Macintosh System 7.6.1 Update

Changes and improvements, Known problems

Document Contents

Introduction

With the release of MacOS 7.6, Apple completed the first step of our incremental release strategy for the Mac OS. This strategy calls for annual reference releases (full standalone installations sold in retail channels) with updates in between.

Mac OS 7.6.1 is the next step in the execution of this strategy. This update to Mac OS 7.6 has two main goals:

1   Improve stability through bug fixes.

2   Make the features of Mac OS 7.6 available to recently introduced computers which are not supported by the initial release.

This update is not intended to deliver any new features, nor does it deliver updates to technologies already available through download sites on the Internet and online services.

For a detailed description of Mac OS 7.6, see Macintosh System 7.6 Update (path: Troubleshooting/HW-SW Procedures).

Delivery of Mac OS 7.6.1

Mac OS 7.6.1 Update on Floppy Disk

Mac OS 7.6.1 Update will be available on four floppy disks. This update will only install on computers running Mac OS 7.6. It will support all computers supported by Mac OS 7.6: all Power Macintosh Computers, all PowerPC computers manufactured by Mac OS licensees, all 68040, and all 32-bit clean 68030 computers. It will be available on the Internet and on various online services, and is also available on floppy disk from the Apple Software Order Center (800-293-6617) for a nominal fee.

Note that the floppy update will not install on PowerBook 3400 computers. A separate five disk PowerBook 3400-specific update will also be released which will bring the 3400 up to 7.6.1.

Mac OS 7.6.1 on CD-ROM

Mac OS 7.6.1 is a full system software CD. It supports all computers supported by Mac OS 7.6 and recently introduced computers not supported by Mac OS 7.6. For a full list, see the section New CPU's Supported.

Qualified customers who purchase one of these computers which do not support Mac OS 7.6 can get Mac OS 7.6.1 for their computer through the Mac OS Up-To-Date program. For more information about qualified machines, see the Mac OS Up-To-Date web site or call 800-335-9258. This site is continually updated as any new machines are introduced.

Changes and Improvements from Mac OS 7.6

Process Manager

Type 11 errors—The biggest change in Mac OS 7.6.1 is the removal of nearly all type 11 errors. Most crashes in Power PC-native code previously were mapped to the 'miscellaneous fatal error' code, which is 11. We now calculate the real error code and report the correct number.

Previously, when MacsBug was not installed, a type 11 error would bring up a "Sorry, a system error has occurred" dialog and force an immediate reboot. Now most of these errors will instead "unexpectedly quit" the foreground application. We strongly advise customers to restart after this occurs, but they should use the Restart item in Finder's Special menu or the Shut Down command in the Apple menu.

Type 12 errors—Under Mac OS 7.6, applications which had a

Debugger or DebugStr instruction would cause a type 12 error and force an immediate restart. Now this problem will produce an 'application unexpectedly quit' condition and allow a controlled restart.

Type 112 errors—Applications which repeatedly install the same Time Manager task can cause a situation where the VM deferred-task queue overflows, causing a Type 112 error under Mac OS 7.6 and a crash/hang under previous systems. Mac OS 7.6.1 prevents this condition has by detecting duplicate tasks and not installing them.

Process Manager heap—We now reserve some memory (300K) in the Process Manager heap when available memory is between minimum and preferred launch sizes. This gives things like QuickTime some breathing room by preventing applications from occupying all available memory.

Default Stack Size—The default stack size was increased from 2K to 8K.

CFM-68K Runtime Enabler

The Code Fragment Manager was disabled on 680X0 machines using Mac OS 7.6, but Mac OS 7.6.1 now installs the updated CFM-68K Runtime Enabler on these machines.

For the full story behind the CFM-68K bug, see Technote 1084: Running CFM-68K Code at Interrupt Time: Is Your Code at Risk?

ObjectSupportLib 1.2—This version is necessary with the new CFM-68K fix. Previous versions of OSL have bugs and/ or lack support for CFM-68K applications. For more information see Technote 1095.html Object Support Library Version History.

Memory Manager

BowelsOfTheMemoryMgr—The symbol name of
BowelsOfTheMemoryMgr was added after _HSetStateQ so a
crash in internal memory manager routines would not be
attributed to the HSetStateQ routine. This was done to
prevent the erroneous reporting of bugs on _HSetStateQ.
For more information on this problem, see Technical Q&A
ME05, BowelsOfTheMemoryManager.

Unlocked Handles—We fixed a condition in the Memory
Manager which only affected Quicktime. In Mac OS 7.6,
calling an handle that was already memory-resident and
locked would result in the handle being unlocked after the
call. This meant the system would crash if QuickTime used
the handle after it had been moved as a result of not being
locked.

Drivers

SCSI—On PowerPC upgrade cards for 680x0 computers, we changed the SCSI Manager to poll for interrupts when the current interrupt mask is level 1 or higher, instead of level 2 or higher.

ATA (IDE)—Crashes could occur when copying large files (> 1 MB) between IDE drives. A stack frame was being added for every transfer of the file, risking a stack overflow. This has been fixed.

The SCSI and ATA managers share a common deferred task queue. Previously the ATA manager, if it found the first queue element was an ATA task, assumed that a second task in the queue belonged to it as well. This would produce a system hang, sometimes for 10 seconds and sometimes permanent, during simultaneous SCSI and ATA transfers. The ATA manager now determines whether any subsequent tasks

actually belong to it.

Floppy—The ability to write to 400K single-sided floppy disks (also called MFS disks) has been disabled, as such writes often resulted in crashes. These disks are now read-only.

Serial—There was a problem on 3400/5400/5500/6400 and 6500 Macintoshes which involved framing errors in cases where the read-plus line was grounded. This could occur under two conditions:

An attached serial device (such as a modem or digital camera) was turned off.

Use of an RS-232 cable that grounds the unused pins. This was fixed by adding a reset when the serial driver detects a frame error.

Infrared—We fixed a crashing problem which sometimes

occurred when the beam was blocked during boot-up or file transfer.

MPEG—We redefined the Gestalt selector that indicates the presence of MPEG software/hardware. This is only defined if the QuickTime MPEG extension is installed. This was not defined in 7.6.

ATI graphic accelerators—The previous version had caused long interrupt latencies which impaired video capture. These interrupt latencißes have been reduced.

DriverLoaderLib—DriverLoaderLib was modified to support multiple ndrvs in a single file. DriverLoaderLib now does name matching if multiple drivers are in the file. The cfrg must be of extended type. Extended type is described in the MPW environment CodeFragments.r and in CodeWarrior in CodeFragmentTypes.r. The code fragment name must match the name of the device. If no cfrg resource is present, the old

assumption of one driver per file is used.

Miscellaneous
- Previously, there were three PowerBook low battery warnings. We added two patch installation routines, one for old-style primitives tables and one for new style. The patch is a tail patch to GetLevel that maps the value returned by GetLevel to a new level. This affects ALL powerbooks except the original Macintosh Portable. There are now only two warning dialogs for PowerBook low battery warning:
  – approximately 10 seconds before sleep.
  – approximately 2-4 minutes before the 10 second warning.
- 'Monitors & Sound' is now installed on all PowerPC or supported 680x0 based CPUs if AppleVision software is present. AppleVision v1.5.1 requires 'Monitors & Sound'.

- Fixed a problem in very low brightness/contrast levels on some PowerBook 1400 computers in which a gradient pattern would appear on some models. This change adjusts the range of allowed settings so the problem does not appear.
- Mac OS 7.6 did not include one bug fix made in the DR emulator for 7.5.5. This bug fix is now included in 7.6.1.
- Added GetPort and SetPort calls for the startup screen during the boot process. This allows password dialogs in disk drivers to work properly.
- Added a gamma fix to the video driver on the 7200, 7500, 8500, and the 3400.
- Energy Saver settings were not being saved if the shutdown and start up time were more than 24 hours apart. This is now fixed.

New CPU Support

The following Macintosh models, which were not qualified for the release of Mac OS 7.6, will be included in the Mac OS 7.6.1 update:

Power Macintosh models: 4400 5500 6500 7300 7600 8600 9600

PowerBook 3400

Updated Components

– Apple System Profiler 1.1.4
– Added support for IDE-based CD-ROM drives.
– Apple Video Player 1.6/Video Startup
– Apple Video Player is now scriptable. Support for PCMCIA cards on PowerBook 3400s for video capture and TV reception.

- Apple CD-ROM 5.3.3
- Support for faster IDE-based CD ROM drives.
- IrDALib 1.0.1/IrLanScannerPPC
- Added for PowerBook 3400 support.
- Apple Dual Processor HAL 1.4.1
- Hardware abstraction layer that allows the
  Multiprocessing API Library to see multiple
  processors. Must be stored in the same folder as the
  Multiprocessing API Library in order to be effective.
  Non-Apple hardware may require additional or
  different HALs.
- PC Card Extension 2.5
- Will automatically mount PCMCIA storage devices (PC
  Cards) on the Finder Desktop. Available on all
  PowerBooks with PCMCIA slots.
- New or Updated Components for PowerBook 3400
- PowerBook 3400 Ethernet PowerBook 3400 Internal
  33.6 PowerBook 3400 Modem PowerBook Ethernet

(PCI) PowerBook Zoomed Video Serial (Built-in) 1.2.2
– AutoRemounter 1.2.3 Control Strip Energy Saver
  General Controls Infrared
– Powerbook TrackPad

Known Problems

Connectix Speed Doubler

There is a problem using Speed Doubler versions 1.3.1 and earlier and version 2.0 when used with Mac OS 7.6.1. If you use one of these Speed Doubler versions, it will be disabled when you install Mac OS 7.6.1 Update.

Connectix is aware of this problem and is providing a free update. For more information, see the Connectix web site at http://www.connectix.com or call 800-839-3632.

LaserWriter 8.3.4

There is a problem with printing to a file using a desktop printer with Mac OS 7.6.1 and LaserWriter 8.3.4. It will not work with the new CFM-68K fix on the 680x0 computers. This problem only occurs on 680x0 computers after installing Mac OS 7.6.1 Update. The work around is to use LaserWriter 8.4, which can be downloaded from

http://swupdates.info.apple.com/Apple.Support.Area/ Apple.Software.Updates/ US/Macintosh/Printing/ LaserWriter

CFM and Long Java applet names

There was a CFM error with Java applets and scripts with names over 63 characters long which kept them from running correctly. This will be fixed in Mac OS 8 and the limit will be 255 characters. There is a workaround:

```
pascal OSErr    MyFindSymbol    ( CFragConnectionID
    connID,    ConstStr255Param        symName,
        Ptr *    symAddr,    CFragSymbolClass *
    symClass )
{
    OSErr err;

    err = FindSymbol ( connID, symName, symAddr,
            symClass );

    if ( (err == paramErr) && (symName[0] > 63) ) {
        // Oops, we're using the CFM that has the paramErr
bug.

        long index, limit;
         Str255 name;

err = CountSymbols ( connID, &limit );
if ( err != noErr ) goto EXIT;
```

```
for ( index = 0; index < limit; index += 1 ) {
    err = GetIndSymbol ( connID, index, name,
            symAddr, symClass );

    if ( err != noErr ) goto EXIT;
    if ( EqualString ( name, symName, false, false
        ) ) goto EXIT;
}
err = cfragNoSymbolErr;

}

EXIT:
 return err;

}
```

PowerBooks and Open Transport 1.1.2

PowerBooks that have been updated to Open Transport 1.1.2 should reinstall Mac OS 7.6.1 Update to avoid a problem with switching your connections to infrared. Switching your connection to infrared with Open Transport 1.1.2 can cause crashes on PowerBooks.

DayStar 68040 Upgrade Card and Virtual Memory

Virtual Memory in the Mac OS 7.6.1 Update is incompatible with DayStar 68040 accelerator cards. There is now a workaround:

1   Take the card out of the machine.
2   Upgrade to Mac OS 7.6
3   Upgrade to Mac OS 7.6.1
4   Turn VM off.
5   Replace the card and restart.

3D Images and OpenDoc 3DMF Viewer

3D images cannot be viewed with OpenDoc 3DMF Viewer 1.0.1 with QuickDraw 3D 1.5 or 1.5.1 installed If QuickDraw 3D 1.5 or 1.5.1 is installed, a messageabout insufficient memory appears when attempting to place a 3D image in an OpenDoc document. Increasing the viewer's memory size with the Get Info command in the File menu does not solve the problem. To use the 3DMF Viewer, install an earlier version of QuickDraw 3D.

General Note on Compatibility

General consideration for third party developers using or replacing undocumented system software:

You should not do this! If you insist on using undocumented APIs, then ask us for a version that you

can check (if one exists) so that when we change, your application doesn't break. Many current incompatibilities can be traced to this problem. We do not recommend or encourage using undocumented APIs, but if you absolutely have to, ask us first. There might even be a documented solution which works better!