpedri/index.html) - both have info on 68k Macs.

How much memory does System 7.x and System 8.x take up?

System 7.0 to 7.55 will take up between 4 and 5 megabytes of RAM - this is for an average to heavy use of system extensions, of course, it could be slightly more, depending on your System setup.

System 8 and 8.1, will take up about 200-300% more memory than MacOS 7.x. A minimum System, that is using only 10-20 or so extensions, will take up approximately 6-8mb, while a medium to average amount of system extensions (including Control Panels) will be anywhere between 10 and 15 mb of RAM!

So, if you're thinking of installing MacOS 8 at some point, it's best to upgrade your RAM as well -

I think 16mb, allocated to Mac emulation, under System 8, is the bare minimum. 32 mb or more (total memory in your Amiga) is best for heavy Mac use.

Will Mac emulation suffer from Memory Fragmentation, as real Macs do?

Yes and no. Although there will be a small amount of fragmentation (lost memory or "memory leakage"), you really shouldn't be that concerned, as the Amiga handles fragmentation very well. This means that you can quit any program, in any sequence, at will, and you'll still have 99% of your allocated memory available. Note that, in emulation, the amount of lost memory is measured in a few kilobytes, rather than megabytes on real Macs!

Is there a utility that can display exactly what is currently in memory, for the Mac?

Yes there is. What you need, is a utility called Memory Mapper from Street Logic Software.

This neat program, displays all programs and the System currently in use, by name and by a coloured graph, try it!

Is it possible to "de-activate" a System Folder, manually?

Yes, just place the Finder program in the Trashcan (you won't be able to bin it). Unfortunately you won't be able to boot-up from that partition anymore, so you'd better make sure you have a bootable disk to hand, just in case it crashes.

This is the manual version of doing a "clean install" (a feature in System 7.6 to 8.1), this can be useful, if you want to keep all your previous 3rd party extensions while a new System is installed!

AppleTalk can cause problems.

This is a hardware feature in real Macs, and may cause delays a first, especially during startup.

Best to switch off AppleTalk as soon as you bootup from a newly installed System.

You can do this by calling up the Chooser (in the Apple icon menu) and click on the Off button, under AppleTalk.

Which MacOSes work with ShapeShifter & Fusion?

You have a few choices, but all of them start from System 7 upwards.

-System 7.0

-System 7.01 to update it, use System 7 Tuner and Sound Manager v3.

-System 7.1

-System 7.1P, 7.1P1, 7.1P2, 7.1P3, 7.1P5, 7.1P6 (for Performas)

-System 7.11 & 7.11(Pro)

-System 7.12 (for Power Macs only)

-System 7.5, 7.51, 7.52

-System 7.53, only works with ShapeShifter v3.5 and above.

-System 7.55, works very well with all 68k processors.

-System 7.6/7.61, this can be troublesome, otherwise it's alright.

-System 8.0/8.1, will only work with Fusion 3.1 and ShapeShifter 3.10.

-System 8.5 and above, will only work with PPC Macs.

System 7.0 & 7.01, plus all updates; 7.11, 7.51, 7.52, 7.53, 7.55, 7.61 and 8.1 can be downloaded from

Apple's web site; [www.apple.com](http://www.apple.com) (see the next question for the exact path). Be sure to download

the System upgrade for your country. See the

ROMs

section for the entire list of 68k Macintoshes, and supported System versions.

How should I go about installing a new Mac System over my old one?

Installing a MacOS7.6 or 8.x

I recommend you do a "clean installation" of any radically new MacOS, eg. from Systems 7.0 to 7.5,

or 7.6 to 8.0. However, you do not need to perform a clean installation for System patches,

ie. System 7.5 to 7.55, all it does is upgrade the System file, Finder and some extensions.

If you're installing System 7.6 or 8.x, the installer will do all the hard work for you, but only if you select "Custom Install" or "Install new System Folder" (in Options). It simply deactivates the old System, and installs a new System8/7.6 Folder next to it.

Installing MacOS7 to 7.55 next to an old or damaged System Folder  
Do not install directly into an old System folder, I strongly recommend you install it as a completely new System Folder, so that all your 3rd party extensions and control panels do not load up the first time round (some of them may be incompatible with the new OS).

Before you perform installation, you'll have to put the old System Folder into the Trashcan - but do not empty it. Then install the new MacOS onto the same hard disk as the old one, and 'bingo!', you now have a new, and upgraded System.

How can I install a system folder on a newly setup ShapeShifter/Fusion hard disk?

If you've bought a copy of System 7.53 or 7.6, then you can boot off the CD and install the System that way. Note: Only Fusion can use System 8.x.

Or you could ask a friend for a temporary installation from his/her disk(s), until you can get hold of your own copy of MacOS.

You could get a version of System 7.01 off Apple's web site, which is free. You need a Mac disk image converter program, so that you can create a set of System installation disks, also found on their web site. However, transferring this to the Mac side will be next to impossible without a bootable floppy disk (high density disks only) or a minimal system on a "hard disk file", which you can also download off the internet, try Aminet or a web site dedicated to Mac emulation for the Amiga.

Or you could use a commercial program that's on CD with a bootable system on it, ie. only Norton Utilities 3.5, has MacOS 7.61 on it. Alternatively you could get a friend who has a real Macintosh or an emulated one, to convert the downloaded files for you, as a set of System disks.

If you don't have any System disks (floppy or CD version), I strongly recommend you to buy a copy, these days it's on CD-ROM by default, but you can order a set of MacOS floppy disks. You need to buy the CD version to be able to order the diskettes. The CD has a bootable floppy disk (PowerPC and/or 680x0 versions) in the box anyway.

Do I need an FPU for all Macintosh programs?

About 70% of 68k Macs have an FPU built-in. Most Mac software will use the FPU in some way, and may cause some programs to crash a lot.

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If your Amiga doesn't have an FPU, you can download a freeware control panel ←  
called SoftwareFPU  
from the internet, this will emulate an FPU for you.

How come my Mac's System is taking up most of the memory now?

This affects older versions of 68k Amigas (68000/020EC) & all System 7 revisions. ←  
These processors  
can only access 24bit memory or 8mb of RAM. In order for it to automatically ←  
detect memory above 8mb,  
you need to open the Memory control panel and switch 32bit Addressing to on, then  
restart the Mac, that's it.

All Macintosh Systems work with all Macs, right?

Wrong. All badges of Macintoshes are different - ROM versions are different, all ←  
Mac motherboards are  
different, and most Mac 68k processors are different. In order for the System to ←  
work on your Mac,  
you need to install a custom "System for this Macintosh", for every version of the ←  
MacOS,  
from System 7.0-8.1.

Is it possible to use virtual memory or RamDoublor in Mac emulation?

Not in any version of ShapeShifter. But you can use the System's own virtual ←  
memory feature  
in Fusion, however I'm not sure whether RamDoublor works on either of those ←  
emulators, any comments?  
RAM costs less these days, so i suggest you go out and buy more memory, ie. 16mb ←  
will be quite cosy  
on the Mac with Workbench running, this is assuming you're not going to run any ←  
large programs. If you  
are going to use Mac emulation for serious work, then I recommend you have at ←  
least 32mb of RAM, the  
more the merrier - remember, Mac programs are memory hungry beasts.

## 1.19 misc

### MISCELLANEOUS PROBLEMS & QUERIES

How do I allocate more memory to a program?

Highlight the program's icon, and press Amiga+i, this will show you the Get Info ←  
window. At the  
bottom of this window are the memory allocation boxes. Only amend the Preferred ←  
Memory field, it  
and your figure should be bigger than the Suggested Memory number (values ←  
represent Kilobytes).  
Should you need to alter a program's memory allocation parameters which is ←  
located on a CD, such as

Norton's Speed Disk (a disk optimiser), then what you need is AppSizer. It can be downloaded from the any Mac web shareware site. It will allow you to edit the program's memory allocation.

What if I don't have a high density floppy drive, can I use disk images?

Yes you can use images, although you may find this to be inconvenient and only a short term solution, so I suggest you save up for an external high density floppy drive for your Amiga. There are two popular Macintosh programs available at the moment, one is called Disk Copy v6.1 from Apple, and the other is Shrinkwrap v3.x from Aladdin Systems - both are available from the internet. Try these sites: [www.shareware.com](http://www.shareware.com) (Shrinkwrap) & [www.apple.com/support/](http://www.apple.com/support/) (Disk Copy). These two programs can create, duplicate, lock/unlock and even mount any disk image onto the Desktop, this fools the Finder into believing they are real disks! They can also create disk images of CD-ROM disks, and just about any other disk type for that matter, just make sure you have enough hard disk space.

Where can I get Adobe Type Manager (ATM)?

You can get ATM with Adobe Acrobat Reader v1 to v3.x. The latest version is v4.0. Certain Adobe software, such as Illustrator v6/v7, and Pagemaker v5 to v6 will have a copy of ATM included on the CD-ROM or floppy disks. Or simply buy ATM Deluxe. Note: ATM is a control panel. The Acrobat Reader installer usually installs it in it's Fonts folder. Simply place it in the Control Panels folder to make it available for System wide use.

How do I know which Mac programs are 68k compatible?

When you are about to buy any Mac software, make absolutely sure that it still supports 68k Macs. Some of the top packages are now switching over to PowerPC code only, such as Photoshop 5, Norton Utilities v4, Freehand 8, Illustrator 8 and System 8.5. I suggest you ring up the retailer or look in the software house's web site for confirmation of 68k compatibility.

As for knowing which programs are PowerPC and which are 68k compatible, that's whole new ball game!

To find out if it is a PPC application, is simple, just launch it. If it is PowerPC only, it will immediately display an error message, usually, error code -192.

Some Mac software is often (but not always) handed to the public as a 'Fat' application - this means it has PowerPC and 68k code in the same file, so that it'll work on all Macs.

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As for seeing what type of code the program uses, externally, the only way to visually tell, is either via it's filename, eg. "Quark Xpress 4.0 PPC", or via the About window/loading screen, these may display information as to whether it is 100% 68k or Fat coded.

I'm having problems with Norton Utilities 3.2 and System 7.6/8.x, is it incompatible?

Version 3.2 on it's own is not fully compatible with System 7.6x, you need to update it. Use the v3.24 updater, or use Norton v3.5, there is an updater on Symantec's web site: [www.symantec.com](http://www.symantec.com).

Norton Utilities 3.5 will need to be updated to version 3.54, in order to be System 8 compliant. Search for "updater" and this will give you a list of all updaters for all versions.

Where's the Norton Utilities 3.5 manual?

Unfortunately Norton Utilities 3.5 does not have a physical manual, however you can download a PDF (Acrobat's Portable Document File) version of Norton Utilities 3.2 manual, from: [ftp://ftp.symantec.com/public/english\\_us\\_canada/products/norton\\_utilities/ver3.5\\_mac/updates/num-manual.pdf.hqx](ftp://ftp.symantec.com/public/english_us_canada/products/norton_utilities/ver3.5_mac/updates/num-manual.pdf.hqx) - this is 6mb, and covers everything you'll need to know for v3.5.

Is it possible make floppy based install disks to work on a hard disk?

Yes, just make sure that you drag the entire disk onto the hard disk, so that all invisible files are copied also. Note that, some install disks only work from floppy disks, but it is always a good idea to make a backup copy of the disk, just in case it goes bad. This especially goes for anyone who has their only copy of the System software on floppies - make sure you have a "master" backup copy of the whole System disk set, you'll be glad you did, believe me!

Can I create/burn CDs with Mac emulation, and what do I need?

So long as you have a SCSI2 or better controller in your Amiga, and of course the equipment to make them; a CDR drive and a spare 650mb SCSI hard disk partition (remember, this includes the directory and desktop files). IDE/EIDE is not fast enough, and will corrupt data, as it is burnt onto the CD.

The hard disk partition with the data you wish to burn onto a CD, can be anything up to the capacity of the CD you're burning, which at the moment is 650 megabytes.

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You may also require a fast 68k processor, depending on the software's requirements, say something like an 030 or better would be a safe bet!

As for the software, I suggest a program called Toast CD-ROM Pro v3.54 (probably updated since) from Adaptec, see their web site: [www.adaptec.com](http://www.adaptec.com).

How can I convert PC truetype fonts to Mac truetype fonts?

Use a shareware program called TTconverter, this utility will convert PC TTF fonts to Mac, and Mac TrueType fonts to PC format. It can be downloaded from any shareware internet site.

## 1.20 maintenance

### MAINTENANCE & PROTECTION GUIDE

How can I optimise or defragment my Mac hard disk?

The Norton Utilities' Speed Disk is a good one to use, and is very safe. You can defragment individual files, as well as fully optimise any Macintosh disk. However Norton 3.5 will not optimise HFS+ hard disks, see below for other possibilities, notably Disk Express Pro.

Or you could do the simple trick of, copying everything off the HD, onto another HD or removable disk, rebuild it's desktop file (Amiga+Alt during startup or via Norton Disk Doctor). Then copy the files back over to the HD again, all files will be optimised and defragmented.

TIP: ALWAYS backup the hard disk, and check the disk's integrity, before optimising.

Here are some other commercial programs that available;

Spacemaker: HFS to HFS+ while optimising the disk, from Total Recall Software.

PlusMaximiser: Advanced HFS+ formatting software, from Alsoft.

PlusMaker: HFS to HFS+ conversion, from Alsoft.

PlusOptimiser: HFS/HFS+ optimiser, from Alsoft ([www.alsoft.com](http://www.alsoft.com)).

Disk Express Pro: HFS+ optimiser with lots of features.

TechTool Pro 2: It has HFS/HFS+ optimising only, however it cannot defrag individual files.

What else can I do to protect my disk and files?

To prevent future disasters, I recommend that you take these actions:

#### BACKUPS

Regular backups - I do mine every 2 weeks, of course it all depends on how often you use

your Macintosh, you could do one; every day, twice a week, or even once a month. Don't forget to

check the integrity of the backup, by doing a random restore of some files. This'll verify that the

backup is not faulty.

I use Retrospect Express (Dantz), a slightly different version of it's big brother Retrospect. Be careful with Retrospect Express, it is very picky about SCSI termination, if it is not set correctly, the program may eject a disk from the drive and will completely freeze up the Amiga. You'll have to switch off the computer for 10 seconds and turn it back on again, to clear the error. It may have damaged the System file and/or Finder at the same time, so have a bootable disk to hand.

I wouldn't recommend doing backups from the Amiga side, you'll corrupt all the Mac files - this due to the different filing systems in use. Instead buy one of these Mac backup programs:

Retrospect (Dantz), THE Mac backup program, supports all types of drives, £130.  
Retrospect Express (Dantz), only supports removable hard disks, ie. Zip drives, £30.  
DiskFit Pro/DiskFit Direct (Dantz), little brother to the Retrospect family, freeware.  
Backup Mastery (ClarisMac), is a competitor to Retrospect, £100+.  
Norton Backup v2 + Fastback v3.21 (Symantec), these 2 backup utilities came with Norton Utilities v2 (Backup) and v3.1/v3.2 (Fastback) - they are not supported any more. I'm not sure if they are available to download though.

There are some shareware/freeware utilities on the Mac internet sites, but these are mainly mirroring/synchronising type backups - don't use them, they do not archive files in any way, and are susceptible to directory and file damage - not a very safe way to back up files. Shareware Backup programs: Drag'n Back, Simple Backup, Switch Back and Synchronize.

It is also a good idea to make an archive (use Stuffit for instance) or a backup of the entire System folder, so that you can replace the System file, Finder or any extensions etc, at your convenience, should any of them get damaged and need replacing - this would save you from reinstalling the full System software again.

#### CLEAN-UP YOUR DISKS

Do regular "clear outs" of your hard disk(s), every 3-6 months. Just sort out and bin, all that junk that accumulates on your disk(s).

#### REGULAR CHECK-UPS & DEFRAGMENTING

Regular disk checks, use a utility such as Norton Utilities' Speed Disk, and Disk Doctor. Macintosh hard disks require a lot more attention than Amiga ones. Therefore, I recommend that you make a copy of the Disk Tools floppy disk that came with the System CD or disk set. Even if you don't need a bootable floppy disk (assuming you have a high density drive) create one anyway, you may need it sooner or later, trust me on this!

You need to: Rebuild the desktop every month or so; You need to use Disk Doctor every 2-3 weeks;

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defragment files every couple of weeks; and a full optimisation (de-segment) of the hard disk every

3-6 months, depending on how often you create and bin files.

Here are a few good utility programs that I can recommend:

-Norton Utilities 3.5 (Symantec) probably one of the best on the market today.

Note that

Norton 3.5's programs does not support HFS+, and will damage the directory structure.

-Norton Utilities 4.0 (Symantec) will only work on PPC Macs.

-TechTool Pro 2.11 (Micromat Computer Systems) a good opposite number to Norton.

This version can

repair HFS+ disks, and is 68k compatible - virtually equal to Norton v4!

-DiskWarrior 1.01 (Alsoft) a little known but quite impressive program (from what users say).

-Disk First Aid (Apple) is the official disk repair utility, it will not fix all errors.

WARNING: Currently, Norton Utilities 4.0 does not work on any 68k computers, it is for PowerMacs.

There may be a 680x0 version sometime in 1999, but I wouldn't hold your breath!

#### VIRUS CHECKS

Get a good and updated virus checker program, these are commercial;

-Norton Anitivirus from Symantec

-Antivirus from Dr Soloman

-Virex from Datawatch

-VirusScan from McAfee (shareware).

-Disinfectant 3.71 is freeware, but it was discontinued in July 1998.

Scan all files you download from the internet FIRST, before you launch it.

#### RECOVERING DELETED FILES

Make sure Filesaver (or similar feature) is running at all times, because not only does it track

deleted files, it also makes a copy of the hard disk's directory. Volume Recover uses this info if

the disk's directory is totally trashed. Its either that or reformat your hard disk! The only

alternative to Filesaver is to do regular (daily/weekly) backups, which you should have done anyway.

#### ABOUT FORMATTING HARD DISKS

You're better off with two Mac partitions rather than a large one (preferably with a System Folder

on each one), because if one goes belly up, you have another unaffected hard disk.

You only need to low-level format your Mac hard disk once, ignore what other people say,

ie. "formatting your HD every year is a good thing" - because it is completely wrong. Except for

repartitioning the HD.

Use the MacOS, to format hard disks, via the Erase Disk option in the Finder's Special

menu. Also, if you connect another SCSI hard disk, it should automatically be detected, and will ask

you whether you want to format it.

For removable hard disks, use the Macintosh driver supplied with the drive, or download it from the

manufacturer's web site.

What other disk management/repair programs are there, other than Norton Utilities?

Some commercial programs:

- TechTool Pro 2 (Micromat Computer Systems), is a full Mac diagnostic suite.
- Hard Disk Toolkit (FWB), supports all hard disk models and has loads of operation ↔ features.
- RAID Toolkit (FWB), a good, software based, hard disk RAID solution - supports ↔ HFS+.

There are other software publishers out there, who make hard disk utilities for ↔ the Macintosh, try these company's web pages for more info; MacPeak, Corel and Clarismac. Their web ↔ addresses are in the

Useful Mac Software  
section.

What should I do to protect my Mac's System?

Well, you should make an archive of the entire System Folder, with a common ↔ Macintosh compression program, such as Stuffit, Compact Pro, Disk Doubler or ZipIt (pkZip compatible). ↔

So if anything disastrous should happen to your System, you can at least de-archive the System ↔ and/or Finder files, straight away without worrying about virus infection or a total System ↔ installation.

Second thing to do, is buy a decent anti-virus program, see above.

## 1.21 viruses

MACINTOSH VIRUSES '99

2 or 3 Tunes

This is a HyperCard virus, it plays three German folk tunes when launched. The ↔ virus can cause system crashes.

AIDS

Aids infects application and system files, with no intentional damage. Aids is a ↔ nVIR B strain.

Aladin

Close relative of Frankie (see below).

ANTI

This virus changes program code, therefore causes applications to crash a lot. Can ↔ 't spread under

System 7.x, or System 6 under MultiFinder.

Strains: Anti-A/Anti-Ange, Anti-B, Anti Variant.

Antibody

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Is a HyperCard virus and causes no damage. It checks for the MerryXmas virus, and then deletes it from all stacks.

#### AppleScript Trojans

AppleScript trojan viruses can be extremely destructive, they are to be treated like a program, if you run such a program which is alien to you, you may invoke a hard disk initialisation or it may go through all of your files and scramble it's Type and Creator codes. This type of virus is very easy to create and even easier to be undetected.

AppleScripts should be downloaded only from known trusted sources. It is nigh impossible for an average person to know what any given compiled script will do.

#### AutoStart 9805

The AutoStart virus is a "worm", and it spreads via any HFS disk. Worms are self contained programs that replicate themselves at will. Some are destructive, overwriting certain files with random data.

Symptoms: Perhaps the most noticeable symptom of the worms is that an infected system will lock up and have unexplained delays and disk activity every 6, 10, or 30 minutes.

Certain file types will have been damaged or deleted:

-Autostart 9805 will overwrite files ending with "data", "cod" or "csa" that are over 100 bytes.

-Autostart 9805-E will write over some image files with random data, these are; JPEG, TIFF and EPSF picture files, only if they are bigger than 10,424 bytes.

-Autostart 9805-F will delete files ending with ".data", ".cod", ".csd" that are over 100 bytes, and

".dat" files that are over 2,063,232 bytes (total of the data & resource forks).

It only infects PPC Macs, it is incompatible with 68K Macs.

Strains: Autostart 9805-B, Autostart 9805-C & D (are really Autostart worm killers),

Autostart 9805-E, Autostart 9805-F.

Autostart (invisible) Extensions/apps to look out for: DB or BD, and Desktop Print Spooler

or Desktop Printr Spooler.

#### Blink

Is a non-destructive Hypercard virus, which spreads to other Hypercard stacks, starts on January '99.

#### CDEF

This virus infects the desktop file and any mounted floppy disks. It causes system crashes and strange

behaviour. System 7 can eradicate the virus simply by rebuilding the Desktop file, it is NOT

necessarily immune to this virus.

#### ChinaTalk Trojan

ChinaTalk Trojan disguises itself as a "female MacinTalk sound driver". This is a very destructive

virus, it deletes the directories of all mounted hard drives and floppy disks.

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## CLAP

A nVIR variant that fools Disinfectant to avoid detection (Disinfectant 3.6-3.7 recognizes it).

## CODE 1

Infects applications and system files. If the hard disk's name changes to "Trent Saburo" then you are infected and causes system crashes and some damage.

## CODE 252

Infects the system file and then all applications. If you are infected, it displays a message, "You are infected with a virus. Ha Ha Ha. Now Erasing all disks. Ha Ha Ha (Click to continue)". The virus does NOT erase disks. It can crash System 7 and damage files, but doesn't spread beyond the System file.

## CODE 32767

Once a month, it tries to delete documents. These are the times it will activate itself, for an hour each time; Jan 6th 9am, Feb 9th 10am, Mar 12th 11am, Apr 5th 12pm, May 16th 1 pm, June 18th 2pm, July 5th 3pm, Aug 4th 4pm, Sept 1st 5pm, Oct 20th 6pm, Nov 15th 7pm, Dec 18th 8pm. This is a destructive virus.

## Code 9811

Hides applications, replacing them with garbage files named ie. 'FIDVCXWVGJKJWLOI'. It also produces a desktop covered with electronic worms, and also displays the message "You have been hacked by the Pretorians."

## CPro Trojan

CPro disguises itself as an update to Compact Pro (a compression program). This is a very destructive virus, it formats all hard disks and floppy disks.

## Dukakis

This is a HyperCard virus. It quickly spreads to other Hypercard docs, then displays the message "Dukakis for President" and deletes itself.

## Excel Macro Viruses

Strains: Laroux (quite harmless), Xtras.A.

## Flag

Unrelated to WDEF A and B, but was given the name WDEF-C in some anti-virus software. Not intentionally damaging but when spreading it overwrites any existing WDEF resource of ID:0, an action which might damage some files.

## FontFinder

Supposed to lists fonts used in a document, but actually deletes folders.

## Frankie

This virus infects Macintosh emulators. When activated, it draws a bomb and then displays: ←

"Frankie says: No more piracy!", then causes a crash.

Fuck

Infects application and System files. No intentional damage (nVIR B strain).

HC 9507

This infects HyperCard docs only. Once infected, the virus spreads to other randomly chosen Hypercard ←

docs. It causes the screen to fade in and out, and the word pickle is typed automatically, or a ←  
system freeze/shutdown.

HC 9603

Infects HyperCard docs. The virus does not cause any damage.

Independance Day

It attempts to be destructive, but fortunatelitis not well enough written to be more than a nuisance. ←

INIT 17

Displays message "From the depths of Cyberspace" the first time it triggers.

INIT17 infects the System file immediately and then all applications. It can cause file damage and ←  
system crashes due to accidental damage, especially on 68K Macs.

INIT 1984

Infects system extensions (INITs). It is activated on Friday 13th. It is a very destructive virus. ←

It damages files by changing filenames and it's file Type & Creator to random characters, on any ←  
System 6/7 Mac.

INIT 29

INIT 29 infects System files. It infects data files as well as programs, infected data files do not ←

spread the virus. This devious virus also tells you to unlock locked disks by saying it needs minor ←

repairs, then promptly infects it. The virus does not do intentional damage, though it can cause ←

printing problems, system crashes.

Strains: INIT29 A, INIT29 B.

INIT 9403

Infects the Finder and other applications/files, and then attempts to ERASE the system disk and other ←

mounted hard disks. This is a very destructive virus.

Also known as: SysX.

INIT 9403 Trojan

This trojan horse, disguises itself as an application called RamDoubler. It also appears in some ←

other applications.

INIT M

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The INIT-M virus, is a very destructive virus that spreads applications, system extensions, documents and preference files. It rename files and folders with random text, changes the creation/modification dates, and scrambles the file creator/type information, it is triggered on Friday the 13th. A dead give away is a preference called "FSV Prefs". This virus infects System 7 or above.

#### Laroux

This is an Excel macro virus. It creates a hidden, blank worksheet in infected documents, but it is not destructive.

#### MacMag

Is a HyperCard stack, it disguises itself as a program called New Apple Products and infects the System file, on Hard Disks and floppies. Set to trigger and self-destruct on March 2nd, 1988, so it is rarely found.  
Strains: Aldus, Brandow, Drew, Peace.

#### Macro Viruses

Many of these only infect the application's files - however, some can do other damage. Be extra vigilant with Microsoft products, ie. MS Word and MS Excel - although they can infect any application that uses macros. Also note that it is unlikely that a macro can activated on a different word processor, as the macro language will mostly be different, therefore rendering the macro virus useless. However I'm not sure whether docs created on one platform and transferred to the Mac (PC to Mac for instance), using the same creator program, will infect your Mac?!  
Listed below are all the known Macintosh macro viruses:

ABC	Friendly	Mind	Simple	Gambler
Alex	Fury	Minimal	Since	Imposter
Alien	FutureNot	Mota	Slow	Kompu
Alliance	Fuzzy	MTF	Smiley	Lunch
Ammy	Gable	Muck	Snickers	MDMA
Anak	Gangsterz	Munch	Socks	Minimal
Andry	Gas	MVDK1	Spiral	MTF
Angel	Gest	MVDK2	Spooky	Muck
Angus	Gnomo	NF	Spy	NiceDay
Ant	Goggles	NiceDay	Strezz	Nightshade
AntiConcept	GoldFish	Niki	Stryx	Nottice
Appder	GoldSecret	Nikita	Sunbeam	Nuclear
Archer	Goodnight	Niknat	Surabaya	OPIM
Armadillo	Gsis	NJ-WMDLK1	Switcher	Rapi
Atom	Habir	NJ-WMDLK1A	Switches	RatsAss
Attack	Haggis	NJ-WMDLK1B	Swlabs	Rehenes
Auge	Hark	NJ-WMDLK1C	Swlabs1	Setmd
Baby	Hassle	NJ-WMDLK1D	Swlabs2	Sparkle
BadBoy	Header	NJ-WMDLK1E	Sword	Splash
Balrog	Hellgate	NJ-WMVCK1	Talon	Surabaya
Balu	Helper	NJ-WMVCK2	Tamago	Swlabs

Bandung	Hiac	No-F	Target	Talon
Bertik	Hider	Nomvir	Tear	Tamago
Birthday	Hitman	NOP	Tedious	Twno
Black	Hot	NoPrint	Tele	Wazzu
Blachyrkh	Hunter	Nottice	Temple	Delta
Boom	Hybrid	No_va	Terror	
Box	Hyper	NPad	TestDoc	
Breeder	Illiterate	Nuclear	Theatre	
Buero	Imposter	Nuker	Toten	
Cap	Incarnate	Oblom	Trap	
Cebu	India	Ochy	Trash	
CeeFour	Inexist	OldPad	Twister	
Chaka	Influenza	Olympic	Twno	
Chaos	InsideOut	Ordo	TwoLines	
Cheat	Irish	Orhey	Uka	
Clock	Italian	Outlaw	Underground	
Colors	Ivana	Oval	Unhas	
Concept	jaja	Panjang	Vampire	
Counter	Jerm	Paper	Varmint	
CountTen	Johnny	PayCheck	VHDL	
Crema	JunkFace	Percent	Vicinity	
Cult	Kerrang	Pesan	Viva	
CVCK1	KillDLL	Phantom	Vivat	
Czech	KillDos	Phardera	Wallpaper	
Dance	KillLuf	Pig	Want	
Daniel	Killok	Plushad	Wazza	
Dark	KillProt	Polite	Weather	
Date	Komcon	PWD	Why	
Dave	Kompu	Quick	WiederOeffnen	
Defender	Lazy	Random	WMVH1	
Demon	Lemon	Rapi	Wompat	
Dietzel	Look	Rats	Wompie	
Dishonor	Lord	Razer	Xenixos	
Divina	Louvado	Red	Yaka	
DMV	Lox	Reflex	Zero	
Doggie	Lucy	Rehenes	ZMB	
Dracula	Lunar	Rellik	Zoolog	
Drugs	Lunch	Safwan		
DZT	Macaroni	Sam	Appder	
Easy	MadDog	Satanic	Bismark	
Envader	Magnum	Saver	Blee	
Epidemic	Malaria	Schoo	Calender	
Eraser	Malice	Sshumann	Cartman	
Fake	Mark	Screw	CMD	
Fire	MDMA	Setmd	Concept	
Five	Mental	Shadow	Czech	
FormatC	Mercy	ShareFun	Disco	
FormatS	Mess	ShowOff	DWMVCK1	
Four	Messenger	Shuffle	Frenzy	
Friday	MG	Silly	Gable	

## MBDF

This one infects the system, finder and any applications. It does not damage, but ↔ it may cause regular system and program crashes. It spreads under System 6 and 7. These 3 games ↔ "Tetracycle", "10 Tile Puzzle" and "Obnoxious Tetris" contain this Trojan virus.

Strains: MBDF A, MBDF B.

#### MDEF

These viruses are not malicious in intent, but can cause system crashes and other ←  
unexplained

behaviour. An infected program may have garbled pull-down menus.

Strains: MDEF A, MDEF B, MDEF C, MDEF D.

Also known as: Garfield (MDEF A), Top Cat (MDEF B).

#### MDEF-E & MDEF-F

Are simple and benign viruses. They infect applications and system files, and do ←  
not cause intentional  
file damage.

#### Merry XMas

The Merry Xmas virus infects HyperCard docs and has several strains. This virus ←  
can cause irreparable

damage to Hypercard docs by adding or deleting scripts. Delete infected docs ←  
instead of repairing

them, where ever possible.

#### Mosaic

Is a program that is supposed to display graphics, but actually mangles directory ←  
structures.

This is a very destructive virus.

#### nVIR Family

This virus infects the System file and applications. If MacinTalk is installed in ←  
your System folder,

your computer will occasionally say "Don't Panic" or it may beep unexpectedly. It ←  
can also cause

programs and the System to crash. Some strains are destructive.

Strains: nCAM, nVIR A/B/C, AIDS, Fuck, Hpat, Jude, MEV#, nFlu, nVIR-f, MODM, prod, ←  
zero.

#### NVP & NVP Trojan

When launched, the NVP virus stops these letters "a,e,i,o,u" from being typed. NVP ←  
does not attempt

to spread to other files.

#### Peace

The Peace Virus, is introduced by a HyperCard doc called New Apple Products. This ←  
virus infects and

spreads to system files only. It displays a peace message on March 2, 1988. The ←  
virus then self-

destructs, no damage is done.

#### Scores

This virus spreads rapidly to all applications every time the Mac is restarted. ←  
There is one tell

tale sign that Scores is on your Mac, it changes the Note Pad and Scrapbook files, ←  
to dog-eared icons.

Scores causes system crashes and other abnormal problems, especially when printing ←

Also known as: Eric, NASA.

#### SevenDust



A family of four viruses which spread both through MDEF resources and a System extension created by those resources. Three of these viruses cause no other damage. On the sixth day of the month, one may erase all non-application files on the current volume.  
Strains: SevenDust A, SevenDust B, SevenDust C, SevenDust D, SevenDust E, SevenDust F.  
Also known as: 666, MDEF 9806 A, MDEF 9806 B, MDEF 9806 C, MDEF 9806 D.

**Steroid Trojan**  
Control Panel - claims to improve QuickDraw speed, but actually destroys the directory structure of our hard disk. This is a very destructive virus.

**T4**  
Was in a game called GoMoku (v2/2.1), on the internet. It is a destructive virus, it causes significant damage to the system file, extensions and applications. Resulting in an unbootable Mac, and unusable programs.  
Strains: T4 A, T4 B, T4 C.

**T4-D**  
It deletes files other than the System file from the System Folder, and documents. This is a very destructive virus.

**Tetricycle Trojan**  
This virus hides in a game called Tetricycle. When it is launched, it infects the System, Finder and any applications. It causes System file and program damage.

**Virus Info**  
This trojan virus disguises itself as a program which claims to provide virus info, but when launched, will destroys the directory of your hard drive. This is a very destructive virus.

**WDEF**  
The WDEF virus spreads in System 6 via the Desktop file. It does not damage data files, but it can cause frequent System crashes. System 7 Desktop files are relatively immune to WDEF, only if you rebuild the desktop regularly.  
Strains: WDEF A, WDEF B.

**ZUC**  
ZUC and it's strains, infects applications and displays the annoying symptom of controlling the movement of the cursor on your screen. Once the infection reaches the Finder file, the computer becomes virtually unusable.  
Strains: ZUC A, ZUC B, ZUC C.

## 1.22 errorcodes

### SYSTEM ERROR CODES

See

Error Codes in Detail  
for a more comprehensive description of Codes +1 to +30.

There are a few small applications that you can download from any Mac web, ones that I find very useful are: System Errors, Easy Errors and Apple Error Codes '98. You may also find, to a limited degree, that Extension Overload and InformINIT, also cover some Mac error codes.

#### System Errors (Positive Nos.)

Error Code & Error Name	Error Description
1 dsBusError.....	Bus error.
2 dsAddressErr.....	Address error.
3 dsIllInstErr.....	Illegal instruction error.
4 dsZeroDivErr.....	Zero divide error.
5 dsChkErr.....	Check trap error.
6 dsOvflowErr.....	Overflow trap error.
7 dsPrivErr.....	Privilege violation error.
8 dsTraceErr.....	Trace mode error.
9 dsLineAErr.....	Line 1010 trap error.
10 dsLineFErr.....	Line 1111 trap error.
11 dsMiscErr.....	Miscellaneous hardware exception error (code that does'nt exist).
12 dsCoreErr.....	Unimplemented core routine error.
13 dsIrqErr.....	Uninstalled interrupt error.
14 dsIOCoreErr.....	IO Core Error.
15 dsLoadErr.....	Segment Loader Error.
16 dsFPERR.....	Floating point error.
17 dsNoPackErr.....	Package 0 not present [List Manager].
18 dsNoPk1.....	Package 1 not present [Reserved by Apple].
19 dsNoPk2.....	Package 2 not present [Disk Initialization].
20 dsNoPk3.....	Package 3 not present [Standard File].
21 dsNoPk4.....	Package 4 not present [Floating-Point Arithmetic].
22 dsNoPk5.....	Package 5 not present [Transcendental Functions].
23 dsNoPk6.....	Package 6 not present [International Utilities].
24 dsNoPk7.....	Package 7 not present [Binary/Decimal Conversion].
25 dsMemFullErr.....	Out of memory!
26 dsBadLaunch.....	Can't launch file.
27 dsFSERR.....	File system map has been trashed.
28 dsStknHeap.....	Stack has moved into application heap.
30 dsReinsert.....	Request user to re-insert off-line volume.
31 dsNotThe1.....	Not the disk I wanted (obsolete).
33 negZcbFreeErr.....	ZcbFree has gone negative.
40 dsGreeting.....	Welcome to Macintosh greeting.
41 dsFinderErr.....	Can't load the Finder error.
42 dsBadStartupDisk.....	Unable to mount boot volume (obsolete).
43 dsSystemFileErr.....	Can't find System file to open (obsolete).
51 dsBadSlotInt.....	Unserviceable slot interrupt.
81 dsBadSANEopcode.....	Bad opcode given to SANE Pack4.
83 dsBadPatchHeader.....	SetTrapAddress saw the "come-from" header.
84 menuPrgErr.....	Happens when a menu is purged.

85 dsMBarNFnd.....SysErr - cannot find MBDF.  
 86 dsHMenuFindErr.....SysErr - recursively defined HMenus.  
 87 dsWDEFnFnd.....Could not load WDEF.  
 88 dsCDEFnFnd.....Could not load CDEF.  
 89 dsMDEFnFnd.....Could not load MDEF.  
 90 dsNoFPU.....FPU instruction executed, but machine has no FPU.  
 98 dsNoPatch.....Can't patch for particular Model Mac.  
 99 dsBadPatch.....Can't load patch resource.  
 101 dsParityErr.....Memory parity error.  
 102 dsOldSystem.....System is too old for this ROM.  
 103 ds32BitMode.....Booting in 32-bit on a 24-bit system.  
 104 dsNeedToWriteBootBlocks....Need to write new boot blocks.  
 105 dsNotEnoughRAMToBoot.....Need at least 1.5MB of RAM to boot 7.0.  
 20000 dsShutDownOrRestart.....User choice between ShutDown and Restart.  
 20001 dsSwitchOffOrRestart.....User choice between Switch off or Restart.  
 20002 dsForcedQuit.....Allow the user to ExitToShell, return if Cancel.  
 32767 dsSysErr.....General system error (catch-all used in DSAT).

#### General System Errors

0 noErr.....0 for success.  
 -1 qErr.....Queue element not found during deletion.  
 -2 vTypeErr.....Invalid queue element.  
 -3 corErr.....Core routine number out of range.  
 -4 unimpErr.....Unimplemented core routine.  
 -5 SlpTypeErr.....Invalid queue element.  
 -8 seNoDB.....No debugger installed to handle debugger command.

#### Colour Manager Errors

-9 iTabPurgErr.....From Color2Index/ITabMatch.  
 -10 noColMatch.....N/A.  
 -11 qAllocErr.....From MakeITable.  
 -12 tblAllocErr.....N/A.  
 -13 overRun.....N/A.  
 -14 noRoomErr.....N/A.  
 -15 seOutOfRange.....From SetEntry.  
 -16 seProtErr.....N/A.  
 -17 i2CRangeErr.....N/A.  
 -18 gdBadDev.....N/A.  
 -19 reRangeErr.....N/A.  
 -20 seInvRequest.....N/A.  
 -21 seNoMemErr.....N/A.

#### I/O System Errors

-17 controlErr.....Driver can't respond to Control call.  
 -18 statusErr.....Driver can't respond to Status call.  
 -19 readErr.....Driver can't respond to Read call.  
 -20 writErr.....Driver can't respond to Write call.  
 -21 badUnitErr.....Driver reference number doesn't match unit table.  
 -22 unitEmptyErr.....Driver reference number specifies NIL handle in  
 unit table.  
 -23 openErr.....Requested read/write permission doesn't match  
 driver's open permission  
 or attempt to open RAM serial driver failed.  
 -24 closErr.....Close failed, or permission to close .MPP driver  
 was denied.  
 -25 dRemovErr.....Tried to remove an open driver.

- 26 dInstErr.....DrvInstall couldn't find driver in resources, or  
abort error. ←
- 27 abortErr.....IO call aborted by KillIO.
- 28 notOpenErr.....Couldn't rd/wr/ctl/sts cause driver not opened.
- 29 unitTblFullErr.....Unit table has no more entries.
- 30 dceExtErr.....DCE extension error.

## File System Errors

- 33 dirFulErr.....Directory full.
- 34 dskFulErr.....Disk full.
- 35 nsvErr.....No such volume, or volume not found.
- 36 ioErr.....I/O error.
- 37 bdNamErr.....Bad file name; there may be no bad names in the  
final system! ←
- 38 fnOpnErr.....File not open.
- 39 eofErr.....End of file, or no additional data in the format.
- 40 posErr.....Tried to position to before start of file (r/w).
- 41 mFulErr.....Memory full (open) or file won't fit (load).
- 42 tmfoErr.....Too many files open.
- 43 fnfErr.....File/Folder/Edition container/Target not found.
- 44 wPrErr.....Disk is write-protected; Volume is locked through  
hardware. ←
- 45 fLckdErr.....File is locked, or publisher writing to an edition  
file. ←
- 46 vLckdErr.....Volume is locked through software.
- 47 fBsyErr.....File is busy (delete); Section doing I/O.
- 48 dupFNErr.....Duplicate filename (rename); File found instead of  
folder. ←
- 49 opWrErr.....File already open with write permission.
- 50 paramErr.....Error in user parameter list.
- 51 rfNumErr.....Reference number invalid.
- 52 gfpErr.....Get file position error.
- 53 volOffLinErr.....Volume is off line.
- 54 permErr.....Permission error on file open, or software lock on  
file. ←
- 55 volOnLinErr.....Drive volume already on-line at MountVol.
- 56 nsDrvErr.....No such drive (tried to mount a bad drive number).
- 57 noMacDskErr.....Not a Macintosh disk (signature bytes are wrong).
- 58 extFSErr.....External file system, file system identifier is  
non-zero. ←
- 59 fsRnErr.....File system internal error: during rename the old  
entry was deleted ←  
but could not be restored.
- 60 badMDBErr.....Bad master directory block.
- 61 wrPermErr.....Write permission error.

## Font Manager Errors

- 64 fontDecError.....Error during font declaration.
- 65 fontNotDeclared.....Font not declared.
- 66 fontSubErr.....Font substitution occurred.

## Disk Errors

- 64 lastDskErr.....Last disk error.
- 64 noDriveErr.....Drive not installed.
- 65 offLinErr.....Read/write requested for an off-line drive.
- 66 noNybErr.....Couldn't find 5 nibbles in 200 tries.
- 67 noAdrMkErr.....Couldn't find valid address mark.

-68 dataVerErr.....Read verify compare failed.  
 -69 badCksmErr.....Address mark checksum didn't check.  
 -70 badBtSlpErr.....Bad address mark bit slip nibbles.  
 -71 noDtaMkErr.....Couldn't find a data mark header.  
 -72 badDCksm.....Bad data mark checksum.  
 -73 badDBtSlp.....Bad data mark bit slip nibbles.  
 -74 wrUnderrun.....Write under-run occurred.  
 -75 cantStepErr.....Step handshake failed.  
 -76 tk0BadErr.....Track 0 detect doesn't change.  
 -77 initIWMErr.....Unable to initialise IWM.  
 -78 twoSideErr.....Tried to read second side on a one sided drive.  
 -79 spdAdjErr.....Unable to correctly adjust disk speed.  
 -80 seekErr.....Track number wrong on address mark.  
 -81 sectNFErr.....Sector number never found on a track.  
 -82 fmt1Err.....Can't find sector 0 after track format.  
 -83 fmt2Err.....Can't get enough sync.  
 -84 verErr.....Track failed to verify.  
 -84 firstDskErr.....First disk error.

#### Serial Ports, PRAM/Clock

-85 clkRdErr.....Unable to read same clock value twice.  
 -86 clkWrErr.....Time written did not verify.  
 -87 prWrErr.....Parameter RAM written didn't read-verify.  
 -88 prInitErr.....InitUtil found the parameter RAM uninitialised.  
 -89 rcvrErr.....SCC receiver error (framing, parity, OR).  
 -90 breakRecd.....Break received (SCC).

#### AppleTalk Errors

-91 ddpSktErr.....Error opening socket, or invalid address or table ←  
 is full.  
 -92 ddpLenErr.....Data length too big.  
 -93 noBridgeErr.....No network bridge for non-local send.  
 -94 lapProtErr.....Error in attaching/detaching protocol.  
 -95 excessCollsns.....Hardware error [excessive collisions on write].  
 -97 portInUse.....Driver Open error code (port is in use).  
 -98 portNotCf.....Driver Open error code (parameter RAM not ←  
 configured for this  
 connection).

#### Memory Manager Errors

-99 memROZErr.....Hard error in ROZ.  
 -99 memROZError.....Hard error in ROZ.  
 -99 memROZWarn.....Soft error in ROZ.

#### Scrap Manager Errors

-100 noScrapErr.....No scrap exists error.  
 -102 noTypeErr.....Format not available, or no object of that type in ←  
 scrap.

#### Memory Allocation Errors

-108 memFullErr.....Ran out of memory, or not enough room in heap zone ←  
 .  
 -109 nilHandleErr.....GetHandleSize fails on baseText or ←  
 substitutionText, NIL master  
 pointer, handle was NIL in HandleZone or other.  
 -110 memAdrErr.....Address was odd, or out of range.

```
-111 memWZErr.....Attempted to operate on a free block; ←  
    GetHandleSize fails on baseText  
                                or substitutionText, or WhichZone failed (applied ←  
                                to free block).  
-112 memPurErr.....Trying to purge a locked or non-purgeable block.  
-113 memAZErr.....Address in zone check failed.  
-114 memPCErr.....Pointer Check failed.  
-115 memBCErr.....Block Check failed.  
-116 memSCErr.....Size Check failed.  
-117 memLockedErr.....Trying to move a locked block (MoveHHi).
```

#### HFS Errors

```
-120 dirNFErr.....Directory not found.  
-121 tmwdoErr.....No free WDCB available.  
-122 badMovErr.....Move into offspring error.  
-123 wrgVolTypErr.....Not an HFS volume or operation not supported for ←  
    MFS (obsolete).  
-124 volGoneErr.....Server volume has been disconnected.  
-125 updPixMemErr.....Insufficient memory to update a pixmap.  
-127 fsDSIntErr.....Internal file system error.
```

#### Menu Manager Errors

```
-126 dsMBarNFnd.....System error code for MBDF not found.  
-127 dsHMenuFindErr.....Couldn't find HMenu's parent in MenuKey.  
-128 userCanceledErr.....User cancelled an operation.
```

#### HFS File ID Errors

```
-130 fidNotFound.....No file thread exists.  
-131 fidNotAFile.....Directory specified; it is not a file.  
-132 fidExists.....File ID already exists.
```

#### Colour QuickDraw and Colour Manager Errors

```
-145 noMemForPictPlaybackErr...No memory available to playback a picture/movie.  
-147 rgnTooBigError.....Region too big or complex.  
-148 pixMapTooBigErr.....Pixel map record pixmap is too large.  
-149 nsStackErr.....Not enough stack space for the necessary buffers " ←  
    OR".  
-150 cMatchErr.....Color2Index failed to find an index.  
-151 cTempMemErr.....Failed to allocate memory for temporary structures ←  
    .  
-152 cNoMemErr.....Failed to allocate memory for structure.  
-153 cRangeErr.....Range error on colorTable request.  
-154 cProtectErr.....ColorTable entry protection violation.  
-155 cDevErr.....Invalid type of graphics device.  
-156 cResErr.....Invalid resolution for MakeITable.  
-157 cDepthErr.....Invalid pixel depth.  
-158 cParmErr.....Invalid parameter.
```

#### Resource Manager Errors (other than I/O)

```
-185 badExtResource.....Extended resource has a bad format.  
-186 CantDecompress.....Resource bent ("the bends") can't decompress a ←  
    compressed resource.  
-188 resourceInMemory.....Resource already in memory.  
-189 writingPastEnd.....Writing past end of file.  
-190 inputOutOfBounds.....Offset or count out of bounds.  
-192 resNotFound.....Resource not found.  
-193 resFNotFound.....Resource file not found.
```

-194 addResFailed.....Add Resource failed.  
-195 addRefFailed.....Add Reference failed.  
-196 rmvResFailed.....Remove Resource failed.  
-197 rmvRefFailed.....Remove Reference failed.  
-198 resAttrErr.....Attribute inconsistent with operation.  
-199 mapReadErr.....Map inconsistent with operation.

#### Sound Manager Errors

-200 noHardware.....No hardware support for the specified synthesizer.  
-201 notEnoughHardware.....No more channels for the specified synthesizer.  
-203 queueFull.....No room in the queue.  
-204 resProblem.....Problem loading the resource.  
-205 badChannel.....Channel is corrupt or unusable [invalid channel ←  
queue length].  
-206 badFormat.....Resource is corrupt (handle to 'snd' resource was ←  
invalid).  
-207 notEnoughBufferSpace.....Insufficient memory available.  
-208 badFileFormat.....File is corrupt or unusable, or not AIFF or AIFF-C ←  
.  
-209 channelBusy.....Channel is being used for a PFD already.  
-210 buffersTooSmall.....Cannot operate in the memory allowed.  
-211 channelNotBusy.....Channel not currently used.  
-212 noMoreRealTime.....Not enough CPU time available.  
-213 badParam.....A parameter is incorrect.  
-220 siNoSoundInHardware.....No sound input hardware available.  
-221 siBadSoundInDevice.....Invalid index for SoundInGetIndexedDevice.  
-222 siNoBufferSpecified.....No buffer specified.  
-223 siInvalidCompression.....Invalid compression type.  
-224 siHardDriveTooSlow.....Hard drive too slow to record.  
-225 siInvalidSampleRate.....Invalid sample rate.  
-226 siInvalidSampleSize.....Invalid sample size.  
-227 siDeviceBusyErr.....Sound input device is busy.  
-228 siBadDeviceName.....Invalid device name.  
-229 siBadRefNum.....Invalid reference number.  
-230 siInputDeviceErr.....Input device hardware failure.  
-231 siUnknownInfoType.....Driver returned invalid info type selector.  
-232 siUnknownQuality.....Invalid quality selector returned by driver.

#### MIDI Manager Errors

-250 midiNoClientErr.....No client with that ID found.  
-251 midiNoPortErr.....No port with that ID found.  
-252 midiTooManyPortsErr.....Too many ports already installed in the system.  
-253 midiTooManyConsErr.....Too many connections made.  
-254 midiVConnectErr.....Pending virtual connection created.  
-255 midiVConnectMade.....Pending virtual connection resolved.  
-256 midiVConnectRmvd.....Pending virtual connection removed.  
-257 midiNoConErr.....No connection exists between specified ports.  
-258 midiWriteErr.....Couldn't write to all connected ports.  
-259 midiNameLenErr.....Name supplied is longer than 31 characters.  
-260 midiDupIDErr.....Duplicate client ID.  
-261 midiInvalidCmdErr.....Command not supported for port type.

#### Notification Manager Error

-299 nmTypErr.....Invalid queue Type - must be ORD(nmType).

#### Start Manager Errors

-290 smSDMInitErr.....SDM could not be initialized.

---

- 291 smSRTInitErr.....Slot Resource Table could not be initialized.
- 292 smPRAMInitErr.....Slot Resource Table could not be initialized.
- 293 smPriInitErr.....Cards could not be initialized.
- 300 smEmptySlot.....No card in slot.
- 301 smCRCFail.....CRC check failed for declaration data.
- 302 smFormatErr.....FHeader Format is not Apple's.
- 303 smRevisionErr.....Wrong revision level.
- 304 smNoDir.....Directory offset is Nil.
- 305 smDisabledSlot.....This Slot is disabled.
- 306 smNosInfoArray.....No sInfoArray. Memory Mgr error.
- 307 smResrvErr.....Fatal reserved error. Reserved field <> 0.
- 308 smUnExBusErr.....Unexpected BusError.
- 309 smBLFieldBad.....ByteLanes field was bad.
- 310 smFHBlockRdErr.....Error occurred during \_sGetFHeader.
- 311 smFHBlkDispErr.....Error occurred during \_sDisposePtr (dispose of  
FHeader block).
- 312 smDisposePErr.....Dispose Pointer error.
- 313 smNoBoardsRsrc.....No Board sResource.
- 314 smGetPRErr.....Error occurred during \_sGetPRAMRec (See SIMStatus) ←
- .
- 315 smNoBoardId.....No Board Id.
- 316 smIntStatVErr.....The InitStatusV field was negative after primary ←  
or secondary init.
- 317 smIntTblVErr.....An error occurred while trying to initialize the ←  
Slot Resource Table.
- 318 smNoJmpTbl.....SDM jump table could not be created.
- 319 smBadBoardId.....BoardId was wrong, re-init the PRAM record.
- 320 smBusErrTO.....BusError time out.
- 330 smBadRefId.....Reference Id not found in List.
- 331 smBadsList.....Bad sList: Id1<Id2<Id3, format is not followed.
- 332 smReservedErr.....Reserved field not zero.
- 333 smCodeRevErr.....Code revision is wrong.
- 334 smCPUErr.....Code revision is wrong.
- 335 smsPointerNil.....LPointer is nil {from sOffsetData, if this error ←  
occurs, check sInfo  
record for more information).
- 336 smNilsBlockErr.....Nil sBlock error {Don't allocate and try to use a ←  
nil sBlock}.
- 337 smSlotOOBErr.....Slot out of bounds error.
- 338 smSelOOBErr.....Selector out of bounds error.
- 339 smNewPErr.....NewPtr error.
- 340 smBlkMoveErr.....BlockMove error.
- 341 smCkStatusErr.....Status of slot = fail.
- 342 smGetDrvrNamErr.....Error occurred during \_sGetDrvrName.
- 343 smDisDrvrNamErr.....Error occurred during \_sDisDrvrName.
- 344 smNoMoresRsrcs.....No more sResources.
- 345 smsGetDrvrErr.....Error occurred during \_sGetDriver.
- 346 smBadsPtrErr.....Bad pointer was passed to sCalcsPointer.
- 347 smByteLanesErr.....NumByteLanes was determined to be zero.
- 348 smOffsetErr.....Offset was too big (temporary, should be fixed).
- 349 smNoGoodOpens.....No opens were successful in the loop.
- 350 smSRTOvrFlErr.....SRT over flow.
- 351 smRecNotFnd.....Record not found in the SRT.

## Device Manager Slot Support Errors

- 360 slotNumErr.....Invalid slot # error.



-400 gcrOnMFMErr.....GCR format on high density media error.

#### Edition Manager Errors

-450 editionMgrInitErr.....Edition manager not inited by this application.  
 -451 badSectionErr.....Not a valid section record.  
 -452 notRegisteredSectionErr...Not a registered section record.  
 -453 badEditionFileErr.....Edition file is corrupt.  
 -454 badSubPartErr.....Cannot use sub parts in this release.  
 -460 multiplePublisherWrn.....Pub already registered for container.  
 -461 containerNotFoundWrn.....Couldn't find editionContainer now.  
 -462 containerAlreadyOpenWrn...Container is open by this section.  
 -463 notThePublisherWrn.....Different pub last wrote that container.

#### SCSI Manager Errors

-470 scsiBadPBErr.....Invalid field(s) in the parameter block.  
 -471 scsiOverrunErr.....Attempted to transfer too many bytes.  
 -472 scsiTransferErr.....Write flag conflicts with data transfer phase.  
 -473 scsiBusTOErr.....Bus error during transfer.  
 -474 scsiSelectTOErr....."scsiSelTO" exceeded (selection failed).  
 -475 scsiTimeOutErr....."scsiReqTO" exceeded.  
 -476 scsiBusResetErr.....The bus was reset, so your request was aborted.  
 -477 scsiBadStatus.....Non-zero (not "Good") status returned.  
 -478 scsiNoStatusErr.....Device did not go through a status phase.  
 -479 scsiLinkFailErr.....Linked command never executed.  
 -489 scsiUnimpVctErr.....Unimplemented routine was called SysErrs used ←  
 instead.

#### SysErrs used instead of inline \$A9FF & \$ABFF

-490 userBreak.....User debugger break.  
 -491 strUserBreak.....User debugger break - display string on stack.  
 -492 exUserBreak.....User debugger break - execute commands on stack.

#### QuickDraw Error

-500 rgnTooBigErr.....Bitmap would convert into a region greater than 64 ←  
 KB.

#### Text Edit Error

-501 teScrapSizeErr.....Scrap item too big for text edit record.

#### Operating System Error

-502 hwParamrErr.....Bad selector for \_HWPPriv.

#### Processes Errors

-600 procNotFound.....No eligible process with specified process serial ←  
 number.  
 -601 memFragErr.....Not enough room to launch application with special ←  
 requirements.  
 -602 appModeErr.....Memory mode is 32-bit, but application is not 32- ←  
 bit clean.  
 -603 protocolErr.....App made module calls in improper order.  
 -604 hardwareConfigErr.....Hardware configuration not correct for call.  
 -605 appMemFullErr.....Application size is not big enough for launch.  
 -606 appIsDaemon.....Application is BG-only, and launch flags disallow ←  
 this.  
 -607 bufferIsSmall.....Buffer is too small.  
 -608 noOutstandingHLE.....No outstanding high-level event.  
 -609 connectionInvalid.....Connection is invalid.

-610 noUserInteractionAllowed..Attempted Post High Level Event from background and no session yet established Memory Dispatch Errors. ←

#### Memory Dispatch Errors

-620 notEnoughMemoryErr.....Insufficient physical memory.  
-621 notHeldErr.....Specified range of memory is not held.  
-622 cannotMakeContiguousErr...Cannot make specified range contiguous.  
-623 notLockedErr.....Specified range of memory is not locked.  
-624 interruptsMaskedErr.....Called with interrupts masked.  
-625 cannotDeferErr.....Unable to defer additional user functions.

#### Database Access (Pack 13) Errors

-800 rcDBNull.....The data item was NULL.  
-801 rcDBValue.....Data available or successfully retrieved.  
-802 rcDBError.....Error executing function.  
-803 rcDBBadType.....Next data item not of requested data type.  
-804 rcDBBadCol.....Function timed out.  
-805 rcDBBreak.....Query currently executing.  
-806 rcDBExec.....Session ID is invalid.  
-807 rcDBBadSessID.....Invalid session number.  
-808 rcDBBadSessNum.....Couldn't find the specified database extension, or error occurred in opening database extension. ←  
-809 rcDBBadDDEV.....The database extension does not support asynchronous calls. ←  
-810 rcDBCcancel.....Invalid parameter block specified.  
-811 rcDBAsyncNotSupp.....There is no handler for this data type installed for the current application. ←  
-812 rcDBBadAsyncPB.....N/A  
-813 rcDBNoHandler.....The InitDBPack function has not yet been called.  
-814 rcDBWrongVersion.....The wrong version was called.  
-815 rcDBPackNotInited.....Pack not inited.  
-816 rcDBStatusCancel.....Status was cancelled.

#### Help Manager Errors

-850 hmHelpDisabled.....Help balloons are not enabled.  
-851 hmResNotFound.....Help Manager resource not found.  
-852 hmMemFullErr.....Help Manager, memory full error.  
-853 hmBalloonAborted.....Because of constant cursor movement, help balloon wasn't displayed. ←  
-854 hmBadHelpData.....Balloon Menu and item are same as previous menu and item. ←  
-855 hmHelpManagerNotInited....Help menu not set up.  
-856 hmBadSelector.....Help Manager has a bad selector.  
-857 hmSkippedBalloon.....No balloon content to fill in.  
-858 hmWrongVersion.....Wrong version of Help Manager resource.  
-859 hmUnknownHelpType.....Help message record contained a bad type.  
-860 hmCouldNotLoadPackage....Help Manager could not load package.  
-861 hmOperationUnsupported....Bad method parameter.  
-862 hmNoBalloonUp.....No balloon showing.  
-863 hmCloseViewActive.....User using CloseView won't let you remove balloon.

#### AppleTalk - PPC Toolbox Errors

-900 notInitErr.....PPC Toolbox has not been initialized yet.

-902 nameTypeErr.....Invalid or inappropriate locationKindSelector in location name. ←

-903 noPortErr.....Invalid port name; Unable to open port or bad port reference number. ←

-904 noGlobalsErr.....System unable to allocate memory, critical error.

-905 localOnlyErr.....Network activity is currently disabled.

-906 destPortErr.....Port does not exist at destination.

-907 sessTableErr.....PPC Toolbox is unable to create a session.

-908 noSessionErr.....Invalid session reference number.

-909 badReqErr.....Bad parameter or invalid state for this operation.

-910 portNameExistsErr.....Another port is already open with this name.

-911 noUserNameErr.....User name unknown on destination machine.

-912 userRejectErr.....Destination rejected the session request.

-913 noMachineNameErr.....User hasn't named his Macintosh.

-914 noToolboxNameErr.....A system resource is missing, not too likely.

-915 noResponseErr.....Unable to contact application.

-916 portClosedErr.....The port was closed.

-917 sessClosedErr.....The session has closed.

-919 badPortNameErr.....PPC port record is invalid.

-922 noDefaultUserErr.....User has not specified owner name in Sharing Setup control panel. ←

-923 notLoggedInErr.....Default user reference number does not yet exist.

-924 noUserRefErr.....Unable to create a new user reference number.

-925 networkErr.....An error has occurred in the network.

-926 noInformErr.....PPCStart failed because target program did not have an inform pending. ←

-927 authFailErr.....User's password is wrong.

-928 noUserRecErr.....Invalid user reference number.

-930 badServiceMethodErr.....Service method is other than ppcServiceRealTime.

-931 badLocNameErr.....Location name is invalid.

-932 guestNotAllowedErr.....Destination port requires authentication.

#### AppleTalk - NBP Errors

-1024 nbpBuffOvr.....Buffer overflow in LookupName.

-1025 nbpNoConfirm.....Name not confirmed on ConfirmName.

-1026 nbpConfDiff.....Name confirmed at different socket.

-1027 nbpDuplicate.....Duplicate name exists already.

-1028 nbpNotFound.....Name not found on remove.

-1029 nbpNISErr.....Error trying to open the NIS.

#### ASP Errors (XPP driver)

-1066 aspBadVersNum.....Server cannot support this ASP version.

-1067 aspBufTooSmall.....Buffer too small.

-1068 aspNoMoreSess.....No more sessions on server.

-1069 aspNoServers.....No servers at that address.

-1070 aspParamErr.....Parameter error.

-1071 aspServerBusy.....Server cannot open another session.

-1072 aspSessClosed.....Session closed.

-1073 aspSizeErr.....Command block too big.

-1074 aspTooMany.....Too many clients (server error).

-1075 aspNoAck.....No Ack on attention request (server error).

#### AppleTalk - ATP Errors

-1096 reqFailed.....Request to contact router failed: retry count exceeded. ←

-1097 tooManyReqs.....Too many concurrent requests.

-1098 tooManySkts.....Too many concurrent responding-sockets.

-1099 badATPSkt.....Bad ATP-responding socket.  
-1100 badBufNum.....Bad response buffer number specified.  
-1101 noRelErr.....No release received.  
-1102 cbNotFound.....Control Block not found; no pending asynchronous ←  
calls.  
-1103 noSendResp.....AddResponse issued without SendResponse.  
-1104 noDataArea.....No data area for request to MPP.  
-1105 reqAborted.....ERdCancel function called for ERead [SendRequest ←  
aborted by RelTCB].

#### Data Stream Protocol - DSP driver Errors

-1273 errOpenDenied.....Open request denied by recipient.  
-1274 errDSPQueueSize.....Send or receive queue is too small.  
-1275 errFwdReset.....Read terminated by forward reset.  
-1276 errAttention.....Attention message too long.  
-1277 errOpening.....Attempt to open connection failed.  
-1278 errState.....Bad connection state for this operation.  
-1279 errAborted.....Request aborted by dspRemove or dspClose function.  
-1280 errRefNum.....Bad connection reference number.

#### HFS Errors

-1300 fidNotFound.....File ID not found [No file thread exists].  
-1301 fidExists.....File id already exists.  
-1302 notAFileErr.....Specified file is a directory.  
-1303 diffVolErr.....Files on different volumes.  
-1304 catChangedErr.....Catalog has changed and CatPosition may be invalid ←  
.  
-1305 desktopDamagedErr.....The desktop database has become corrupted - the ←  
Finder will fix this,  
but if your application is not running with the ←  
Finder, use DTReset or  
DTDelete.  
-1306 sameFileErr.....Can't exchange a file with itself.  
-1307 badFidErr.....File ID is dangling or doesn't match file number.  
-1308 notARemountErr.....If \_Mount allows only remounts & doesn't get 1.

#### AppleEvent Errors

-1700 errAEC coercionFail.....Data could not be coerced to the requested ←  
description type.  
-1701 errAEDescNotFound.....Description record was not found.  
-1702 errAECorruptData.....Data in an Apple event could not be read.  
-1703 errAEWrongDataType.....Wrong description type.  
-1704 errAENotAEDesc.....Not a valid description record.  
-1705 errAEBadListItem.....Operation involving a list item failed.  
-1706 errAENewerVersion.....Need a newer version of the Apple Event Manager.  
-1707 errAENotAppleEvent.....Event is not an Apple event.  
-1708 errAEEventNotHandled.....Event wasn't handled by an Apple event handler.  
-1709 errAEReplyNotValid.....AEResetTimer was passed an invalid reply.  
-1710 errAEUnknownSendMode.....Invalid sending mode was passed.  
-1711 errAEWaitCanceled.....User cancelled out of wait loop for reply or ←  
receipt.  
-1712 errAETimeout.....AppleEvent timed out.  
-1713 errAENoUserInteraction...No user interaction allowed.  
-1714 errAENotASpecialFunction.Wrong keyword for a special function.  
-1715 errAEParmMissed.....Handler did not get all required parameters.  
-1716 errAEUnknownAddressType..Unknown Apple event address type.  
-1717 errAEHandlerNotFound.....No handler found for an Apple event or a coercion.

-1718 errAEReplyNotArrived.....Reply has not yet arrived.  
-1719 errAEIllegalIndex.....Not a valid list index.

#### AppleTalk - ATP Errors

-3101 buf2SmallErr.....Buffer too small.  
-3102 noMPPErr.....No MPP error.  
-3103 ckSumErr.....Check sum error.  
-3104 extractErr.....Extraction error.  
-3105 readQErr.....Read queue error.  
-3106 atpLenErr.....ATP length error.  
-3107 atpBadRsp.....ATP bad response error.  
-3108 recNotFnd.....Record not found.  
-3109 sktClosedErr.....Socket closed error.

#### Print Manager w/LaserWriter Errors

-4096 n/a.....No free Connect Control Blocks available.  
-4097 n/a.....Bad connection reference number.  
-4098 n/a.....Request already active.  
-4099 n/a.....Write request too big.  
-4100 n/a.....Connection just closed.  
-4101 n/a.....Printer not found, or closed.

#### File Manager Extensions Errors

-5000 accessDenied.....Incorrect access for this file/folder.  
-5006 DenyConflict.....Permission/Deny mode conflicts with the current  
mode in which this  
fork is already open.  
-5015 NoMoreLocks.....Byte range locking failure from Server.  
-5020 RangeNotLocked.....Attempt to unlock an already unlocked range.  
-5021 RangeOverlap.....Attempt to lock some of an already locked range.

#### AFP Errors (XPP driver)

-5000 afpAccessDenied.....AFP access denied.  
-5001 afpAuthContinue.....AFP authorization continue.  
-5002 afpBadUAM.....AFP bad UAM.  
-5003 afpBadVersNum.....AFP bad version number.  
-5004 afpBitmapErr.....AFP bit map error.  
-5005 afpCantMove.....AFP can't move error.  
-5006 afpDenyConflict.....AFP deny conflict.  
-5007 afpDirNotEmpty.....AFP directory not empty.  
-5008 afpDiskFull.....AFP disk full.  
-5009 afpEofError.....AFP End-of-File error.  
-5010 afpFileBusy.....AFP file busy.  
-5011 afpFlatVo.....AFP flat volume.  
-5012 afpItemNotFound.....AFP item not found.  
-5013 afpLockErr.....AFP lock error.  
-5014 afpMiscErr.....AFP misc error.  
-5015 afpNoMoreLocks.....AFP no more locks.  
-5016 afpNoServer.....AFP no server.  
-5017 afpObjectExists.....AFP object already exists.  
-5018 afpObjectNotFound.....AFP object not found.  
-5019 afpParmErr.....AFP parameter error.  
-5020 afpRangeNotLocked.....AFP range not locked.  
-5021 afpRangeOverlap.....AFP range overlap.  
-5022 afpSessClosed.....AFP session closed.  
-5023 afpUserNotAuth.....AFP user not authorized.  
-5024 afpCallNotSupported.....AFP call not supported.

---

-5025 afpObjectTypeErr.....AFP object type error.  
-5026 afpTooManyFilesOpen.....AFP too many files open.  
-5027 afpServerGoingDown.....AFP server going down.  
-5028 afpCantRename.....AFP can't rename.  
-5029 afpDirNotFound.....AFP directory not found.  
-5030 afpIconTypeError.....AFP icon type error.  
-5031 afpVolLocked.....Volume is Read-Only.  
-5032 afpObjectLocked.....AFP Object is M/R/D/W inhibited.  
-5033 afpContainsSharedErr.....Folder being shared has a shared folder  
-5034 afpIDNotFound.....ID not found.  
-5035 afpIDExists.....ID exists.  
-5036 afpDiffVolErr.....Different volume error.  
-5037 afpCatalogChanged.....Catalog changed.  
-5038 afpSameObjectErr.....Same object error.  
-5039 afpBadIDErr.....Bad ID error.  
-5040 afpPwdSameErr.....Same password on a mandatory password change.  
-5041 afpPwdTooShortErr.....Password being set is too short.  
-5042 afpPwdExpiredErr.....Password being used is too old.  
-5043 afpInsideSharedErr.....Folder being shared is in a shared folder.  
-5044 afpInsideTrashErr.....Folder being shared is in the trash folder.

#### SysEnviron Errors

-5500 envNotPresent.....SysEnviron trap not present - returned by glue.  
-5501 envBadVers.....Version non-positive.  
-5502 envVersTooBig.....Version bigger than call can handle.

#### Gestalt Errors

-5550 gestaltUnknownErr.....Gestalt doesn't know the answer.  
-5551 gestaltUndefSelectorErr..Undefined code was passed to Gestalt.  
-5552 gestaltDupSelectorErr....Tried to add entry that already existed.  
-5553 gestaltLocationErr.....Gestalt function not in system heap.

#### LaserWriter Driver Errors

-8132 n/a.....Manual Feed time out.  
-8133 n/a.....General PostScript Error.  
-8150 n/a.....No LaserWriter chosen.  
-8151 n/a.....Version mismatch between LaserPrep dictionaries.  
-8150 n/a.....No LaserPrep dictionary installed.  
-8160 n/a.....Zoom scale factor out of range.

#### Picture Utilities Errors

-11000 pictInfoVersionErr.....Wrong version of the PictInfo structure.  
-11001 pictInfoIDErr.....Internal consistency check is wrong.  
-11002 pictInfoVerbErr.....The passed verb was invalid.  
-11003 cantLoadPickMethodErr...Unable to load the custom pick proc.  
-11004 colorsRequestedErr.....The number of colours requested was illegal.  
-11005 pictureDataErr.....The picture data was invalid.

#### Power Manager Errors

-13000 pmBusyErr.....Pmgr never ready to start handshake.  
-13001 pmReplyTOErr.....Timed out waiting for reply.  
-13002 pmSendStartErr.....During send, pmgr did not start handshake.  
-13003 pmSendEndErr.....During send, pmgr did not finish handshake.  
-13004 pmRecvStartErr.....During receive, pmgr did not start handshake.  
-13005 pmRecvEndErr.....During receive, pmgr did not finish handshake.

#### Mac TCP

-23000 ipBadLapErr.....Bad network configuration.  
 -23001 ipBadCnfgErr.....Bad IP configuration error.  
 -23002 ipNoCnfgErr.....Missing IP or LAP configuration error.  
 -23003 ipLoadErr.....Error in MacTCP load.  
 -23004 ipBadAddr.....Error in getting address.  
 -23005 connectionClosing.....Connection in closing.  
 -23006 invalidLength.....Invalid length.  
 -23007 connectionExists.....Request conflicts with existing connection.  
 -23008 connectionDoesntExist...Connection does not exist.  
 -23009 insufficientResources...Insufficient resources to perform request.  
 -23010 invalidStreamPtr.....Invalid stream Ptr.  
 -23011 streamAlreadyOpen.....Stream already open  
 -23012 connectionTerminated...Connection terminated.  
 -23013 invalidBufPtr.....Invalid buffer Ptr.  
 -23014 invalidRDS.....Invalid RDS.  
 -23014 invalidWDS.....Invalid WDS  
 -23015 openFailed.....Open failure.  
 -23016 commandTimeout.....A command timed out.  
 -23017 duplicateSocket.....Duplicate socket error.  
 -23030 ipOpenProtErr.....Can't open new protocol, table full.  
 -23031 ipCloseProtErr.....Can't find protocol to close.  
 -23032 ipDontFragErr.....Packet too large to send without fragmenting.  
 -23033 ipDestDeadErr.....Destination not responding.  
 -23034 ipBadWDSErr.....Error in WDS format.  
 -23035 icmpEchoTimeoutErr.....ICMP echo timed-out.  
 -23036 ipNoFragMemErr.....No memory to send fragmented packet.  
 -23037 ipRouteErr.....Can't route packet off-net.  
 -23041 nameSyntaxErr.....Name has a syntax error.  
 -23042 cacheFault.....Cache not working properly.  
 -23043 noResultProc.....No result Proc.  
 -23044 noNameServer.....No name has been specified for the Server.  
 -23045 authNameErr.....Author name is wrong.  
 -23046 noAnsErr.....No answer error.  
 -23047 dnrErr.....Dnr error.  
 -23048 outOfMemory.....Out of memory.

#### Font Manager Errors

-32615 fontNotOutlineErr.....Bitmap passed, routine does outlines only.

#### Primary or Secondary Init Code Errors

-32768 svTempDisable.....Temporarily disable card but run primary init.  
 -32640 svDisabled.....Reserve -32640 to -32768 for Apple temp disables.

#### THESE ARE FAIRLY OBSCURE ERRORS

#### Internal File System Errors

1 chNoBuf.....No free cache buffers (all in use).  
 2 chInUse.....Requested block in use.  
 3 chnotfound.....Requested block not found.  
 4 chNotInUse.....Block being released was not in use..  
 16 fxRangeErr.....File position beyond mapped range.  
 17 fxOvFlErr.....Extents file overflow.  
 32 btnotfound.....Record not found.  
 33 n/a.....Record already exists.  
 34 n/a.....No available space.  
 35 btnoFit.....Record doesn't fit in node.

36 btbadNode.....Bad node detected.  
 37 btbadHdr.....Bad BTree header record detected.  
 48 cmnotfound.....CNode not found.  
 49 cmexists.....CNode already exists  
 50 cmnotempty.....Directory CNode not empty (valence = 0).  
 51 cmRootCN.....Invalid reference to root CNode.  
 52 cmbadnews.....Detected bad catalog structure.  
 53 cmFThdDirErr.....Thread belongs to a directory not a file.  
 54 cmFThdGone.....File thread doesn't exist.  
 64 dsBadRotate.....Bad BTree rotate.

#### Slot Declaration ROM Manager Errors

1 siInitSDTblErr.....Slot int dispatch table couldn't be initialized.  
 2 siInitVBLQsErr.....VBLQueues for all slots couldn't be initialized.  
 3 siInitSPTblErr.....Slot priority table could not be initialized.  
 10 sdmJTInitErr.....SDM Jump Table could not be initialized.  
 11 sdmInitErr.....SDM could not be initialized.  
 12 sdmSRTInitErr.....Slot Resource Table could not be initialized.  
 13 sdmPRAMInitErr.....Slot PRAM could not be initialized.  
 14 sdmPriInitErr.....Cards could not be initialized.

#### HD20 Driver Errors

16 wrtHsLw.....HSHK low before starting.  
 17 wrtHSLwTO.....Time out waiting for HSHK to go low.  
 19 wrtHSHighTO.....Time out waiting for HSHK to go high.  
 32 rdHsHi.....HSHK high before starting.  
 33 rdSyncTO.....Time out waiting for sync (\$AA) bye.  
 34 rdGroup to.....Time out waiting for group.  
 36 rdHoffSyncTO.....Time out waiting for sync after hold off.  
 37 rdHsHiTO.....Time out waiting for HSHK high.  
 38 rdChksumErr.....Checksum error on response packet.  
 48 invalidResp.....First byte in response packet was wrong.  
 49 sqncNumErr.....Sequence number in response packet was wrong.  
 50 dNumberErr.....Drive number in response packet was wrong.  
 64 noResp.....No response packet ever received.

#### SCSI Manager Errors

2 scCommErr.....Communications error (operations timeout).  
 3 scArbNBErr.....Arbitration failed during SCSIGet Bus busy.  
 4 scBadparmsErr.....Bad parameter or TIB opcode.  
 5 scPhaseErr.....SCSI bus not in correct phase for operation.  
 6 scCompareErr.....SCSI Manager busy with another operation when ←  
 SCSIGet was called.  
 7 scMgrBusyErr.....SCSI Manager busy with another operation when ←  
 SCSIGet was called.  
 8 scSequenceErr.....Attempted operation is out of sequence, eg. ←  
 calling SCSISelect before  
 doing SCSIGet.  
 9 scBusTOErr.....Bus timed out before data ready on SCsIRBlind and ←  
 SCsIWBlind.  
 10 scComplPhaseErr.....SCSIComplete failed Ⓟ bus not in Status phase.

#### Connection Manager Errors

-1 cmGenericError  
 0 cmNoErr  
 1 cmRejected  
 2 cmFailed



```

3  cmTimeOut
4  cmNotOpen
5  cmNotClosed
6  cmNoRequestPending
7  cmNotSupported
8  cmNoTools
9  cmUserCancel
11 cmUnknownError

```

#### File Transfer Manager Errors

```

-1  ftGenericError
0   ftNoErr
1   ftRejected
2   ftFailed
3   ftTimeOut
4   ftTooManyRetry
5   ftNotEnoughDSpace
6   ftRemoteCancel
7   ftWrongFormat
8   ftNoTools
9   ftUserCancel
10  ftNotSupported
11  ftUnknownError

```

#### Terminal Manager Errors

```

-1  tmGenericError
0   tmNoErr
1   tmNotSent
2   tmEnvironsChanged
7   tmNotSupported
8   tmNoTools
11  tmUnknownError

```

## 1.23 detailed\_errors

### COMMON ERRORS IN MORE DETAIL

Error codes are often, confusingly, referred to as a Type X Error, eg. a type 3 ↔ error.

#### 1 - Bus Error

The computer tried to access memory that doesn't exist. You can get this error on ↔ almost any Macintosh. If one of these computers tried to access one or more bytes beyond the ↔ total number of bytes in RAM, you see a bus error.

#### 2 - Address Error

The Motorola 68000 microprocessor can access memory in increments of one byte (8 ↔ bits), one word (16 bits), or one long word (32 bits). The microprocessor can access a byte of ↔ information at an odd or even memory address. But it must access a word or long word at an even memory ↔ address. So, when

the microprocessor attempts to read or write a word or long word at an odd address  
, you see this  
error. Since that's a 50/50 proposition when running random code, this one shows  
up quite often.

### 3 - Illegal Instruction

If the computer tries to execute an instruction that isn't in its vocabulary, you  
see this error code.  
It's less likely than error 02, but still very common.

### 4 - Zero Divide Error

This error occurs if the CPU divides two numbers, and the divisor is zero.

### 5 - Range Check Error

An instruction is used to check if a number is within a certain range, if not,  
this error is  
displayed.

### 6 - Overflow Error

An overflow condition results if a generated number is too big for its allotted  
space.

### 7 - Privilege Violation

The 68000 runs in Supervisor or User mode. The Macintosh should always be in  
Supervisor mode as some  
instructions can only be used in this mode, but sometimes it is placed in User  
mode. This error  
results if an Supervisor instruction was run in User mode.

### 8 - Trace Mode Error

A programmer can use a runtime debugger while in Trace mode. This allows tracing  
through a program  
one instruction at a time. You see this error if a debugger isn't installed and  
the 68000 is  
accidentally placed in Trace mode.

### 9 & 10 - Line 1010 & 1111 Trap

There are many routines in the Macintosh ROM that can be called by placing  
instructions in a program  
that aren't in the 68000's vocabulary. When the CPU encounters such an instruction  
, it looks it up  
in the instruction table. If it finds that there's no entry for the instruction,  
you see one of  
these errors.

### 11 - Miscellaneous Hardware Exception Error

A Type 11 error is listed as a hardware exception error. However, Type 11 errors  
are more general  
in nature, and usually have nothing to do with hardware problems - it more likely  
a software  
instruction trying to do something that the hardware cannot do. You may see more  
Type 11 errors on  
a Power Macintosh computer because of problems with the software-based 68k  
emulation.

### 12 - Unimplemented Core Routine

---

A programmer might set breakpoints in parts of a program to inspect for errors. If a debugger isn't installed when a breakpoint occurs, you see this error code.

#### 13 - Uninstalled Interrupt

The Macintosh uses an interrupt to identify when devices like keyboards and disk drives need service.

Routines must be available in memory to tell the computer how to service the device. If those routines aren't available, you see this error.

#### 15 - Segment Loader Error

The segment loader is responsible for loading a needed program allocated segment into RAM. If the segment loader can't do this, you'll see this error.

#### 17-24 - Missing Packages 0-7

If you get these errors, you probably have a damaged System file. Error codes 15, 16, 26, 27, 30, and 31 also come up when the System file is damaged.

#### 25 - Memory Full Error

You've run out of RAM!

#### 26 - Bad Program Launch

The application could not be executed.

#### 28 - Stack Ran into Heap

This is a memory related error, basically it was trying to use memory that is already in use.

#### 27,30-31

See Missing Packets.

## 1.24 info

### USEFUL MACINTOSH INFORMATION

Macintosh Filing Systems (HFS/HFS+)

The Finder & File Characteristics

NEW

The Standard Components of a Mac Operating System:

Control Panels

Extensions Folder

Libraries

System Folder

System Enablers

---

NEW

All 68k Macintosh Systems & ROM Info  
NEW

Keyboard Shortcuts

Did you know..

## 1.25 hfs

### MACINTOSH FILING SYSTEMS

What's the difference between HFS and HFS+ filing systems? Can I use HFS+?

Hierarchical Filing System (HFS) is a 12 year old filing system, it allows only a limited number of blocks (65,536) you can have on a partition. I suggest you create multiple partitions from any hard disk above 1 gigabyte, because you will only be wasting valuable disk space, due to large block sizes. See the table below.

Estimated Block Sizes in Relation to the Size of HFS Standard Partitions  
(In increments of 0.5k for every 31mb, and +16k for every gigabyte.)

Partition Size	Block Size	Partition Size	Block Size
0mb - 31mb	= 0.5k	1.0gig - 1.5gig	= 16-24k
32mb - 64mb	= 1k	1.5gig - 2.0gig	= 24-32k
65mb - 95mb	= 1.5k	2.0gig - 3.0gig	= 32-48k
96mb - 255mb	= 2-4k	3.0gig - 4.0gig	= 48-64k
256mb - 511mb	= 4.5-8k	4.0gig - 9.0gig	= 64-144k
512mb -1023mb	= 8.5-16k	9.0gig - 18.0gig	= 144-288k

HFS+ or HFS Extended was made to extend the number of blocks, particularly for very large hard disks (1gig+). It now allows for hundreds of millions of blocks to be used. The default System block allocation is as follows:

- A 10-250 megabyte partition will have a 0.5k block size.
- A 250-999 megabyte partition will have either a 1k or 2k block size.
- 1 gigabyte up to 2 terrabyte (2000gig) partitions will have a 4k block size.

The advantage of using HFS+ is obvious, quite a lot of disk space will be reclaimed. This depends on the size of the hard disk, 1 gigabyte drive and above will see the most gains in saved space. Apple have added other advanced features to the new filing system, that are not accessible via System 8.1 at the moment, but should be in later revisions of the operating system.

The advantages of HFS+:

- Much more efficient use of disk space on 1gig+ hard disks.
- 68040/060 Macs can read/write to HFS+ disks.

- A server with a large capacity HFS+ formatted disk can be accessed by any Mac, ←  
with any  
System version.
- The user can define the allocation block size, but only with some commercial ←  
formatting software,  
eg. 0.5-2k (under 500mb only), 4k, 8k or even 16k if you want.
- The maximum partition size is at least 2 terabytes, or 2000 gigabytes.
- The maximum number of files you can have on a partition is at least 250,000.
- It uses disk space much more efficiently, especially with small files.
- Additional, built-in features of HFS+ will come available with later versions of ←  
PPC System software,  
eg. MacOS 8.5.

The disadvantages of HFS+;

- Only PowerPC and 68040/060 Amigas and Macs can use HFS+.
- You will have to reformat/optimise&format your hard disk.
- 68k Macs cannot startup from a HFS+ volume, it will fail to boot.
- HFS+ will not format any partition below 32mb.
- It requires the Text Encoding Convertor system Extension, and the Text Encoding ←  
data folder.
- There are only a few repair packages which can repair and optimise HFS+ formatted ←  
disks.
- Only System 8.1 is capable of recognising HFS+ disks.

Currently, I know of only these repair utilities that are compatible with HFS+:

- TechTool Pro2 (commercial).
- Disk First Aid (System 8.1 CD).
- Norton Utilities v4.0 (commercial).
- Look in  
commercial software  
for references to HFS+ formatters and optimisation  
programs (there are 4).

Don't use...

- Any version of Norton Utilities from v1 to v3.52, they will damage a HFS+ disk.
- Norton Fix - repairs any damage caused by Norton Disk Doctor 3.5. Free from any ←  
Mac internet site.

## 1.26 finder

### THE FINDER AND HOW FILES WORK ON THE MAC

The Finder

The Finder is like Workbench, it manages the Mac environment.

The Desktop File is managed by the Finder, and is a type of database, it stores; ←  
all icon positions,  
and remembers what each file's icon should look like, from the applications stored ←  
on your hard disks.

File Characteristics

Like the Amiga, the Macintosh uses flags or settings for individual files, however ←  
these flags are  
totally different to the Amiga's standard set, and less accessible. So I will go ←  
through all of them,

and explain what each one does. An asterisk (\*) next to the title means that this particular flag can be switched on or off at will, without doing any damage to the file in question. Most of these should not to be tinkered with, as they may cause untold damage. Experiment with a copy of the file if you must change something. The description tells you what happens when you activate it :

ON DESK; System 6 users only. Means that the file is on the desktop.

\*INVISIBLE; Means it will not be displayed in the Finder or in Open/Save dialogue boxes. Usually programs or the System creates these invisibles because they are important, and it doesn't want the user to bin or alter it.

BUNDLE; The icon for this item, is stored in it's resource fork. This applies mainly to all programs and most of it's data/library files.

STATIONERY; Makes this document into a stationery file, which can be opened and it's contents loaded into an untitled window, rather like a template.

ALWAYS SWITCH LAUNCH; System 6 users only. It switches to the System file to the disk where the application is located.

SHARED; The program can now be shared over a network.

INITED; The Finder recognises it as a special kind of file (eg. a control panel) and assigns it to a location on the disk or desktop, ie. if dragged over the top of the System folder, it'll know which folder it goes in.

ALIAS; Marks this as a standard Alias file (do not tick if it is a data file, it might destroy all data in it).

NO INITS; This will prevent a System extension from loading at boot-up.

NAME LOCKED; The file & it's filename cannot be changed.

CUSTOM ICON; Indicates that this file has it's own custom icon.

#### TYPE & CREATOR CODES

A Type code tells you what file type it is, for example; a GIFF Type is an image file, a WRD6 Type is a MS Word6 document, and an APPL Type is always used for executable programs.

This is the most critical half of these two codes, because if it displays "?????", then there is no way to tell what type of file it is. Unless you have a shareware program called Type/Creator Database, this lists all known file Types.

---

The Creator code tells the MacOS which program this file or document belongs to. ←  
 This makes ←  
 it possible for you to automatically load-up the application when you double click ←  
 on an icon. That ←  
 is, IF you have the program on your hard disk. Look ←  
 here ←  
 for more info on the Desktop file.

Data & Resource Forks, the Building Blocks of Mac Files

What the heck are these, you may say? These are the two building blocks that make ←  
 a Mac file or ←  
 program - they are similar to the Amiga's xxx.info and xxx files. The xxx equals ←  
 the Data fork, and ←  
 xx.info equals the Resource fork, in principle. ←  
 Basically the Data fork holds all data, ie. pictures, text and other data, while ←  
 the Resource fork ←  
 holds vital Finder and application information, ie. icon image, Finder flags, all ←  
 program code, and ←  
 accompanying program graphics.

## 1.27 system

### THE STANDARD COMPONENTS OF A MAC'S SYSTEM FOLDER

I've listed most of the standard System components that'll be installed (from ←  
 MacOS 7.53 to 7.6) and ←  
 what they do exactly, these are; Control Panels, Extensions, Libraries, System ←  
 Enablers and loose ←  
 items in the System Folder. Some of these extensions and control panels may not be ←  
 available on an ←  
 Amiga but they are usually installed anyway - I've highlighted these with a bold ←  
 message.

There are two excellent self viewing documents which explains every single ←  
 System component in ←  
 detail, and they're called Extension Overload and InformINIT. Both cover Systems ←  
 7.x to 8.x, and include all of Apples's standard System files and most known third ←  
 party ←  
 extensions and control panels - both have very useful additional info concerning: ←  
 Libraries, ←  
 Enablers and other types of files.

Select one of these buttons to go to the other categories:

Extensions

Libraries

System Folder

System Enablers

Menu

STANDARD APPLE CONTROL PANELS

What is a control panel? A control panel is a small piece of software that allows you to customise certain settings that meet your needs. For example, you can change the pattern or colour of your computer's desktop using the Desktop Patterns control panel.

Depending on the type of computer you have and the System version you're using, the contents of your Control Panels folder may vary. You might also have control panels that were added by third-party applications. You can see a complete detailed list of all Apple control panels in the "Macintosh Guide" via the "?" menu, or press the Help key (only in System 7.5 or later).

Here are some

odd control panels that the installer placed in your system, but may not need.

#### Apple Menu Options

Provides hierarchical sub-menus in the Apple Menu.

#### AppleTalk

You can specify AppleTalk settings (such as connection port and zone) for use with Apple's Open Transport networking.

#### AppleTalk Options

Part of the Open Transport package, but not installed automatically. It allows a user to suppress unwanted router-related alerts.

#### At Ease Setup

Allows you to start up your Mac in a simple, configurable launcher, which replaces the standard Finder.

#### ATM

Makes your Type 1 fonts look sharp and clear at any point size, both on your screen and on paper.

Improves the output of QuickDraw printers, such as the ImageWriter and StyleWriter series.

#### ATM GX

For displaying smooth QuickDrawGX fonts. Apple no longer supports QuickDrawGX features.

#### Auto Power On/Of

Allows your Mac to automatically shut down after a specified idle time, reboot after a power failure, and/or start up or shut down at a certain times. It may not work with emulation.

#### AutoRemounter

Allows remounting of volumes after waking from sleep, on Powerbooks. It also works on desktop Macs, to remount shared disks instead of using the AppleShare "mount on startup" option.

---



#### Cache Switch

For 68040/680LC40 Macs only. Allows you to turn off the 68040 processor caching for compatibility with older applications. ↔

#### Colour

You can set the colour of highlighted text and window borders.

#### CloseView

You can magnify your computer display for easier viewing.

#### ColourSync System Profile

Part of the ColourSync system that provides consistent colour across various types of equipment (printers, scanners, monitors, and so on). In the control panel, you can view and select ColourSync profiles for the types of equipment you use. ↔

#### Control Strip

You can display or hide the Control Strip, and specify a font for Control Strip menus. With the Control Strip, you can control a variety of settings directly from your desktop, such as sound volume, monitor resolution, file sharing, and so on. ↔

#### Date & Time

You can set the date, time, and time zone on your computer. You can also set how dates and times are displayed. ↔

#### Desktop Patterns

You can change the pattern or colour of your computer's desktop.

#### Easy Access

Provides keyboard enhancements, and easier mouse input, and audio/visual feedback on keyboard entries for people with disabilities. ↔

#### Editor Setup

You can specify which OpenDoc parts to use for different kinds of file formats. System 7.6-8.1 only. ↔

#### Energy Saver

Allows you to put your external monitor into sleep mode after a specified idle time. It only works with Macs that have the built-in video, it also requires an Energy Star compliant monitor. Will not work in emulation. ↔

#### Energy Saver

This utility combines the features of CPU Energy Saver, Energy Saver 1.0 and Auto Power On/Off, and is only compatible with PCI based PowerMacs. ↔

#### Extensions Manager

You can turn your computer's system extensions on or off. Extensions include items in the Extensions ↔

folder, control panels, and other startup programs in the System Folder.

#### File Sharing Monitor

When file sharing is turned on, this control panel displays a list of users who are connected to your computer. Only available on networked Amigas.

#### General Controls

You can set various options, including desktop hiding, Launcher visibility at startup, folder protection to prevent folders and files from being deleted, insertion point blinking rate, menu selection blinking, and the default folder that appears in the Save dialogue box.

#### Keyboard

You can set the repeat rate and delay before repeat for your keyboard. Also lets you switch keyboard layouts.

#### Labels

You can customize the colour and text of icon labels.

#### Launcher

You can open the Launcher window, where you can easily find and open programs. You can add items to the Launcher by placing an alias to your favourite applications, files, or folders in the Launcher Items folder in the System Folder.

#### Mac OS Easy Open/Macintosh Easy Open

Allows you to select the way a Mac or DOS/Windows file is translated/opened when you don't have the application that created it.

#### MacIPX

Used with the MacIPX network extensions to provide support for the MacIPX network protocol.

#### MacTCP

Used to configure and connect to TCP/IP-based networks, either locally or dial-up. Replaced by the TCP/IP control panel under Open Transport.

#### MacTCP DNR

This file, which is loose in your system folder. DNR (Domain Name Resolver) contains part of the information needed by TCP/IP applications.

#### Map

You can locate popular cities around the world, and display longitude and latitude coordinates and local time. Lets you set the location of your computer.

#### Memory

Lets you control settings such as virtual memory, disk cache size, the Modern Memory Manager, RAM disks and 24-bit/32-bit addressing switch.

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### Monitors

Allows you to configure your monitors; no. of colours/greys, resolution, main monitor on multiple monitor systems for non-PCI Macs and the 7200 series PCI Macs.

### Mouse

You can set the tracking speed and double-click speed for your mouse.

### Network

Used to choose the type of network in Systems 7.0-7.1x. Replaced by the AppleTalk control panel under Open Transport.

### Numbers

You can control how numbers and currencies are displayed on your computer (for example, where decimal points appear).

### PC Exchange

Allows your computer to read files from ProDOS and MS-DOS disks. You can specify the Mac OS application program used to open a DOS document. You can also use SyQuest and Bernoulli disks on your desktop.

### QuickTime Settings

This changes the preferences for QuickTime 2.5. You can set options for MIDI instruments, and set a CD to play automatically when inserted.

### Serial Switch

Provides compatibility for some applications that use the printer or modem port. You can set the serial port option to Faster or More Compatible. Works on Macintosh IIfx and Macintosh Quadra 950 computers.

### Sharing Setup

You can set file sharing options and specify a network name for your computer. Only available on networked Amigas.

### Sound

You can set the alert sound and volume and specify a sound input and sound output source for your computer. On PowerPC-based computers with PCI slots, this control panel is replaced by the Monitors and Sound control panel.

### Speech

You can set options for hearing text read aloud by the computer. If you have Speakable Items software and a PlainTalk-compatible microphone, you can set options for giving spoken commands to the computer. Works on all Macintosh 660AV and 840AV computers. Also works on all computers with PowerPC

microprocessors.

#### Startup Disk

Select the disk you want to start up your computer (it must have a compatible System Folder on it).

#### TCP/IP

You can specify TCP/IP settings for use with Apple's Open Transport networking.

#### Text

You can select from the text features for the script systems installed on your computer.

#### Users & Groups

Specifies who can access your computer's hard disk when file sharing is turned on. Only available on networked Amigas.

#### Views

You can customize how information is displayed in Finder windows. Note: Can be found in the Edit menu under "Preferences" in System 8 to 8.1.

#### WindowShade

Specifies whether to hide a window by clicking on its title bar. Note: Can be found in the Edit menu under "Preferences" in System 8 to 8.1.

## 1.28 oddcps

### OTHER CONTROL PANELS

Some of these Control Panels (CP) may have been installed with the "standard set" of control panels.

99% of these will not apply to you, or simply won't work (it'll give an error message if you try to

double click on an incompatible CP), so you can safely bin most of them.

#### AppleCD Speed Switch

From System 7.1. Allows you to switch between "standard" or "faster" speed. It is integrated into

CD Software 5.0.

#### AppleShareSetup

Allows you to change many of the AppleShare parameters.

#### AppleVision Setup

For PCI Macs; after upgrading to System 7.5.3, this Control Panel should be eliminated. All of its

functionality will be incorporated into the Monitors & Sound control panel.

#### Button Disabler

Allows you to disable the volume, brightness etc. buttons on the front of certain computer models,

ie. the LC/Performa 500 series Macs.

---

#### CPU Energy Saver

Allows you to turn your Mac off at a specific time or after a specified amount of idle time. ↔

#### DOS Compatibility Software Update / PC Setup

Used by Macs with the DOS Compatibility Card.

#### LaserWriter Bridge

Open Transport-compatible version of LaserWriter Bridge and LocalTalk Bridge. ↔

Allows you to use

LocalTalk printers and access LocalTalk networked Macs over an Ethernet or TokenRing network. ↔

#### LocalTalk Bridge

Allows you to bridge Ethernet and LocalTalk networks.

#### MODE32

Under System 7, gives the Mac II, IIx, IIcx, or SE/30 the ability to run in 32-bit addressing mode. ↔

With 32-bit addressing on, your Mac can take advantage of more than 8MB of RAM. ↔

Under System 7.5, a

new version of MODE32 was released. You MUST use MODE32 7.5 if you are running System 7.5. ↔

This CP is not necessary for Mac emulation on Amigas - 32 bit addressing is guaranteed. ↔

#### Monitors & Sound

A combined control panel that replaces the separate Sound and Monitors control panels. ↔

Only works on PowerPC Macs with PCI slots.

#### Network Time

If you are on a network with a Time Server, this control panel checks the server and synchronizes your Mac's clock. ↔

#### PC Setup

Used by Macs with the 610 PC and DOS Compatibility Cards, and is replaced by the DOS Compatibility Software Update 1.5. ↔

#### Performa

Included with Performa models running System 7.1P. Provides functionality similar to the General Controls control panel. ↔

#### ScriptSwitcher

Provides a quick way to automatically switch the primary script system resources in your System software.. ↔

#### Serial Switch

Made for the Mac IIcx and Quadra 950, they used a different serial port than normal Macs. ↔

#### Token Ring

Under Open Transport, works with the AppleTalk control panel to allow access to a Token Ring network.

## 1.29 extensions

### STANDARD APPLE EXTENSIONS

What is an Extension? An Extension is a small file that changes how your computer operates. Unlike a control panel, you typically do not have any direct interaction with an Extension. An Extension makes the appropriate changes when you start your computer and remains active until you shutdown your computer.

Depending on the type of computer you have, the contents of your Extensions folder may vary. You might also have extensions that were added by third-party applications.

To disable an Extension, simply take it out of the Extension Folder and put it in a folder called "Extensions (disabled)", this can be placed in the System Folder, don't worry, no Extension will be loaded from this particular folder. You can also use the Extension Manager control panel to do the same thing.

Other types of extensions are actually Libraries, these are often used by many applications or system components. It is usually a good idea not to turn off libraries, otherwise it may cause some programs not to load up. Some of the more common ones are listed in the "Libraries" link below.

Here are some

odd extensions that the installer placed in your system that you may not need.

Select one of these buttons to go to the other categories:

Control Panels

Libraries

System Folder

System Enablers

Menu

EM Extension

Used by the Extensions Manager control panel.

9500 Guide Additions

Adds step-by-step instructions for using features specific to the Power Macintosh 9500 to the on-screen help provided in Macintosh Guide.

About Apple Guide

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Provides information about how to use Apple's on-screen help system.

#### ADSP

AppleTalk Data Stream Protocol, provides networking protocol under pre-7.0 systems ←  
. More specifically, ←  
it provided data flow and full duplex data delivery over a network. However, in ←  
order for the benefits ←  
to be realized, both Macs had to be running this extension.

#### AppleCD Audio Player Guide

Provides step-by-step instructions for using the AppleCD Audio Player. You can ←  
access the AppleCD ←  
Audio Player Guide from the Guide (question mark) menu, after you install and open ←  
AppleCD Audio ←  
Player.

#### Apple CD-ROM

Enables your computer to use an Apple CD-ROM drive.

#### Apple Color SW Pro CMM

Contains colour-matching information used by ColorSync 2.0 to maintain consistent ←  
colour between ←  
documents.

#### AppleGuide

Enables your computer to use Apple's on-screen help system. You can access ←  
Macintosh Guide from the ? ←  
menu (the help menu is on the right hand side of the menu-bar), whilst in the ←  
Finder. This feature can ←  
only be found in Systems 7.5 to 8.1.

#### Apple Photo Access

Part of the CD-ROM software, and is needed for viewing Kodak PhotoCDs.

#### AppleScript

Enables automation of repetitive tasks in applications that support it. Some ←  
applications, such as ←  
Apple on-screen help, require AppleScript to work.

#### AppleShare

Gives you access to shared disks on the network. Systems 7.6 through to 8.1 uses a ←  
later version of ←  
AppleShare that is incompatible with ShapeShifter up to v3.10.

#### AppleVision Guide Additions

Adds step-by-step instructions to Mac OS Guide about how to use AppleVision ←  
displays with your ←  
computer.

#### Audio CD Access

Lets you play audio CDs on your internal or external CD-ROM drive. Requires the ←  
AppleCD Audio Player ←  
or equivalent application to control the audio CD. May only work with Apple CD ←  
drives.

#### AV Guide Additions

Adds step-by-step instructions to Mac OS Guide about how to use AV monitors with your computer. ↔

#### Clipping Extension

Lets you use the drag-and-drop feature to create clipping files on your desktop.

#### Color Picker

Creates a standard colour selection interface for all applications.

#### Color SW 2000 Series CMM

Colour-matching information used by ColorSync to maintain consistent colour between documents printed on a Color StyleWriter 2000 series printer and other colour devices. ↔

#### ColorSync

Matches colours on your display with the closest matching colours on your printers, scanners, and other devices. ↔

Desktop Printer Extension, Desktop Printer Spooler, Desktop PrintMonitor.

All three of these files are necessary for the desktop printing feature to work. (With desktop printing, you can print documents by dragging their icons to printer icons.) ↔

#### Dragging Enabler/Drag Enabler

Provides Drag Manager support under System 7.0 and 7.1. When used with the Macintosh Drag and Drop extension, provides inter-application drag and drop support under System 7.1. Integrated into the Finder under System 7 Pro and later. ↔

#### Energy Saver Extension

Used in conjunction with the Energy Saver Control Panel. Sends the Mac to sleep.

#### Energy Saver Guide Additions

Adds step-by-step instructions for using Energy Saver to the on-screen help provided by MacOS Guide. ↔

#### Ethertalk Phase 2

Lets you connect your computer to an Ethernet network.

#### File Sharing Extension

Enables your computer to share files and folders with other computers on your network. ↔

#### Find File Extension

Lets you search for files and view the results in a single window. If you turn off this extension and choose Find from the File menu, you'll get the System 7.1 Find dialogue box instead of Find File. ↔

#### Finder Help

Provides Balloon Help support for the Finder.

#### Finder Scripting Extension

Allows you to use AppleScript to automate tasks in the Finder.

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#### Foreign File Access

Enables your computer to work with CD-ROM discs whose contents don't use the standard Mac OS file system (for example, ISO 9660 or High Sierra formats).

#### Global Guide Files folder

Contains files used by the on-screen help system. Some of these files may be used to provide help more than one application.

#### LC Monitors Extension

Adds functionality to the Monitors control panel for LC series Macs.

#### Graphics Accelerator

Provides video acceleration for the PCI video card.

#### High Sierra File Access

Part of the CD-ROM software that lets you view CDs with High Sierra file systems.

#### IIci/IIsi Monitors

Describes the capabilities of the built-in video card for the Macintosh IIci and IIsi. If you remove this file, your computer can still use the video card and you can still select the number of colours displayed on your monitor, but monitor options (such as gamma settings) may not be available.

#### Installer Cleanup

This is put in the System Folder after a OS is installed. All it does is to make sure that the installation process was successful and that everything was installed in the proper place. You must allow it to load on the next restart so that it can take care of any files that were left behind after the installation. It should then disappear.

#### ISO 9660 File Access

Part of the CD-ROM software that lets you view CDs with ISO 9660 file systems.

#### LaserWriter 8

(version 8.x) A PostScript level II print driver that enables your computer to print documents on a PostScript printer connected to an AppleTalk network.

#### Mac OS Guide

Contains step-by-step instructions for working in the Finder. You access Mac OS Guide from the Guide (question mark) menu when the Finder is active.

#### MacinTalk 3

Lets your computer read text documents in human-like voices.

#### Macintosh Drag & Drop / Drag&Drop Extension

Provides Drag and Drop support under Systems 7.0.x and 7.1.x. These two files are still installed by numerous software packages, such as Now Utilities and ccMail, for universal compatibility, but are not

needed under System 7.5 and later.

MacIPX AppleTalk, MacIPX TCP/IP and MacIPX Token Rink

These are network drivers which support the MacIPX protocol over the respective network type (ie. AppleTalk, TCP/IP or Token Ring).

MacTCP Token Ring Extension

Allows you to use the TCP/IP protocol over a Token Ring network.

Monitors & Sound Guide Additions

Adds step-by-step instructions for using the Monitors & Sound control panel to Mac OS Guide. You access Mac OS Guide from the Guide (question mark) menu when the Finder is active.

My Speech Macros

Supports the Speech Macro Editor.

Network Extension

Lets you set Personal File Sharing from the Finder.

Open Transport Guide Additions

Adds step-by-step instructions for using Open Transport networking software to Mac OS Guide.

PB 500 Upgrade Guide Additions, PB 190 Upgrade Guide Additions, PB 2300 Upgrade Guide Additions

PB 5300 Upgrade Guide Additions, PowerBook Guide Additions, PowerBook Guide Additions

Adds step-by-step instructions for using features specific to the PowerBook0 to Mac OS Guide.

Printer Descriptions

This folder contains printer description files (PDFs) for most of Apple's laser printers.

Printer Driver Extensions

These are extensions which allow access/connection to various types of networks, services, printers, etc. using the Chooser. They do not take up any RAM when the System has booted-up. Most of these

(99.9%) can be deleted out of the Extensions folder, it is highly likely you won't have any of these printers.

AppleTalk ImageWriter

Color SW 1500 (SW=StyleWriter)

Color SW 2200

Color SW 2400

Color SW 2400

Color SW 2500

Color SW Pro

Color SW Pro GX (GX=QuickDraw GX compatible)

ImageWriter

ImageWriter GX

ImageWriter LQ GX

Laserwriter 8.x (General purpose postscript II compatible printer driver)

LaserWriter 300 & LaserWriter 300/LS

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LaserWriter 300 GX  
LaserWriter GX  
LaserWriter II SC GX  
LW 300/LS GX  
LW Select 310  
Personal LaserWriter SC  
Portable StyleWriter  
StyleWriter 1200  
StyleWriter GX

Printer Share & Printer Share GX

Provides the ability to share non-network printers (for example, the StyleWriter II) across a network.

PrintMonitor

This application allows you spool your print jobs to any printer.

Quadra AV Monitors Extension

Describes the capabilities of the built-in video card for the Macintosh Quadra and Centris AV computers. If you remove this file, your computer can still use the video card and you can still select the number of colours displayed on your monitor, but monitor options (such as gamma settings) may not be available.

Quadra Monitors Extension

Describes the capabilities of the built-in video card for the Macintosh Quadra and Macintosh Centris computers. If you remove this file, your computer can still use the video card and you can still select the number of colours displayed on your monitor, but monitor options (such as gamma settings) may not be available.

QuickDraw GX

QuickDraw GX is a specialist (no longer supported) printing system. Note that if this extension is installed, you must have GX-compatible printer drivers. If you have this extension installed, non-GX drivers will not even show up in the Chooser.

Printer Description

This folder contains Postscript2 printer description files or PPDs, and includes PPDs for most of Apple's own printers.

QuickTime

Provides built-in multimedia support for applications.

QuickTime PowerPlug

Provides native support of QuickTime for PowerPC-based computers when used in combination with QuickTime 2.x.

QuickTime Musical Instruments

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Supports 30 Roland Standard MIDI sound samples that can be accessed by QuickTime applications with no additional MIDI equipment. ↔

#### Scripting Additions

Extends the AppleScript language with special features, such as finding the date or time of day. With scripting additions installed, AppleScript acts as if these features are part of the language. ↔  
Scripting additions are required only when a script uses them. ↔

#### Serial (Built-In)

Used by Open Transport to allow access to the built-in serial port on your computer. ↔

#### Shared Library Manager

Provides native support for Open Transport.

#### Shortcuts

Explains common keyboard equivalents and other shortcuts to use in the Finder. You can access Shortcuts in the Guide (question mark) menu when the Finder is active. ↔

#### SimpleText Guide

Provides step-by-step instructions for using SimpleText. You can access the SimpleText Guide from the Guide (question mark) menu, after you open SimpleText. ↔

#### Speech Guide Additions

Adds step-by-step instructions for using speech recognition to the on-screen help provided in Mac OS Guide. ↔

#### SOMobjects for Mac OS

Used by OpenDoc.

#### Speech Manager

Provides text-to-speech capabilities.

#### SR Monitor

Used to monitor and interpret speech.

#### Startup Tuner

Ensures correctly starting up from the disk selected in the Startup Disk control panel. ↔

#### System 7 Tuner

For System 7.0, and comes on the System Tune-Up disk. It provided better memory management for the initial release of System 7. ↔

#### SystemAV

Used for audio-video input.

#### System Speech Rules

Supports voices and speech dialects.

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#### Thread Manager

Thread Manager is an addition to the Macintosh Toolbox that enables concurrent programming for real multi-tasking within an application. Supports cooperative and pre-emptive threads of execution at the application level, but not at the system level. It has been incorporated into System 7.5 onwards.

#### TokenTalk Phase 2

Used by the Apple Token Ring card.

#### TokenTalk Prep

Provides driver support for TokenTalk Phase II.

#### Tutorial Items

Provides instructions for learning basic skills on your computer. You can access the tutorial from the Guide (question mark) menu when the Finder is active.

#### Video Out Default (PAL)

Used by the Apple Video Player. On the standard U.S. System, the default video-out for the Apple Video Player is NTSC. Outside of the US, the standard video format is PAL - this extension changes the Apple Video Player default to PAL.

#### Video Startup

Used by the Apple Video Player.

#### Voices folder

Contains voices for use by Speech/ PlainTalk/ Text-to-Speech.

#### WorldScript Power Adapter

Supports language kit software on PowerPC-based computers. However, computers that use the Roman alphabet (English and French, for example), can still take advantage of performance and stability enhancements provided by the WorldScript Power Adapter.

## 1.30 oddexts

### OTHER EXTENSIONS

These will probably not be installed on later System OSs, eg. 7.5 to 8.1, although it depends entirely on the MacOS you are running, the processor, and any added hardware, such as; a CD-ROM drive, Ethernet, SCSI etc. 99% of these will not apply to you, so you can safely bin them .

#### A/ROSE

Allows communication between your computer's main logic board and NuBus cards that run the Apple Real-Time Operating System. Examples of such NuBus cards include the Apple Token Ring 4.16 NB card

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and the Apple Serial NB card.

#### ADBReInit

ADB is a port on the Mac, which you use to plug in the keyboard and mouse. The ADBReInit extension prevents memory from being moved at interrupt time, which could cause the some PowerBook and Quadra models to hang or crash.

#### Apple Built-In Ethernet + Apple Ethernet NB

A driver for the built-in Ethernet port on Nubus-based Macs.

#### Apple Event Manager

Allows applications (including the Finder) to send commands to other applications (again, including the Finder). For example, in InformINIT, when you click on the little "IE" AND "NN" buttons, InformINIT sends an Apple Event to Netscape telling it to go to the URL listed. This file is incorporated into the AppleScript extension with System 7.5 and above.

#### Apple Multimedia Tuner

Enhances QuickTime 2.0 and Sound Manager 3.0. Once you upgrade to QuickTime 2.1 and Sound Manager 3.1, or System 7.5.3/Update 2.0, this is no longer necessary.

#### AppleTalk ImageWriter

Enables your computer to print documents on a networked ImageWriter II.

#### At Ease 7.5 Layer Patch

Fixes a crash when using At Ease, and the Show Desktop box is unchecked in the General Controls control panel.

#### At Ease Startup

Forces your Mac to start up with the At Ease instead of the standard Mac Finder.

#### AV Setup

Used to control AppleVision displays.

#### CFM Update

Installed by older versions of QuickDraw 3D. CFM stands for Code Fragment Manager.

#### DAL

Enables network activity using Data Access Language, formerly called CL/1. Data Access Language is Apple's client/server protocol for remote data access and is based on ANSI standard SQL (Structured Query Language). DAL is optimised to provide decision-support applications with uniform access to data, regardless of the different brands of databases, the different host platforms, or the different types of networks.

#### Desktop Printer Menu

Creates a menu bar which allows you to change to a different printer without having to use the Chooser.

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#### Display Enable

Provides multiscan/multisync support, especially for AppleVision monitors. Adds functionality to Energy Saver, and to the Monitors control strip module by allowing you to switch resolutions on-the-fly.

#### DoubleTrouble

For use under pre-System 7.5 systems. When using a debugging utility, the DoubleTrouble extension will break into the debugger to alert you whenever the code in a project attempts to free a "handle" that has already been freed. An unsupported Apple extension. NOTE: do not use this extension with System 7.5 or later. It is intended only for pre-7.5 use.

#### Ethernet (Built-In)

Supports the built-in Ethernet port on PCI Macs. Not to be confused with the Apple Built-In Ethernet extension.

#### EthertalkPrep

On older systems, worked with Ethertalk Phase 2 to establish and maintain Ethernet connections. No longer needed under 7.5.3.

#### FontSize Patch

Fixes problems with font corruption when using the Asian language kits under System 7.5.3 and later.

#### Frontmost Extension

Frontmost comes with the full AppleScript commercial product, it allows you to create sophisticated user interfaces for AppleScript applications. It also acts as a run-time assistant for projects saved as miniature applications.

#### GetInfo

For use only under System 7.0. Provides extra information about files which depend on other files by modifying the Get Info... box. Only works with applications that use QuickTime.

#### Graphics Accelerator

Provides video acceleration for PCI Macs using an ATI video card.

#### Hardware System Update 1.0/2.0/3.0

System 7.1 Updates. Provided numerous system-level improvements. This file was not designed for use on Performa models.

Version 2.0 adds further improvements and overall stability, while version 3.0 increases reliability and performance, even further. AV Systems already have these improvements in their ROMs.

#### InLine Filter

Helps AppleScript and PlainTalk Speech Recognition work together. Allows Worldscript users to type scripts "in-line" instead of to a separate text file. ↔

#### Insomnia

Created for Apple PowerBooks to keep them from falling asleep.

#### Letterhead

Is part of the QuickDraw GX package, this extension enables the Letterhead paper type option in the Page Setup window of all GX compatible applications. ↔

#### LocalTalk DMA

Is part of the obscure System 7.5.3 Revision 2.1, this file fixes a bug with transferring files over LocalTalk on Performa 6400/180 and 6400/200 computers. This fix is included in the System 7.5.5 Update. ↔

#### MIDI Manager

Enables Apple's MIDI Management system.

#### Modem Scripts

A folder which contains the modem descriptions/scripts used by OT/PPP and Apple Remote Access to communicate with your modem. ↔

#### Mount IDE Drive

Allows Macs with IDE hard drives to mount these drives when the Mac is booted from another disk or device. ↔

#### N-Up Printing

Part of the QuickDraw GX package, this extension allows you to print more than one page on a single sheet of paper by dividing the page into smaller sections and reducing the printing size. Up to 16 pages can be printed on a single 8.5x11 sheet. ↔

#### Network Launch Fix

On 68040 Macs, fixed a bug when launching applications over a network. Incorporated into system 7.5 and later. ↔

#### PC Net Exchange

Works with the PC Exchange control panel to help Mac users share DOS/Windows files over an AppleTalk network with users of the AppleShare Client for Windows software. ↔

#### Printer Selector

Under LaserWriter 8.4 and above, this adds a menu of configured printers to your menu bar for quick printer switching. ↔

#### ProDOS File System

Allowed pre-7.5 Macs to recognize ProDOS/Apple IIe disks. Incorporated into PC Exchange 2.0.2 and ↔



later, and is incompatible with System 7.5.x.

#### Scanner

Is a driver for all Apple scanners (including 3rd party compatible scanners).

#### SCSI Manager

Version 4.3 is incorporated into the System under System 7.5.3 and later. On earlier systems, this is a SCSI driver upgrade extension for all (real) Macintoshes, with in-built SCSI.

#### SCSI Update

Included with the AppleShare IP 5.0 beta. Updates the SCSI Manager to allow asynchronous access on machines that don't already support it, such as 680x0 machines and early PowerMacs. The new SCSI Manager is required for products such as the Advanced Driver Toolkit from Dantz for accessing Digital Linear Tapes from within Retrospect.

#### SerialDMA v2.02

Is a driver update for DMA chips for PPC and 68040 Macs. Serial DMA is now incorporated into the System file from System 7.5.3 onwards.

#### Sound Manager

Sound Manager 3.2 was incorporated into the System in System 7.5.3, and included asynchronous sound playback. Version 3.2.1 is part of the QuickTime 2.5 package and provides even better low-memory performance and better multi-channel sound via a new sound clock component. Sound Manager 3.2.1 is built into the System file under 7.6.

#### Startup Tuner

Part of the System 7.5.3 revision, fixes a problem with the Startup Disk control panel where the Mac (on selected models) may not startup from the selected disk. Not necessary for System 7.5.5 and later.

#### Stationary

Part of the QuickDraw GX package, this extension enables the Stationary paper type option in the Page Setup.. window of compatible applications.

#### TokenTalk Phase 2

Driver used by the Apple Token Ring card and the Network/AppleTalk control panels.

#### Video Startup

Provides support for the Apple Video Player; needed to use the AVP.

#### WindowPicker

Older, unsupported utility which provides the ability to bring any open window to the front via a pop-up menu and/or arrow keys.

#### AppleVision

Only used for support of AppleVision monitors only.

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**AudioVision**

Part of the AudioVision 14" monitor software package. Only needed on pre-7.5 systems. ↔

**Shutdown Items enabler**

Provides support for the Shutdown Items folder under System 7 Pro.

**1.31 libs**

## LIBRARIES

Shared libraries are modules of data/code that is used by many applications. They are loaded only when needed, and not during boot-up. They must be placed either, in the Extensions folder (if copied there by the installer) or in the same folder as the program. Libraries often appear in Systems 7.5 to 8.1. ↔

Select one of these buttons to go to the other categories:

Control Panels

Extensions

System Folder

System Enablers

Menu

AppleScriptLib

Provides native support for AppleScript on PowerPC-based computers.

**ColorSyncLib 68k**

Code Fragment Manager file for the ColourSync software.

**DisplayLib**

Provides backwards compatibility for Display Manager 2.0 functionality on pre-7.5 systems. The ↔

Display Manager allows users and applications to dynamically change the arrangement and display modes of monitors attached to the computer. ↔

**DragLib**

It is a drag and drop support library which is incorporated into the Macintosh Drag and Drop extension. Included in the System software under System 7.5+. ↔

**Game Sprockets:**

DrawSprocketLib, GoggleSprocketLib, InputSprocketLib, NetSprocketLib, SoundSprocketLib ↔

The game sprocket system was developed as a way for game developers to directly access certain features of the System software, such as networking, video and audio, and also to provide added ↔

game-oriented functionality to these areas. The individual sprocket modules provide shared library support for their respective features.

ColorSyncLib68K, NuDragLib.slb, NuQuickTimeLib.slb, NuThreadsLib.slb, NuTranslationLib.slb

QuickDraw GX Enabler

These files are 68K shared libraries which work with the CFM-68K Runtime Enabler extension. They are loaded by the CFM-68K Runtime Enabler extension if a CFM68K based application needs them.

ObjectSupportLib

Provides services to allow applications to send, receive and exchange Apple Events that conform to the object model as well as implementing the Open Scripting Architecture object model.

OpenDoc Libraries folder

Contains code libraries and other files that enable OpenDoc technology.

Open Tpt AppleTalk Library

Used by Open Transport for the AppleTalk communication protocol.

Open Tpt Internet Library

Used by Open Transport for the TCP/IP communication protocol.

Open Transport Library

Used by Open Transport.

OpenTptAppleTalkLib

Used by Open Transport for AppleTalk communication protocol.

OpenTptInternetLib

Used by Open Transport for the TCP/IP communication protocol.

OpenTransportLib

Used by Open Transport.

PrintingLib

Provides shared library support for the LaserWriter 8.4.x software. Needed for 68k Macs and PowerMacs.

## 1.32 systemfolder

### A STANDARD SYSTEM FOLDER

Depending on the type of computer you have, the contents of the System Folder may vary. You might also have items or folders that were added by third-party applications.

Select one of these buttons to go to the other categories:

Control Panels

---

Extensions

Libraries

System Enablers

Menu

Finder

Displays the desktop area, where you work with files and disks, and keeps track of your files.

Apple Menu Items folder

When you place an item (folder, application, or document) in this folder, it appears in the Apple menu. To create submenus, place folders inside the Apple Menu Items folder.

Clipboard

Temporarily stores the last item you cut or copied from a document.

Control Panels folder

Contains individual control panels. You use control panels to adjust your computer's settings. See the "About the Control Panels" document in the Apple Extras folder for more information.

Control Strip Modules folder

Contains modules used by the Control Strip control panel.

Editors

Contains OpenDoc part editors. Editors provide functionality to OpenDoc parts, but you don't work with editors directly. To use an editor to create a document, double-click the editor's stationery icon. Your stationery icons are probably located in the Stationery folder on your hard disk.

Extensions folder

Contains individual extensions that modify the operation of your computer. Unlike a control panel, an extension works automatically, without your intervention.

Fonts folder

Contains font suitcases or individual font files. You can place up to 128 suitcase or font files in this folder. PostScript fonts are not included in the 128 file limit. Font suitcases can hold any number of font files, up to a limit of 16 MB.

Launcher Items folder

Contains files, folders, and applications that appear in the Launcher window.

Macsbug

A debugger used by programmers to help diagnose problems with programs, extensions, and so on. Unless you're programming, you don't need Macsbug.

Preferences folder

---

Contains preferences files created by individual applications. A preference file determines application settings.

PrintMonitor Documents folder  
Stores all spooled print documents waiting to be printed.

Scrapbook  
Stores items placed in the Scrapbook (the Scrapbook is available in the Apple menu).

Shutdown Items folder  
Contains applications or scripts that run automatically when you shut down your computer. You can add or remove items from this folder.

Startup Items folder  
Contains applications or scripts that run automatically when you start your computer. You can add or remove items from this folder.

System Enabler xxx  
Is an System updater file, that makes a specific Macintosh work with older System software, ie. System 7.1x with a Power Mac 7500. See Enablers in detail for details.

System file  
Contains some system-wide resources, such as sounds and keyboard layouts.

## 1.33 sysenable

### SYSTEM ENABLERS FOR 68K MACS

What are Enablers?  
In the past, when Apple released new computers, the system software was revised. To get around this problem, system enablers were written which contain information necessary for newer computers to start up. All Apple computers released since system software 7.1 (September 1992) require a system enabler to start up. If you have System 7.5 upwards, then you will not require an Enabler (it is built into the System file).

Will I need it for Mac emulation?  
Very unlikely, except maybe for Systems 7.0 to 7.11 (Pro) - this is because ShapeShifter and Fusion makes your Amiga think it is a Quadra or MacIIci in emulation mode (depending on the version of SS/Fusion you are using). You're better off reading the docs that came with the emulator, to confirm any queries you might have.

Select one of these buttons to go to the other categories:

- Control Panels
  - Extensions
  - Libraries
  - System Folder
  - Menu
- TABLE OF 680x0 MAC SYSTEM ENABLERS

CPU	Note	Enabler	Current Version	↔
Centris 610		System Enabler 040	1.1	↔
	D			
Centris 650		System Enabler 040	1.1	↔
	D			
Centris 660AV		System Enabler 088	1.2	↔
	D			
Colour Classic		System Enabler 401	1.0.5	↔
	D			
Macintosh IIvi		System Enabler 001	1.0.1	↔
	D			
Macintosh IIvx		System Enabler 001	1.0.1	↔
	D			
Macintosh LC III		System Enabler 003	1.1	↔
	D			
Macintosh LC 475		System Enabler 065	1.2	↔
	D			
Macintosh LC 520		System Enabler 403	1.0.2	↔
	D			
Macintosh LC 550		System Enabler 403	1.0.2	↔
	D			
Macintosh LC 575		System Enabler 065	1.2	↔
	D			
Macintosh LC 630		System Enabler 405	1.0	↔
	D			
PowerBook 150		PowerBook 150 Enabler	1.1	↔
	D			
PowerBook 160		System Enabler 131	1.0.3	↔
	A			
PowerBook 165		System Enabler 131	1.0.3	↔
	A			
PowerBook 165c		System Enabler 131	1.0.3	↔
	A			
PowerBook 180		System Enabler 131	1.0.3	↔
	A			
PowerBook 180c		System Enabler 131	1.0.3	↔
	A			
PowerBook 190		PowerBook 5300/2300/190 Enabler	1.2.4	↔
	E			
PowerBook 520		PowerBook 500 Series Enabler	1.0.2	↔
	D			

PowerBook 520c.....	PowerBook 500 Series Enabler.....	1.0.2	↔
..... D			
PowerBook 540.....	PowerBook 500 Series Enabler.....	1.0.2	↔
..... D			
PowerBook 540c.....	PowerBook 500 Series Enabler.....	1.0.2	↔
..... D			
PowerBook 5300.....	PowerBook 5300/2300/190 Enabler....	1.2.4	↔
..... E			
PowerBook Duo 210.....	PowerBook Duo Enabler.....	1.0	↔
..... B			
PowerBook Duo 230.....	PowerBook Duo Enabler.....	1.0	↔
..... B			
PowerBook Duo 250.....	PowerBook Duo Enabler.....	1.0	↔
..... B			
PowerBook Duo 270c.....	PowerBook Duo Enabler.....	1.0	↔
..... D			
PowerBook Duo 280.....	PowerBook Duo Enabler.....	2.0	↔
..... C			
PowerBook Duo 280c.....	PowerBook Duo Enabler.....	2.0	↔
..... C			
PowerBook Duo 2300.....	PowerBook 5300/2300/190 Enabler....	1.2.4	↔
..... E			
Quadra 605.....	System Enabler 065.....	1.2	↔
..... D			
Quadra 610.....	System Enabler 040.....	1.1	↔
..... D			
Quadra 630.....	System Enabler 405.....	1.0	↔
..... D			
Quadra 650.....	System Enabler 040.....	1.1	↔
..... D			
Quadra 660AV.....	System Enabler 088.....	1.2	↔
..... D			
Quadra 800.....	System Enabler 040.....	1.1	↔
..... D			
Quadra 840AV.....	System Enabler 088.....	1.2	↔
..... D			
Macintosh TV.....	System Enabler 404.....	1.0	↔
..... D			
Performa 600.....	System Enabler 304.....	1.0.1	↔
..... D,F			
Performa 450,460,466/7.....	System Enabler 308.....	1.0	↔
..... D			
Performa 475,476,575,577/8..	System Enabler 364.....	1.1	↔
..... D			
Performa 550,560.....	System Enabler 332.....	1.1	↔
..... D			
Performa 630,635CD.....	System Enabler 405.....	1.0	↔
..... D			

## Notes

A - System Enabler 131 replaces System Enabler 111 and System Enabler 121.

C - Requires System Software 7.1.1 or later. System Software 7.1.1 and PowerBook Duo Enabler 2.0

ship with the PowerBook Duo 280 and 280c.

D - No system enabler is required for this Macintosh under System 7.5 or later.

E - Requires System Software 7.5.2 or later.

F - The Performa 600 requires System Enabler 304 to run Performa System Software (7.1Px) and Macintosh System Enabler 001 to run Macintosh System Software (7.1).

### 1.34 roms

#### THE ENTIRE MACINTOSH 68k RANGE + SYSTEM SPECS

Listed below is the entire range of 68K Macintoshes. I've also included; the MacOSes that will work with each Mac, from System 7.0 upwards (see the KEY for details); which processor was used; and what ROM was used on that particular Mac (incomplete).

Note the stars (\*) next to the Mac's name, this means that this ROM will not be compatible with ShapeShifter or Fusion. Fusion accepts 256k, 512k and 1mb ROMs, while ShapeShifter will only accept 512k and 1mb ROMs.

Note, that I've listed the memory addressing "bit" capability of the Mac.. if you got a ROM from a 24bit Mac, it will not cause a problem with memory addressing in emulation, this is handled by ShapeShifter or Fusion.

Compatibility guidelines;

- 1) Use 512k or 1mb ROMs for System 7.5 and above
- 2) Use 1mb ROMs for 68040 or 68060 Amigas, and when you want to use System 8.x.

THIS LIST CONTAINS SYSTEM VERSION COMPATIBILITY INFO FOR "REAL" MACINTOSHES, THIS DOES NOT MEAN THAT IT EFFECTS EMULATION IN THE SAME WAY. -MOST- ROMS AND SYSTEMS LISTED, WILL WORK IN EMULATION, HOWEVER THERE IS NO GUARANTEE THAT THEY WILL WORK WITH ALL AMIGA SETUPS!

Click here

to go back to the - Mac Info Main Menu.

To find more information on 68k Macintosh specs, click here

.

Macintosh Model	ROM version	ROM size	CPU/Mhz	Bit?	Supported Systems
-----					
Desktop Macs					
*Macintosh 128K	xxx.xx	64k	68000/8	24bit	7.01P only
	key				
*Macintosh 512K	xxx.xx	64k	68000/8	24 bit	Systems 1.0-6.08 only
*Macintosh 512Ke	xxx.xx	128k	68000/8	24bit	Systems 1.0-6.08 only



```

*Macintosh XL.....xxx.xx.....16k...68000/5.....24bit..... ←
  MacWorks System only
*Macintosh Plus.....xxx.xx.....128k...68000/8.....24bit.....1,2,4,B
Macintosh SE.....xxx.xx.....256k...68000/8.....24bit.....A,B
Macintosh SE FDHD.....xxx.xx.....256k...68000/8.....24bit.....A,5a,B
Macintosh SE/30.....xxx.xx.....256k...68030/16.....24bit.....A,B
Macintosh Classic.....124.22.....512k...68000/8.....24/32bit....A,B
Macintosh Classic II.....xxx.xx.....512k...68030/16.....24/32bit ←
  ....2,4,5,7,10,11,C
Macintosh Colour Classic.....xxx.xx.....1mb...68030/16.....24/32bit....4,5,B,C
Macintosh Colour Classic II...xxx.xx.....1mb...68030/33.....24/32bit....4,B,C
Macintosh II.....124.14.....256k...68020/16.....24bit.....A,B
Macintosh IIX.....xxx.xx.....256k...68030/16.....24bit.....A,B
Macintosh IICX.....xxx.xx.....256k...68030/16.....24bit.....A,B
Macintosh IICI.....124.16*/17/18.....512k...68030/25.....24/32bit....A,B,C
Macintosh IISI.....xxx.xx.....512k...68030/20.....24/32bit....A,B,C
Macintosh IIVI.....xxx.xx.....1mb...68030/16.....24/32bit....4,5,A,B ←
  ,C
Macintosh IIVX.....xxx.xx.....1mb...68030/32.....24/32bit....4,5,A,B ←
  ,C
Macintosh IIFX.....124.17.....512k...68030/40.....24/32bit....A,B
Macintosh LC.....124.17/19.....512k...68020/16.....24/32bit....A,B
Macintosh LC II.....124.34.....512k...68030/16.....24/32bit....2,4,5,B ←
  ,C
Macintosh LC III.....124.25/34.....1mb...68030/25.....24/32bit....4,5,B,C
Macintosh LC III+.....xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh LC 475.....124.34/38..512k/1mb...68LC040/50...24/32bit....4,5,B,C ←
  ,D
Macintosh LC 520.....xxx.xx.....1mb...68030/25.....24/32bit....4,5,B,C
Macintosh LC 550.....xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh LC 575.....xxx.xx.....1mb...68LC040/66...24/32bit....4,5,B,C ←
  ,D
Macintosh LC 580.....xxx.xx.....1mb...68LC040/66...32bit.....B,C,D
Macintosh LC 630.....xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←
  D
Macintosh LC 630 DOS.....xxx.xx.....1mb...68LC040/66...32bit ←
  .....8,10,11,C,D
Macintosh TV.....xxx.xx.....1mb...68030/32.....24/32bit....4,5,B,C
Macintosh Performa 200.....xxx.xx.....512k...68030/16.....24/32bit....3,4,6a ←
  -6e,B,C
Macintosh Performa 250.....xxx.xx.....1mb...68030/16.....24/32bit....4,5,B,C
Macintosh Performa 275.....xxx.xx.....1mb...68030/33.....24/32bit....4,B,C
Macintosh Performa 400.....xxx.xx.....512k...68030/16.....24/32bit....3,4a,6a ←
  -6e,B,C
Macintosh Performa 405.....xxx.xx.....512k...68030/16.....24/32bit....4,4a,6a ←
  -6e,B,C
Macintosh Performa 410.....xxx.xx.....512k...68030/16.....24/32bit....6c-6e,B ←
  ,C
Macintosh Performa 430.....xxx.xx.....512k...68030/16.....24/32bit....6b-6e,B ←
  ,C
Macintosh Performa 450.....xxx.xx.....1mb...68030/25.....24/32bit....6b-6e,B ←
  ,C
      key
      Macintosh Performa 460.....xxx.xx.....1mb ←
        ....68030/33.....24/32bit....6c-6e,B,C
Macintosh Performa 466.....xxx.xx.....1mb...68030/33.....24/32bit....6c-6e,B ←
  ,C

```

Macintosh Performa 467.....xxx.xx.....1mb...68030/33.....24/32bit....6c-6e,B ←  
 ,C  
 Macintosh Performa 475.....124.34.....1mb...68LC040/50...24/32bit....6c-6e,B ←  
 ,C,D  
 Macintosh Performa 476.....xxx.xx.....1mb...68LC040/50...24/32bit....6c-6e,B ←  
 ,C,D  
 Macintosh Performa 520.....xxx.xx.....1mb...68030/25.....24/32bit....4,5,B,C  
 Macintosh Performa 550.....xxx.xx.....1mb...68030/33.....24/32bit....6c-6e,B ←  
 ,C  
 Macintosh Performa 560.....xxx.xx.....1mb...68030/33.....24/32bit....6d-6e,B ←  
 ,C  
 Macintosh Performa 575.....xxx.xx.....1mb...68LC040/66...24/32bit....6e,B,C, ←  
 D  
 Macintosh Performa 577.....xxx.xx.....1mb...68LC040/66...24/32bit....6e,B,C, ←  
 D  
 Macintosh Performa 578.....xxx.xx.....1mb...68LC040/66...24/32bit....6e,B,C, ←  
 D  
 Macintosh Performa 580cd.....xxx.xx.....1mb...68LC040/66...32bit.....B,C,D  
 Macintosh Performa 588cd.....xxx.xx.....1mb...68LC040/66...32bit.....B,C,D  
 Macintosh Performa 600/600cd..xxx.xx.....1mb...68030/32.....24/32bit....4a,6a-6 ←  
 e,B,C  
 Macintosh Performa 630/630cd..xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←  
 D  
 Macintosh Performa 630cd DOS..xxx.xx.....1mb...68LC040/66...32bit ←  
 .....8,10,11,C,D  
 Macintosh Performa 631cd.....xxx.xx.....1mb...68LC040/66...32bit ←  
 .....8,10,11,C,D  
 Macintosh Performa 635cd.....xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←  
 D  
 Macintosh Performa 636/636cd..xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←  
 D  
 Macintosh Performa 637cd.....xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←  
 D  
 Macintosh Performa 638cd.....xxx.xx.....1mb...68LC040/66...32bit.....6f,B,C, ←  
 D  
 Macintosh Performa 640cd DOS..xxx.xx.....1mb...68LC040/66...32bit ←  
 .....8,10,11,C,D  
 Macintosh Centris 610.....xxx.xx.....1mb...68LC040/40...24/32bit....4,5,B,C ←  
 ,D  
 Macintosh Centris 650.....124.35.....1mb...68040/50.....24/32bit....4,5,B,C ←  
 ,D  
 Macintosh Centris 660av.....xxx.xx.....2mb...68040/50.....32bit.....4,5,B,C ←  
 ,D  
 Macintosh Quadra 600.....124.21.....n/a...n/a.....n/a.....n/a  
 Macintosh Quadra 605.....xxx.xx..512k/1mb...68LC040/50...24/32bit....4,5,B,C ←  
 ,D  
 Macintosh Quadra 610/610 DOS..xxx.xx.....1mb...68040/50.....24/32bit....4,5,B,C ←  
 ,D  
 Macintosh Quadra 630.....xxx.xx.....1mb...68040/66.....32bit.....6f,B,C, ←  
 D  
 Macintosh Quadra 650.....xxx.xx.....1mb...68040/66.....24/32bit....4,5,B,C ←  
 ,D  
 Macintosh Quadra 660av.....xxx.xx.....2mb...68040/50.....32bit.....4,5,B,C ←  
 ,D  
 key  
 Macintosh Quadra 700.....xxx.xx.....1mb ←  
 ...68040/50.....24/32bit....2,4,5,B,C,D

```

Macintosh Quadra 800.....xxx.xx.....1mb...68040/66.....24/32bit....4,5,B,C ←
,D
Macintosh Quadra 840av.....xxx.xx.....2mb...68040/80.....32bit.....4,5,B,C ←
,D
Macintosh Quadra 900.....xxx.xx.....1mb...68040/50.....24/32bit....2,4,5,B ←
,C,D
Macintosh Quadra 950.....124.23/34.....1mb...68040/66.....24/32bit....2,4,5,B ←
,C,D

Portable Macs
Macintosh Portable.....xxx.xx.....256k...68000/16.....24bit.....A,B
Macintosh PowerBook 100.....124.21.....256k...68000/16.....24bit.....2,4,5,B
Macintosh PowerBook 140.....xxx.xx.....1mb...68030/16.....24/32bit....2,4,5,B ←
,C
Macintosh PowerBook 145.....xxx.xx.....1mb...68030/25.....24/32bit....2,4,5,B ←
,C
Macintosh PowerBook 145B.....xxx.xx.....1mb...68030/25.....24/32bit....4,5,B,C
Macintosh PowerBook 150.....xxx.xx.....1mb...68030/33.....32bit.....5a,B,C
Macintosh PowerBook 160.....xxx.xx.....1mb...68030/25.....24/32bit....4,5,B,C
Macintosh PowerBook 165/165c..xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh PowerBook 170.....xxx.xx.....1mb...68030/25.....24/32bit....2,4,5,B ←
,C
Macintosh PowerBook 180/180c..xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh PowerBook 190.....xxx.xx.....2mb...68LC040/66...32bit ←
.....9,10,11,C,D
Macintosh PowerBook 190cs.....xxx.xx.....2mb...68LC040/66...32bit ←
.....9,10,11,C,D
Macintosh PowerBook Duo 210...xxx.xx.....1mb...68030/25.....24/32bit....4,5,B,C
Macintosh PowerBook Duo 230...xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh PowerBook Duo 250...xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh PowerBook Duo 270c..xxx.xx.....1mb...68030/33.....24/32bit....4,5,B,C
Macintosh PowerBook Duo 280...xxx.xx.....1mb...68LC040/66...24/32bit....5a,B,C, ←
D
Macintosh PowerBook Duo 280c..xxx.xx.....1mb...68LC040/66...24/32bit....5a,B,C, ←
D
Macintosh PowerBook 520/520c..xxx.xx.....2mb...68LC040/50...32bit.....5a,B,C, ←
D
Macintosh PowerBook 540/540c..xxx.xx.....2mb...68LC040/66...32bit.....5a,B,C, ←
D
Macintosh PowerBook 550c.....xxx.xx.....2mb...68040/66.....32bit.....B,C,D

Server Macs
WorkGroup Server 60.....xxx.xx.....1mb...68040/40.....24/32bit ←
....4,8,10,11,C,D
WorkGroup Server 60/50mhz.....xxx.xx.....1mb...68040/50.....24/32bit ←
....4,8,10,11,C,D
WorkGroup Server 80.....xxx.xx.....1mb...68040/66.....24/32bit ←
....4,8,10,11,C,D
WorkGroup Server 95.....xxx.xx.....1mb...68040/66.....24/32bit....B,C,D ( ←
unsure)

```

key

## 1.35 key

## KEY TO SYSTEM VERSIONS

To go back to the System & ROMs page click [here](#)

Individual System Versions - Key Versions - Key	Group System ↔
1 = System 7.0	A = System 7.0, 7.01, 7.1, 7.11 (Pro)
2 = System 7.01	B = System 7.5, 7.51, 7.53, 7.55
3 = System 7.01P	C = System 7.6 & 7.61
4 = System 7.1	D = System 8.0 & 8.1
4a = System 7.1P	
5 = System 7.11 (Pro)	
5a = System 7.11	
6a = System 7.1P1	Other - Key
6b = System 7.1P2	DOS = DOS Compatible card
6c = System 7.1P3 with SS & Fusion	*Macintosh = ROM not compatible ↔
6d = System 7.1P5 available	xxx.xx = ROM version not ↔
6e = System 7.1P6	
6f = System 7.12P	
7 = System 7.5	
8 = System 7.51	
9 = System 7.52	
10 = System 7.53	
11 = System 7.55	
12 = System 7.6	
13 = System 7.61	
14 = System 8.0	
15 = System 8.1	

To go back to the System & ROMs page click [here](#)

## 1.36 keys

### USEFUL KEYBOARD SHORTCUTS

Keyboard Key Names & the Amiga's Equivalent

Apple = Amiga's "A" keys    Option = Alt keys    (all other keys are literally ↔  
named the same)

Key Combinations [When to Use It]

What it does

### ACTION KEYS, WHEN BOOTING-UP

Apple + Option + p + r  
memory file.

Deletes the contents of the PRAM ↔

[Hold down at the very beginning of bootup]

Shift  
System extensions.

Disables all non-essential ↔

[Hold down when the Happy Mac screen appears]

Spacebar control panel. [Hold down this key on the Happy Mac screen until the Extensions enabler screen appears]	Calls up the Extensions Manager ↔
Apple + Option + Shift + Backspace Delete and startup [Hold down at the very beginning of bootup]	Bypass the internal hard disk, ↔ from a different System Folder.
Apple + Option + Escape program. [Press and hold all at once; anytime a program appears to freeze-up or crash]	Force quits any application/ ↔
Apple + Option [Hold both keys just before the last extensions load up during startup. A dialogue box will appear, asking you whether you to rebuild for every locally mounted disk.]	Rebuild the Desktop File.
Apple loading the Finder. [Hold down, right through the startup sequence]	Disables virtual memory upon ↔

## ACTIONS &amp; SHORTCUTS, WHILE IN THE FINDER

Control + click anywhere on screen. [Hold the Ctrl key & select the option you require, from the menu]	Displays a contextual menu ↔ System 8.x only.
Option + click the window close gadget [Hold the option key, then click the gadget]	Closes all open folder windows.
Option + drag icon different folder [Hold the option key, then click & drag the original still in place. icon over the folder you want it duplicated to, and release the mouse button]	Copies the icon(s) into a ↔ or location, leaving the ↔
Apple + Option + drag icon folder/disk. [Hold all keys, then drag & release mouse button]	Creates an alias of the icon/ ↔
Apple + window title bar on the disk. [Hold key & click on the folder name in the window's title bar, a pop-up menu will appear]	Displays the folder's full path ↔
Apple + Shift + 3 screen will be saved [Hold all keys until you hear a crunching disk. sound, then the image will be saved]	A snapshot of the current Mac ↔ onto the desktop of the startup ↔

<p>Apple + Shift + 4  snapshot of any part of  [Hold all keys down, then use the mouse to  click and drag a rectangle round the area you  wish to save, and release the mouse button]</p>	<p>This enables you to take a ↵  of the Mac's screen.</p>
<p>Apple + Shift + Capslock + 4  window.  [Hold all the keys down, release them and use  the mouse to click on the window you want]</p>	<p>A snapshot of the current active ↵</p>
<p>Apple + . (full stop)  is equivalent to  [Hold both down until the operation is  window. You may also  cancelled]  disk request window.</p>	<p>Cancel current operation, this ↵  pressing the cancel button in a ↵  use this key combo to cancel a ↵</p>
<p>Return / Enter  button in a window.  [Just press the key once]  default' highlighted</p>	<p>Equivalent to clicking the OK ↵  This also applies to all ' ↵  buttons (with extra thick border ↵  round it).</p>

## 1.37 didyouknow

DID YOU KNOW..

Interesting System 7.x information

- HFS is limited to 65,536 files for any partition or removable hard disk.
- HFS limits filenames to 31 characters.
- HFS does not allow these characters in filenames; ":" & ";".
- The maximum number of fonts you can have open at any one time, is 128.
- The maximum number of files that can be opened at once is 346.
- The maximum number of items you can have in the Apple Menu is 50.
- The maximum amount of RAM that can be allocated to any program is 99,999k (100mb) ↵
- .
- To move the Control Strip in the Finder, press Alt and drag with the left hand ↵  
edge of the Control  
Strip gadget.
- PC Exchange (upto version 2.1) will only recognise PC formatted disks upto 1gig.

Where do I find the full specs for the whole Macintosh range..

Go to this FPT page (below), you will need to download two files:

[ftp://ftp.info.apple.com/Apple\\_Support\\_Area/Apple\\_Software\\_Updates/English- ↵  
North\\_American/Macintosh/  
Utilities/Apple\\_Spec/Apple\\_Spec\\_8-98.smi.bin](ftp://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/English-North_American/Macintosh/Utilities/Apple_Spec/Apple_Spec_8-98.smi.bin) or [Apple\\_Spec\\_app.smi.bin](#)

The file is a Filemaker Pro3 document, so you'll need the accompanying viewer ↵  
program if you do not  
own Filemaker. Both files are in the same web page.

Apple also has the above information in it's web pages. Use this web address to go ←  
direct to it:

<http://support.info.apple.com/applespec/applespec.taf>

## 1.38 software

### USEFUL UTILITIES, PROGRAMS & SYSTEM ENHANCERS

Some good & very reasonable mail-order companies (UK), to order from:

Camelot.....[unknown].....Tel: 0171 383 2727

Dabs Direct.....[www.dabs.com/](http://www.dabs.com/).....Tel: 0800 68000 (sales ←  
freephone)

Computer Warehouse.....[www.cwonline.co.uk/](http://www.cwonline.co.uk/).....Tel: 0181 400 1234

MacWarehouse.....[www.macwarehouse.co.uk/](http://www.macwarehouse.co.uk/).....Tel: 0800 181 332 (sales ←  
freephone)

#### Commercial Software:

Software Title Description	Publisher/Author	Web Site	
Adobe Type Manager Deluxe... font render.	Adobe.....	<a href="http://www.adobe.com">www.adobe.com</a> .....	On-screen ←
Anti-virus..... program.	Dr Solomans.....	<a href="http://www.drsoloman.com">www.drsoloman.com</a> .....	Anti-virus ←
Anubus Plus 3.0..... manager HFS/HFS+.	Clarismac.....	<a href="http://www.clarismac.com">www.clarismac.com</a> .....	Disk ←
BackupMastery..... package.	Clarismac.....	<a href="http://www.clarismac.com">www.clarismac.com</a> .....	Backup ←
CD Autocache..... driver.	Charismac.....	<a href="http://www.charismac.com">www.charismac.com</a> .....	CD-ROM ←
CD-ROM Toolkit..... management.	FWB.....	<a href="http://www.fwb.com">www.fwb.com</a> .....	CD-ROM ←
Charismac RAID..... management software.	Charismac.....	<a href="http://www.charismac.com">www.charismac.com</a> .....	RAID ←
Conflict Catcher..... conflict catcher.	Cassidy.....	<a href="http://www.cassidy.com">www.cassidy.com</a> .....	Extension ←
DiskFit..... backup utility.	Dantz.....	<a href="http://www.dantz.com">www.dantz.com</a> .....	Very cheap ←
Disk Doubler..... Compression/archive creation.	Symantec.....	<a href="http://www.symantec.com">www.symantec.com</a> .....	←
Disk Express Pro..... HFS+ optimiser	Alsoft.....	<a href="http://www.alsoft.com">www.alsoft.com</a> .....	Advanced ←
DiskWarrior..... repair utility.	Alsoft.....	<a href="http://www.alsoft.com">www.alsoft.com</a> .....	Disk ←
Fastback..... util, came with NU v3.	Symantec.....	<a href="http://www.symantec.com">www.symantec.com</a> .....	Backup ←
FileGuard..... security utility.	Highwire.....	[unknown] .....	Disk/data ←
Hard Disk ToolKit..... management utils.	FWB.....	<a href="http://www.fwb.com">www.fwb.com</a> .....	Disk ←
MacLink+/Pro..... converter.	Dataviz.....	<a href="http://www.dataviz.com">www.dataviz.com</a> .....	Text file ←
MarkzTools2..... repairer.	Markzware.....	<a href="http://www.markzware.com">www.markzware.com</a> .....	Xpress doc ←
Master Juggler..... manager program.	Alsoft.....	<a href="http://www.alsoft.com">www.alsoft.com</a> .....	Font ←

Norton Backup.....Symantec.....www.symantec.com.....Backup ←  
 util, came with NU v2.

Norton DiskLock.....Symantec.....www.symantec.com.....Disk/data ←  
 security utility.

Norton Utilities 3.5 CD.....Symantec.....www.symantec.com.....Disk ←  
 repair utility.

PKzip (PC & Mac).....PKware Inc.....www.pkware.com..... ←  
 Compression/archive creation.

Plus Maximiser.....Alsoft.....www.alsoft.com.....Enhances ←  
 System HFS+ formatting.

PlusMaker.....Alsoft.....www.alsoft.com.....HFS to HFS ←  
 + converter.

PlusOptimiser.....Alsoft.....www.alsoft.com.....HFS/HFS+ ←  
 disk optimiser.

PowerPrint v4.....Infowave.....www.infowave.com.....Parallel ←  
 printer driver.

Private File.....Aladdin Systems.....www.aladdinsys.com.....Disk/data ←  
 security utility.

RAID Toolkit.....FWB.....www.fwb.com.....RAID0/1 ←  
 hard disk manager.

Ram Doubler.....Connectix.....www.connectix.com.....RAM ←  
 expander.

Rapid-CD.....Insignia Solutions...www.insignia.com.....CD-ROM ←  
 driver.

RapidCD.....MacPeak.....www.macpeak.com.....CD-ROM ←  
 driver.

Remus.....Adaptec.....www.adaptec.com.....RAID ←  
 management software.

Retrospect/R.Express.....Dantz.....www.dantz.com.....THE Mac ←  
 backup program.

SAM Anti-Virus.....Symantec.....www.symantec.com.....Anti-virus ←  
 program.

SCSI CD Driver.....Corel.....www.corel.com.....CD-ROM ←  
 driver.

Spacemaker.....Total Recall.....www.spacemaker.recallusa.com.. ←  
 HFS-HFS+ converter.

Stuffit Deluxe.....Aladdin Systems.....www.aladdinsys.com..... ←  
 Compression/archive creation.

StyleScript.....Infowave.....www.infowave.com.....Postscript ←  
 for inkjets.

Suitcase.....Symantec.....www.symantec.com.....Font ←  
 manager program.

TechTool Pro2.....Micromat Comp Systems.www.micromat.com.....Disk ←  
 repair utility.

Toast CD-ROM Pro/Toast3.5...Adaptec.....www.adaptec.com.....CD burning ←  
 utility.

Virex.....Datawatch.....www.datawatch.com.....Anti-virus ←  
 program.

Shareware Software:

AppSizer.....Michael Peirce.s.....[any shareware site]..Memory ←  
 allocator utility.

Chucks Printer Driver.....Charles Rentmeesters..[any shareware site]..Epson/HP b ←  
 &w printer driver.

Compact Pro.....Bill Goodman.....[any shareware site].. ←  
 Compression/archive creation.

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Data Rescue.....[unknown].....www.wildbits.com/ Recovers ↵  
 lost data from high rescue.....level ↵  
 formatted HDs.

Default Folder.....St.Clair Software.....[any shareware site]..Open/save ↵  
 folder navigator.

Dos2mac.....T.Sourbier.....[any shareware site]..Removes ↵  
 unwanted characters from PC text.

Extension Overload.....Peter Lewis.....[any shareware site]..Extension ↵  
 info database.

FileBuddy.....Lawrence Harris.....[any shareware site]..File flag/ ↵  
 type editor.

FileTypeer.....[unknown].....[any shareware site]..File flag/ ↵  
 type editor.

Font Manager.....Ed Hopkins.....[any shareware site]..Font ↵  
 manager program.

GraphicConverter.....Lemke Software.....[any shareware site]..Multi ↵  
 image format converter.

InformINIT.....Don Frakes.....[any shareware site]..Extension ↵  
 info database.

Snitch.....Mitch Jones.....[any shareware site]..File flag/ ↵  
 type editor.

Shrinkwrap.....Aladdin Systems.....[any shareware site]..Disk image ↵  
 mounter/creator.

Stuffit Lite.....Aladdin Systems.....[any shareware site].. ↵  
 Compression/archive creation.

TTconverter.....Chris Reed.....[any shareware site]..PC ↵  
 truetype font converter.

Type/Creator Database.....Ilan Szekely.....[any shareware site]..Type codes ↵  
 database.

ZipIt.....Softlock.....[any shareware site].. ↵  
 Compression/archive creation.

Freeware Software:

Apple Error Codes'98.....Apple/Tech Info Lib...www.apple.com.....Explains ↵  
 System error codes.

Binhex 4 & 5.....Yves Lempereur.....[any shareware site]..HQX ↵  
 encoder/decoder.

DD Expand.....Symantec.....[any shareware site].. ↵  
 DiskDoubler archive expander.

Disk Copy.....Apple Computers.....www.apple.com/support.Disk image ↵  
 mounter/creator.

DiskFit Direct.....Dantz.....www.dantz.com.....Comes on ↵  
 Mac Zip Tools disk.

Disinfectant 3.7.....John Norstad.....[any shareware site]..Anti-virus ↵  
 program.

Easy Errors 1.2.....Dave Rubinic.....[any shareware site]..Explains ↵  
 error codes.

FreePPP.....S.Dagley & R.Reynolds.[any shareware site]..PPP ↵  
 internet driver.

LHA Expander.....Masanori Sekino.....[any shareware site]..LHA ↵  
 archive expander.

MacGZip.....SPD Soft.....[any shareware site]..Expands:.. ↵  
 gz, .z, .taz, .tgz.

Memory Mapper.....Street Logic Soft.....www2.connectnet.com/ Shows ↵  
 exactly what is

~stlogic/.....currently ←  
 using memory.

Packit.....[unknown].....[any shareware site]..Archive ←  
 creator.

SoftwareFPU.....J.Neil & Associates...[any shareware site]..FPU ←  
 emulator.

Stuffit Expander 4.0/4.5....Aladdin Systems.....[any shareware site]..SIT,CPT, ←  
 HQX,BIN expander.

System Errors.....Bill Steinberg.....[any shareware site]..Explains ←  
 error codes.

Text Browser.....John Lamb.....[any shareware site]..Text doc ←  
 viewer.

Zip Tools.....Iomega.....www.iomega.com.....Zip & Jazz ←  
 drivers/tools.

## 1.39 download

### FTP & WEB SITES TO DOWNLOAD SHAREWARE/FREWARE SOFTWARE

All these sites have been tested, and they work!

#### Macintosh Shareware & Information Sites

<http://www.macalliance.com/> .....Mac community site.

<http://sharewarestation.com/> .....Large shareware site.

<http://www.zdnet.com/mac/> .....Good selection of ←  
 shareware here.

<http://www.filez.com/> .....Millions of Mac files to ←  
 be had.

<http://www.versiontracker.com/> .....Hosts every software ←  
 update for Macs.

<http://cdrom.amug.org/http/bbs/files.html> .....Mac version of the Aminet.

<http://www.macfaq.com/> .....FAQs, vendors, links and ←  
 much more.

<http://www.macville.mac-mania.com/> .....Guide to Mac sites.

<http://www.MacintoshOS.com/> .....Great for Mac info, ←  
 shareware and more.

<http://www.macfixit.com/> .....A Mac troubleshooter web ←  
 site (not mine).

<http://www.Macreviewzone.com/> .....Reviews on Mac software.

<http://www.macupdate.com/> .....The LARGEST shareware site ←  
 in the world.

<http://www.shareware.com/> .....General Mac shareware site ←

.

<http://www.download.com/Mac/FrontDoor/> .....Links to other shareware ←  
 sites.

<http://www.maccentral.com/>.....General Mac shareware site ←

.

<http://www.hyperactive.lcs.mit.edu/>.....Very large shareware & ←  
 freeware site.

<http://wwwhost.ots.utexas.edu/> .....Very large shareware & ←  
 freeware site.

<http://www.happypuppy.com/> .....Loads of games.

<http://www.jumbo.com/pages/mac> .....Large shareware site.

<http://www.MacintoshOS.com/> .....Everything for Macintosh ←  
 at this site.

<http://www.ap.net/download/> .....The Macintosh Shareware ←  
 Source.

<http://www.macorchard.com/> .....Up-to-date Mac internet ←  
 software.

<http://www.gamesdomain.com/> .....Huge site, endless supply ←  
 of info.

<http://www.pixi.com/~schizo/> .....The latest in 68k Mac ←  
 games.

<http://www.macsites.com/>.....Guide to Macintosh sites.

<http://www.Macreviewzone.com/>.....Mac related reviews.

<http://micros.hensa.ac.uk/platforms/mac.html>.....Large shareware site.

<http://www.macresource.com/> .....News, views, updated ←  
 regularly.

<http://www.macintouch.com/> .....Get intouch with Mac news!

<http://www.macnn.com/> .....More news for Mac users.

<http://www.versiontracker.com>.....Lists all the latest ←  
 software updates.

<http://www.macformat.com/> .....Macintosh magazine, lots ←  
 of info & reviews.

<http://www.macuser.com/>.....Mac magazine, the last 18 ←  
 months of reviews.'

FTP Sites with many Mac files, and regularly updated

<ftp://VOLftp.tin.it/pub/mac/>  
<ftp://ShadowMAC.org/pub/>  
<ftp://www.cdrom.com/>

Apple's Support & Development FTP Sites

<ftp://ftp.apple.com/dts/> .....Apple software.

<ftp://ftp.apple.com.au/pub/> .....Apple software for Macs & ←  
 Newtons.

<ftp://ftp.info.apple.com/Apple.Support.Area/> .....Apple software.

<ftp://ftp2.info.apple.com/Apple.Support.Area/> .....Apple software - ←  
 alternative2.

<ftp://ftp3.info.apple.com/Apple.Support.Area/> .....Apple software - ←  
 alternative3.

<ftp://ftp.info.euro.apple.com/Apple.Support.Area/> .....Apple software (Europe).

<http://www.apple.com/support/> .....Apple software & updates ←  
 centre.

<ftp://mirror.apple.com/mirrors/>.....Software updates +mirrors ←  
 of other sites.

FTP Mirror/Shadow Archive Sites

<ftp://cnuce-arch.cnr.it:21/pub/micros/motorola/mac/> ....Limited software selection ←  
 .

<ftp://f.ms.uky.edu/pub/mac/> .....Quite a abit of software.

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ftp://fiesta.tsc.udel.edu/pub/mac/ .....Apple System software & ←
  updaters.
ftp://ftp.agt.net/pub/info-mac/ .....Large mirror site.
ftp://ftp.auckland.ac.nz/pub/mac/ .....Large mirror site.
ftp://ftp.ausom.net.au/pub/mirrors/info-mac/ .....Large mirror site.
ftp://ftp.bitcon.no/pub/mac/info-mac/ .....Large mirror site.
ftp://ftp.calvacom.fr/pub/mac/info-mac/ .....Large mirror site.
ftp://ftp.cdrom.com:21/.3/mac/umich .....See [www.cdrom.com] above.
ftp://ftp.center.osaka-u.ac.jp/info-mac/ .....Large Japanese mirror site ←
.
ftp://ftp.chem.sci.osaka-u.ac.jp/pub/mac/ .....Another large Japanese ←
  mirror site.
ftp://ftp.circa.ufl.edu/pub/software/mac/ .....Large mirror site.
ftp://ftp.cs.tu-berlin.de/pub/mac/info-mac/ .....Large mirror site.
ftp://ftp.epix.net:21/apple/Macintosh .....Up-to-date software only.
ftp://ftp.euro.net:21/d3/info-mac .....Large mirror site.
ftp://ftp.hawaii.edu/mirrors/info-mac/ .....Large mirror site.
ftp://ftp.iiij.ad.jp:21/pub/mac/umich .....Small mirror site.
ftp://ftp.ims.ac.jp/pub/mac/info-mac/ .....Large mirror site.
ftp://ftp.informatik.rwth-aachen.de/pub/info-mac/ .....Large mirror site.
ftp://ftp.inter.spin.ad.jp/pub/Mac/Merit.mirror/ .....Medium-sized mirror site.
ftp://ftp.is.co.za/info-mac/ .....Large mirror site.
ftp://ftp.uu.net/systems/mac/info-mac/ .....Large mirror site.
ftp://sunsite.anu.edu.au:21/mnt/disk3/info-mac/ .....Large mirror site.
ftp://sunsite.doc.ic.ac.uk/packages/info-mac/ .....Large mirror site (UK).
ftp://newton.sys.uea.ac.uk/Newton_Archive/ .....Mirrors of 13 Newton & ←
  Apple sites.

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## 1.40 jargon

### MACINTOSH JARGON

#### ADB (port)

The ADB (Apple Desktop Bus), is a cable/port standard on most Macs. It allows you ←  
to connect the  
keyboard and mouse, via through connectors.

#### Alias

Is a special file which points to the location of the original file/folder/disk. ←  
If you launch an  
alias, it will open the original file, folder or disk window instead. If you bin ←  
an alias, it will NOT  
delete the original.

#### Allocated Memory

The Macintosh Operating System is pretty dumb when it comes allocating memory for ←  
applications/  
programs, it doesn't have any Memory Management features at all. So the user has ←  
to manually set the  
preferred amount of memory. It may be necessary for you to bump up the size of ←  
most of your regularly  
used software, particularly if they are memory intensive, such as image processing ←  
packages.

To view its settings, find the application's icon in the Finder, then press ←  
Amiga+i, this will

display the Get Info window. It should have a standard preset number already, ←  
however you can alter  
the number in the Preferred Size box, but don't touch the Minimum Size. The number ←  
is in kilobytes.  
The maximum limit is 99,999k (don't use commas ",").

#### AppleTalk

Is Apple's standard Macintosh network and printer communication language. It was ←  
the main and only  
standard on all MacOS's up to System 7.55.  
Classic Networking, as it is now called, only allowed the use of AppleTalk as ←  
main network protocol,  
no other protocol could be used. For instance, Ethernet is converted into ←  
Ethertalk, which is an  
AppleTalk variant, before it is sent over the network.

#### Contextual Menus

Was introduced in System 8.0, and allows you to call up a little menu (whilst in ←  
the Finder)  
containing all the most common actions you are likely to use. It works only if you ←  
highlight an icon,  
window or disk, and then pressing the Control key and drag to the menu item - ←  
anywhere on screen.

#### Control Panels

Are part of the System folder, they are used to setup your Mac to how you want. ←  
This could be  
anything from the monitor resolution, colour, networks and various other Finder ←  
behaviour. All of  
them can be customised by the user.

#### Disk Drivers

Like PCs, Macs use drivers for its hard disks, whether its formatted via the ←  
Finder or another  
utility, it places its info onto the disk for basic operational functions.  
Amigas emulating a Macintosh don't necessarily need Mac based drivers ( ←  
especially ShapeShifter),  
because the partition has been setup via the Amiga side already. The only thing ←  
disk management  
utilities would do, is to increase the disk's performance through caching.

#### Desktop (the)

The desktop contains the menubar, disk icons, background pattern, the trashcan and ←  
any icons you may  
have left "lying around" - it is basically the Finder's work space for organising ←  
icons and windows.

#### Desktop File

Is a disk based database for keeping information on icon and window positions, and ←  
what icons are  
used on which file or program. Without the Desktop file, all icons would revert to ←  
the System file's  
generic icon collection.

#### Disk Cache (Memory Control Panel)

This setting uses a portion of RAM to store frequently used data, and also helps ←  
your programs to run

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faster. Many Mac users, use the "32k for every megabyte of memory" calculation to figure out how much it should be, personally I use a standard 256k, 512k or 1024k value, of course this depends largely on how much memory you have available. The absolute minimum is approximately 32k.

#### Drag & Drop

This feature was introduced in System 7.1, it enables you to drag any document item, be it a; bit of text, a picture, a movie or sampled sound, and literally drag and drop it either onto another document or onto the Desktop. The item that was dropped onto the Desktop, is called a "clipping".

#### Extensions

Are part of the System folder, they add specific resources to the Operating System, such as libraries, CD filing system data, System enhancements etc.

#### Finder

Manages the "desktop" environment, it is similar to the Amiga's Workbench.

When the Finder is placed in a folder, it "blesses" the folder with the familiar System folder icon, to show you that this is the active System for this disk.

#### Hard Disk Driver

Is the bit of information stored in the Rigid Disk Block, on a hard disk - all Mac hard disk

formatting programs create this so called "driver" when it initialises the disk.

You can see which driver has been used for any disk, by highlighting the hard disk icon and pressing

Amiga+i, for the Get Info window. Look in the "Where" field, and it will give some details of where

the disk is on the SCSI or IDE chain and the version of the driver that was used.

In emulation, the main boot disk is called an AmigaDevice or AmigaFileDisk.

#### HFS & HFS+

HFS/HFS+ is the Macintosh's only, filing system for hard disks. HFS Standard, as Apple likes to call

it, was originally created for small (20 to 500mb) hard disks, and is limited by the number of blocks

it can have on any partition. Meanwhile, HFS+/HFS Extended, is an improved version, allowing

smaller block sizes for very large hard disks (1gig upwards), performance increase and better error

handling.

#### Hypercard

Is rather like the AmigaGuide file, except Hypercard docs can contain pictures.

However you need a Hypercard viewer or the Hypercard program to view them.

#### INITs

Stands for System extension, a loadable file during bootup. It could either be an Extension or Control

Panel, since these are the only types of files that are loaded whenever you boot a Macintosh.

#### Initialise

This term refers to high level formatting of a hard disk, usually via the Finder or utility.

#### LocalTalk

Is a network port on real Macintosh computers, it is used for linking Macs together.

#### LUN

Stands for Logical Unit Number - it is a number used to uniquely identify and address a subsystem of a SCSI device. Usually it is not necessary to set the LUN, since most SCSI devices are single units. A SCSI peripheral that has LUNs are optical disk/CD-ROM jukeboxes, and multiple custom hard disk tower RAID systems, all these have many drives in a single case.

#### MacOS

Stands for "Macintosh Operating System", ie. System 7.5 or System 8.1.

#### Open Transport

Supersedes the AppleTalk standard, it is much faster, and allows you to use different types of network protocols. It will allow you to change from one network to another, very quickly, and it allows you to use different types of network, simultaneously.

#### NU-Bus

Is an old expansion slot type, used in all 68k Macs and some early PowerPC Macs.

#### PC Exchange

Is a control panel that helps you to mount any PC formatted floppy disk (high density or 720mb double density disks only) and any PC SCSI removable hard disk, ie. CD & Zip disks, via the Options button.

It also creates Mac icons for PC files with a 3 character extension. It can only do this if you setup PC Exchange to associate a Mac file type with the correct PC file naming convention, ie.

GRAPHIC.TIF, means that this is a TIFF file, therefore you can use any Mac image handling program.

If it is a specific file type, ie. an Excel document, then you associate it with your Mac version, eg. Macintosh Excel.

PC Exchange already shows you an example in its window, .TXT = Simpletext = TEXT

#### PPD

Stands for Postscript Printer Description file, this can only be used with Postscript printer drivers, such as Laserwriter 8. They usually live in the Printer Descriptions folder, in the System: Extensions folder.

### PRAM

Stands for Parameter RAM - this a tiny bit of memory that stores vital information  
, when you shutdown  
the Mac, ie. the Startup Disk Control Panel setup and some other bits of info the  
System needs.  
Sometimes, this memory gets corrupted, so what you do is, you "zap the PRAM" -  
delete it's contents by  
a keyboard combination, see  
Keyboard Shortcuts  
for more info.

### RAID

RAID stands for Redundant Array of Independent Disks. It is a way of linking  
several drives  
together so that they behaved and appeared as one large capacity drive.  
There are a few options for setting up a RAID array. The two most common (range  
from RAID0 to RAID5)  
options are RAID Level 0 (Striping) and RAID Level 1 (Mirroring).  
Striping increases data throughput to and from the member drives, by using all  
the drives to  
split up the file over all member drives. Mirroring uses dedicated hard disk  
members to  
simultaneously write files to both disks, basically making a backup of the main  
server RAID disk.  
To find out more on RAID technology, there is a FAQ on FWB's web site: [www.fwb.com](http://www.fwb.com).

### SCSI

Small Computer System Interfaces - is an industry standard interface for plugging  
in many peripherals  
onto a single computer, by daisy chaining them. There are currently three  
versions: SCSI1, SCSI2 &  
SCSI3 - and some very fast off-shoots: Wide SCSI, Ultra SCSI & Ultra Wide SCSI.

### System Bomb

Refers to a Mac system error message, because it shows a little bomb with a lit  
fuse next to the  
message. The Macintosh is also famous for giving very uninformative error messages  
, ie. "An Error of  
Type -11 has occurred!".

### Stuffit

Stuffit is probably the most common compression type on Macs at the moment. It is  
commercially  
available as Stuffit Deluxe, also appears on the internet as a shareware program  
called Stuffit Lite.  
All Stuffit files appear with a 3 character dot extension ".sit".

### Suitcase

Is a special type of folder, which only allows one type of system resource to be  
stored in them,  
such as fonts, keyboard layouts, screen fonts (including TrueType) and desk  
accessory files.

### System File

This looks like a suitcase file, but in actual fact it contains the Operating  
System resources

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(libraries, drivers, generic icons, program code etc.) needed for your particular Mac to work. ↔

#### The System Folder

Contains all the elements that the MacOS needs to operate correctly. You could take out all of the folders and extraneous files in the folder if you like, except the System, Finder and any System Enabler files, and it will still work. ↔

Usually this folder contains: the System file, the Finder program, Extensions folder, Control Panels Preferences folder, Startup Items Folder, Shutdown folder by default. ↔

## 1.41 suggestions

I NEED HELP WITH THESE PROBLEMS!

Email me at: madmike@blizzard.u-net.com

68k Macintosh Models and ROM versions

Please help me to fill in the

Mac ROM

page, specifically the rest of the ROM versions and from

which Mac it came from (the exact model). ShapeShifter's SaveROM utility will give you the

correct version number just before it saves it, even in emulation! Fusion, just gives a checksum

figure, which is no good, I'm afraid. Or use a Mac program called MacRomTest, from Thomas Kessler,

I think it is downloadable from a Mac shareware site. Does a Mac Quadra 600 really exist? ↔

Do you have any tips or hints, or even info on these subjects..

\*Printing

\*Internet connection and modem problems

\*Networking problems

Hard Disk repair/management software:

-TechTool 2 Pro (Micromat Computer Systems)

-Hard Disk Toolkit (FWB)

-RAID Toolkit (FWB)

I would appreciate any views you have of these software packages, are they any good? ↔