

PRODUCT DETAILS

68040 Processor

The 68040 is a fast and highly integrated microprocessor with clock speeds of either 25 MHz or 33 MHz. The 68040 contains 1.2 million transistors, more than any other microprocessor in its class. This incredible number of transistors is required because the 68040 is actually four chips in one—a central processing unit, a floating point unit, a paged memory management unit, and 8 kilobytes of cache memory.

The system clock speed is identical to the CPU bus speed, providing an average execution time per instruction of 1.3 clock cycles.

There are two 4-kilobyte memory caches, one for data, the other for instructions, along with burst mode read and write-back caching for improved data transfers.

56001 DSP

Built into the NeXTstation's design is the 56001 DSP, a 25 MHz digital signal processor. With 24 K of static RAM cache, upgradable to 96 K, the DSP is dedicated to the task of handling digital signals—such as sound—at exceptional speeds.

The DSP is capable of generating compact-disc-quality sound: 44.1 kHz sampling rate with 16-bit resolution and full stereo.

Other uses for the DSP range from receiving still and video images to a variety of other data transmission and acquisition activities.

Network Support

Built-in networking, both thin and twisted-pair Ethernet ports are designed into all NeXT™ computers.

Network software and administrative tools are preloaded on all hard drives to simplify connecting to virtually any network, with no additional cards to purchase, install, or configure.

DMA Architecture

NeXT computers were designed to handle the most complex tasks efficiently. Rather than emulating a traditional PC or workstation architecture, NeXT systems used a direct memory access (DMA) architecture similar to that of main-frame computers for off-loading I/O functions from the CPU to the peripheral controller (PC) chip to maximize system throughput.

RAM Configurations

NeXTstation Color computers are currently available in 16, or 32 MB RAM configurations.

To support the fast memory transfer capability of the Turbo Memory Controller (TMC), NeXTstations utilize very-high speed (70-nanosecond) 72-pin DRAM SIMMs.

RAM upgrades can be added incrementally in two-SIMM increments up to 32 MB of RAM.

When denser chips (16 MB) become available, NeXTstations can be upgraded up to 128 MB.

Parity memory is also an option, and can be ordered on a select number of 16 MB configurations.

SCSI

SCSI is an expandable high-performance interface for connecting NeXTstations to hard disks and other peripherals, such as the NeXT Color Printer, NeXT CD-ROM Drive, scanners, and other devices. Up to seven SCSI peripherals (including the internal hard disk) can be connected.

SCSI data transfer rates are up to 4.8 MBytes per second (SCSI-I implementation).

A SCSI-II-type connector was used on NeXTstations to provide high data reliability in CPU-to-peripheral connection.

Sound I/O

NeXT computers have been designed to accept and process sound.

Using the built-in microphone in the MegaPixel Display™ or an external microphone, voice messages can be easily added to electronic mail or used to annotate applications.

NeXTstep

Based on the industry's first object-oriented system software, NeXTstep offers an elegant graphical user interface and one of the most productive development environments available today.

UNIX

NeXT's operating system is based on the Mach UNIX kernel developed at Carnegie Mellon University, which features shared memory, fast inter-process communication, multitasking, and network support.

NeXT's UNIX is compatible with UNIX 4.3 BSD (Berkeley Software Distribution).

Display PostScript

NeXT offers a unified imaging model, Display PostScript, for imaging on both the screen and printer.

Bundled Software

Each NeXTstation ships with an unprecedented amount of end-user and development software including:

End-User Applications

- Workspace Manager™
- NeXTmail™
- Digital Webster™ (Webster's Ninth New Collegiate Dictionary™ and Collegiate® Thesaurus)
- Digital Librarian™
- Edit
- *Mathematica*®—for higher education customers only
- DataViz/Bridge™
- FaxReader
- Preferences
- Preview for PostScript®
- PrintManager

System Administration Applications

- VT100™
- BuildDisk
- BuildDOS
- InstallTablet
- MailManager
- NetInfoManager
- NetManager
- PrinterTester
- UserManager

NeXTstep Release 2.2 Extended also includes:

End-User Applications

- Oxford® Dictionary of Quotations
- William Shakespeare: The Complete Works (for Digital Librarian)
- T_EX™ Document Processing System (Radical Eye Software)

Developer Tools

- Interface Builder™
- NeXT Compiler for the Objective C Language
- C++ Language Compiler
- Objective C Class Definitions
- 56001 DSP Tools
- GNU Emacs
- GNU Debugger
- Bug-56™ Debugger (Ariel)
- Malloc Debugger
- AppInspector™
- PostScript Tools
- Application Kit™
- Music Kit™
- Sound Kit™
- On-line technical documentation