

NEXTSTEP for Intel Processors

Title: Compaq Deskpro XE 466

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NEXTSTEP Release Certified: 3.2

Product Vendor:

Compaq Computers
20555 State Highway 249
Houston, TX 77070
USA

+1 (800) 345 1518 USA toll-free phone sales and information

+1 (800) 652 6672 USA toll-free phone technical support

+1 (800) 263 5868 Canada toll-free customer support phone

+1 (713) 370 0670 international phone

+1 (713) 378 1418 BBS

WWW: <http://www.compaq.com/>

Keywords: ISA, 486, Compaq, Desktop

Explanation of Certification

To ensure a high level of compatibility and support for PC-compatible system configurations, NeXT has developed a process for comprehensively testing specific configurations for compatibility with NEXTSTEP for Intel Processors.

In this process, the NeXT Quality Assurance group subjects each specific system configuration to a suite of compatibility tests. If a system configuration passes the test suite, it is considered *certified*. Only the manufacturing revisions of a system unit and its add-on cards listed in the NeXTAnswer are considered certified. Once a configuration is certified, NeXT creates a detailed NeXTanswers document (like this one) that lists the specific configuration tested, plus any setup information required to configure the system for NEXTSTEP.

Because of the detailed information that's available on certified configurations, NeXT delivers the best technical support on them. Keep in mind that a system platform might be loosely referred to as "certified" if it has one or more certified configurations, but all the benefits of certification are available only to users of the specific certified configurations.

Note: NeXT certification does not necessarily mean a configuration is error-free. Certified systems may contain detected or undetected compatibility problems. Be sure to read all of the Known Problems before beginning installation.

Overview

The Compaq Deskpro 466 XE is an Intel 80486DX2 based desktop PC with ISA expansion bus, and built-in sound and graphics.

Certified Components:

NeXT has certified the following components(*):

System CPU Board(s)

Compaq Deskpro 466 XE

BIOS Version: 486A1

BIOS Revision Number: 10/11/93

CPU Type(s) & Speed(s)

66 MHz Intel 80486DX2

System RAM

32MB maximum tested

IDE Controller(s)

Integrated

SCSI Controller(s)

Adaptec 1540CF

Interface: ISA

BIOS Revision Number: v2.0

Firmware Revision Number(s): 553801-00 C, 553601-00 C

SCSI CD-ROM Drive(s)

Toshiba external double speed CD-ROM

Model Number: TXM3401E1

Hard Drive(s)

Quantum 540AT

Interface: IDE

Size: ~500MB

Floppy Drive(s)

Integrated 1.44MB 3.5"

Graphics Adaptor(s)

Compaq QVision

Interface: built-in local bus

BIOS Revision Number: 10/11/93

Chipset: QVision 1024/I

RAMDAC: Brooktree PS048401

VRAM: 2MB

Serial Port(s)

Integrated, COM1

Parallel Port(s)

Integrated, LPT2

Keyboard(s)

Compaq, PS/2 interface

Model: Enhanced II Keyboard

Mice and Other Pointing Devices

Microsoft, PS/2 interface

Part number: 28898

LAN Adapter

Compaq LAN adapter (Intel EtherExpress 16 compatible)

Interface: ISA adapter

Connectors: Twisted pair

-or-

Intel EtherExpress 16

Interface: ISA adapter

Connectors: BNC

Sound Card(s)

Compaq Business Audio (Microsoft Windows Sound System Compatible)

Interface: built-in

Monitor(s)

NEC 5FG

Note that only the firmware and hardware revision numbers specified are certified. Occasionally vendors may modify firmware or hardware characteristics without changing model numbers. Only systems with firmware and hardware revisions actually tested by NeXT have been certified.

Setup and Installation

Hardware Setup:

The BIOS address switches on the Adaptec 1540CF card need to be changed to set the ROM address to D4000H.

This prevents a conflict with the Compaq's on-board BIOS ROMs.

Switch S1:

1 OFF	Software controls termination
2 OFF	Set I/O port to 0x330
3 OFF	" "
4 OFF	" "
5 ON	Disable onboard floppy controller
6 OFF	Set BIOS address to D4000H
7 ON	" "
8 OFF	" "

System Board Switch Settings:

Switch Block SW500:

S1 ON	Set processor type to 486DX2/66
S2 OFF	" "
S3 ON	" "
S4 OFF	" "

Switch block SW502:

S1 OFF	Enable built-in video
S2 OFF	Allow configuration changes
S3 OFF	Allow writing to diskettes
S4 OFF	Reserved (always off)
S5 OFF	Retain passwords
S6 OFF	Prevent Flash BIOS updating

CMOS settings:

Access the CMOS configuration utility by pressing F10 during boot up. Configure the computer to the following settings:

Processor and Memory

Speed: High

Base Memory: 640K

IRQ12 Source: Pointing Device Interface

Alternate A20 Switching: Disabled

Video

VGA RAM bus width: 16 Bits

VGA ROM bus width: 16 Bits

Storage

Diskette drive A: 1.44-megabyte (3.5 inch)

Diskette Drive B: Not Installed

Fixed Disk Drive(s)

Primary Disk 1: Type 42 (528.m mbytes)

Primary Disk 2: Not installed

Secondary Disk 1: Not installed

Secondary Disk 2: Not installed

Advanced Settings

Diskette controller: Enabled

Fixed Disk Controller: Primary Address

Fixed Disk DMA: Enabled

Communications

Serial Interface 1: COM1, IRQ4

Parallel Interface: LPT2, IRQ7

Input Devices

Numlock power-on state: On

Security

power-on password: Disabled

Advanced settings: (None selected)

Power conservation

Energy Saver Mode: Off

Audio

Audio: On
Address: Primary (530h-537h)

Driver settings:

Use Configure.app to set the following parameters:

Display: Compaq QVision Display Adapter update
Port Address: 2 bytes at 0x3B4
Mapped Memory: 4096K at 0x19000000

Note: this driver is not on the NEXTSTEP 3.2 CD-ROM. It is available through NeXTanswers, or from NeXT Support. See the Known Problems section for details.

Pointing Device: PS/2-style mouse
IRQ: 12
resolution: 150 dots per inch

Network: Intel EtherExpress Ethernet adapter
Port Address: 16 bytes at 0x300
IRQ: 10
Connector: BNC

SCSI: Adaptec 1542B SCSI Adapter
DMA Channel: 5
Port Address: 4 bytes at 0x330
IRQ level: 11

Audio: Microsoft Sound System
DMA Channel: 3
Port Address: 8 bytes at 0x530

IRQ level: 9

Other Drivers:

PS/2-style keyboard
Floppy Disk Drive
On-board serial ports
IDE disk controller
On-board parallel port

Known Problems

Release 3.2:

- Compaq ships their disks with a master boot program which allows you to access the setup program. NEXTSTEP Installation will overwrite this program with a boot program which allows you to choose whether to boot into DOS or NEXTSTEP. Unfortunately, this means that you will not be able to easily access the setup program. NeXT strongly recommends that you use the setup program to create a setup utility diskette before installing NEXTSTEP.
- The Logitech mice shipped with these systems are incompatible with NEXTSTEP 3.2. Problems you may experience are the pointer moving by itself, jerky mouse response, or complete failure of the mouse. You will need to purchase a serial mouse or other PS/2 mouse for full mouse support. See NeXTanswer 1360_Mouse_Support for information on how to select a supported mouse.
- Support for the on-board graphics capabilities of this system is provided by an updated QVision driver. This driver is available from NeXTanswers as 1591_QVisionDriver.pkg.compressed. A ReadMe file is available as NeXTanswer 1590_QVisionDriver.ReadMe.
- Since Certification by NeXT, Compaq has changed the RAMDAC used on their QVision boards. This causes new systems to fail to work with the current driver. QVision boards with the AT&T RAMDAC will cause the following error messages:


```
Display0: unknown adapter; unknown DAC.  
Display: Failed to match modes. Using default mode  
Display0: Sorry, cannot use requested display mode.
```

Until an updated version of the QVision driver is available, you will only be able to use default VGA mode with the on-board QVision graphics adaptors. See NeXTanswers and the Hardware Compatibility Guide for information about new versions of the QVision driver.

- This system does not support SoftPC in full-screen mode.

- You should set the parallel port to be configured as LPT2 in the setup program. This will configure the parallel port at an address that NEXTSTEP is expecting.

- Sounds are not recorded or played back properly at 11KHz, and 16bit sounds sometimes break up on playback. This is a known problem with the Windows Sound System driver.

- The Compaq Deskpro by default only recognizes 16 MB of RAM. Compaq does not provide any straightforward way to make more than 16 MB of RAM addressable by NEXTSTEP; the information provided by the Compaq BIOS is not the true amount of RAM available. The only known workaround to this problem under NEXTSTEP 3.2 is to edit a configuration file in NEXTSTEP.

To get NEXTSTEP to recognize more than 16MB of memory on this system, you need to edit the file **/usr/Devices/System.config/Instance0.table**. You can use Edit or another text editor to modify this file. Be very careful! If you make a mistake here, it may render your system unbootable; see NeXTanswer 1381_booting_from_CD-ROM for information on how to boot from the CD-ROM if you do experience problems.

Your Instance0.table should look something like this:

```
"Version" = "3.30";  
"Kernel Flags" = "";
```

```
"Kernel" = "mach_kernel";  
"Boot Graphics" = "Yes";  
"Language" = "English";  
"Active Drivers" = "PS2Mouse Wingine EtherExpress16 Beep";  
"Instance" = "0";  
"Boot Drivers" = "Adaptec1542B SerialPorts Floppy PS2Keyboard EISABus";  
"Install Mode" = "No";  
"APM" = "Yes";
```

You should change the bold line above reading "Kernel Flags" = "" (note: it is not bold in the Instance0.table file, nor should you make it bold; this is a plain text file and should remain so) to:

```
"Kernel Flags" = "maxmem=XXXX"
```

Here XXXX is the amount of RAM in kilobytes installed in the system. One megabyte of RAM is equal to 1024 kilobytes. Once you've changed the file, reboot; all of your RAM should now be accessible to NEXTSTEP. You can check this by bringing up the Info Panel in Workspace and checking the amount of RAM listed for the system.

See Also:

- 1108_Adaptec_1542C_and_Adaptec_1540C_SCSI_Adapters
- 1206_Intel_Ether_Express_Ethernet_Adapter
- 1360_Mouse_Support
- 1381_booting_from_CD-ROM
- 1471_Microsoft_Windows_Sound_System
- 1590_QVisionDriver.ReadMe