

Technical Note OS05

System Update 3.0

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This Technical Note documents the Macintosh System Update 3.0. System Update 3.0 is a collection of bug fixes and enhancements to Macintosh System 7.1, System 7 Pro (7.1.1), and System 7.1.2. There have been three previous versions of this update, called "Macintosh Hardware System Update Version 1.0", "Macintosh Hardware System Update Version 2.0" and "Macintosh System Update Version 2.0.1". Note that the word "Hardware" has been removed from the name because the fixes are no longer hardware specific.

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Introduction

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System Update 3.0 Extension

The System Update 3.0 extension is a collection of bug fixes and enhancements to Macintosh System Software 7.1, System Software 7.1.1, and System Software 7.1.2. It is a superset of the Hardware System Update 1.0, Hardware System Update 2.0, and System Update 2.0.1 extensions. It consists of the following enhancements: (The number in parentheses is the System Update version that delivered the update; however, all updates are in version 3.0 regardless of when they first appeared.)

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Note:

The System Update reserves the 'bugx', 'bugy', and 'bugz' gestalt selectors to indicate which fixes are installed on a given machine. These are for Apple internal use only, and developers should not rely on these. There is no guarantee that they will be supported in future versions of Macintosh System Software.

Tick Count Patches (1.0)

Models Affected: Classic II, Quadra 900, Quadra 950, IIsi, LC, LC II, Ilvi, Ilvx.

Customer Impact: Users without this fix may experience system crashes and the tick count may not be accurate.

Apple File Exchange Patch for Color Classic Sound Input (1.0)

Models Affected: Macintosh Color Classic

Customer Impact: Sound Input capability disappears on Color Classic systems after Apple File Exchange quits.

Details: This patch fixes a condition where Apple File Exchange mistakenly assumes a resource in the System Enabler belongs to it. This patch is only applied when Apple File Exchange is running.

SCSI Slow-read Patch (1.0)

Models Affected: Ilvi, Ilvx, LC III.

Customer Impact: Certain new SCSI hardware support can cause rare random failure of slow SCSI reads. This fix is mainly to support older devices, as few new devices require the `SlowRead` function.

Details: The patch is to the `SlowRead` routine in the SCSI manager. The original problem was a race condition between when the REQ bit is set, but before the phase checker completes, an interrupt would require service. An interrupt check is now made immediately after the REQ bit is set.

PowerOff shutdown delay (1.0)

Models Affected: IIsi, Ilci, Quadra 700, Quadra 950, Ilvi and Ilvx.

Customer Impact: Fixed a bug relating to some hardware configurations. The floppy drive would fail to fully eject a floppy disk at power-off.

Details: The patch delays for 1.5 extra seconds. The combination of fast shutdown power supplies and certain floppy drives

require more time for the mechanism to complete its revolution before power is interrupted. The patch installs on IIsi, Ilic, Quadra 700, Quadra 950, Ilvi, and Ilvx systems running System 7.1 or System 7 Pro.

BlockMove fix (2.0)

Models Affected: Ilic, Ilfx, Quadas, Centris, all PowerBooks except the 100.

Customer Impact: Under certain `circumstances` the block header information was getting written over during calls to `BlockMove`. This happens when the byte count (DO) is between 8MB and 16MB, and the destination address (A1) is less than 8MB lower than the source address (AO), and the source/destination overlap. This fix prevents the application heap being trashed by this condition.

Details: This fix has been merged in with the "Patches to Eliminate Unnecessary Processor Cache Flushing (3.0)" patch.

Extents file problem fix (2.0)

Models Affected: All.

Customer Impact: Users who suffer from this problem will be led to believe that their drive has failed. If the afflicted drive is a boot volume then the system will not boot, resulting in the flashing question mark. If the volume is not the boot volume the user will be presented with the "This disk is damaged, do you want to initialize it?" dialog. This may lead the user to initialize the drive with the resulting loss of data.

Details: The problem is related to the size of the extents files and whether or not the dirty bit is set. Because of the size of the drive shipped with the machine, this bug was originally thought to be associated with the Macintosh PowerBook Duo.

DrawCsr fix (2.0)

Models Affected: Centris 610 & 650, Quadra 800, LC III.

Customer Impact: This problem appears as an update problem. The cursor will not track the mouse properly. This is fixed by installing a new `DrawCsr` routine which updates the cursor position properly.

Centris/Quadra VGA-sensed monitor sync on green fix (2.0)

Models Affected: Quadra and Centris Systems

Customer Impact: When a user connects a VGA-sensed monitor (such as Apple's Basic Color Monitor or Performa Monitor) to Quadra or Centris on board video the picture will be unacceptably green. There will be no way for the user to correct for this.

Details: The fix is to prevent sync on green from being used with VGA-sensed monitors on affected systems.

ADBReInit patch (2.0)

Models Affected: PowerBook 140, 145, 170 and Quadra 700, 900 and 950.

Customer Impact: Prevents a crashing bug which occurs when `ADBReInit` is called.

Centris/Quadra Blue Video Fix (2.0)

Models Affected: Quadra and Centris Systems

Customer Impact: If a customer connects a Centris to a 12" RGB monitor in 8 bit mode the display will appear to be blue and washed out.

Details: The fix is a patch to the built-in video driver which adds a 1 usec delay to the code which writes to the hardware for indexed devices.

Centris/Quadra Scrolling on a 16" Monitor Problem (2.0)

Models Affected: Quadra and Centris Systems.

Customer Impact: The video hardware must continually read image data from video memory to ensure a stable, flicker-free display. This data must be read at regular intervals so that no interruption occurs in the flow of image information to the screen. Under the right conditions (which occur at 8 bits/pixel on the 16" monitor) there can sometimes be a fairly short time window in which this data must be read from the video memory. It is possible for the `MOVE16` instruction on the Centris 610 to block this time window, causing an interruption in the stream of image data being sent to the screen. The problem only occurs on the Centris 610 since it runs at 20 MHz, a slower clock speed than other 68040 machines. The slower clock speed translates into a longer burst memory cycle. The problem does not occur on higher clock speed machines, or if the `MOVE16` instruction is not used for graphics operations.

Details: The fix is to patch the video driver to use a manual move rather than using `MOVE16`.

ReleaseTheFont fix (2.0.1)

Models Affected: All.

Customer Impact: Under System 7.1 fonts were not being purged when they should be. This results in the customer losing the use of the RAM that the fonts (which should have been purged) occupy. This fix corrects a logical test which was testing a word instead of a byte.

GetIndResource patch (2.0.1)

Models Affected: All.

Customer Impact: Inside Mac specifies that calls to `GetIndResource` with an index less than or equal to zero will return nil with `ResErr` set to `noErr` or `resNotFound`. The patch makes `GetIndResource` behave as documented. This is the same issue that the Connectix Enabler Patch addresses. (This patch is updated from the version in Hardware System Update 2.0.)

ADB bug fix (3.0)

Models Affected: PowerBook 160,165,165c,180,180c.

Customer Impact: In the PowerBook 160/180 version of `PMgrOp`, the system checks to see if the PMGR microcontroller is free. Unfortunately, if this check times out for any reason, it branches to the wrong location in the ROM and crashes.

Details: Time outs are more likely to happen during the sending of large ADB packets. This can happen with certain ADB based copy protection schemes. The fix redirects the branch to the proper location.

Flush Data Cache patch (3.0)

Models Affected: All models running an 040 processor.

Customer Impact: Due to changes in some ROMs to `LoadSeg` and the Device Manager, it is possible that `LoadSeg` may try to execute stale data, leading to a crash. This can also occur if an application loads code (either from a data fork or a resource file) and tries to execute it -- for example, HyperCard and XCMDs.

Details: The fix is to patch the File Manager to flush the data cache on synchronous File System read calls to non-HFS volumes (specifically, a non-zero File System ID).

Resource Fork Consistency patches (3.0)

Models Affected: All.

Customer Impact: The System file's resource fork can become corrupted due to its resource map becoming inconsistent with what is on disk. This can be triggered by a power failure or a poorly timed system crash. The result is the infamous flashing question mark at start up.

Details: The fix is to patch `UpdateResFile` to set a flag when the System file is being updated and to patch `SystemTask` so that once or twice a second the cache will be flushed if the flag is set.

Power Manager low power alert fix (3.0)

Models Affected: All PowerBooks and Portable.

Customer Impact: When the Notification Manager displays the last low-power alert on a PowerBook (the inevitable shutdown alert), the PowerBook's hard drive may be required to spin up to load the alert resources and the system sound. This spinning up may require more power than is available, which forces the system to die in a non-graceful manner.

Details: The fix is to load and mark the necessary resources for the low-power alert (DLOG #1, DITL #1, and 'snd '#1) as un purgeable and to update the Power Manager low memory globals to point at the loaded resources. The resources require approximately 300 bytes of RAM (mostly due to the Simple Beep sound, which is used instead of the user's designated system alert sound because the user's sound may be quite large). The PowerBook 100 and Portable also get a new version of the notification routine installed (same as the PB140 and newer).

Patches to Eliminate Unnecessary Processor Cache Flushing (3.0)

Models Affected: All 020, 030, and 040 based models except AV.

Customer Impact: Performance is being lost due to unnecessary cache flushing.

Details: The fix is to replace the `BlockMove` trap with a newer version which supports the `BlockMoveData` option.

`BlockMoveData` is the `BlockMove` trap called with the immediate bit set (0xA22E). The only difference between the two calls is that `BlockMoveData` does not flush the processor caches. This call is available to third party developers who should be able to speed up their applications by using it in situations where code is not involved. If `BlockMoveData` is called on a system without this patch then the normal `BlockMove` code is called (the immediate bit is ignored) and the caches get flushed.

MacPlus compressed resources fix (3.0)

Models Affected: MacPlus.

Customer Impact: On a MacPlus, the Resource Manager sometimes returns compressed size of a resource instead of the uncompressed size as it should. This was preventing the MacPlus from using System 7.1.1 and newer.

Details: The fix is to patch the Resource Manager to return the proper size in all cases.

About This Macintosh fix (3.0)

Models Affected: All.

Customer Impact: Sometimes the System memory usage line in the About This Macintosh box can be drawn outside of its bounds. The problem is that the total amount of memory being used by the System is being miscalculated. If the System heap has a significant amount of free space in it the memory used bar will be drawn outside of its boundaries. This can easily happen if an extension attempts to allocate a large chunk of memory and fails. The System heap will grow to try to honor the request, and then not shrink back down.

Details: The fix is to patch `InitApplication` to attempt to allocate most of `TempMem` the first time it is called from the Finder or AtEase. This has the nice side effect of shrinking the System heap back to a more appropriate size.

FSpExchangeFiles compatibility code fix (3.0)

Models Affected: All.

Customer Impact: `FSpExchangeFiles` fails on volumes that do not support `PBExchangeFiles`. Any of the following may occur:

- if both files are in the same directory, it returns `dupFNErr` because the code does not preflight for the same parent ID.
- the file attributes are swapped except for the modification date. This is exactly the reverse of what should happen. `PBExchangeFiles` exchanges only the modification date!
- if an error condition occurs after the files are renamed to unique names, there is no attempt made to rename the files back to their original names.

Details: The fix patches the `HighLevelFSDispatch` trap.

FSpCreate and FSpCreateResFile patch (3.0)

Models Affected: All.

Customer Impact: These traps were using `PBHGetFInfo` at their core which does not preserve the Finder extended info (FXInfo). Among other things, the script information would get lost.

Details: These traps now use `PBHGetCatInfo`.

Unexpected File Server disconnect fix (3.0)

Models Affected: All.

Customer Impact: When a server unexpectedly disconnects, the Finder forcibly unmounts it. If an application had files open on this server, the file control blocks are released without any notification to the application. When saving the file fails, the user may attempt a Save As to a new disk. Unfortunately, the newly mounted disk is assigned the previously released file control blocks and the stage is set for disaster. When the application writes to what it thinks is its file, it may be writing data into the new disk's catalog. Or, if the user opens a second file before saving the first, the second file will become corrupted when saving the first.

Details: The fix is to patch `PBHGetCatInfo` and `PBHGetVolParms` to prevent the unexpectedly disconnected volume from being unmounted, thus not releasing its file control blocks. The result is that server volumes that unexpectedly disconnect will go offline but not be sent to the trash (i.e. appear to work like a manually ejected floppy).

AppleShare Working Directory fix (3.0)

Models Affected: All except AV and Power Macintosh.

Customer Impact: When an application opens a working directory on an AppleShare volume, AppleShare doesn't properly inform the Process Manager. This leaves the folder marked in use and prevents it from being deleted even after the application has quit.

Details: The Process Manager now properly links working directories opened on AppleShare volumes with the process that opened the working directories. This fix is already in the AV and Power Macintosh ROM.

DTOpen asynchronous fix (3.0)

Models Affected: Quadra 840AV, 660AV, Power Macintosh 6100, 7100, 8100, and Power Macintosh Upgrade Card configurations.

Customer Impact: When one of the affected models is file sharing with any other computer, a large file is being transferred, and a CD-ROM disc is inserted into the affected model, it may hang the system.

Details: Added a patch to force `DTOpenInform` and `DTGetPath` calls to do all IO synchronously. This prevents some potential file system hangs.

New Standard File Package

Models Affected: All.

The Problem: There are several Standard Files problems that are addressed in System Update 3.0. The main one is that anyone mounting more than 20 volumes will start trashing system memory, usually causing a crash when hitting the Desktop button. Another is that no feedback is given to a user who opens a folder with more than 600-800 files (some file names are not in the selection list). Numerous other small bugs were also fixed.

Details: * The fix for the more than 20 volumes problem is to replace the fixed internal array with a dynamic buffer allocation scheme. A Gestalt bit (`gestaltStandardFileHasDynamicVolumeAllocation`, bit 4) was added to the 'stdf' proc for developers to determine whether the version supports more than 20 volumes.

- The fix for the 600-800 file problem is to put up a dialog when Standard File realizes that it has filled its List Manager record which informs the user that there are more files which cannot be displayed.
- The LDEF was completely rewritten and now uses desktop database icons. The icons are displayed in the main monitor's color depth (up to 8-bit). If there is no icon for the item, one of the generic icons from the system is shown (just like previous versions). The generic icons are also used if Standard File is called during boot (before the Process Manager is available). For situations where the original performance is desired, a Gestalt bit (`gestaltStandardFileUseGenericIcons`, bit 3) was added to the 'stdf' proc to force the LDEF to use only the system generic icons.
- Fixed a bug that prevented the use of the up/down arrows while editing the `PutFile` filename that reached 31 characters. They are now allowed regardless of name length.
- Plugged a leak where more than 31 characters could get into the `PutFile` filename via the clipboard paste.
- Fixed a bug where hitting Return/Enter twice quickly in `GetFile` on a folder that didn't contain any more folders, nor any files the application could open, would return a bogus reply record. This happened because the second key arrived before the button had a chance to dim. If the button had been dim, the key would have been ignored; that is what now happens.
- Fixed a bug where `PutFile` would return a bogus reply record if the user hit Return/Enter before the Save button was dimmed if the current directory was on a write protected disk. If the button had been dim, the key would have been ignored; that is what now happens.
- Made the New Folder, Eject, and Save buttons enable/disable properly at the desktop level.
- Whenever a third-party `editItem` becomes active, word wrap is turned on and the `destRect` and `viewRect` are both reset to the item rect in the DITL.
- The right side of the filename's `destRect` was being set to 100 pixels greater than the `viewRect` to allow horizontal scrolling. This value was increased to 256 to ensure that the widest possible name would be visible.
- Fixed bugs relating to the filename getting garbaged when click-activating any `editItem`. Now, when an `editItem` is deactivated (including any third party additions), it is forcibly scrolled back to its beginning. This leaves the `editItem` in sync for the subsequent activate.
- Fixed a bug where dimmed items in the list could get selected (but not highlighted) and affect the buttons.
- Fixed several bugs relating to updating the region behind Help balloons.
- Added Command-S as a key equivalent for the Save button. Also restricted Command-O to Open (previously, it worked on the default button regardless of whether it was Open or Save).
- Made opening an alias to a folder work the same as opening a real folder; formerly, opening an alias to a folder would not highlight the first item in the list.
- Changed it so the watch cursor is displayed every time a folder is opened. This is for slow media, large folders, and aliases to deeply nested folders.
- Added code to trap attempts to create new folders with reserved system names. It traps for the same four special names that the Finder does (Temporary Items, Trash, Desktop Folder, and Network Trash Folder). If one of these names is entered, an error dialog is shown: "That name is reserved by the system; please use another name."
- Added code to reset the cursor to an arrow whenever any Standard File dialog is closed. Occasionally, it was being left as an I-Beam.
- Added generic small icons for Apple's RAM disk and CD-ROM disk.
- Added an enhancement for developers who are writing a Get Directory function. It is no longer necessary to use a

custom file filter to list only directories. For a significant speed improvement and less code, use a type list instead. If the type list consists of types that don't exist, only volumes and folders will be displayed. Previously, there was no type that was guaranteed to not exist. Now the type '[[florin]]ldr' (0xC46C6472) has been assigned as a type that is reserved and will never be assigned. Also code was added to Standard File to specifically trap and not display any files of that type (should it ever exist for any reason). The following code is an update to *Inside Macintosh: Files*, page 3-37, listing 3-19.

```
FUNCTION DoGetDirectory: StandardFileReply;
VAR
    myReply:           StandardFileReply;
    myTypes:           SFTypelist;           {types of files to display}
    myPoint:           Point;                {upper-left corner of box}
    myNumTypes:        Integer;
    myModalFilter:     ModalFilterYDProcPtr;
    myActiveList:      Ptr;
    myActivateProc:    ActivateYDProcPtr;
    myName:            Str255;
CONST
    rGetDirectoryDLOG = 128;                {resource ID of custom dialog box}
BEGIN
    gPrevSelectedName := '';                {initialize name of previous selection}
    gDirSelectionFlag := TRUE;              {initialize directory selection flag}
    myNumTypes := 1;                        {only one type in the type list}
    myTypes[0] := '[[florin]]ldr';          {there are no files of this type}
    myPoint.h := -1;                        {center dialog box on screen}
    myPoint.v := -1;
    myModalFilter := NIL;
    myActiveList := NIL;
    myActivateProc := NIL;

    CustomGetFile(NIL, myNumTypes, myTypes, myReply,
                  rGetDirectoryDLOG, myPoint, @MyDlgHook, myModalFilter,
                  myActiveList, myActivateProc, @myReply);
    {Get the name of the directory.}
    IF gDirSelectionFlag AND myReply.sfIsVolume THEN
        myName := Concat(myReply.sfFile.name, ':')
    ELSE
        myName := myReply.sfFile.name;

    IF gDirSelectionFlag AND myReply.sfIsVolume THEN
        myReply.sfFile.name := myName
    ELSE IF gDirSelectionFlag THEN
        myReply.sfFile.name := gPrevSelectedName;
    gDirSelectionFlag := FALSE;
    DoGetDirectory := myReply;
END;
```

Easy Access Control Panel 7.2

Models Affected: All.

Customer Impact: If the sticky keys feature of Easy Access was activated on a PowerBook or the Portable when it was put to sleep, it will be deactivated upon wake up and the user will be unable to reactivate it. During the wake up process, the call to ADBReInit disables the Easy Access modifier keys. The only solution for the user is to restart.

Details: * The problem is that Easy Access installs its own service routine using SetADBInfo on any keyboards it finds. When ADBReInit is called, the keyboard is reset to use its original driver but the routine in Easy Access does not get called. The problem is fixed in version 7.2 of the Easy Access control panel. The fix was a simple matter of having Easy Access post an entry into the ADBReInit queue on PowerBooks so that when the PowerBook wakes up, it gives Easy Access a chance to re-attach its driver into the ADB chain.

- This version was enhanced to save the on/off state of the sticky keys, mouse keys, and slow keys between restarts.

Memory Control Panel 7.3

Models Affected: All.

Customer Impact: Bug fixes.

Details: * If a customer sets a RAM Disk to 100% while running System 7.1 with Memory Control Panel version 7.1, the

system may not properly reboot because of insufficient memory for the system heap. This fix reduces the possibility of this occurring.

- The default for "32-Bit Addressing" is now "On".

Screen Control Panel 1.0.4

Models Affected: LC 520, 550, 575, Color Classic, Color Classic II and Mac TV.

Customer Impact: The latest version of the Screen control panel. This version fixes a problem on LC 575 systems where a single PRAM location was serving two different and conflicting purposes.

Sound Manager 3.0

Models Affected: All except MacPlus and SE.

Customer Impact: Fixes old sound manager bugs and enhances sound performance.

Details: Provides bug fixes and better performance. See also the Technote, *TB 570 - Sound Manager Q&As* .

Sound Control Panel 8.0.1

Models Affected: All.

Customer Impact: This control panel is necessary for Apple Adjustable Keyboard and Sound Manager 3.0.

Details: It has the software necessary to respond to the mute and record buttons on the Apple Adjustable Keyboard.

PowerBook Display Control Panel 1.1

Models Affected: All PowerBooks.

Customer Impact: It is part of the package of PowerBook related controls panels which have had their functionality reorganized to simplify things for the user and to allow for more room for future functionality.

Details: * This version has better support for 12" external monitors.

- Changes made for Duo 270c.
- Screen dimming moved to PowerBook Control Panel.

PowerBook Control Panel 7.3.1

Models Affected: All PowerBooks.

Customer Impact: Latest version with bug fixes.

Details: The functionality has been split between this control panel and the PowerBook Setup Control Panel to simplify the user experience with the PowerBook.

PowerBook Setup Control Panel 7.3.1

Models Affected: All PowerBooks.

Customer Impact: Changes made to accommodate PowerBook Control Panel and Express Modem 1.5 and later.

PowerBook Duo Enabler 1.0

Models Affected: PowerBook Duo 210, 230, 250, 270c.

Customer Impact: Provides the latest software for the entire Duo Family.

Details: * Fixes ADB problems.

- Allows the use of type II batteries.

Duo Battery Patch 1.0

Models Affected: PowerBook Duo 210, 230, 250.

Customer Impact: Fixes a bug in the PowerBook Duo Enabler. NOTE: The functionality of this patch is already in the Duo 270c and will be included in the next version of the PowerBook Duo Enabler.

AutoRemounter 1.2

Models Affected: All PowerBooks and the Portable.

Customer Impact: This release significantly reduces network traffic compared to version 1.0.

Battery DA 7.1.1

Models Affected: All PowerBooks.

Customer Impact: Eliminated Power-Saver mode. Changes made to support Duo models.

TV Setup Control Panel 1.0.1

Models Affected: MacTV.

Customer Impact: Bug fixes and enhancements.

Details: * Support has been added for HRC cable systems.

- A problem was fixed that would sometimes cause the screen to darken after returning from TV mode.

PC Setup Control Panel 1.0.2

Models Affected: Centris/Quadra 610.

Customer Impact: This version provides a fix for users of the Macintosh DOS Compatibility Card that are experiencing interference when using a single 14" display and the PC is in the foreground. If you are experiencing an interference problem, make sure the "Fade Screen" option is selected in the updated PC Setup control panel. With this option selected, switching to the Macintosh will be slightly slower but the video interference will disappear.

System Enabler 003 v1.1

Models Affected: LC III.

Customer Impact: Minor bug fix for compatibility.

System Enabler 040 v1.1

Models Affected: Quadra 800, 610, 650, Centris 610, 650.

Customer Impact: Added support for Quadra 610 and 650.

System Enabler 065 v1.2

Models Affected: Quadra 605, LC475, LC575.

Customer Impact: Minor bug fix for compatibility.

System Enabler 088 v1.2

Models Affected: Quadra 840AV, 660AV.

Customer Impact: Required for System 7 Pro support.

Details: * Added support for Quadra 660AV.

- Increased File Manager performance by flushing the disk cache less often.
- Increased Resource Manager performance by reverting to the old flush file algorithm which flushes less often.
- Fixed a problem where the root volume name of an alias created on an 840AV was corrupted.
- Corrects most cases of failure to print to the LaserWriter Select 310 printer. Previously, these computers could not print reliably to this printer using the printer port.
- Eliminates the possibility (reported in just a few instances) of System Error 28 occurring during heavy, concurrent traffic over both the serial port and an AppleTalk network connection.
- Corrects an asynchronous serial receive problem. Previously, the machine might crash while receiving a fax and simultaneously transferring files over a network.

System Enabler 131 v1.0.3

Models Affected: PowerBook 160, 165, 165c, 180, 180c.

Customer Impact: Problems with 12" are fixed. Greater support for the video out port is provided. Added support for PowerBook 165.

Details: * Replaces Enabler 111 and 121.

- Corrected a problem involving the serial driver. If a user has the serial driver open, but is not transmitting, and then puts the PowerBook to sleep, any attempt to transmit upon waking, would cause the system to hang.

System Enabler 401 v1.0.5

Models Affected: Color Classic.

Customer Impact: This new system enabler fixes problems with erratic mouse movement when using the Apple Ile card in the Macintosh Color Classic. The mouse will be unusable as its movements will appear random.

Details: The updated system enabler fixes the mouse acceleration tables.

System Enabler 403 v1.0.2

Models Affected: Color Classic II, LC520, LC550.

Customer Impact: This update adds support for the Color Classic II and LC550.

PowerPC Enabler 1.0.1

Models Affected: Power Macintosh 6100, 7100, 8100.

Customer Impact: The updated system enabler fixes some video and communications problems.

Details: * Includes Comm ToolBox 1.1. Gestalt returned that version 1.1 was available when, in fact, the ROM only has version 1.0.

- Fixes a sync problem with 16" & 21" monitors using the AV video board (2 registers were not being initialized).
- Patches the built-in video driver to properly enter the energy saving mode.
- Corrects most cases of failure to print to the LaserWriter Select 310 printer. Previously, these computers could not print reliably to this printer using the printer port.
- Eliminates the possibility (reported in just a few instances) of System Error 28 occurring during heavy, concurrent traffic over both the serial port and an AppleTalk network connection.
- Corrects an asynchronous serial receive problem. Previously, the machine might crash while receiving a fax and simultaneously transferring files over a network.

PowerPC Upgrade Card Enabler 1.0.1

Models Affected: PowerPC Upgrade Card installed in: Centris 610, 650, Quadra 610, 650, 700, 800, 900, 950.

Customer Impact: This is a subset of the PowerPC Enabler, with only the applicable parts.

Details: * Includes Comm ToolBox 1.1. Gestalt returned that version 1.1 was available when, in fact, the ROM only has version 1.0.

Apple Adjustable Keyboard resources 1.0.3

Models Affected: All.

Customer Impact: Allows users to plug an Apple Adjustable Keyboard into their system without installing additional keyboard software.

Details: The Apple Adjustable Keyboard resources are backwards compatible.

Grayshare serial driver patches 1.0

Models Affected: All.

Customer Impact: Users will experience better printer and serial performance.

Details: These patches allow GrayShare and the StyleWriter II to operate more reliably.

HDSC Setup 7.3.1

Models Affected: All.

Customer Impact: Using HD SC Setup 7.1, users of large (1 GB+) drives will be unable to format their drives. As these larger drives are becoming more commonplace it is desirable to have the software to support them readily available.

Details: * Includes a driver which has been patched to handle the MountVol problem that many Duo x/120 systems have been experiencing, and fixes some problems handling certain bad block conditions. It also supports the new asynchronous

functionality of SCSI Manager 4.3.

- Fixed a bug that could cause a PowerBook to hang when it was connected as a hard drive to another Macintosh that was running asynchronous SCSI.
- Includes some changes to accommodate Power Macintosh.
- Fixed a bug in version 7.3 that caused a crash on non-VM-capable models.

Disk First Aid 7.2

Models Affected: All.

Details: Disk First Aid 7.2 fixes a number of problems present in earlier versions. Disk First Aid now sets the Volume OK bit when a volume passes all tests. The new software also changes the default device that is checked by Disk First Aid to be other than the volume containing the Disk First Aid software. The user interface is improved, and a number of other bugs are solved. Messages generated are more descriptive.

SimpleText 1.0

Models Affected: All.

Customer Impact: Replaces TeachText. Among other improvements, SimpleText allows multiple documents to be open simultaneously, and allows users to easily use a variety of fonts, font sizes, and font styles.

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