

Technical Note OS07

System 7.5 Update 1.0

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System 7.5 Update 1.0 provides the user with bug fixes and enhancements that have become available since the shipment of System 7.5. This technical note describes the bug fixes and enhancements in some detail.

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Introduction

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Macintosh System 7.5 Update 1.0 provides the user with bug fixes and enhancements that have become available since the shipment of System 7.5. This technical note describes the bug fixes and enhancements in some detail.

New Features of Macintosh System 7.5 Update 1.0

File Sharing Extension 7.6.1

Older versions of the File Sharing extension were built from an early version of the AppleShare 3.0 source base. AppleShare has been revised since then, adding many new features and bug fixes. File Sharing 7.6.1 is Personal File Sharing built from the AppleShare 4.0.2 source base. It incorporates all the of the bug fixes and enhancements since AppleShare 2.0 that are present in AppleShare 4.0.2. It consists of a single extension which will replace the customer's older version. Among the enhancements in File Sharing Extension 7.6.1 is the ability to eject removable media such as CD-ROM discs without turning off file sharing.

Since File Sharing 7.6.1 is built from the same source as AppleShare 4.0.2, they share the same feature set. This adds support for ejectable media and additional server control calls to File Sharing. For details, see tech note NW 29 - File Sharing Extension 7.6.1.

Power Off Key

The Quadra 840AV introduced the ability to shut down the computer by pressing the Power On key and responding appropriately to the confirmation dialog. Macintosh System 7.5 Update 1.0 provides this functionality for all ADB-based Macintosh computers. This excludes the Macintosh Plus (which does not use ADB) and the built-in keyboards of PowerBook 1x0 models. (These keyboards do not have a Power On key. If you attach an external keyboard to a PowerBook, the Power On key on the external keyboard behaves as described.)

"Welcome To Macintosh" greeting update

Customers were calling asking why their desktop files are being rebuilt on every start up. The customers were confusing the progress bar in the Welcome To Macintosh greeting with the Rebuilding Desktop dialog. At the time the progress bar appears, we now display the new MacOS(TM) start up screen with a "Starting Up..." string to clarify the meaning of the progress bar.

Keyboard Control Panel 7.5.1

System 7.5 shipped with all of international keyboard layouts in the System file by default. Some popular applications use the Command-Option-Space key sequence which also causes the selected keyboard layout to change. Keyboard 7.5.1 has a check box which enables and disables the keyboard layout switching via Command-Option-Space. The default is switching off. There was also a problem with the use of a wrong register in a loop which was fixed.

System 7.5 Apple Menu Items revisions

Find File 1.1.1

Find File now offers improved two-byte language support. Fixed bug which did not handle server volumes with restricted access properly. Find File now works correctly on volumes which do not support file ID references. Previously, Find File would find matches but would report, "The item ITEMNAME is missing and was probably deleted. Other items may be affected; checking them now." Examples of volumes which do not support file ID references are AFP 2.0 compliant network servers and ISO 9660 formatted CD-ROMs.

Jigsaw 1.0.1 Update

Jigsaw now calls `HNOPurge` on the sounds after loading them to make sure they are not purgeable.

Shutdown DA 1.0.1

The previous Shutdown desk accessory (1.0P) does not walk the Shutdown Items folder. We added code to properly walk the Shutdown Items folder.

Stickies 1.0.1

There was a bug in Stickies 1.0 which caused intermittent crashes when launching Stickies if one of the notes was collapsed via WindowShade.

System 7.5 Control Panel Items revisions

Apple Menu Options 1.0.1

Apple Menu Options reduced the number of places where it calls `FSSMakeFSSpec`. This call was causing considerable slowdown on servers. Apple Menu Options also had a patch on Open which was not restoring A5 correctly. Finally, Apple Menu Options now correctly handles non-AppleShare servers.

The Recent Servers folder is implemented by checking each successfully mounted volume to see if it is a server volume. Under System 7.5, only AppleShare volumes were tracked. This behavior is changed with Macintosh System 7.5 Update 1.0 to include any volume that returns a non-zero value in `vMServerAdr` in response to `PBHGetVolParms`.

General Controls 7.5.3

Application Folder locking was fixed plus new error codes for System and Application folder locking were added. Coupled with the Finder Update, the dialogs put up by System and Application folder locking are much less cryptic. The General Controls control panel can now be opened even if the machine was booted with Extensions disabled.

Launcher 2.7

This is a follow on to the Launcher shipped with the most recent Performas. Version 2.5 brought Drag and Drop to the Launcher. It now refers to SimpleText (instead of TeachText) in its Balloon Help.

MacTCP 2.0.6

MacTCP version 2.0.6 contains improvements over MacTCP 2.0.4 and earlier versions, and is recommended for all MacTCP users. The Domain Name Resolver has been changed to avoid out-of-memory errors previously seen with BIND 4.9.2/3 ADDAUTH PTR replies. The DNR is also now fully up-to-date in terms of permitted and forbidden syntax for domain names. MacTCP 2.0.6 offers better performance through changes to its retransmission timers. Also, MacTCP now supports BootP Relay Agents, and now remembers the first to respond ('best') BootP server.

Monitors 7.5.1

Monitors 7.5 did not work with multiple monitors on a single NuBus card.

PC Setup 1.0.2

PC Setup 1.0.2 is the latest version of the control panel used in conjunction with the Centris/Quadra 610 PC Card. The control panel was shipped with System Update 3.0 for System 7.1.x. This update will bring the control panel to 7.5 users.

Speech Manager 1.3

Speech Manager 1.3 is provided as a convenience for customers. System 7.5 did not ship with a current version of the Speech Manager. This is corrected in Macintosh System 7.5 Update 1.0.

WindowShade 1.3.1

WindowShade called into unlocked WDEF code - which can be moved while it is executing. This leads to random code/data being executed. WindowShade now locks the WDEF before calling it.

System 7.5 Extensions items revisions

Apple Guide 1.2.5

Macintosh System 7.5 Update 1.0 introduces a fat version of Apple Guide which also includes some compatibility fixes for At Ease.

Macintosh Easy Open 1.1.1

Macintosh Easy Open 1.1.1 fixes problems with Cut and Paste between DOS and Macintosh applications running on a Macintosh with a DOS card installed. It also fixes a problem with Drag and Drop functionality of document converters intermittently failing.

MathLib 2.0.1

MathLib 2.0.1 is a performance enhanced version of the MathLib found in the ROM of the Power Macintosh 6100/7100/8100 series. This new MathLib offers substantial performance increases for Power Macintosh computers, especially concerning hyperbolic, trigonometric, power, exponential, and logarithmic functions. Support for long double (double-double) precision transcendental functions has also been added. MathLib 2.0.1 is IEEE 754 compliant.

Native QuickDraw Update

The Power Macintosh version of QuickDraw has been revised since the version that shipped with System 7.5. This updated version includes various bug fixes. Macintosh System 7.5 Update 1.0 brings the latest version of native QuickDraw to existing Power Macintosh computers. The Gestalt selector 'qd' now returns a version of 2.3.9. Pattern fills have been optimized to use a run-length mask, not a straight bitmap mask. A bug was fixed which avoids an overflow error when creating packed bitmaps/pixmaps.

SCSI Manager 4.3.1

If a device goes bus free after the command phase the SCSI Manager would crash. Now, the SCSI Manager will not dispatch the next command if the bus is free after waiting for the earlier command. The SCSI Manager mistakenly tried to optimize TIBs on machines which do not have DMA - this could potentially cause data loss. TIB optimization is now turned off for pseudo-DMA machines.

Selected CPU Enhancements

Macintosh System 7.5 Update 1.0 will roll in the functionality and remove the following CPU Specific System extensions: Color Classic Update, 040 VM Update, 630 SCSI Update, EM Sound Update, PowerBook 150 Update and Mount IDE Drive. (The 630 SCSI Update is superseded by SCSI Manager 4.3.1.)

Other System 7.5 components revisions

SimpleText 1.2

Various minor problems with SimpleText 1.1.1 were fixed.

Synchronize Folder AppleScript Update

The Synchronize Folder AppleScript shipped with System 7.5 does not handle nested folders properly. It replaces one folder with another depending on the last modification date instead of recursively traversing the sub folders. We replace this incorrect script with a new version of the AppleScript which recursively traverses sub folders.

Share a Folder (No Guest) AppleScript

This is a new AppleScript, based on the "Share a Folder" automated task. It shares a folder with Guest access disabled.

Share a Folder AppleScript update

While implementing the Share a Folder (No Guest) we noticed that the Share a Folder script used 'ok' instead of 'OK'. We changed the script to use 'OK' and called it version 7.5.1.

New Printer Drivers

Color StyleWriter Pro driver Update

Version 1.5.1 of the Color StyleWriter Pro driver fixes a timeout loop which never timed out when printing the calibration page for the first time.

LaserWriter 8 (v8.2)

The latest version of the LaserWriter 8 driver is provided as part of Macintosh System 7.5 Update 1.0. A PICT file with rotation PicComments did not print properly. This bug has been fixed. Automatic setup for printers has been improved so that it will automatically query the printer for setup information. The user does not have to manually select this information. Several minor bug fixes and enhancements were also added.

PowerTalk changes

AppleMail 1.1.2

AppleMail 1.1.1 had a performance problem when there are a large number of fonts installed in the current System. The problem stems from a bug in the version of MacApp used to build AppleMail, which resulted in a section of code being called once for every font installed at application startup and whenever a menu is pulled down. The code was changed to make the call only once instead of once per installed font.

DigiSign Utility 1.1.1

A problem was reported against the System 7.5 DigiSign utility that it could not print a DigiSign request on an HP DeskWriter C. The root of the problem was that the default print record was marked as purgeable. In DigiSign Utility 1.1.1 the default print record is not marked as purgeable. The application can print to an HP DeskWriter C without a problem.

Direct Dialup 1.1.1

There are several Direct Dialup problems addressed in Macintosh System 7.5 Update 1.0. The first is that the previous version of Direct Dialup would timeout in the middle of a long file transfer if the transfer required more than 3 minutes. The system did not detect any activity during the file transfer and would close the connection since it thought it had been dropped. The second problem is a crash when dragging a Direct Dialup address from the Mailer to the desktop and then using that address to send Direct Dialup mail. The third problem occurs when a user selects "Off line" from the "I'm at..." menu and then sent a Dialup letter. The letter would appear as "waiting" in the Out Tray. If the user selects the letter and chooses "Send now" an error of type -9014 would be displayed to the user. We added code to ping the system during file transfers so the connection does not time out. We fixed the code to recognize the address dragged out of the mailer as a valid address.

Catalogs Extension 1.1.1

The System 7.5 Catalogs Extension would sometime display an Out of Memory message even though plenty of memory is available. The root of the problem is that the Catalogs Extension was making calls on files that were already closed. The problem generally manifested itself after several applications had been launched and quit and then the Catalogs icon was opened. This was fixed.

Mailbox Extension 1.1.1

The System 7.5 Mailbox Extension had a problem with switching between Finder and At Ease. When the user switches to the Finder and then back to At Ease, the mail notify buffer was being disposed before the Mailbox Extension was closed. The process of closing the Mailbox Extension accessed the mail notify buffer - which is no more! This was fixed.

Bug fixes

ADB Patch for Quadra 700

European Quadra 700s were generating spurious ADB Resets. The root of the problem was an IRQ issued during an ADBOp call. This was fixed by replacing the VIA StartReqProc which avoids the collision between an ADBOp and autopoll data from the transceiver.

Standard File Update

Some problems have been discovered in the System 7.5 version of the Standard File Package. They include a crash if the item list is displayed off screen, incorrectly setting some list manager private variables when manipulating items in its list display, ignoring an application's dctb when a custom color dialog is used and returning an invalid vRefNum/dirID for an alias on the desktop. These are all fixed.

PowerMac Serial Driver Hang

Under certain well defined conditions (such as printing to a Personal LaserWriter which is not on) the serial driver on a PowerMac would hang in a loop waiting for a timeout to occur. This is fixed.

ResolveIDConflicts fix

It was possible for `ResolveIDConflicts` to not correctly resolve id conflicts. For all 68k machines, if a `FONT` and `NFNT` have the same id, `ResolveIDConflicts` would do nothing to resolve the conflict and the wrong font would appear. For all machines, if a conflict is detected `ResolveIDConflicts` would possibly assign to a `FONT` or `NFNT` a "unique" id which was actually already assigned to an `NFNT` or `FONT`. A new `ResolveIDConflicts` routine has been created which checks for `FONT` and `NFNT` conflicts both initially and when generating a new id when a conflict is found.

Generic Creator Desktop Icon Patch

Long ago there was an application released with a creator of '????' and a valid bundle for that creator. This "visual virus" has been widely spread to desktops all around the world. Now on many systems a generic application will have this icon. We patch `DTGetIcon` and `DTGetIconInfo` to return `afpItemNotFound` for any request with a '????' creator. We also patch `DTAddIcon` to return `ioErr` if an attempt is made to add icon information for a '????' creator.

Gestalt Update

`NewGestalt` was calling `StripAddress` on an address passed to it rather than a local copy. This caused some third party processor boards to fail. The 'sysv' Gestalt selector returns `0x0751` when Macintosh System 7.5 Update 1.0 is installed.

Finder Update

Several Finder bugs were fixed, and two new strings were added for the use of personal File Sharing. The bugs fixed include a Finder Preferences corruption due to dereferencing a dangling pointer and an infinite loop due to a circular open window list (alternating arrow/watch cursor hang).

Threads 2.1.1 update

Preemptive threads did not preempt after the first threaded application launched in Threads 2.0.1. This was fixed. You couldn't get information on a 68k thread from a PPC thread & vice versa. Now it's possible for a 68k thread to get information on a PPC thread & vice versa. The `Threadslib` shared library added native debugger nub support, and fixed a minor bug in context switching.

Virtual Memory update

Added support for HFS volumes larger than 4 GB. If a filemapped code fragment was too big, the resource fork of the fragment's file could be closed rather than the data fork

Video Driver Patches

The Quadra 630 (and its LC/Performa relatives) running System 7.5 did not properly support the use of Apple multisync monitors and the Apple 12" RGB monitor. One of the video drivers in System 7.5 did not include proper TV mode support for the Mac TV or Ile Hi Res mode support for the Color Classic with Ile card. Both of these problems are fixed.

Display Manager update

Quadra 840AV computers did not remember the resolution a multisync monitor was set to between restarts. The monitor would resync as at 640x480 regardless of the value set by the user.

PBSetVInfo and Rename patches restored

`SetVolInfo` (that's `PBSetVInfo`) and `Rename` were patched by System 7 so that if you changed the name of the volume or of the root directory, both names were changed (having two different names for the volume and root directory is a bad thing because it breaks things like full pathnames). Somehow, the patch on `SetVolInfo` was lost when they built the ROM used on 660AV, 840AV, and Power Macintosh machines. That meant that the two names could get out of sync if the volume name was changed with `PBSetVInfo`. With 7.5 Update, the patch is back.

Video Fixes for machines with ROM version \$77D

Under certain conditions users of some 660AV, 840AV, and Power Macintosh machines would experience scrambled video on startup.

Older Memory Manager fix

The 68k Memory Manager routine `MoveHLow` incorrectly tests the error code returned from `RecoverHandle` and may crash. `MoveHLow` assumes that a `RecoverHandle` succeed when it actually failed.

Drag Manager Update

Bug fixes and improvements which were introduced for System 7.5 in Japan are now applied for all System 7.5 systems.

Process Manager Update

During scrap coercion the Process Manager called `PtrToXHand` passing in an unlocked dereferenced handle as a pointer. It then did a `BlockMove` using the same pointer. The block in question may have moved as a result of the `PtrToXHand`, leaving the Process Manager with a dangling pointer, which will most likely point into the system heap. The `BlockMove` then clobbered the memory pointed to by the dangling pointer. The `MoveScrap` routine in the Process Manager has been changed to `SetHandleSize` the scraphandle before calling `BlockMove` and not dereference the handle until the `BlockMove` call is made.

After EPPC started a PPC session with `StartSecureSession`, it deleted the user reference number returned in the `PPCStartPBRec`, which is the correct behavior unless the reference number is the default user's reference number. Now a call is made to determine if the reference number returned in the `PPCStartPBRec` is the default user reference number and if so it is not deleted.

Under System 7.5, a background process that has the "high level event aware" bit set in the SIZE resource has priority in event handling. If a high level event aware process has an event pending, and fails to process that event, the event stays in the event queue, and any background processes which do not have the "high level event aware" bit set in the SIZE resource will never get CPU time. This behavior was changed in Macintosh System 7.5 Update 1.0. Background processes without the high level event aware bit set will now get CPU time, even if a high level event aware process has pending events.

Sound In Driver Update

Under certain conditions `DRVR -16499` (.AppleSoundIn) will not be installed where it needs to be by the 7.5 installer. Macintosh System 7.5 Update 1.0 will include the latest version of the `DRVR` to remedy this problem.

Touch Pad accl update

A new `accl` resource for the PB 520/540 touch pad is installed. The new `accl` curve gives the pad a better feel and response to the user's touch.

Boot Process Changes

The System 7.5 Update enabler now supports booting all Macintosh computers introduced up to January 95. This includes the Power Macintosh 8100/110, 8100/100, 7100/80, and 6100/66. The System 7.5 Update enabler also supports Power Macintosh 6100 models equipped with the PowerPC upgrade card.

Apple Workgroup Server 9150 Support

The Apple Workgroup Server 9150 needs an enabler to run under System 7.5. Current Apple Workgroup Server 9150 CPUs cannot boot System 7.5. This is fixed in Macintosh System 7.5 Update 1.0.

FMSwapFont update

The native version of `FMSwapFont` that shipped in 7.5 had some problems dealing with multibit source fonts, a problem properly handling the Palatino font, and a bug involving a handle which it created in the current zone instead of the system zone. These problems are all fixed.

FSM (File System Manager) Update

Fixed memory trashing problem in FSM's dynamic load mechanism.

Quadra 630/System 7.5-J Shutdown crash

It was discovered during the System 7.5 Japanese effort that a Quadra 630 running 7.5J would crash on shutdown. The old shutdown code called `Eject` and then `UnmountVol`. The fix for this problem was to call `UnmountVol` and then `Eject`.

StdText Update

Under System 7.1.2 and System 7.5 the `DrawText ()` routine had a bug which could leave a locked `'sfnt'` or `'NFNT'` handle in the system heap. This has been corrected. Anti-aliased text was not properly displayed in System 7.5; this was fixed.

Other Information

System 7.5 Update Enabler File

The majority of the system level bug fixes and low level system enhancements exist in the System 7.5 Update enabler file. This file is a System Enabler (`'MACS'`, `'gbl'y'`). The enabler was used instead of modifying the user's system file for two reasons. The first is that all of the changes are encapsulated and easy to remove. The second is so the user can still run the System 7.5 installer on the System after having installed the update.

Shared Library Icons

This is a known problem with System 7.5 and Macintosh System 7.5 Update 1.0. Shared libraries have icons which were displayed correctly by default under System 7.1.2. These shared libraries will appear with generic icons under System 7.5 and Macintosh System 7.5 Update 1.0.

Conclusion

Macintosh System 7.5 Update 1.0 provides a significant set of enhancements and bug fixes for customers and developers. We recommend you install it.

References

Inside Macintosh , all 27 volumes.

Most tech notes ever written, but especially Technical note OV 21 - System 7.5

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