



# Tech Info Library

## Macintosh System Error Codes Explained (11/95)

Article Created: 19 February 1986

Article Reviewed/Updated: 20 November 1995

TOPIC -----

This article explains what some Macintosh system errors actually mean. You can use them to interpret what is happening when your Macintosh gives these errors.

DISCUSSION -----

Because the Macintosh is a complex operating system, the problems a user encounters can be equally complex.

These are example of some problems that may occur:

- A handle can be de-referenced.
- A routine can get a NIL pointer.
- The stack can dip into the heap for just a few cycles and not be caught by the stack sniffer.
- An application can forget to check an error code.

A Macintosh usually crashes with a system error code while running under System 6.0.x. System 7 changed the way errors are displayed - instead of displaying an error code, it translates the code to the appropriate words, like "Address Error".

Finding out what's wrong involves use of debugging tools, intricate knowledge of Macintosh memory structures, and familiarity with the application itself. Fixing it usually involves recompiling the source code. The table below explains some of the codes.

ID=01 Bus Error

-----  
This means 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. You should never see this error on a Macintosh Plus or SE, because address references that are out of bounds "roll over". This means if one of these computers tries to access one byte beyond the total bytes in RAM, it actually accesses the first byte in memory. If you see this error on a Macintosh Plus or SE, it's reporting the wrong error or having hardware problems.

#### ID=02 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.

#### ID=03 Illegal Instruction

-----  
The computer has a specific vocabulary of machine language instructions it can understand. If a 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.

#### ID=04 Zero Divide Error

-----  
This error results if the microprocessor divides two numbers, and the divisor is zero. Sometimes a programmer puts these in as debugging aids, and then forgets to take them out.

#### ID=05 Range Check Error

-----  
Programmers can use an instruction in the Motorola 68000 to check if a number is within a certain range. This error indicates that the number tested isn't in the specified range.

#### ID=06 Overflow Error

-----  
Each number stored in a computer is given a certain amount of space. The larger the number, the more space is needed to represent the number. An overflow condition results if a generated number is too big for its allotted space. A Motorola 68000 instruction tests for an overflow condition, and displays this error if it detects an overflow.

#### ID=07 Privilege Violation

-----  
The Motorola 68000 runs in Supervisor or User mode. The Macintosh should always be in Supervisor mode, but sometimes is placed in User mode. Some of the instructions can only be executed in Supervisor mode. If the computer attempts one of these instructions while in User mode, a Privilege Violation error results.

#### ID=08 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.

#### ID=09 and ID=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 68000 encounters such an instruction, it looks it up in the instruction table. This table gives the location of routines paired with each instruction. If it finds an entry in the table for the instruction, it branches to the routine. If there's no entry for the instruction, you see one of these errors.

#### ID=12 Unimplemented Core Routine

-----

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

#### ID=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.

#### ID=15 Segment Loader Error

-----

Macintosh programs are broken up into segments, and each program will always have at least one segment. Multiple segments allow loading parts of the program into memory to provide more room for data in internal RAM. The segment loader is responsible for loading a needed segment into RAM. If the segment loader can't do this, you'll see this error.

#### ID=17 through ID=24 Missing Packages 0-7

-----

The Macintosh uses packages to do specific tasks. Some of the packages are International Utilities, Binary-Decimal Conversion, Standard File Utilities, and Disk Initialization. These packages are located in the System file. 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. Try replacing the System file.

#### ID=25 Memory Full Error

-----

You've probably run out of RAM. But you can get this error when an earlier error causes the Macintosh to falsely detect an out-of-memory condition.

#### ID=26 Bad Program Launch

-----

The Macintosh couldn't execute the application opened.

#### ID=28 Stack Ran into Heap

-----

This is similar to the Memory Full error. It's a good idea to save your work frequently, and keep current backups of your hard disk data. When a system crash does occur, you'll lose less data if you've taken these precautions.

Troubleshooting System Errors

=====

It's a good idea to save your work frequently, and keep current backup copies of your hard disk data. When a system crash occurs, you'll lose less data if you've taken these precautions.

If you're getting system errors frequently, investigate these possibilities:

- Try to open the document with a current version copy of the application.
- Try opening other documents with the same copy of the application.
- Check to see if the document size exceeds the application size limits.
- Boot your system with extensions off (restart while holding the Shift key down).
- Any changes (new Control Panels, extensions, etc.) you've made to the system might give you a clue to the cause of the crashes.
- Make a note of the desk accessories you had open at the time of the crash and exactly what you did before the crash.
- Also make a note of the error ID or text, and the version numbers of the application and system software you were using.
- Try to recreate the problem on another Macintosh.
- Cleanly install your system software and try the application again.

#### Negative Error Codes

=====

Here's a list of negative codes (0 to -261) with brief explanations.

#### General System Errors (VBL Mgr, Queue)

```
0    noErr  0 for success "OR"
0    smNotTruncated  No truncation necessary
-1   qErr   queue element not found during deletion "OR"
-1   smTruncErr  Truncation indicator alone is wider than the specified
width
-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
```

#### Color Manager Errors

```
-9   iTabPurgErr  from Color2Index/ITabMatch
-10  noColMatch  from Color2Index/ITabMatch
-11  qAllocErr   from MakeITable
-12  tblAllocErr  from MakeITable
-13  overRun     from MakeITable
```

-14 noRoomErr from MakeITable  
-15 seOutOfRange from SetEntry  
-16 seProtErr from SetEntry  
-17 i2CRangeErr from SetEntry  
-18 gdBadDev from SetEntry  
-19 reRangeErr from SetEntry  
-20 seInvRequest from SetEntry  
-21 seNoMemErr from SetEntry

#### 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 ref num doesn't match unit table  
-22 unitEmptyErr Driver ref num 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; Permission to close .MPP driver was denied  
-25 dRemovErr tried to remove an open driver  
-26 dInstErr DrvrInstall couldn't find driver in resources  
-27 abortErr IO call aborted by KillIO; Publisher has written a new edition "OR"  
-27 iIOAbortErr IO abort error (Printing Manager)  
-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; 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; 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 not found; Folder not found; Edition container not found; Target not found  
-44 wPrErr Disk is write-protected; Volume is locked through hardware  
-45 fLckdErr File is locked  
-45 fLckedErr Publisher writing to an edition  
-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 Software lock on file; Not a subscriber [permissions error  
on file open]  
-55 volOnLinErr drive volume already on-line at MountVol  
-56 nsDrvErr no such drive (tried to mount a bad drive num)  
-57 noMacDskErr not a Macintosh disk (sig bytes are wrong)  
-58 extFSErr External file system - file system identifier is nonzero  
-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 permissions error; Not a publisher

#### Font Manager Errors

-64 fontDecError error during font declaration  
-65 fontNotDeclared font not declared  
-66 fontSubErr font substitution occurred

#### Disk, Serial Ports, Clock Specific Errors

-64 lastDskErr  
-64 noDriveErr drive not installed  
-65 offLinErr r/w requested for an off-line drive  
-66 noNybErr couldn't find 5 nybbles in 200 tries  
-67 noAdrMkErr couldn't find valid addr mark  
-68 dataVerErr read verify compare failed  
-69 badCksmErr addr mark checksum didn't check  
-70 badBtSlpErr bad addr mark bit slip nibbles  
-71 noDtaMkErr couldn't find a data mark header  
-72 badDCKsum bad data mark checksum  
-73 badDBtSlp bad data mark bit slip nibbles  
-74 wrUnderrun write underrun occurred  
-75 cantStepErr step handshake failed  
-76 tk0BadErr track 0 detect doesn't change  
-77 initIWMErr unable to initialize IWM  
-78 twoSideErr tried to read 2nd side on a 1-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  
-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 uninitialized  
-89 rcvrErr SCC receiver error (framing, parity, OR)  
-90 breakRecd Break received (SCC)

#### AppleTalk Errors

-91 ddpSktErr Error opening socket "OR"  
-91 eMultiErr Invalid address or table is full  
-92 ddpLenErr Data length too big "OR"  
-92 eLenErr Packet too large or first entry of the write-data structure  
didn't contain the full 14-byte header  
-93 noBridgeErr No router available [for non-local send]  
-94 lapProtErr error in attaching/detaching protocol "OR"  
-94 LAPPProtErr Protocol handler is already attached, node's protocol  
table is full, protocol not attached, or protocol handler pointer  
was not 0  
-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)  
-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 [no object of that type in scrap]

#### Storage Allocator Errors

-108 memFullErr Ran out of memory [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 [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 wrgVolTypeErr Not an HFS volume [wrong volume type error or  
(obsolete) operation not supported for MFS]  
-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 canceled an operation

#### HFS FileID Errors

- 130 fidNotFound no file thread exists
- 131 fidNotAFile directory specified
- 132 fidExists file ID already exists

#### Color QuickDraw and Color Manager Errors

- 147 regionTooBigError Region too big or complex
- 148 pixMapTooBigErr Pixel map record is deeper than 1 bit per pixel  
[passed pixelmap is too large]
- 149 notEnoughStack Not enough stack space for the necessary buffers  
"OR"
- 149 mfStackErr Insufficient stack
- 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 AddResource failed
- 195 addRefFailed AddReference failed
- 196 rmvResFailed RmveResource failed
- 197 rmvRefFailed RmveReference failed
- 198 resAttrErr Attribute inconsistent with operation
- 199 mapReadErr Map inconsistent with operation

#### Sound Manager Errors

- 200 noHardware Required sound hardware not available [no hardware  
support for the specified synthesizer]
- 201 notEnoughHardware Insufficient hardware available [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 or unusable [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 channel Channel is busy  
-210 buffersTooSmall Buffer is too small  
-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 sound input device  
-222 siNoBufferSpecified No buffer specified  
-223 siInvalidCompression Invalid compression type  
-224 siHardDiskTooSlow 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 Unknown type of information  
-232 siUnknownQuality Unknown quality

#### 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

This article is one of many available through the Apple Fax center. For a complete list of available Fax documents, search the Tech Info Library for Apple Fax Document Index or call the Apple Fax line at 1-800-505-0171 and select document number 20000 (Apple Fax - Document Index - Product Support Literature). The Apple Fax center is available free of charge 24 hours a day, 7 days a week.

#### Article Change History:

20 Nov 1995 - Added new keyword and reviewed article for technical accuracy.  
19 Oct 1994 - Added negative error codes.  
12 Oct 1994 - Added keyword, description, and troubleshooting tips.

Support Information Services

Copyright 1986-96, Apple Computer, Inc.

Keywords: supt,kfax,kalley,ktoptil,ktop20

=====

This information is from the Apple Technical Information Library.

19960627 16:33:15.00

Tech Info Library Article Number: 1749