



New IBM ThinkPad T41 notebook computers for education feature great performance in a lightweight package

Overview

The ThinkPad® T41 notebook for education is an ideal computer for frequent travelers who need high performance in a lightweight package.

These models are available only to public or private K-12, or higher, accredited schools organized and operated exclusively for educational purposes for use by qualified students and teachers.

The ThinkPad T41 notebook models for education are for sale directly from IBM or through an Authorized Education Reseller. They are not available for resale to any other organization or individual.

Exciting new technology: The IBM Active Protection system, a ThinkVantage™ technology, helps protect your HDD from some damage that could be caused by shock. A system board-mounted sensor continuously monitors your ThinkPad notebook for sudden movement, and temporarily stops the HDD when a fall or similar event is predicted.

- Intel™ mobile technology:
 - Intel Pentium™ M processor
 - Intel 855 PM Chipset family
- ATI Mobility Radeon 7500 (32 MB) graphics chipset for clear, crisp images
- 512 MB double data rate (DDR) RAM at 333 MHz
- UltraNav™ dual-pointing system, featuring TrackPoint® and customized touch pad for the ultimate in pointing flexibility

- UltraConnect™ antenna to help optimize frequency coverage and performance for improved wireless LAN connectivity around the world

Excellent features and options

- Embedded Security Subsystem 2.0, Trusted Computing Group (TCG)-compliant
- Integrated communications: Modem and 1 Gigabit Ethernet LAN connection
- IBM 11a/b/g Wi-Fi wireless; wireless LAN LED indicator

Light and portable: The ThinkPad T41 notebook is 26.6 mm (1.0 in) thin¹⁰ with optimal travel weight starting at 2.05 kg (4.5 lb)¹¹ with travel bezel. Its approximate dimensions are 26.6 to 30.5 x 311 x 255 mm (1.0 to 1.2 x 12.2 x 10.0 in). The titanium composite cover gives you added strength.

Long battery operation^{12,13}: Up to 4.7 hours on the standard six-cell system battery, up to 7.2 hours with the optional nine-cell high-capacity Li-Ion battery, and up to 9.2 hours with the optional nine-cell and bay batteries

ImageUltra™ services: Selected ThinkPad notebooks are enabled for ImageUltra.

For more information, visit

<http://www.pc.ibm.com/us/think/thinkvantagetech/imageultra.html>

Availability date

April 20, 2004

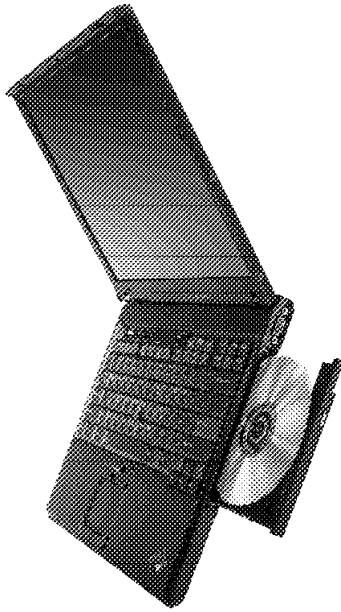
At a glance

The new ThinkPad T41 notebooks for education feature:

- Intel Pentium M processor¹ at 1.5 or 1.7 GHz with 1 MB on-die L2 cache
- Preloaded software: vitalsource KEY and the Personal Portable Library by Vital Source Technologies, Inc.
- Sleek profile and lightweight
- 400 MHz front-side system bus with 333 double data rate (DDR) memory
- 512 MB of standard memory, expandable to 2.0 GB²
- UltraNav dual-pointing system, featuring TrackPoint and customized touch pad
- ThinkPad HDD shock absorber
- 30 or 40 GB³ high-speed (5400 rpm)
- 16x-10x-24x-8x⁴ max CD-RW/DVD⁵
- Standard integrated communications of V.90⁶ modem (V.92⁷-designed) and 1 Gigabit Ethernet
- IBM 11a/b/g Wi-Fi wireless⁸
- Embedded Security Subsystem 2.0, Trusted Computing Group (TCG)-compliant⁹
- Three-year, limited warranty; one-year limited warranty on battery
- IBM Support Center: 800-IBM-SERV (426-7378)

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: <http://www.ibm.com>.

Description



ThinkPad T41 features

The preload of this system has vidualsource KEY and the Personal Portable Library by Vital Source Technologies, Inc.

Vital Source Technologies, Inc. develops software for the education market which enables the electronic delivery of a variety of materials including class textbooks, great books, rich media, and customized content. IBM Education models are preloaded with the vidualsource KEY and the Personal Portable Library. The vidualsource KEY provides powerful tools for reading, searching, organizing, and annotating class materials. The Personal Portable Library delivers an existing repository of nearly 2,000 works including fiction, drama, poetry, philosophy, political theory, music, fine art, and numerous other disciplines.

Leadership design

- Shock absorber to help prevent HDD crashes when system is placed on a hard surface while in use
- UltraConnect antenna to help optimize frequency coverage and performance for improved wireless LAN connectivity around the world; supports 2.4 GHz frequency band for 802.11b networks and four sub-bands in 5 GHz frequency band to meet unique country spectrum requirements
- ATI Mobility Radeon 7500 (32 MB) chipset for clear, crisp images
- Access Connections software to easily manage wired and wireless connections
- Disk-to-disk recovery of preloaded software
- 400 MHz front-side system bus
- 333 MHz DDR memory modules
- IBM Embedded Security Subsystem 2.0 (TCG-compliant)
- IBM 11a/b/g Wi-Fi wireless

Wi-Fi wireless lets you connect to a LAN without wires or cables. To connect to the Internet, the Cisco AP 1200, or similar device, and an Internet connection are required. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo.

Processor technology: The new ThinkPad T41 notebook computer features the Intel Pentium M processor at 1.5 or 1.7 GHz with 1 MB on-die L2 cache and floating-point decimal for exceptional performance. All models include enhanced Intel SpeedStep technology with two performance modes:

- Maximum performance mode for top performance while connected to ac external power using the ac power adapter.
- Battery-optimized performance mode for balance between performance and battery life when operating on battery power. In this mode the MHz speed is reduced to conserve battery power.

Superior security and manageability

- Designed to the PXE 2.0 manageability requirements for mobile systems
- Support for IBM Director Agent, a comprehensive set of superior, standards-based PC hardware manageability tools that work with and complement existing systems management products
- Compliant with the industry-standard Common Information Model
- Local and remote asset management, and early detection of HDD failure via IBM Director Agent
- Remote setup and low-level maintenance via Remote Deployment Manager
- Asset and data security via multiple passwords and locks

Operating system: Microsoft™ Windows™ XP Professional with selected applications

Communications: Modem and 1 Gigabit Ethernet LAN connection with IBM 11a/b/g Wi-Fi wireless

Multimedia: DVD movie playback does not require complementary graphics hardware on ThinkPad T41 systems that have a CD-RW/DVD drive and Windows XP Professional installed.

LCD TFT display: The ThinkPad T41 notebook comes with 358.1-mm (14.1-in) TFT display with 1024 x 768 resolution.

The display is measured diagonally.

Video modes

ATI Mobility Radeon 7500 (32 MB) with 1024 x 768 TFT display resolution

TFT LCD			
Resolution	Color depth		
640 x 480	256,	64K,	16M
800 x 600	256,	64K,	16M
1024 x 768	256,	64K,	16M
1280 x 1024	256(14),	64K(14),	16M(14)
1600 x 1200	256(14),	64K(14),	16M(14)
2048 x 1536	256(14),	64K(14),	16M(14)

External monitor		
Resolution	Color	Refresh rate (Hz)
640 x 480	256	60, 72, 75, 85, 90, 100, 120, 160
640 x 480	64K	60, 72, 75, 85, 90, 100, 120, 160
640 x 480	16M	60, 72, 75, 85, 90, 100, 120, 160
800 x 600	256	60, 70, 72, 75, 85, 90, 100, 120, 160
800 x 600	64K	60, 70, 72, 75, 85, 90, 100, 120, 160
800 x 600	16M	60, 70, 72, 75, 85, 90, 100, 120, 160
1024 x 768	256	60, 70, 72, 75, 85, 90, 100, 120, 150, 160
1024 x 768	64K	60, 70, 72, 75, 85, 90, 100, 120, 150, 160
1024 x 768	16M	60, 70, 72, 75, 85, 90, 100, 120, 150, 160
1280 x 1024	256	60, 70, 75, 85, 90, 100, 120, 160
1280 x 1024	64K	60, 70, 75, 85, 90, 100, 120, 160
1280 x 1024	16M	60, 70, 75, 85, 90, 100, 120, 160
1600 x 1200	256	60, 75, 85, 100, 120
1600 x 1200	64K	60, 75, 85, 100, 120
1600 x 1200	16M	60, 75, 85, 100, 120
2048 x 1536	256	60, 66, 70, 75
2048 x 1536	64K	60, 66, 70, 75
2048 x 1536	16M	60, 66, 70, 75

Keyboard with TrackPoint and enhanced features: The keyboard has the familiar layout of a ThinkPad notebook with function keys that allow you to quickly access system functions such as power-management control.

- The UltraNav, which combines the advantages of the TrackPoint device, center-scrolling button, and a touch pad, is standard.
- ThinkLight®; easy to view your keyboard in low-light conditions.
- ThinkPad button provides one-button access to critical information. Choose from three different caps for the TrackPoint.
- The TrackPoint with enhanced features includes the Press-to-Select and Release-to-Select function.

Just tap the TrackPoint to speed icon launches and help reduce keystrokes. The programmable center button enables fast scrolling of Web sites and documents or fast panning across wide spreadsheets. Switch to the innovative magnifying glass feature to enlarge screen views in any application.

Memory: The system has 512 MB of standard memory and can be configured for up to 2 GB of addressable memory. Memory options up to 1 GB DDR SO DIMMs each can be added in the two slots for memory expansion.

To achieve the maximum 2 GB to which memory can be expanded you need to replace the 512 MB card with a 1 GB card and add another 1 GB card in the extra slot.

Both 333 MHz and 266 MHz SO DIMM memory can be used in this system. The use of 133 MHz SO DIMM memory is not supported in the ThinkPad T41 systems.

PC Card: The Type III slot accommodates either two Type I, two Type II, or one Type III PC card. The slot supports CardBus adapters and a PC card.

Storage: The customer-removable HDD is 30 GB (4200 rpm) or 40 GB high-speed (5400 rpm).

Drives: 16x-10x-24x-8x max CD-RW/DVD combination drive.

A second HDD in the UltraBay Slim expands storage. The second HDD option, requiring an adapter, can be used with all ThinkPad T41 models.

Audio: Full-duplex audio on the system board and the integrated microphone allow voice annotation and audio.

The system is equipped with audio in/out jacks for stereo speakers, headphone, or external microphone. The system supports Microsoft DirectSound applications.

Video: Digital visual interface for digital displays is supported through the optional ThinkPad Dock II, ThinkPad Mini-Dock, or ThinkPad Port Replicator II.

Infrared (IR): The system has one fast IR transceiver (up to 4 Mbps) for wireless file and data transfer and printing. The ThinkPad T41 notebook is designed for compliance with the Infrared Data Association (IrDA) IR data link specification V1.1.

Other features: The ThinkPad T41 systems include these ports:

- Enhanced parallel
- External display
- Built-in RJ-11 and RJ-45 connectors for telephony and LAN connections
- IR
- Microphone
- Headphone
- Two USB 2.0 ports
- S-Video out (TV out)

PS/2® and serial port are not included, but both can be obtained through the optional ThinkPad Port Replicator II, ThinkPad Dock II, or ThinkPad Mini-Dock.

The USB ports, which connect external drives and other devices, are supported with Microsoft Windows XP Professional.

The 240-pin connector supports these optional docking solutions:

- ThinkPad Port Replicator for simple port replication and cable management
- ThinkPad Mini-Dock for port replication, additional USB capability, and security
- ThinkPad Dock for a more advanced docking solution

AC adapter

The ac adapter is an ac-to-dc converter that supplies the necessary power to the computer. The ac adapter also charges the battery pack when it is installed in the computer.

Li-Ion battery pack

- A Li-Ion battery pack with six cells is shipped with the system.
- A different optional Ultrabay™ Slim Li-Polymer battery pack with three cells fits into the Ultrabay Slim.
- An optional nine-cell High Capacity Li-Ion Battery is available for even longer hours of operation. Two batteries can be installed to increase battery operating time. One of these batteries must be the optional Ultrabay Slim Li-Polymer battery.
- The battery pack is an internal power source to the computer when the ac adapter is not available. The battery pack is rechargeable and is charged using the ac adapter with the system.
- You can determine how much battery power remains by using the Fuel-Gauge ThinkPad utility program. This displays the percent charge remaining, whether

one or two batteries are in the system. This feature is not available on systems running the OS/2® operating system.

Approximate operation and charging hours:

- Power off/suspend charging: 3.6 hr
- Charging during operation: 3.6 to 6.0 hr
- Battery operation:
 - Standard six-cell battery: Up to 4.7 hours
 - Optional nine-cell battery: Up to 7.2 hours
 - Optional nine-cell plus bay battery: Up to 9.2 hours

Software

Non-IBM software: The non-IBM software programs listed in this section may be licensed to you under the non-IBM manufacturer's, supplier's, or publisher's terms and conditions. The non-IBM manufacturers, suppliers, or publishers are responsible for providing any service or support associated with these programs. The descriptions of these programs were obtained from information made available by these companies to the general public. IBM does not warrant these products. Some software may differ from its separately available version (if available), and may not include user manuals or all program function.

IBM software available for download from the Web

- IBM Client Security software¹⁵
<http://www.pc.ibm.com/us/security/secdownload.html>
- IBM Director Agent
http://www.pc.ibm.com/us/eserver/xseries/systems_management/dwnl.html
- Remote Deployment Manager
http://www.pc.ibm.com/us/eserver/xseries/systems_management/dwnl.html

Software that may be included or preloaded on the system

U.S. English Machines Software #1 (Windows XP Professional)

- Microsoft Windows XP Professional
- InterVideo WinDVD Player — only for systems with DVD drive or DVD/CD-RW
- IBM Update Connector™.¹⁶
- IBM Access IBM
- IBM Access Support
- PC-Doctor
- IBM Record Now and IBM Drive Letter Access by Veritas — only for systems with DVD/CD-RW drive
- IBM Access Connections
- Adobe Acrobat Reader
- IBM Rapid Restore™ Ultra
- Norton AntiVirus 2003 (OEM version)
- vidualsource KEY and the Personal Portable Library by Vital Source Technologies, Inc.

Warranty information

For a copy of applicable product warranties write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept JDJA/B203

IBM makes no representation or warranty regarding third-party products or services.

Telephone support may be subject to additional charges, even during the limited warranty period. For IBM machines with on-site labor, IBM will attempt to diagnose and resolve the problem remotely before sending a technician. For IBM machines with EasyServ service, IBM will attempt to diagnose and resolve the problem remotely before sending a courier.

All offers are subject to availability. IBM reserves the right to alter product offerings and specifications at any time without notice. IBM is not responsible for photographic or typographic errors.

Accessibility by people with disabilities

The following features support use by people with disabilities:

- Controls and latches operable with one hand and minimal dexterity
- Keys discernible by touch without activating them
- Ports and connectors for connection of industry-standard devices

Reference information

- ¹ Mobile Intel Pentium processors feature Intel SpeedStep technology. Processor speed can be reduced to conserve battery power.
- ² Recognizes up to 2.0 GB of addressable memory in these models. Memory options up to 1 GB DDR SO DIMMs each can be added in the two slots for memory expansion.
- ³ GB equals one billion bytes when referring to HDD. Accessible capacity may vary. Up to 4 GB is used in service partition.
- ⁴ Variable read rate. Actual playback speed varies and is often less than the maximum possible.
- ⁵ For combination drives, maximum speeds are given in the following order: CD-W, CD-RW, CD-R, and DVD-R.
- ⁶ The V.90 modem can receive data at up to 56 Kbps from a compatible service provider and transmit data at up to 31.2 Kbps. Public networks currently limit maximum download speeds to about 53 Kbps. Actual speeds depend on many factors and are often less than the maximum possible.
- ⁷ Public network download speeds are limited to 53 Kbps. Upload speeds are limited to 48 Kbps for V.92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V.92 functions and speeds require a compatible phone line and server equipment, and download of V.92 support device driver when available. Check with your telephone and Internet service providers for availability.
- ⁸ 11a, 11b, and 11g wireless are based on IEEE 802.11a, 802.11b, and 802.11g. An adapter with 11 a/b or 11a/b/g can communicate on either or any of these formats; the actual connection is based on the access point to which it connects.
- ⁹ Requires download of Client Security software from the Web.
- ¹⁰ Thickness may vary at certain points on the system.
- ¹¹ Actual weight may vary depending on vendor components, or manufacturing process, or options. Weight includes battery and optional travel bezel instead of the standard optical drive in the Ultrabay Plus.
- ¹² Recharge time also varies.
- ¹³ These model numbers achieved the Ziff Davis Media Inc.'s Business Winstone 2002 BatteryMark V1.0 battery rundown

time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. (VeriTest) nor Ziff Davis Media Inc.; neither Ziff Davis Media Inc. nor VeriTest makes any representations or warranties as to these test results. For a description of the environment under which the test was performed, visit

<http://www.ibm.com/pc/ww/thinkpad/batterylife>.

Battery life (and recharge times) varies based on many factors including screen brightness, applications, features, power management, battery conditioning, and other customer preferences.

¹⁴ Supported in panning mode.

¹⁵ Models with IBM Embedded Security Subsystem only.

¹⁶ Update Connector is available to registered ThinkPad customers during the warranty period at no charge. Line charges may apply.

Trademarks

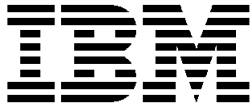
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IBM US Announcement Supplemental Information

April 20, 2004

Optional features		Description	Part number
<p>The ThinkPad® T41 notebook is compatible with peripherals and software products that run on other IBM systems.</p> <p>For the latest information on options available for the ThinkPad T41 models and other ThinkPad notebooks, visit http://www.pc.ibm.com/options</p> <p style="text-align: center;">Options</p>			
Description	Part number	IBM FlatPanel Speakers	
		U.S. power cord	09N4175
		EU1 power cord	10K0160
		Denmark power cord	10K0161
		South Africa power cord	10K0162
		U.K./Ireland power cord	10K0163
		Switzerland power cord	10K0164
		Italy power cord	10K0165
		Israel power cord	10K0166
		Japan power cord	10K0167
		Gem PC400 Smart Card Reader from IBM	31P8901
		Intel™ PRO/Wireless LAN 2100 3B mini-PCI adapter	31P8601
		IBM 11a/b/g Wireless LAN MPC1 Adapter	31P9701
		Japan	31P9702
		IBM 11a/b/g Wireless CardBus Adapter	31P9101
		Japan	31P9102
		Cisco Aironet Wireless 802.11b Mini-PCI by IBM	31P8301
		Mini-PCI Card (EMEA)	31P8303
		Mini-PCI Card (Japan)	31P8302
		Mini-PCI Card (China)	31P8304
		IBM iLM300 MicroPortable Data/Video Projector	
		U.S./Canada	0037-A03
		LA/Mexico/Taiwan/Thailand	31P6904
		U.K./Hong Kong/Singapore	31P6905
		Australia/New Zealand	31P6911
		Japan	31P6912
		EMEA	31P6913
		China	31P6914
		Denmark	33L3532
		Switzerland	33L3533
		Italy	33L3534
		IBM iLV300 ValueBased Data/Video Projector	0038A03
		U.S. Canada	
		IBM iLC300 Conference Room Data/Video Projector	0039A03
		IBM 64 MB USB 2.0 Memory Key	22P9024
		IBM 256 MB USB 2.0 Memory Key	22P9025
		ThinkPad 30 GB HDD	09N4268
		ThinkPad High Speed 40 GB HDD	08K9816
		ThinkPad Second HDD Adapter for Ultrabay Slim	62P4554
		ThinkPad Second HDD Adapter for Ultrabay 2000 ¹⁷	08K6068
		IBM 40 GB USB 2.0 HDD with Rapid Restore™	09N4255
		IBM 128 MB PC2700 CL2.5 DDR SDRAM SO DIMM	31P9828
		IBM 256 MB PC2700 CL2.5 NP DDR SDRAM SO DIMM	31P9830
		IBM 512 MB PC2700 CL2.5 NP DDR SDRAM SO DIMM	31P9832

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Description	Part number
IBM 1 GB PC2700 CL2.5 NP DDR SDRAM SO DIMM	31P9834
ThinkPad Multiple Battery Charger II	22P9040
ThinkPad Ultrabay Slim Li Polymer Battery	08K8190
ThinkPad T40 Series High Capacity Li-Ion Battery	08K8197
ThinkPad T40 Series Li-Ion Battery	08K8214
IBM Portable USB 2.0 CD-RW Drive	22P5297
IBM Portable USB CD-ROM Drive	33L5151
IBM USB Portable Diskette Drive	05K9276
IBM USB Numeric Keypad	33L3225
IBM Preferred USB Keyboard with two-port USB Hub (black)	10K3849
IBM Rapid Access III USB Keyboard	22P5185
800 dpi ScrollPoint™ Optical Mouse (Metallic Black)	31P7405
800 dpi Optical Travel Wheel Mouse	31P7410
800 dpi ScrollPoint Pro Optical Mouse (Metallic Black)	31P8700
IBM USB Keyboard with UltraNav™	31P8950
IBM USB Travel Keyboard with UltraNav	31P9490
ThinkPad Port Replicator II	74P6733
ThinkPad Dock II	
without power cord	
ANZ/ASEAN	287710A
with power cord	
U.S.	287710U
Argentina	287710X
Brazil	287710P
Japan	287710J
Europe General power cord	287710G
EU1	67P8995
U.K.	67P8998
Denmark	67P8996
Israel	67P9001
Italy	67P9000
Saudi Arabia	92P3319
South Africa	67P8997
Switzerland	67P8999
ThinkPad Mini-Dock ¹⁸	
without power cord	2878-10A
with power cord	
Japan	2878-10J
Brazil	2878-10P
U.S.	2878-10U
Argentina	2878-10X
Europe General	2878-10G
EU1	67P8984
Denmark	67P8985
South Africa	67P8986
U.K.	67P8987
Switzerland	67P8988
Italy	67P8989
Israel	67P8990
Saudi Arabia	92P2801
ThinkPad 72 W ac Adapter ¹⁸	
U.S./Canada/Latin America	02K6699
Japan	02K6700
Europe, Middle East, Africa	02K6701
with EU1 power cord	
with Denmark power cord	02K6702
with Africa/India power cord	02K6703
with U.K. power cord	02K6704
with Switzerland power cord	02K6705
with Italy power cord	02K6706
with Israel power cord	02K6707
with ANZ/SEAN power cord	02K6708
with Argentina power cord	02K6709
ThinkPad Nylon Carrying Case	10K0207
ThinkPad Premiere Leather Carrying Case	10K0209

- ¹⁷ Option requires the ThinkPad Dock II
¹⁸ Order an appropriate country-specific line cord with these options. Contact your IBM Authorized Dealer or IBM representative for details.

Publications

ThinkPad data sheets and other publications are now available on the Web. Many can be downloaded or printed free of charge.

To view or print marketing publications or data sheets on ThinkPad notebooks, visit

<http://www.ibm.com/thinkpad>

- Under the ThinkPad Overview bar or in the left menu click Literature.
- Scroll down to the Data Sheets bar and then to the ThinkPad notebook you want information about.
- Click PDF to the right of the product.
- To print the data sheet for the system, click Print.

To view, download, or print ThinkPad publications, visit

<http://www.pc.ibm.com/support>

- Click Online Publications.
- Under For your product, choose the product or family.
- Click on the publication you want to see.
- Scroll to the file link under the File Details bar and click on the link to view the publication.
- To print the publication, click Print.

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Integrated technology services

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<http://www.ibm.com/services/>

Your IBM representative can help you determine availability of standard and customized services.

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

Select your country, and then select the product as the category.

Technical information

Physical specifications

Note: Actual specifications and weights may vary based on features, vendor components, or manufacturing processes. All weights and dimensions are approximate.

- Width: 311 mm (12.2 in)
- Depth: 255 mm (10.0 in)
- Height: 26.6 mm (1.0 in)
- Weight:
 - Travel: 2.05 kg (4.5 lb) with travel bezel
 - Configured system: 2.22 kg (4.9 lb)

Accessories

- Li-Ion battery pack: 325 g (0.72 lb)
- HDD: 210 g (0.45 lb)
- AC adapter (two-pin or three-pin): 360 g (0.795 lb)
- Power cord for ac adapter: 90 g (0.19 lb)
- DVD drive: 345 g (0.76 lb)

Electrical specifications

- Universal ac adapter (72 W):
 - Input: 100/240 V ac, 1.4/0.70 A, 50/60 Hz
 - Output: 16 V dc, 4.5 A
- Li-Ion battery packs: 10.8 V, 4.4 AH, 6 cell/pack

Heat dissipation: 246 Btu/hr maximum

Heat emissions: 72 watts maximum

Air temperature for shipping and storage: -20° to 60°C (-4° to 140°F)

Acoustic noise level: Category 3D (office environment)

- Low cooling fan speed:
 - Sound power level: 3.7 bels (idling), 4.0 bels (HDD seeking)
 - Sound pressure level at the operator position: 31 dB (idling), 34 dB (HDD seeking)
- Middle cooling fan speed:
 - Sound power level: 3.9 bels (idling), 4.0 bels (HDD seeking)
 - Sound pressure level at the operator position: 33 dB (idling), 34 dB (HDD seeking)

- High cooling fan speed:
 - Sound power level: 4.0 bels (idling), 4.1 bels (HDD seeking)
 - Sound pressure level at the operator position: 36 dB (idling), 37 dB (HDD seeking)

Note: All measurements are made in accordance with ISO 7779 and reported in conformance with ISO 9296.

Operating environment: ThinkPad computers are designed, built, and tested for high quality and reliability. When used properly in standard business environments, a ThinkPad system should be a reliable computing asset for many years. Harsh environments and abuse can damage ThinkPads since they are not intended to withstand extreme temperatures, dust, shock, or other severe physical environments. ThinkPad systems should not be used in unsuitable environments. For example, a ThinkPad system should not be used in non-stationary environments, such as in-vehicle installations, without additional casing or shock dissipation. IBM warrants that the ThinkPad notebook will conform to its Official Published Specifications when used in a suitable physical operating environment.

Air temperature

- 0 to 8,000 ft:
 - Operating:
 - Without diskette: 5° to 35°C (41° to 95°F)
 - With diskette inside unit: 10° to 35°C (50° to 95°F)
 - System off: 5° to 43°C (41° to 110°F)
 - Storage/shipment: -20° to 60°C (-4° to 140°F)
 - Wet bulb (maximum): 29.4°C (85°F)
- 8,000 to 10,000 ft:
 - Operating:
 - Without diskette: 5° to 31.3°C (41° to 88°F)
 - With diskette inside unit: 10° to 31.3°C (50° to 88°F)
 - System off: 5° to 43°C (41° to 110°F)
 - Storage/shipment: -20° to 60°C (-4° to 140° F)
 - Wet bulb (maximum): 25.7°C (78°F)

Note: The maximum temperature when the system is on is linearly decreased from 8,000 ft to 10,000 ft.

Relative humidity

- Operating:
 - 8% to 95% (without diskette)
 - 8% to 80% (with diskette inside unit)
- Storage/shipment: 5% to 95%

Altitude: 10,000 ft maximum (3,048 m)

Agency approvals: System unit approvals:

- FCC Class-B Certified to comply with FCC Rules, Part 15(Doc)
- VCCI Class 2
- UL-60950
- C-UL

- CCC (for China)
- BSMI (for Taiwan)
- SMA 3548 (Australia and New Zealand)
- MPR-II (Sweden)
- CE Mark
- CB Report
- NOM (Mexico)
- MIC (Korea)

Software requirements: The following operating systems support the ThinkPad T41 computer:

- OS/2 Warp® Convenience Package 2 V4.52 Refresh MCP2 Refresh: XR_4503 with FixPak XR_C003, or later, and XR_D003, or later
- OS/2 Warp Convenience Package 1 V4.51 MCP1: XR_4501 with FixPak XR_C003, or later, and XR_D003, or later
- OS/2 Warp Convenience Package 2 V4.52 MCP2: XR_4502 with FixPak XR_C003, or later, and XR_D003, or later
- Microsoft™ Windows™ 98 Second Edition with USB 1.1 support
- Windows 98 Gold with USB 1.1 support
- Windows NT™ Workstation 4.0 SP6a, no USB support
- Windows NT Workstation 4.0 SP6a Japanese, no USB support
- Windows 2000 Professional (SPO, SP1®, SP2®, SP3, SP4) with USB 2.0 support
- Windows XP Professional (no service pack, SP1) with USB 2.0 support
- Windows XP Home (no service pack, SP1) with USB 2.0 support

For information about support for these operating systems, visit

<http://www.pc.ibm.com/support>

Note: Previous versions of these operating systems are not supported.

Operating systems other than those preinstalled on the systems may not provide full-feature function. To view considerations or Service Hints and Tips by operating system, visit

<http://www.pc.ibm.com/support>

- In the middle of the page, in the Quick path to a product field, enter your system's four-digit machine type and model number, such as 2373-123.
- On the left side of the page, click Hints and Tips.
- In middle of the page, select a category such as Windows 2000 to see the list of considerations or hints and tips for your machine type.

Compatibility and supported products

Contact your IBM representative for a list of supported features and options.

PC Card

The ThinkPad T41 computer conforms to the PC Card Standard 95, which encompasses both the former 16-bit Release 2.1 card standard and the new 32-bit CardBus card. Other PC card adapters that comply with the PC Card Standard may also function, but have not been tested by IBM.

Vendor software compatibility

IBM tests a large number of commonly used and available applications for compatibility with its ThinkPad systems, using supporting operating systems and configurations. In general, you can expect that most vendor applications designed to run on supported operating systems and Intel-compatible system architectures should be compatible with a ThinkPad system. Some configurations, however, may not be compatible.

IBM does not warrant or support vendor software products, nor guarantee compatibility of those products with IBM systems. Refer to the applicable warranty and license terms provided by the respective vendors.

ThinkPad T41 systems contain BIOS in flash ROM, and a GUI to set up the system and power-management features Windows users. BIOS provides the hardware instructions and interfaces designed to support the standard features of the ThinkPad T41 computer and to maintain compatibility with many software programs currently operating under Windows 98 Second Edition, Windows 2000, and Windows XP Professional.

Limitations: For a list of tips about running various versions of operating systems, visit the IBM electronic support site at

<http://www.pc.ibm.com/support>

General

- IBM 11a/b/g Wireless Mini-PCI Adapter (IBM 11a/b/g), IBM Dual-Band Wi-Fi Wireless Mini-PCI Adapter (IBM 11a/b), IBM 11b/g Wireless Mini-PCI Adapter (IBM 11b/g), Intel ProWireless 2100, and Intel ProWireless 2200 wireless adapters support ad hoc wireless connection mode for 2.4 GHz 802.11b connections. IBM 11a/b/g, IBM 11b/g, and Intel ProWireless 2200 wireless adapters support ad hoc wireless connections for 2.4 GHz 802.11g connections at 802.11b data rates (up to 11 Mbps) as defined in the IEEE 802.11g standard. Ad hoc wireless connection mode is not supported for 5 GHz connections (802.11a) on IBM 11a/b/g or IBM 11a/b wireless adapters.
- Do not use the RJ-11, RJ-45, or VGA port of the ThinkPad T41 notebook when it is docked on the ThinkPad Dock II, ThinkPad Mini-Dock, or Port Replicator II.
- In systems with an IBM Dual-Band Wi-Fi Wireless Mini-PCI Adapter purchased in Japan, the wireless LAN feature cannot be used in countries and regions other than Japan.
- Selected systems are wireless upgradable with wireless LAN mini-PCI options sold by IBM. Systems are not wireless upgradable in all countries.
- Systems with the wireless LAN product permit legal operation worldwide in regions in which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi brand.

- Using Wi-Fi wireless and optional Bluetooth products together may affect the performance of both.
- Support for a DVI monitor is through the ThinkPad Docking options and is limited to a resolution of 1280 x 1024, 60 Hz mode.
- IBM Active Protection System does not support a second HDD bay.
- IBM Active Protection System is automatically disabled while the computer is:
 - Loading the operating system
 - In standby or hibernation mode
 - Resuming from normal operation after being in standby or hibernation
 - Being shut down

Windows 2000

- Screen expansion for DVD playback is not supported.
- DVD playback is not supported in 1400 x 1050, 32-bit mode.

Windows NT 4.0

- Screen expansion is not supported for DVD playback in 1024 x 768 mode.
- Integrated Bluetooth is not supported.
- IBM Active Protection System is not supported.

Windows 98

- Screen expansion is not supported for DVD playback to external TV at 800 x 600, 256, or 16-bit color mode.
- In systems with Windows 98 installed, when a wireless LAN adapter PC card is installed, the system requires a longer time to boot when the power is off. Boot time of approximately 150 seconds is to be expected. Normal boot times without a wireless PC card installed are approximately 70 to 110 seconds, depending on specific configurations. The time to resume from suspend or hibernate is not affected by the wireless LAN card.
- IBM Active Protection System is not supported.

OS/2 Warp V4.0 limitations

- When running on ac power, the system will not enter suspend/hibernation when a communication card is installed.
- Entering suspend/hibernation during communication causes loss of connection and may not be reconnected on resume.
- IBM Active Protection System is not supported.

Planning information

Cable orders: All required cables are included in the shipment group.

Installability: ThinkPad notebook systems require approximately 20 minutes for installation. Installation includes unpacking, setting up, and powering on the system. Additional time is required to install optional memory and other features.

Packaging: Depending on model, the shipment group contains the following items:

- System unit with the appropriate processor, HDD, and display
- 512 MB of memory
- CD-RW/DVD drive installed
- Modem and Ethernet
- IBM Embedded Security Subsystem 2.0
- Wi-Fi wireless card
- Appropriate preloaded software

Shipment group

- System unit with U.S. English keyboard
- AC adapter
- Rechargeable battery pack (Li-Ion)
- Power cord
- TrackPoint® caps
- ThinkPad T Series Service and Troubleshooting Guide
- ThinkPad T Series Setup Guide
- License agreement and supporting documentation
- Lotus SmartSuite® Millennium license of use
- Lotus Notes® stand-alone client license of use
- Envelope Group BM (Miscellaneous Envelope): Insurance brochure

Security, auditability, and control

Passwords: These password protection mechanisms are available:

- Power-on passwords to help protect the system from unauthorized use
- Supervisor password for use by a system administrator
- HDD password to help protect data on the removable HDD

In addition, an optional locking device in the IBM security slot provides physical security.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Terms and conditions

This product is available for purchase under the terms of the IBM Customer Agreement (ICA).

Each IBM machine is manufactured from parts that may be new or used. In some cases, a machine may not be new and may have been previously installed.

Regardless, IBM warranty terms apply.

IBM Global Financing: Yes

In the United States, call 800-IBM-SERV (426-7378), or write to:

Warranty Information
P.O. Box 12195
Research Triangle Park, NC 27709
Attn: Dept JDJA/B203

Warranty period

- System hardware — Three years on parts and labor
- System battery — One year

Optional IBM features initially installed in an IBM system carry the same warranty period as the system. If installed after the initial system installation, they carry the balance of the system warranty or the optional feature warranty, whichever is greater.

Warranty service: If required, IBM provides repair or exchange service depending on the type of warranty service specified below for the machine. An IBM technician will attempt to resolve your problem over the telephone. You must follow IBM's problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country and location specific information.

Customer Replaceable Unit (CRU) (keyboard, mouse, speaker, memory, HDD, and other easily replaceable parts) service and courier or depot service (ThinkPad EasyServ) for other selected parts.

CRU service: IBM will ship these parts to you for your replacement. If IBM instructs you to return the replaced CRU, you are responsible for returning it to IBM in accordance with IBM's instructions. If you do not return the defective CRU, if IBM so instructs, within 30 days of your receipt of the replacement CRU, IBM may charge you for the replacement.

Courier or depot service: You will disconnect the failing machine for collection arranged by IBM. IBM will provide you with a shipping container for you to return your machine to a designated service center. A courier will pick up your machine and deliver it to the designated service center. Following its repair or exchange, IBM will arrange the return delivery of the machine to your location. You are responsible for its installation and verification.

This type of service is called ThinkPad EasyServ in the U.S.

Call IBM at 800-IBM-SERV (426-7378) to assist with problem isolation for hardware to determine if warranty service is required. Telephone support may be subject to additional charges, even during the limited warranty period. If a hardware problem is identified, the Support Center will either initiate the shipment of a CRU or arrange for a courier to pick up the system for overnight delivery (where available) to the repair location. Most repairs should be made within 48 hours after the system is received at the repair location (actual repair time may vary). Keep the original shipping carton for shipping to the repair location. If the original shipping carton is not available, the courier will deliver a shipping carton and return to pick up the system for delivery to the repair location.

International Warranty Service (IWS): IWS is available during the warranty period to customers who travel or relocate to countries where their computer is sold and serviced by IBM or IBM resellers authorized to perform warranty service. Eligible IBM computers are identified by their four-digit machine type.

You can obtain IWS through the method of service, such as CRU, depot, carry-in, or on-site, provided in the servicing country. Service methods and procedures vary by country, and some service or parts may not be available in all countries. Service centers in certain countries may not be able to service all models of a

particular machine type. In addition, some countries may have fees and restrictions that apply at the time of service.

To determine the eligibility of your computer and to view a list of countries where service is available, visit

<http://www-3.ibm.com/pc/support/site.wss/warranty/warranty.vm>

For more information on IWS, refer to Services Announcement 601-034, dated September 25, 2001.

Licensing: Programs included with this product are licensed under the terms and conditions of the License Agreements that are shipped with the system.

Maintenance services — ServiceElect and ServiceSuite™

ServiceElect and ServiceSuite provide hardware warranty service upgrades, maintenance, and selected annuity support services in one agreement.

Warranty service upgrade: During the warranty period, warranty service upgrade provides an enhanced level of on-site service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of on-site service acquired by the customer. Service levels are response time objectives and are not guaranteed.

An IBM technician will attempt to resolve your problem over the telephone. You must follow IBM's problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. If applicable, parts that are considered CRUs will be provided as part of the machine's standard warranty CRU service.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following warranty service upgrade option is available: On-site service — IBM on-site repair (IOR), 9 hours per day, Monday through Friday excluding holidays, next-business-day (NBD) response.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified below for the machine. An IBM technician will attempt to resolve your problem over the telephone. You must follow IBM's problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (keyboard, mouse, speaker, memory, HDD, and other easily replaceable parts), IBM will ship these parts to you for replacement by you. If IBM instructs you to return the replaced CRU, you are responsible for returning it to IBM in accordance with IBM's instructions. If you do not return the defective CRU, if IBM so instructs, within 30 days of your receipt of the replacement CRU, IBM may charge you for the replacement.

Courier or depot service (ThinkPad EasyServ): You will disconnect the failing machine for collection arranged by IBM. IBM will provide you with a shipping container for you to return your machine to a designated service center. A courier will pick up your machine and deliver it to the designated service center. Following its repair or exchange, IBM will arrange the return delivery of the machine to your location. You are responsible for its installation and verification.

On-site service: IOR, IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following on-site service option is available: IOR, 9 hours per day, Monday through Friday excluding holidays, NBD response.

Maintenance service (ICA)

Maintenance services are available for existing ICA legacy contracts. The preferred go-to-market offerings are ServiceElect. However, ICA legacy contracts will still be available for current customers until they are withdrawn.

Alternative service (warranty service upgrades): During the warranty period, warranty service upgrade provides an enhanced level of on-site service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of on-site service acquired by the customer. Service levels are response time objectives and are not guaranteed.

An IBM technician will attempt to resolve your problem over the telephone. You must follow IBM's problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. If applicable, parts that are considered CRUs will be provided as part of the machine's standard warranty CRU service.

IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose.

The following warranty service upgrade option is available: On-site service — IOR, 9 hours per day, Monday through Friday excluding holidays, NBD response.

Maintenance service: If required, IBM provides repair or exchange service depending on the type of maintenance service specified below for the machine. An IBM technician will attempt to resolve your problem over the telephone. You must follow IBM's problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed.

CRU service: If your problem can be resolved with a CRU (keyboard, mouse, speaker, memory, HDD, and other easily replaceable parts), IBM will ship these parts to you for replacement by you. If IBM instructs you to return the replaced CRU, you are responsible for returning it to IBM in accordance with IBM's instructions. If you do not return the defective CRU, if IBM so instructs, within 30 days of

your receipt of the replacement CRU, IBM may charge you for the replacement.

The following maintenance service options are available:

Courier or depot service (ThinkPad EasyServ): You will disconnect the failing machine for collection arranged by IBM. IBM will provide you with a shipping container for you to return your machine to a designated service center. A courier will pick up your machine and deliver it to the designated service center. Following its repair or exchange, IBM will arrange the return delivery of the machine to your location. You are responsible for its installation and verification.

On-site service: IOR, 9 hours per day, Monday through Friday excluding holidays, NBD response. IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well-lit, and suitable for the purpose. On-site service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where on-site service is not available, the normal in-country service delivery is used. Some repairs may require sending the ThinkPad to a service center for repair.

Non-IBM parts support

Warranty service: IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to customers, and normal warranty service procedures for the IBM machine apply.

Warranty service upgrades and maintenance services: Under certain conditions, IBM Integrated Technology Services repairs selected non-IBM parts at no additional charge for machines that are covered under a warranty service upgrade or maintenance services.

IBM Service provides hardware problem determination on non-IBM parts (adapter cards, PCMCIA cards, disk drives, memory, and so forth) installed within IBM systems covered under the IBM warranty service upgrade or maintenance services and provide the labor to replace the failing parts at no additional charge. If IBM has technical service agreements with the manufacturers of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing parts at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or maintenance services.

IBM hourly service rate classification: One

International service for ThinkPads: International service for ThinkPads is a hardware repair service for customers who have purchased an IBM warranty service upgrade, maintenance services, or packaged offerings. This service is provided at no additional charge. International service is available wherever IBM sells and services ThinkPad products. Customers are required to register for this service.

For more information, refer to Services Announcement 698-019, dated March 24, 1998. To register, call one of the following offices:

- United States: 800-497-7426 or 248-740-1215
- Scotland: 44-1475-893638
- Japan: 81-462-73-7598
- Australia: 61-2-9354-4171

ServicePac® offerings

Warranty and maintenance options: The announced products may be eligible for ServicePacs for warranty and maintenance options, convenient prepackaged offerings for warranty service upgrades and maintenance services.

Installation services: The announced products may be eligible for ServicePacs for installation services, convenient prepackaged offerings for installation services. Refer to the **Prices** section for information on the availability of ServicePac offerings.

For additional ServicePac information, visit:

<http://www-1.ibm.com/services/its/us/servicepac.html>

Field-installable features: Yes

Model conversions: No

Machine installation: Customer setup; customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated charges: No. This product does not contain licensed internal code or licensed machine code.

Prices

Description	Part number	Machine type/model	IBM list price ¹⁹
Software #1 (Windows XP Professional)			
30 GB HDD, Intel Pentium™ M 1.5 GHz processor (with 1 MB L2 cache), 512 MB, 24x/24x/24x/8x max CD-RW/DVD drive, 32 MB Mobility Radeon 7500 graphics chipset, IBM 11a/b/g wireless, 6-cell battery, 14.1-in TFT 1024 x 768	23734JU	2373-4JU	\$2,299
40 GB HS HDD, Intel Pentium M 1.7 GHz processor (with 1 MB L2 cache), 512 MB, 24x/24x/24x/8x max CD-RW/DVD drive, 32 MB Mobility Radeon 7500 graphics chipset, IBM 11a/b/g wireless, 6-cell battery, 14.1-in TFT 1024 x 768	23734KU	2373-4KU	2,599

¹⁹ IBM price; does not include tax or shipping and is subject to change without notice. Reseller prices may vary.

ServicePac for warranty and maintenance

Description	Part number
2-year IOR 9 x 5 NBD	30L9190
3-year IOR 9 x 5 NBD	30L9197
4-year IOR 9 x 5 NBD	69P9198
5-year IOR 9 x 5 NBD	69P9200
4-year P&L P/U Depot	69P9199
5-year P&L P/U Depot	69P9201

Maintenance (MA) ServicePac for post warranty/warranty service upgrade service

Description	Part number
1-year IOR 9 x 5 NBD	69P9381
1-year P&L P/U Depot	69P9380
2-year IOR 9 x 5 NBD	96P2075
2-year P&L P/U Depot	96P2074

ServicePac for installation services

Description	Part number
Basic Installs 1 to 25 units	21P2001

For ServicePac prices, visit

<http://www-1.ibm.com/services/its/us/spwarmain.html>

Maintenance service (Legacy) charges

Alternative service (warranty service upgrades)

IOR
9 x 5
for ThinkPads with
a 3-year warranty

\$147

Maintenance services

EasyServ
1-year
courier depot

1-year IOR
9 x 5

\$315

\$378

For ServiceElect (ESA) Maintenance Service Charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

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<http://www.ibm.com/financing>

IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Rates are based on a customer's credit rating, financing terms, offering type, equipment type, and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension, or withdrawal without notice.

Financing offering/capabilities: Financing solutions from IBM Global Financing can help you stretch your budget and affordably acquire the new product. But beyond the initial acquisition, our end-to-end approach to IT management can also help keep your technologies current, reduce costs, minimize risk, and preserve your ability to make flexible equipment decisions throughout the entire technology life cycle.

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Microsoft, Windows, and Windows NT are trademarks of Microsoft Corporation.

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