NEXTSTEP RELEASE 3.2 FOR INTEL PROCESSORS HARDWARE COMPATIBILITY GUIDE

NEXTSTEP DEVICE SUPPORT OVERVIEW

This document describes in general terms the types of PC-compatible hardware that is supported by NEXTSTEP Release 3.2 for Intel Processors.
This guide is divided into three general sections:

• *Certified Systems* - These are PC-compatible systems that have been thoroughly tested by NeXT for the highest level of compatibility with NEXTSTEP.

• *Listed Systems* - These are PC-compatible systems that have been tested by a third party and reported to be compatible with NEXTSTEP.

• *Other Devices and Adapters* - This section lists various devices, adapters and peripherals that have been tested with NEXTSTEP, or reported to be compatible with NEXTSTEP.

Please refer to the specific section for details on testing, compatibility and support of any of the listed items.

Each of these sections refers to specific NeXTanswers documents available for some listed items. To ensure the greatest possible compatibility and support, NeXT recommends reviewing any available NeXTanswers document before purchase.

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NeXTanswers™: This guide and many other kinds of information are available from NeXTanswers, NeXT's free information-retrieval system. For NeXTanswers documents by fax, call (415) 780-3990 from a touch-tone phone. For NeXTanswers by Internet mail, send e-mail to nextanswers@next.com with the two-word subject: INDEX HELP.

Driver Updates: NeXT and third parties continuously develope and enhance drivers for NEXTSTEP. New drivers or updates to existing drivers can be downloaded from the Internet via e-mail or ftp. NeXTanswers provides an easy method to obtain drivers by e-mail. As described above, follow the instructions for obtaining a document via return e-mail. (Note: You must be able to receive NeXT Mail in order to receive a driver through e-mail) To obtain drivers by ftp, use ftp to access ftp.next.com, log in as ‘anonymous’ with any password and cd to pub. In that directory, there is a README file that explains how to download drivers and other NeXTanswers information. The drivers are located under NeXTanswers/Files/Drivers. If you have any further questions about how to obtain a Driver Update contact NeXT Technical Support at 1-800-848-NeXT, option 4.

For current device support, please request the latest edition of this NEXTSTEP Hardware Compatibility Guide from NeXTanswers or by calling 1-800-TRY-NeXT (or your local NeXT representative).

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Desktop System Requirements

OVERVIEW

GENERAL REQUIREMENTS FOR DESKTOP SYSTEMS

CPU

i486®-based or Pentium™-based PC compatible computer. NEXTSTEP requires a floating-point coprocessor. Systems using processors without a built-in floating-point coprocessor require an add-on floating-point coprocessor, or upgrade to a 486 or Pentium with built-in floating-point support.

EXPANSION BUS

ISA, EISA, VL-Bus or PCI expansion bus.

AVAILABLE HARD DISK SPACE

NEXTSTEP supports multiple partitioned hard disks, allowing the user to install and boot several operating systems from the same local hard disk. Larger local disks are recommended for stand-alone systems or for systems with a local non-NEXTSTEP partition.

User Environment 120 MB partition minimum, 200 MB recommended for stand-alone systems.

User + Developer Environments 330 MB partition minimum, 400 MB recommended.

RAM REQUIREMENTS

RAM requirements vary depending upon your selection of graphics adapter and imaging model.

Graphics System / Imaging Model	Minimum RAM Required	Recommended RAM
32-bit color	24 MB	32 MB
16-bit color	16 MB	24 MB
8-bit grayscale	12 MB	16 MB
2-bit grayscale	8 MB	12 MB

GRAPHICS ADAPTERS

See the “Graphics” section in this guide for details on graphics support.

DISK INTERFACES

IDE and several SCSI hard disk interfaces are supported.

Note: A SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.

POINTING DEVICES

Microsoft®- and Logitec®- compatible PS/2® and serial mice. Logitec bus mouse.

PRINTERS

Any PostScript printer connected via a serial or parallel port, including the NeXT Color Printer (connected via a SCSI port). NeXT recommends color PostScript printers with PostScript Level II for proper color support.

NETWORKING

Several Ethernet and Token Ring networking adapters are supported. A networking adapter is optional.

SOUND

NEXTSTEP can support certain PC sound cards for both playback and recording. A sound card is optional.

Portable System Requirements

OVERVIEW

GENERAL REQUIREMENTS FOR PORTABLE SYSTEMS

CPU

i486®-based or Pentium™-based PC compatible portable computer. NEXTSTEP requires a floating-point coprocessor. Systems using processors without a built-in floating-point coprocessor require an add-on floating-point coprocessor, or upgrade to a 486 or Pentium with built-in floating-point support.

AC-POWERED PORTABLES

AC-powered portables require at least one ISA or EISA slot for a SCSI adapter to install NEXTSTEP from CD-ROM.

BATTERY-POWERED PORTABLES AND DOCKING STATIONS

Battery-powered portables require a docking station with at least one ISA slot for a SCSI adapter to install NEXTSTEP from a SCSI CD-ROM drive. Once NEXTSTEP is installed, the portable may be used away from the docking station.

AVAILABLE HARD DISK SPACE

NEXTSTEP supports multiple partitioned hard disks, allowing the user to install and boot several operating systems from the same local hard disk. Larger local disks are recommended for stand-alone systems or for systems with a local non-NEXTSTEP partition.

User Environment 120 MB partition minimum, 200 MB recommended for stand-alone systems.

User + Developer Environment 330 MB partition minimum, 400 MB recommended.

RAM REQUIREMENTS

RAM requirements vary depending upon the user's selection of graphics adapter.

Graphics System	Minimum RAM Required	Recommended RAM
32-bit color	24 MB	32 MB
16-bit color	16 MB	24 MB
8-bit grayscale	12 MB	16 MB
2-bit grayscale	8 MB	12 MB†

Note: Since 32-bit, 16-bit color and 8-bit grayscale support require LocalBus, VL-Bus, PCI, or EISA graphics adapters, only AC-powered portables with EISA slots can support 32-bit, 16-bit color or 8-bit grayscale.

GRAPHICS ADAPTERS

Current display technology in popular portable PC-compatibles does not yet support the linear frame buffer NEXTSTEP requires for color or 8-bit grayscale. Therefore, NEXTSTEP supports these systems with 2-bit grayscale at 640 x 480. Active matrix or plasma panels are recommended for better cursor tracking response. ISA systems (AC-powered or through a docking station) can support add-on, high-resolution 2-bit grayscale graphics adapters and EISA-based AC-powered portables can support 16-bit color or 8-bit grayscale graphics with an add-on EISA graphics adapter.

DISK INTERFACES

Both built-in IDE and add-on SCSI hard disk interfaces are supported. Battery-powered portables require a docking station to install a SCSI hard disk interface card.

Note: A SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.

POINTING DEVICES

Microsoft- and Logitec-compatible PS/2 and serial mice are supported.

PRINTERS

Any PostScript printer connected via a serial or parallel port, including the NeXT Color Printer (connected via a SCSI port). NeXT recommends color PostScript printers with PostScript Level II for proper color support.

NETWORKING

Ethernet and Token Ring networking adapters are supported. Battery-powered portables require a docking station to install a networking adapter. A networking adapter is optional.

SOUND

NEXTSTEP can support certain PC sound cards for both playback and recording. Battery-powered portables require a docking station to install a sound card. A sound card is optional.

Certified Desktop Systems

TABLE LEGEND

Vendor	Model	Expansion Bus	CPU	Graphics Architecture	Supported Graphics Modes																SoftPC Full-Screen Mode	NA #
					2-bit Grayscale		8-bit Grayscale					16-bit Color					32-bit Color						
					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200		

VENDOR

Vendor, manufacturer, or system provider.

MODEL

Model number or name of system or series of systems tested with NEXTSTEP.

EXPANSION BUS

Standard expansion buses supported. ISA, EISA, VL-Bus (VESA LocalBus), and PCI. Note: EISA systems are compatible with ISA add-on cards.

CPU

Available CPUs (i486 or Pentium).

GRAPHICS ARCHITECTURE

Graphics architecture of the built-in or add-on graphics adapter. Includes interface (LocalBus, VL-Bus, PCI, EISA) and graphics controller. For systems tested with add-on graphics adapters, see “NEXTSTEP for Intel Processors Graphics” in this guide for additional information on supported adapters.

SUPPORTED GRAPHICS MODES

Supported resolution of the built-in or add-on graphics adapter. Gray areas indicate supported resolutions and number indicates video frame buffer size (in megabytes) required to support that resolution. In some cases, additional numbers indicate a specific supported resolution.

SoftPC FULL-SCREEN MODE

Insignia’s SoftPC will run in a seperate window on all supported configurations. For maximum performance, you can flip SoftPC into full-screen mode.

S=Supported; this configuration has been verified by NeXT to support SoftPC in full-screen mode.

NS=Not supported; this configuration has been verified by NeXT not to support SoftPC in full-screen mode.

If this entry is left blank, NeXT has not verified this configuration to support SoftPC in full-screen mode.

NeXTANSWER DOCUMENT NUMBER

NeXTanswer Document Number providing detailed setup and configuration information.

NEXTSTEP CERTIFIED SYSTEMS OVERVIEW

In order to ensure the highest level of compatibility and support, NeXT has developed a process to comprehensively test specific PC-Compatible system configurations with NEXTSTEP.

* Each specific system configuration has been subjected to a suite of compatibility tests by the NeXT Quality Assurance group.

* A detailed NeXTanswer support document is available listing the specific configuration tested, and any setup information required to configure the system for NEXTSTEP.

* Because of the detailed information available to customers and NeXT's Customer Support personnel, NeXT delivers the best technical support on certified configurations.

* A system platform is 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 configuration.

* Only the specific revisions of a system unit and its add-on cards listed in the NeXTanswer are certified. Always refer to the latest version of this guide, and the associated NeXTanswer to ensure the specific version of a system is fully certified by NeXT.

* NeXT certification does not necessarily mean “error free”. Certified systems may contain detected or undetected compatibility problems, please refer to the NeXTanswer for the latest information.

Certified Desktop Systems

PC MANUFACTURERS

Vendor refer to footnote below 1,2	Model	Expansion Bus	CPU	Graphics Architecture	Supported Graphics Modes																SoftPC Full-Screen Mode	NA #
					2-bit Grayscale		8-bit Grayscale					16-bit Color					32-bit Color						
					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200		
COMPAQ	Deskpro M-Series	EISA	486	QVision 1280/E				1 MB				1 MB	2 MB				2 MB 640 x 480					NS	
	Deskpro 5 / M-Series	EISA	Pentium	QVision 1280/E				1 MB				1 MB	2 MB				2 MB 640 x 480					NS	1456
DATA GENERAL	Dasher LE2	EISA	486	LocalBus ATI 68800								1MB	2MB									S	
	466V	ISA VL-Bus	486	Cirrus Log. CL-GD5426					1MB														
DEC	MTE d2	EISA	486	LocalBus S3-805				1MB				2MB										S	
	MTE d2	EISA	486	LocalBus S3-928				1MB		2MB		2MB	2MB		4MB		4 MB	4 MB				S	
DELL	450DE/2 DGX	EISA	486	LocalBus JAWS										2MB								S	1154
	Dimension XPS	ISA VL-Bus	486	VL-Bus #9GXE VL			1 MB	1 MB	2 MB 1152 x 819	2 MB		1 MB	2 MB									S	
	OptiPlex/L	ISA VL-Bus	486	VL-Bus #9GXE VL			1 MB	1 MB	2 MB 1152 x 819	2 MB		1 MB	2 MB									S	
	OptiPlex /M	ISA VL-Bus	486	VL-Bus #9GXE VL			1 MB	1 MB	2 MB 1152 x 819	2 MB		1 MB	2 MB									S	
EPSON	NX	ISA	486	LocalBus C&T Wingine									2 MB	2 MB								S	
HEWLETT PACKARD	Vectra XM-Series	ISA	486	LocalBus S3-928				1MB		2MB		2MB	2MB									S	
NCR	3333	ISA VL-Bus	486	VL-Bus ATI 68800	Built in VGA																	S	
NEC	Image 486es	ISA	486	LocalBus ET4000 W32i			1 MB	1 MB	1 MB			1 MB	2 MB									S	1466
	Express II ST	EISA	486	LocalBus ET4000 W32				1 MB				1 MB										S	1467

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment. To contact NeXTanswers, see page one (1) for instructions.
2. A SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.

Certified Portable Systems

TABLE LEGEND

Vendor	Model	Power Source	Built-in Panel Type	Built-in Expansion	Docking Station Expansion	CPU	Max DISK/ RAM	Supported Graphics Resolution 2-bit Grayscale				NeXTanswer Document Number
								Built-in Panel	External Monitor			
								640 x 480	640 x 480	800 x 600	1024 x 768	

VENDOR — Vendor, manufacturer, or system provider.

MODEL — Model number or name of system (or series of systems) tested with NEXTSTEP.

POWER SOURCE — Standard power source: AC or battery.

BUILT-IN PANEL TYPE — Built-in display panel technology: passive matrix, active matrix, or plasma.

BUILT-IN EXPANSION — For AC-powered portables: Fax/Modem, etc., + ISA or EISA slots. For battery-powered portables: Fax/Modem, PCMCIA, etc. This is reference information only, and does not represent supported devices.

DOCKING STATION EXPANSION — For battery-powered portables, ISA, Mass Storage (MS), Keyboard + Mouse + Monitor Port (KMM). NA indicates not applicable to AC-Powered portables.

CPU — Available CPUs (486 or Pentium).

MAX DISK/RAM — Maximum hard disk and RAM supported by this system. Contact manufacturer for current sizes supported.

SUPPORTED GRAPHICS RESOLUTION 2-BIT GRAYSCALE — Supported resolution of the built-in graphics adapter. Gray areas indicate supported resolutions. “Built-in Panel” indicates resolution supported by built-in graphics display panel. “External Monitor” indicates resolution supported by the built-in graphics adapter when connected to an external monitor.

NeXTANSWER DOCUMENT NUMBER — NeXTanswer Document Number providing detailed setup and configuration information

NEXTSTEP CERTIFIED SYSTEMS OVERVIEW — In order to ensure the highest level of compatibility and support, NeXT has developed a process to comprehensively test specific PC-Compatible system configurations with NEXTSTEP.

* Each specific system configuration has been subjected to a suite of compatibility tests by the NeXT Quality Assurance group.

* A detailed NeXTanswer support document is available listing the specific configuration tested, and any setup information required to configure the system for NEXTSTEP.

* Because of the detailed information available to customers and NeXT's Customer Support personnel, NeXT delivers the best technical support on certified configurations.

* A system platform is 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 configuration.

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* NeXT certification does not necessarily mean “error free”. Certified systems may contain detected or undetected compatibility problems, please refer to the NeXTanswer for the latest information.

Certified Portable Systems

PC MANUFACTURERS

Vendor Refer to footnote below 1,2,3	Model	Power Source	Built-in Panel Type	Built-in Expansion	Docking Station Expansion	CPU	Max DISK/ RAM	Supported Graphics Resolution 2-bit Grayscale				NeXTanswer Document Number
								Built-in Panel	External Monitor			
								640 x 480	640 x 480	800 x 600	1024 x 768	
COMPAQ	LTE Lite4/25c	Battery	Active Matrix Color	Fax/Modem	ISA, MS, KMM	486SL	200/20					
NEC	UltraLite Versa C	Battery	Active Matrix Color	PCMCIA	ISA, MS, KMM	486SL	340/20					

Listed Desktop Systems

TABLE LEGEND

Vendor	Model	Expansion Bus	CPU	Graphics Architecture	Graphics Modes																Release Tested	SoftPC Full-Screen Mode	NA #
					2-bit Grayscale		8-bit Grayscale					16-bit Color					32-bit Color							
					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200			

VENDOR — Vendor, manufacturer, or system provider.

MODEL — Model number or name of system or series of systems tested with NEXTSTEP.

EXPANSION BUS — Standard expansion buses supported. ISA, EISA, VL-Bus (VESA LocalBus), and PCI. Note: EISA systems are compatible with ISA add-on cards.

CPU — Available CPUs (i486 or Pentium).

GRAPHICS ARCHITECTURE — Graphics architecture of the built-in or included graphics adapter. Includes interface (LocalBus, VL-Bus, PCI, EISA) and graphics controller. For systems tested with add-on graphics, see “Graphics” in this guide for choice of supported adapters.

GRAPHICS MODES — The resolution of the built-in or included graphics adapter. Gray areas indicate supported resolutions and number indicates video frame buffer size (in megabytes) required to support that resolution. “Built-in VGA” indicates resolution supported by built-in standard VGA graphics; higher resolution support may require an add-on graphics adapter.

RELEASE TESTED — The Release of NEXTSTEP for Intel Processors used to test this system.

SoftPC FULL-SCREEN MODE — Insignia’s SoftPC will run in a seperate window on all supported configurations. For maximum performance, you can flip SoftPC into full-screen mode.

S=Supported; This configuration has been reported to support SoftPC in full-screen mode.

If this entry is left blank, this configuration has not been reported to support SoftPC in full-screen mode.

NA # — NeXTanswer Document Number providing detailed setup and configuration information.

NEXTSTEP LISTED SYSTEMS OVERVIEW — *Listed* systems are those whose NEXTSTEP compatibility has been reported by a third party, not determined by NeXT's Quality Assurance department. NeXT lists these systems for informational purposes only, as a convenience to our customers. NeXT does not warrant or monitor the accuracy or completeness of the information provided on *Listed* systems.

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					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280x1 024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200			
ADVANCE 2000	NE 486-SUS	ISA VL-Bus	486	VL-Bus ATI 68800									2 MB									3.1		
	NE 486-SUS	ISA VL-Bus	486	Metheus VL4 S3-928									2 MB									3.1		
	NE 486-LDS	EISA VL-Bus	486	VL-Bus ATI 68800									2 MB									3.1		
	NE 486-LDS	EISA VL-Bus	486	Metheus VL4 S3-928									2 MB									3.1		
ALR	Evolution IV/e	EISA VL-BUS	486	VL-Bus ATI 68800								1MB	2MB									3.1		1363
AST	Power Premium	EISA	486	Add-on EISA	Built-in VGA		Select add-on EISA Graphics Adapter															3.1	S	1123
	Premmia 4/d	EISA	486	LocalBus ATI 68800								1MB										3.2	S	
COMPAQ	Deskpro L-Series	EISA	486	EISA QVision			See NEXTSTEP for Intel Processors Graphics section for more info on QVIsion support.															3.1		
DELL	ME Series	EISA	486	LocalBus S3-805			1MB	1MB				1MB										3.1	S	
	M-Series	ISA	486	LocalBus S3-805			1MB	1MB				1MB										3.1	S	
	L-Series (S3-805)	ISA	486	LocalBus S3-805			1MB	1MB				1MB										3.1	S	
ECESYS	486	ISA VL-Bus	486	LocalBus C&T Wingine									2MB									3.2	S	
EPSON	Progression	ISA	486	LocalBus C&T Wingine								1 MB										3.1	S	1155
GATEWAY	V-Series	ISA VL-Bus	486	VL-Bus ATI 68800								1MB	2MB									3.1	S	1120

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment. To contact NeXTanswers, see page one (1) for instructions.
2. A SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.

Listed Desktop Systems

PC MANUFACTURERS

Vendor refer to footnote below 1,2	Model	Expansion Bus	CPU	Graphics Architecture	Graphics Modes																Release Tested	SoftPC Full-Screen Mode	NA #
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					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280x1 024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200			
HEWLETT PACKARD	Vectra U-Series	EISA	486	Add-on EISA	Built-in VGA		Select add-on EISA Graphics Adapter														3.1		1121
	Vectra NI-Series	ISA	486	LocalBus S3-805				1MB				1MB									3.1		
	Vectra N-Series	ISA	486	LocalBus S3-805				1MB				1MB									3.1		
IBM	ValuePoint 466DX2/S	ISA VL-Bus	486	LocalBus S3-805				1MB				1MB									3.1		
	ValuePoint 466DX2/D	ISA VL-Bus	486	LocalBus S3-805				1MB				1MB									3.1		
	ValuePoint 466DX2/T	ISA VL-Bus	486	LocalBus S3-805				1MB				1MB									3.1		
INTEL	GX/ Professional	EISA	486	LocalBus ATI 68800									2MB								3.1	S	1209
LOGISYS / LUCKY GOLDSTAR	LG 486NX	ISA VL-Bus	486	LocalBus C&T Wingine									2MB								3.2	S	1207
MAG COMPUTERS	MAG 4000 NSTEP	EISA ISA VL-Bus	486	LocalBus ATI 68875									2MB								3.1		
NEC	PowerMate Express/e	EISA	486	Add-on EISA	Built in VGA			Select add-on EISA Graphics Adapter													3.1	S	1333
	I-Series	ISA	486	LocalBus ET4000AX		1 MB															3.1		
	Image 466	ISA	486	LocalBus ET4000 W32		1 MB		1 MB				1 MB									3.1	S	
UNISYS	U6000 DT2	EISA	486	LocalBus ATI 68800								1MB	2MB								3.1	S	
ZENITH	Z-Station XEn	EISA	486	Add-on EISA	Built in VGA			Select add-on EISA Graphics Adapter													3.1		
CONTINENTAL COMPUTER	3800 NeXT EISA	EISA VL-Bus	486	VL-Bus ATI 68800								1MB	2MB								3.2	S	
	3800 NeXT ISA	ISA VL-Bus	486	VL-Bus ATI 68800								1MB	2MB								3.2	S	

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					640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280x1 024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200			
GEC COMPUTERS	Jet F86	ISA, EISA VL-Bus	486	VL-Bus ATI 68800								1MB	2MB									3.1		
JCIS	JC/NX 466/2C	ISA VL-Bus	486	C&T Wingine									2MB									3.2		
	JC/NX 466/2N	ISA VL-Bus	486	C&T Wingine									2MB									3.2		
	JC/NX 480/2C	ISA VL-Bus	486	C&T Wingine									2MB									3.2		
Vobis	486 DX2-66	ISA VL-Bus	486	Cirrus Logic VGA-542V		.5MB																3.2		

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Listed Portable Systems

TABLE LEGEND

Vendor	Model	Power Source	Built-in Panel Type	Built-in Expansion	Docking Station Expansion	CPU	Max DISK/ RAM	Graphics Resolution 2-bit Grayscale				NeXTanswer Document Number
								Built-in Panel	External Monitor			
								640 x 480	640 x 480	800 x 600	1024 x 768	

VENDOR — Vendor, manufacturer, or system provider.

MODEL — Model number or name of system (or series of systems) tested with NEXTSTEP.

POWER SOURCE — Standard power source: AC or battery.

BUILT-IN PANEL TYPE — Built-in display panel technology: passive matrix, active matrix, or plasma.

BUILT-IN EXPANSION — For AC-powered portables: Fax/Modem, etc., + ISA or EISA slots. For battery-powered portables: Fax/Modem, PCMCIA, etc. This is reference information only, and does not represent supported devices.

DOCKING STATION EXPANSION — For battery-powered portables, ISA, Mass Storage (MS), Keyboard + Mouse + Monitor Port (KMM). NA indicates not applicable to AC-Powered portables.

CPU — Available CPUs (i486 or Pentium).

MAX DISK/RAM — Maximum hard disk and RAM supported by this system. Contact manufacturer for current sizes supported.

GRAPHICS RESOLUTION 2-BIT GRAYSCALE — The resolution of the built-in graphics adapter. Gray areas indicate supported resolutions. “Built-in Panel” indicates resolution supported by built-in graphics display panel. “External Monitor” indicates resolution supported by the built-in graphics adapter when connected to an external monitor.

NeXTANSWER DOCUMENT NUMBER — NeXTanswer Document Number providing detail setup and configuration information.

NEXTSTEP LISTED SYSTEMS OVERVIEW — *Listed* systems are those whose NEXTSTEP compatibility has been reported by a third party, not determined by NeXT’s Quality Assurance department. NeXT lists these systems for informational purposes only, as a convenience to our customers. NeXT does not warrant or monitor the accuracy or completeness of the information provided on *Listed* systems.

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PC MANUFACTURERS

Vendor Refer to footnote below 1,2,3	Model	Power Source	Built-in Panel Type	Built-in Expansion	Docking Station Expansion	CPU	Max DISK/ RAM	Graphics Resolution 2-bit Grayscale				NeXTanswer Document Number
								Built-in Panel	External Monitor			
								640 x 480	640 x 480	800 x 600	1024 x 768	
AST	PowerExec 4SL	Battery	Passive Mono or Color	Fax/Modem	ISA, MS, KMM	486SL	200/32					
	PowerExec 4SL	Battery	Active Matrix Mono	Fax/Modem	ISA, MS, KMM	486SL	200/32					
COMPAQ	Portable 486/M	AC	Passive Matrix Mono	Fax/Modem EISA	NA	486	525/32					
	Portable 486/C	AC	Active Matrix Color	Fax/Modem EISA	NA	486	525/32					
NEC	Prospeed 486C	AC	Active Matrix Color	Fax/Modem EISA	NA	486SX	200/20					
	UltraLite Versa M	Battery	Passive Matrix Mono	PCMCIA	ISA, MS, KMM	486SL	340/20					1477
TOSHIBA	T6400DX	AC	Passive Mono or Plasma	Fax/Modem ISA	NA	486	200/32					1116
	T6400DXC	AC	Active Matrix Color	Fax/Modem ISA	NA	486	200/32					1116
	T4400SX	Battery	Passive Mono or Plasma	Fax/Modem	ISA, MS, KMM	486SX	120/20					
	T4400SXC	Battery	Active Matrix Color	Fax/Modem	ISA, MS, KMM	486SX	120/20					
	T4400C	Battery	Active Matrix Color	Fax/Modem	ISA, MS, KMM	486	200/20					

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment. To contact NeXTanswers, see page one (1) for instructions.
2. A SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.
3. A docking station, SCSI adapter and SCSI CDROM are required for installation of NEXTSTEP.

NEXTSTEP GRAPHICS SYSTEM

NEXTSTEP's Display Postscript graphics system supports such advanced capabilities as scalable fonts, unified imaging model for both screen display and printing, image transparency (also known as alpha channel), Pantone color matching, and Pixar Interactive Renderman 3D imaging.

NEXTSTEP's window server composites multiple layers of images, and allows the user to work with images of any quality with any supported imaging model, in other words users can work with a 32-bit color image even on a 2-bit grayscale system!

In order to provide these sophisticated capabilities NEXTSTEP requires a “workstation”-style linear frame buffer graphics system and a high performance 32-bit data path to the frame buffer. The number of colors or shades of gray, depth of transparency, etc., varies depending on the image model supported.

Imaging Model	Colors or Shades of Gray	Transparency (alpha channel)
32-bit color	24-bit (16M colors)	8-bit (256 levels)
16-bit color	12-bit (4,096 colors)	4-bit (16 levels)
8-bit grayscale	8-bit (256 shades of gray)	8-bit (256 levels)
2-bit grayscale	2-bit (4 shades of gray)	2-bit (4 levels)

32-BIT COLOR

Overview NEXTSTEP supports 32-bit color on a variety of graphics controller chips that support linear frame buffer access. Due to the performance requirements of 32-bit color, these graphics adapters must be connected via LocalBus, VESA LocalBus (VL-Bus), PCI or EISA. The ISA expansion bus does not provide the 32-bit data path, or adequate performance to support NEXTSTEP 32-bit color. Refer to the Desktop Systems and Add-on Graphics Adapter charts for specific adapter support.

16-BIT COLOR

Overview NEXTSTEP supports 16-bit color on a variety of graphics controller chips that support linear frame buffer access. Due to the performance requirements of 16-bit color, these graphics adapters must be connected via LocalBus, VESA LocalBus (VL-Bus), PCI or EISA. The ISA expansion bus does not provide the 32-bit data path, or adequate performance to support NEXTSTEP 16-bit color. Refer to the Desktop Systems and Add-on Graphics Adapter charts for specific adapter support.

8-BIT GRAYSCALE

Overview NEXTSTEP supports 8-bit grayscale on a variety of graphics controller chips that support linear frame buffer access. Due to the performance requirements of 8-bit grayscale, these graphics adapters must be connected via LocalBus, VESA LocalBus (VL-Bus), PCI or EISA. The ISA expansion bus does not provide the 32-bit data path, or adequate performance to support NEXTSTEP 8-bit grayscale. Refer to the Desktop Systems and Add-on Graphics Adapter charts for specific adapter support.

2-BIT GRAYSCALE

Overview NeXT has developed a special driver that simulates the linear frame buffer required by NEXTSTEP's graphics system on segmented frame buffer graphics adapters such as standard VGA and Super VGA cards. This allows NEXTSTEP to support most standard VGA cards as well as certain Super VGA cards. Refer to the Desktop Systems and Add-on Graphics Adapter charts for specific adapter support. These graphics adapters can be connected via LocalBus, VESA LocalBus (VL-Bus), PCI, EISA or ISA.

Other Devices and Adapters - Graphics

TABLE LEGEND

Graphics Controller	Vendor	Model	Expansion Bus/Interface	Graphics Resolutions																	Driver Name	Avail.	NA #	Appr.
				2-bit Grayscale		8-bit Grayscale					16-bit Color					32-bit Color								
				640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200				

GRAPHICS CONTROLLER Graphics controller used by the add-on graphics adapter.

VENDOR Vendor, manufacturer, or system provider of the graphics adapter.

MODEL Model number or name of the add-on adapter.

EXPANSION BUS/ INTERFACE Expansion Bus or Interface used by this graphics adapter: LocalBus, VL-Bus (VESA Standard LocalBus), PCI, ISA, or EISA.

GRAPHICS RESOLUTIONS The resolution of the graphics adapter. Gray areas indicate supported resolutions and number indicates video frame buffer size (in megabytes) required to support that resolution.

DRIVER NAME Name of graphics driver used by NEXTSTEP for Intel Processor' Configure application (Video Devices section).

Avail. Availability indicates the current distribution status of any device driver. *CD-ROM* - indicates this driver is included on the latest release of NEXTSTEP for Intel Processors CD-ROM disc; *Planned* - Indicates this driver is planned by NeXT or a 3rd party (if available an approximate date is given for availability of the driver); *Avail.* - Indicates this driver is available from either NeXT or a 3rd party. For drivers available from NeXT, see page 1 for distribution of driver updates.

SoftPC FULL-SCREEN MODE Insignia's SoftPC will run in a seperate window on all supported controllers. For maximum performance, you can flip SoftPC into full-screen mode.

S=Supported; this controller has been verified by NeXT to support SoftPC in full-screen mode.

NS=Not supported; this controller has been verified by NeXT not to support SoftPC in full-screen mode.

If this entry is left blank, NeXT has not verified this controller to support SoftPC in full-screen mode.

NA # NeXTanswer Document Number providing detailed setup and configuration information.

APPROVED An add-on adapter or peripheral is said to be *approved* when it has been tested as a component of one or more NeXT certified configurations. Note that one piece of approved hardware may be incompatible with another; to ensure compatibility, chose a certified configuration and review any available NeXTanswers.

Other Devices and Adapters - Graphics

GRAPHICS ADAPTERS

Graphics Controller see footnote 1	Vendor	Model	Expansion Bus / Interface	Graphics Resolutions																Driver Name	Avail.	SoftPC Full-Screen Mode	NA #	Appr.
				2-bit Grayscale		8-bit Grayscale					16-bit Color					32-bit Color									
				640 x 480	1024 x 768	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200	800 x 600	1024 x 768	1120 x 832	1280 x 1024	1600 x 1200					
ATI 68800 Rev 3, 6	ATI	Graphics UltraPro VL-Bus	VL-Bus				1MB		2MB		1MB	2MB	2MB Rev 6 only								**ATI Ultra Pro**	**CD-ROM**	**S**	**1122**	**YES**
	ATI	Graphics UltraPro EISA	EISA				1MB		2MB		1MB	2MB	2MB Rev 6 only								**ATI Ultra Pro**	**CD-ROM**	**S**	**1122**	**YES**
ATI 68800 AX	ATI		VL-Bus, PCI	See readme file included with the driver or a future version of this guide for supported modes.																		**Planned Q1 94**			
COMPAQ QVISION	Compaq	QVision 1024/E	EISA				1MB				1MB										**Compaq Qvision**	**CD-ROM**			**YES**
	Compaq	QVision 1280/E	EISA				1MB		2MB		1MB	2MB				2 MB 640 x 480					**Compaq Qvision**	**CD-ROM**			**YES**
CIRRUS LOGIC GD542X	STB	Horizon	ISA		.5 MB																**Cirrus Logic GDX542X**	**CD-ROM**	**S**		**YES**
JAWS	DELL	450DE/2 DGX	LocalBus										2MB								**Dell Jaws DGX**	**CD-ROM**	**S**		**YES**
TSENG LABS ET-4000 AX			ISA		.5 MB									.							**Tseng Labs ET-4000**	**CD-ROM**			**YES**
TSENG LABS ET-4000 W32i	Several	Several	VL-Bus	See readme file included with the driver or a future version of this guide for supported modes.																		**Planned Q1 94**	**S**		
STANDARD VGA	Various	Various	ISA																		**Default VGA Adapter**	**CD-ROM**			**YES**
S3-805	miro Computer Products AG	miro Crystal 8S	VL-Bus ISA			1MB	1MB				1MB										**S3**	**CD-ROM**		**1485**	
S3-928	Number Nine	GXE-VL Level 11 or 12	VL-Bus			1 MB	1 MB	2 MB 1152 x 819	2 MB		1 MB	2 MB									**#9GXE**	**CD-ROM**	**S**		**YES**
	Number Nine	GXE-VL Level 13	VL-Bus	See readme file included with the driver or a future version of this guide for supported modes.																		**Planned Q1 94**			
	STB	Pegasus-VL	VL-Bus	See readme file included with the driver or a future version of this guide for supported modes.																		**Planned Q1 94**			
	miro Computer Products AG	miro Crystal 32S	PCI VL-Bus EISA			1MB	1MB	2MB 1152 x 864	2MB	2MB 1408 x 1024	1MB	2MB	2MB 1152 x 864	2MB	4MB 1408 x 1024		4MB				**miro928**	**miro Comp. Prod. AG**		**1486**	
Weitek Power 9000	Diamond	Viper-VL	VL-Bus	See readme file included with the driver or a future version of this guide for supported modes.																		**Planned Q1 94**			

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment.

Other Devices and Adapters

ADDITIONAL DEVICE SUPPORT

NEXTSTEP DEVICE SUPPORT

NEXTSTEP supports a variety of additional devices and add-on adapters.

DISK INTERFACES	Both IDE and several SCSI hard disk interfaces are supported.
POINTING DEVICES	Microsoft®- and Logitec®-compatible PS/2® and serial mice. Logitec bus mouse.
PRINTERS	Any PostScript printer connected via a serial or parallel port, including the NeXT Color Printer (connected via a SCSI port). NeXT recommends PostScript printers with PostScript Level II for proper color support.
NETWORKING	Several Ethernet and Token Ring networking adapters are supported. A networking adapter is optional.
SOUND	NEXTSTEP can support certain PC sound cards for both playback and recording. A sound card is optional.
ADDITIONAL DEVICES	Other popular PC peripherals such as FAX/Modems are supported.

DRIVERKIT

NEXTSTEP for Intel Processors incorporates a newly developed object-oriented driver architecture called DriverKit. DriverKit allows the quick development of device drivers for new peripherals and add-on cards for Intel-based PCs running NEXTSTEP. DriverKit's architecture allows drivers to be loaded at run-time, thereby allowing users to add additional cards or devices to their systems without re-installing the main operating system. Loadable device drivers also allow NeXT and third parties to easily distribute additional drivers as they become available. In order to promote the availability of drivers for NEXTSTEP, NeXT includes the Driver Kit development tools, and source code examples of several drivers on the NEXTSTEP Developer CDROM. NeXT is actively working with hardware manufacturers and third parties to provide additional drivers for NEXTSTEP for Intel Processors.

Developers interested in becoming a registered driver developer, should contact NeXT Developer Relations (1-800-TRY-NeXT) and join the registered developer program.

Other Devices and Adapters

ADDITIONAL DEVICE SUPPORT LEGEND

Device Type	Vendor	Model	Expansion Bus/Interface	Features	Driver Name	Avail.	NA #	Approved

DEVICE TYPE — Class of device or adapter supported.

VENDOR — Vendor, manufacturer, or system provider of the supported device or adapter.

MODEL — Model number or name of the supported device or adapter.

EXPANSION BUS/ INTERFACE — Expansion Bus or Interface used by this device: CPU Board (built onto the systems CPU board), LocalBus, VL-Bus (VESA Standard LocalBus), PCI, ISA, or EISA. Note: EISA expansion bus slots are compatible with ISA adapters.

FEATURES — Features of the device, or class of devices. This includes additional capabilities and/or protocols supported by this device or adapter. It also includes any limitations of the use of the device.

DRIVER NAME — Name of driver used by NEXTSTEP's Configure application.

NA # — NeXTAnswer Document Number providing detailed setup and configuration information.

APPROVED — An add-on adapter or peripheral is said to be *approved* when it has been tested as a component of one or more NeXT certified configurations. Note that one piece of approved hardware may be incompatible with another; to ensure compatibility, chose a certified configuration and review any available NeXTanswers.

Other Devices and Adapters

ADDITIONAL DEVICE SUPPORT PRODUCTS

Device Type refer to footnote below 1	Vendor	Model	Expansion Bus/Interface	Features	Driver Name	Avail.	NA #	Approved
FLOPPY DISK		3.5in 1.44MB Floppy			Floppy Disk Controller	CD-ROM		
IDE HARD DISK INTERFACE		IDE			IDE Disk Controller	CD-ROM		
SCSI HARD DISK INTERFACE	Adaptec	1540 B, C or CF	ISA		Adaptec 1542B	CD-ROM	1107 - B 1108 - C	**YES**
		1542 B, C or CF	ISA	Includes a floppy controller.	Adaptec 1542B	CD-ROM	1107 - B 1108 - C	**YES**
		1740	EISA	Supported in 1540 compatability mode only	Adaptec 1542B	CD-ROM	1475	**YES**
		1742	EISA	Includes a floppy controller. Supported in 1540 compatability mode only	Adaptec 1542B	CD-ROM	1475	**YES**
		2740	EISA			Planned Q1 94		
		2742	EISA	Includes a floppy controller.		Planned Q1 94		
	Bus Logic	542B	ISA		Adaptec 1542B	CD-ROM	1362	**YES**
		747S	EISA		Adaptec 1542B	CD-ROM	1118	**YES**
		445S	VL-Bus			Planned Q1 94		
	DPT	2021/90	ISA	1MB-64MB Cache upgradable.	DPT 2012-B EISA	CD-ROM	1476	**YES**
		2021/95	ISA	1MB-64MB Cache upgradable. Includes a floppy controller.	DPT 2012-B EISA	CD-ROM	1476	**YES**
		2012/90	EISA	512K-16.5MB Cache upgradable.	DPT 2012-B EISA	CD-ROM	1358	**YES**
		2012/95	EISA	512K-16.5MB Cache upgradable. Includes a floppy controller.	DPT 2012-B EISA	CD-ROM	1358	**YES**
		2022 /90	EISA	1MB-64MB Cache upgradable.	DPT 2012-B EISA	CD-ROM	1457	**YES**
		2022 /95	EISA	1MB-64MB Cache upgradable. Includes a floppy controller.	DPT 2012-B EISA	CD-ROM	1457	**YES**
		2122/90	EISA	1MB-64MB Cache upgradable	DPT 2012-B EISA	CD-ROM		**YES**
		2122 /95	EISA	512K-16.5MB Cache upgradable. Includes a floppy controller.	DPT 2012-B EISA	CD-ROM		**YES**
SCSI TAPE		SCSI Tape			SCSI Tape Driver	CD-ROM		
PARALLEL PORT		Standard Parallel Port			On-Board Parallel Port	CD-ROM	1330	
SERIAL PORTS		Standard Serial Ports		Supports COM1 & COM2	On-Board Serial Ports	CD-ROM	1208	

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment.

Note: Floppy controllers on add-on SCSI adapters are not currently supported.

Other Devices and Adapters

ADDITIONAL DEVICE SUPPORT PRODUCTS (CONTINUED)

Device Type refer to footnote below 1	Vendor	Model	Expansion Bus/Interface	Features	Driver Name	Avail.	NA #	Approved
LOCAL AREA NETWORK ADAPTERS	3COM	EtherLink III (3C509)	ISA	Ethernet Coax Twisted Pair not supported	3COM EtherLink III Ethernet Adapter	CD-ROM		YES
	3COM	EtherLink III(3C579) (Twisted Pair not supported)	EISA	Ethernet Coax Twisted Pair not supported	3COM EtherLink III Ethernet Adapter	CD-ROM		YES
	SMC	EtherCard PLUS Elite 16 (8013)	ISA	Ethernet Coax or Twisted Pair	SMC 16 Ethernet Adapter	CD-ROM	1110	YES
	Intel	EtherExpress 16 (TP, Coax or Combo)	ISA	Ethernet Coax or Twisted Pair	Intel EtherExpress Ethernet Adapter	CD-ROM	1206	YES
		TokenExpress ISA/16s	ISA	Token Ring	Intel TokenExpress ISA Token-Ring	CD-ROM		YES
	IBM	Token-Ring 16/4 Adapter	ISA	16/4 Mbps 8 bit I/O 64k Buffer Share RAM	IBM Token-Ring 16/4 Adapter	Planned Q1 94		
POINTING DEVICES	Microsoft	MS Mouse or Compatible	Serial or PS/2 Mouse Port		Serial Mouse or PS/2-Style Mouse	CD-ROM	1360	YES
	Logitec	Mouse Man (Right or Left)	Serial or PS/2 Mouse Port		Serial Mouse or PS/2-Style Mouse	CD-ROM	1360	YES
		Mouse Man Bus	Bus Mouse Adapter		Bus Mouse	CD-ROM	1360	YES
AUDIO DEVICES	Media Vision	ProAudio Spectrum 16	ISA	Up to CD Quality Stereo Record & Playback	ProAudioSpectrum 16	CD-ROM	1158	YES
		Pro Studio 16	ISA	Up to CD Quality Stereo Record & Playback	ProAudioSpectrum 16	CD-ROM		YES
	Intel	GX/Professional CPU-Board Audio Support	CPU Board	Up to CD Quality Stereo Record & Playback		CD-ROM		YES
	Compaq	Business Audio	CPU Board	Up to CD Quality Stereo Record & Playback		CD-ROM		YES
	Microsoft	Sound System	ISA	Up to CD Quality Stereo Record & Playback		CD-ROM	1471	YES
		Standard PC Speaker Support	CPU Board	System Audio Alerts only	System Beep Driver	CD-ROM		YES
PRINTERS	NeXT	NeXT Color Printer	SCSI					YES
		Standard Adobe PostScript Printers	Serial or Parallel					
CD-ROM DRIVES	NEC	CDR-74	External					YES
	NeXT	Sony-541	External					YES
TAPE BACKUPS	Archive	Viper 150		QIC, 512-byte blocks				YES
	Archive	Python		DAT, 512-byte blocks				YES

1. When considering a complete system or add-on card, please refer to any available NeXTanswers before purchasing equipment.