

Product Support Bulletin

Subject: Epson NX Multimedia PC, CDR101 ERROR

Date: 05/18/94
Page(s): 1 of 1

PSB No: S-0176
Originator: RWS

This bulletin provides updated reinstallation information of the Multimedia software from the "Media Vision Spectrum 16 Drivers for DOS and Windows" installation disk. The product codes affected are: A432360, A432361, A432370, A432371.

PROBLEM:

CDR101 errors are exhibited when the CD ROM drive is accessed after the reinstallation of the Media Vision software. The CDR101 errors are due to an OLD version (3.06) of TSLCDR.SYS (34,239 dated 7-15-93) being installed to the hard drive. This file is in compressed form on the installation disk and therefore is not listed if a directory command is performed on the installation disk.

SOLUTION:

Copy the NEW version (3.12) of TSLCDR.SYS (34,975 dated 12-01-93) Included in the root directory of the Media Vision INSTALLATION disk, to the C:\SPECTRUM directory on the hard drive. Then RE-BOOT the PC.

To copy the NEW version of the TSLCDR.SYS file to your hard drive insert the Media Vision installation diskette into the floppy drive **A:**, go to a DOS prompt C:\>, and type in the copy command listed below, followed by pressing the **ENTER** key.

C:\>COPY A:\TSLCDR.SYS C:\SPECTRUM

NOTE: Copy the NEW TSLCDR.SYS file to your hard drive each time the Media Vision installation diskette is used to reinstall the multimedia software.

VERIFICATION:

1. Re-boot your EPSON NX Multimedia PC by turning it OFF and then back ON.
2. Insert a CD ROM program disk into the CD ROM drive.
3. Go to the DOS prompt C:\>
4. Change to the CDROM drive by typing a **D:**, **C:\>D:** followed by the **ENTER** key.
5. Do a directory command by typing DIR, **D:\>DIR** followed by the **ENTER** key,
6. You should see a listing of the contents of the CD installed.

Product Support Bulletin

Subject: EPSON NX Questions and Answers

Date: 10/8/93
Page(s): 1 of 7

PSB No: S-0167
Originator: MWT

HARDWARE

Q. What is the EPSON NX?

A. The EPSON NX is a small footprint, high-powered desktop computer that is designed specifically for the NeXTSTEP for Intel® operating system.

Q. What are some of the standard features?

A. An Intel i486DX2/66 CPU; 20MB or 36MB of system memory (depending on the configuration); VirtualCache™ memory architecture; Chips and Technologies Wingine display controller with 2MB of video memory and high performance TI RAMDAC; 16-bit Ethernet LAN adapter; 16-bit sound card with speakers and microphone; 3.5" 1.44MB FDD; NeXTSTEP for Intel 3.1, MS-DOS 6.0 and Windows 3.1 preinstalled (on all HDD configurations).

Q. What configurations are available?

A. There are two IDE HDD configurations - 170MB (Conner CP30174E) and 240MB (Quantum LPS240AT). Then there are two 525MB SCSI HDD configuration - these use the Quantum LPS525S HDD and Adaptec AHA-1540B SCSI host adapter, and comes with 36MB of system memory standard. One of these includes the NeXTSTEP Development software. Finally, there's a "bare" configuration - no HDD, no software (NeXTSTEP, MS-DOS or Windows).

Q. This is quite different from systems that Epson has offered in the past. Is it new technology?

A. From a hardware standpoint, no. The EPSON NX is derived from the Progression 4 basic design. In fact, with the exception of the main board and front bezel, parts are interchangeable between the two systems.

Q. What's different about the main board?

A. Primarily, the increase in video memory from 1MB to 2MB and the TI TLC34076 RAMDAC (as opposed to the Brooktree BT484 RAMDAC used in

the Progression 4 series). This called for a new board layout to accommodate the increased component count.

Q. What Ethernet adapter is being used?

A. Actually, two different adapters will be used - the Intel EtherExpress™ 16C and the SMC EtherCard PLUS Elite 16 Combo™. These adapters will be used interchangeably and both provide BNC (thin Ethernet), AUI (thick Ethernet) and RJ-J45 (10BaseT Ethernet) connectors. This gives the EPSON NX true "plug 'n play" capability in virtually any Ethernet environment.

Q. What options are available?

A. Additional SIM modules, FDDs and HDDs, 17" and 20" Professional Series monitors and a SCSI host adapter. Other options may be made available in the future. (Note that NeXTSTEP only supports a 3.5" 1.44MB FDD, so a 5.25" 1.2MB FDD would be useful only in the DOS/Windows environment.)

SOFTWARE

Q. What is NeXTSTEP?

A. NeXTSTEP is an advanced, Mach-based operating system that integrates object-oriented technology, industry standard networking and connectivity and an outstanding graphical user interface (GUI). It provides true multitasking in a very "user-friendly" environment.

Q. Okay - what's Mach?

A. Mach is an operating system that was designed by researchers at Carnegie Mellon University. It's based on a simple communication-oriented kernel, and is designed to support distributed and parallel computation while still providing UNIX 4.3BSD (Berkeley San Diego) compatibility. For all intents and purposes, Mach "looks like" the 4.3BSD implementation of UNIX and the terms "Mach" and "UNIX" can be used interchangeably.

Q. But I've heard that UNIX is very intimidating - is that true?

A. Yes, UNIX can be very intimidating to someone not familiar with it. But with a properly installed and configured NeXTSTEP system, the only "UNIX-ese" that you see is during the initial loading of the operating system - and that's all automatic. The only exception is if your LAN adapter is installed and configured but you're not connected to a LAN, you'll be prompted to type Ctrl-C to continue without the network connection. Since the EPSON NX HDD configurations have NeXTSTEP preloaded and configured, you might very well never see the Mach command prompt (unless you want to).

Q. What does a normal NeXTSTEP boot-up look like?

- A. The system will go through its normal power-on process - displaying the BIOS versions, RAM count, etc. If it's one of the 525MB HDD systems, you'll then see the SCSI BIOS version. Then the screen will clear, you'll hear another beep and the message:

```
NeXT boot0  
Type n for NEXTSTEP, d for DOS 1-4 for partition #:
```

Type n (or wait for 5 seconds) and you'll see:

```
NeXT boot1 v1.17  
  
>> NeXTSTEP 486 boot v1.17  
>> 639 conventional / 19456 extended memory (20MB system)  
Type ? for information about advanced startup options
```

boot:

At that point, press Enter (or wait again for about 5 seconds) and the operating system will continue loading. With an EPSON NX that's in the original factory configuration, you'll wind up automatically logged in to NeXTSTEP as the user account "me".

Q. So how is working in NeXTSTEP different from working in DOS or Windows?

- A. Everything is graphically represented, so, in that respect, it's similar to working in Windows. Some of the conventions are different - for example, instead of drop-down menus, the active window's menu is always displayed in the upper left-hand corner of the screen (unless you place it elsewhere). Another difference is that NeXTSTEP uses a spinning disk icon when it's busy accessing a drive, as opposed to Windows' hourglass icon.

Probably the biggest functional difference is that, unlike DOS, you can't just turn the computer off. Like all UNIX-based systems, an orderly shutdown should be performed. This is because the Mach file system is completely dynamic - in other words, things are constantly changing "on the fly". Fortunately, NeXTSTEP provides a very easy way to do this. From anywhere in NeXTSTEP (even at the Mach command prompt), simply hold down the right Alt key and press NumLock. This causes the message:

```
Restart or halt? Type r to restart,  
or type h to halt. Type n to cancel.
```

to be displayed in a terminal window (or at the command line). Type `h` and the system will start the shutdown procedure, safely unmounting the active file systems. Wait until you see the message:

```
It's safe to turn off the computer.
```

and then power the system down. Typing `r` to restart is the equivalent of Ctrl-Alt-Del in DOS - Mach ignores the Ctrl-Alt-Del keystroke sequence.

Q. Okay, what happens if the system is NOT shut down correctly - say there's a power outage?

A. When power is restored, the system will come up in a "dirty" condition - file links and pointers will be disorganized and the file system will be in an unknown state. At a certain point in the boot process, Mach displays the message "checking disks...". At this point, it will run the program *fsck* (for file system check). This is similar to the DOS CHKDSK command, but much more thorough. Depending on the size of the drive and the condition of the file system, *fsck* can take up to 15 to 20 minutes to complete. When it has repaired the file system, it will automatically restart the system.

Q. I see there's an icon for a *MS-DOS_6* disk - can I run my DOS and Windows programs from NeXTSTEP?

A. With release 3.1, no. NeXT will be releasing an optional third-party package called SoftPC[®], which is a DOS simulator. This will allow you to run DOS and Windows applications from the NeXTSTEP Workspace, including drag-and-drop capability between all applications. SoftPC should be available later this year.

Q. Then why is the DOS partition accessible at all?

A. Certain files can be accessed from both OS environments. The most common type of file is a straight ASCII text file. (Note, however, that DOS and Mach use different end-of-line, or EOL, characters - DOS uses CR/LF where Mach uses LF alone.) Other examples would be applications that exist for both environments and share a common file format - WordPerfect is such an application. From NeXTSTEP, you can either access eligible DOS files from the DOS partition or copy them into a folder (directory) in the Mach partition. You can also copy eligible NeXTSTEP files to the DOS partition for later manipulation from DOS. You cannot, however, access the Mach partition from DOS, due to the differences in the file systems.

Q. You mentioned networking - isn't that a lot more complicated in UNIX than it is in DOS?

A. Yes - but NeXTSTEP makes it very simple. NeXTSTEP was designed from the beginning to be a networked environment, instead of having it "tacked on" after the fact. If you take a brand new EPSON NX out of the box and connect it to an existing NeXTSTEP network, the first time you boot into NeXTSTEP you'll be prompted to enter a name for your computer - this name can be anything not already used by another system on the network. So type in "sirius", or "jsmith", or "foo" or whatever - and that's it. Your system will be recognized on the network by that name and the IP (Internetwork Protocol) address will be automatically generated and assigned. You'll now be able to send and receive E-mail and access other resources on the network.

Q. What about non-NeXTSTEP networks, like Novell NetWare?

A. There is an application called *NetWareManager* included that provides access to NetWare file servers on the network. This works in much the same way that DOS access does - i.e., you can copy eligible files back and forth between the two environments, or access them right from the NetWare file system. *NetWareManager* is located in the **/NextAdmin** folder.

Q. Since NeXTSTEP is so graphically oriented, what display resolutions are supported?

A. In the shrink-wrapped release of NeXTSTEP 3.1, a display driver is included for the EPSON NX that supports 1024 x 768 x 64K colors. An updated driver is available from NeXT (800-848-6398) that supports the "native" display mode, which is 1120 x 832 x 64K colors. Incidentally, on a standard Progression or Progression 4, NeXTSTEP would run at a resolution of 800 x 600 x 64K colors.

Q. What about printing?

A. Since NeXTSTEP uses Adobe's Display PostScript® for the display, it logically uses PostScript printers. A minimal number of PostScript Printer Description (PPD) files are installed by default, but there are many more PPD files contained in the package *Documentation.pkg* on the distribution CD-ROM. Included are virtually all of the Epson printers that support PostScript, either in native mode or with an optional PostScript card. This package can be installed using the *Installer* application.

SETUP/TROUBLESHOOTING

Q. How do you run SETUP and are there any special considerations?

- A. SETUP is stored in ROM, so you simply press F2 when prompted to at boot-up. The only special consideration (so far as NeXTSTEP is concerned) is the parallel printer port assignment. If you enable the parallel port driver in NeXTSTEP (using the *Configure* application) without changing the default SETUP, you'll see an error message when you reboot about not being able to initialize the parallel port. This is because NeXTSTEP uses I/O address 378h for LPT1, whereas the default SETUP uses 3BCh. Just run SETUP and change the port to 378h and when you reboot you'll see a line that says:

```
pp0 enabled
```

and you're ready to use the parallel port. All you have to do is run the *PrintManager* application to select and configure your printer.

Q. What do I do if the NeXTSTEP configuration gets corrupted - for example, if a non-supported display driver is selected accidentally?

- A. There's a way to boot the system with a "plain vanilla" configuration. At the boot : prompt, type the command:

```
config=Default
```

and press Enter. This will use the configuration template that was used by the initial installation program. You can then rerun *Configure.app* and select the correct settings. (Do remember that Mach, like UNIX, is case-sensitive, unlike DOS. Enter the command exactly as shown above.)

Q. The NeXTSTEP boot process keeps stopping with an "RDP exception" error message - what should I do?

- A. First, follow the same steps as above to use the default configuration template and then check everything in *Configure.app*. Make sure that all of the settings are valid and match the physical configuration of the system. If that doesn't correct the problem, you have two choices - either contact NeXT for software support at (800) 848-6398 or reinstall NeXTSTEP using the boot floppy and CD-ROM that came with your system.

Q. How can I tell if an error message is caused by hardware or software?

A. Hardware-generated error messages are fairly specific - such as parity errors, device failures, etc. Either hardware or software problems can cause `panic` or `kernel panic` errors at boot-up - such messages will usually include additional information related to the error condition, and you should write down the exact error message as displayed. A message such as `RDP exception` typically indicates a hardware or software configuration error.

Q. What should I do if I think there's a hardware problem but NeXTSTEP doesn't clearly isolate it?

A. The first step would be to run some thorough diagnostic software on the system. Unfortunately, there are no readily available Mach or UNIX-based diagnostics, due to the fact that UNIX is relatively "hardware-blind". There are a number of excellent third-party DOS-based diagnostic programs available such as QA Plus, AMI Diagnostics, Landmark AT Service Diagnostics and CheckIt Tools. If there is a hardware problem, one of these programs should identify it. If it doesn't and you still feel there is a problem, you might want to have an authorized service technician check the system out.

Q. What do I do if I want to change the hard disk partition sizes?

A. Obviously, the first thing to do is back up your data. Then, from DOS, run the FDISK utility to change the partition sizes. Of course, you'll have to reinstall DOS, Windows and NeXTSTEP. Be sure that you install DOS first - if you install NeXTSTEP and then install DOS, DOS 6 does something to the partition table that doesn't really work correctly with NeXTSTEP.

Q. Is there any problem using the DoubleSpace disk compression utility included with MS-DOS 6.0?

A. No. Follow the directions in the *MS-DOS User's Guide* for preparing the disk and then running `DBLSPACE.EXE`. This program reboots the computer twice in the process, so make sure that you select to boot DOS each time so as not to disturb the compression process. The only effect this has from the NeXTSTEP perspective is that your DOS files will no longer be available from NeXTSTEP - instead of the *MS-DOS_6* disk icon, you'll see one called *host_for_c* - this is the uncompressed partition that DoubleSpace uses for the actual compressed volume.

Q. What about MemMaker?

A. MemMaker, the memory optimizer included with MS-DOS 6.0, has absolutely no effect on NeXTSTEP. It can safely be used to optimize memory utilization for MS-DOS and Windows.

Product Support Bulletin

Subject: Proper Method for Running Benchmark and Diagnostics Programs

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Page(s): 1 of 1

PSB No: S-0158

Originator: MWT

This bulletin describes the proper method for running any benchmark or diagnostics programs. This applies to any computer system.

In most cases, the computer should be started using an MS-DOS boot diskette that's 'clean' - in other words, one with no CONFIG.SYS or AUTOEXEC.BAT files. The appropriate executable can then be run, either from diskette or hard drive.

There will be some exceptions to the above rule. In attempting to benchmark or troubleshoot any add-on that requires a device driver (CD-ROM, local area network, etc.), obviously the necessary device driver(s) must be loaded. Also, some programs will require a minimum number of FILES or BUFFERS to be defined in the CONFIG.SYS file. Such programs will usually display this requirement if they are run without the necessary CONFIG.SYS file.

For the most consistent results, use the absolute minimal boot configuration that's allowed by the hardware being tested.

EPSON NX					
VER	PART #	DESC	TYPE	LOC	REASON
1.11.1.12		SYSTEM	27C010	U1	INITIAL RELEASE
1.11.1.12		SETUP	27C512	U113	
1.13.1.14	201311201	SYSTEM	27C010	U1	Corrected jagged cursor display in interlaced mode with the BT-482 RAMDAC when using the hardware cursor Wingine display drivers. Serial BIOS has been expanded to support COM3 and COM4. Parallel BIOS has been corrected to provide support for LPT1-LPT3. Corrected inability to run SETUP when an adaptec AHA-1540C or 1542C SCSI host adapter is installed by modifying POD to run external ROM initialization routines just prior to invocation of SETUP. Corrected timing of parallel port STROBE signal to allow for slow rise time and longer cable lengths. Removed internal cache test. The cache test failed, regardless of cache condition. Since the 80486 CPU perform internal cache testing at power-up, disabling the POD cache test will not affect system performance. (SEE ECN NO: PROG4-002) 12/03/93.
1.13.1.14	201311301	SETUP	27C512	U113	

EL3S/33					
VER	PART #	DESC	TYPE	LOC	REASON
1.03	930219	PHOENIX	27C010	U19	INITIAL RELEASE