

Make Your **WIN XP UPGRADE** Smoother The FBI's **ANTI-TERROR VIRUS**

PC WORLD

IDG
net

MARCH 2002 TECHNOLOGY ADVICE YOU CAN TRUST™ AOL KEYWORD: PCWORLD WWW.PCWORLD.COM



Flat Screens Get Bigger & Better: We Test 15 Sleek **LCD Monitors**



Top 100 Products
Today's Best Deals in PCs, Storage, Upgrades & More



Use Your PC to Create, Edit & Share **Great Digital Video**

7TH
ANNUAL
GUIDE TO
THE BEST
FREE
STUFF
ON THE
WEB

Free

**DOWNLOADS
SERVICES
ADVICE**

(Yes, they're still out there!)



Monitor sold separately

hp vectra vl420

Microtower computer

- ▶ 1.8GHz Intel® Pentium® 4 processor
- ▶ Memory: 256MB std, 1GB max.
- ▶ 40GB hard drive
- ▶ 48X Max CD-ROM drive
- ▶ 10/100 Ethernet
- ▶ Windows XP Pro

\$1229.77

CDW 351081



TOSHIBA Satellite Pro 6000 series notebook

- ▶ 1.0GHz Intel® Pentium® III with SpeedStep™ technology
- ▶ Memory: 256MB std.
- ▶ Combo CD-RW/DVD-ROM drive
- ▶ 14.1" active-matrix display
- ▶ 30GB hard drive
- ▶ Windows XP Pro

\$1849.76

CDW 340774



256MB memory module

For Toshiba Satellite Pro 6000 notebooks

- ▶ Individually tested
- ▶ Guaranteed 100% compatible
- ▶ Superior quality
- ▶ Supported by unlimited, toll-free technical support

SimpleTech

\$169.22

CDW 356114

hp photosmart 715

3.3 megapixel digital camera

- ▶ Maximum image resolution: 2048 x 1536 pixels
- ▶ 3X optical, 2X digital zoom
- ▶ 1.8" LCD display
- ▶ Includes 16MB CompactFlash™ card



\$499.99

CDW 332573

256MB memory module

For hp vectra desktops

- ▶ Memory Type: SDRAM (Synchronous DRAM)
- ▶ Speed: 133MHz
- ▶ Guaranteed 100% compatible
- ▶ Supported by unlimited, toll-free technical support

SimpleTech

\$75.29

CDW 237084



www.cdw.com



800-306-4239



Computing Solutions
Built for Business®

CDW: Technology working for you

Sun Fire 280R rack-mount server

- ▶ 2 x 900MHz Sun SPARC III
Cu processors
- ▶ Memory: 2GB std., 8GB max.
- ▶ 2 x 36.4GB hard drives
- ▶ 10X Max DVD-ROM drive
- ▶ 10/100 Ethernet
- ▶ Solaris license

\$22,239.72

CDW 352637



take it to the nth  **Sun**
microsystems

Sun 4mm DDS-4 Tape Drive

Internal, SCSI-2 drive

- ▶ 20GB native/uncompressed (40GB compressed)
- ▶ Data transfer rate: 3MBps without compression, 6MBps with compression
- ▶ One-year limited warranty

take it to the nth  **Sun**
microsystems

\$1149.99 CDW 343676

MaxAttach NAS 4300

1U Storage Server

- ▶ 480GB and 640GB capacity points
- ▶ 866MHz Intel® Pentium® III processor
- ▶ Memory: 384MB std.
- ▶ Powered by MS Windows 2002 Server with unlimited user license
- ▶ Dual 10/100BASE-TX and Gigabit Ethernet
- ▶ RAID Levels 0, 1 and 5 data protection

Maxtor[®]

\$4328.72 CDW 355933

hp laserjet 4100n printer

- ▶ Resolution: HP ProRes 1200 (true 1200 dpi) at engine speed
- ▶ Print speed: 25 ppm
- ▶ Paper handling: 500-sheet input tray, 100-sheet multipurpose tray
- ▶ Includes HP JetDirect 610n (EIO) 10/100BASE-TX internal print server
- ▶ 1-year limited return-to-HP warranty


invent

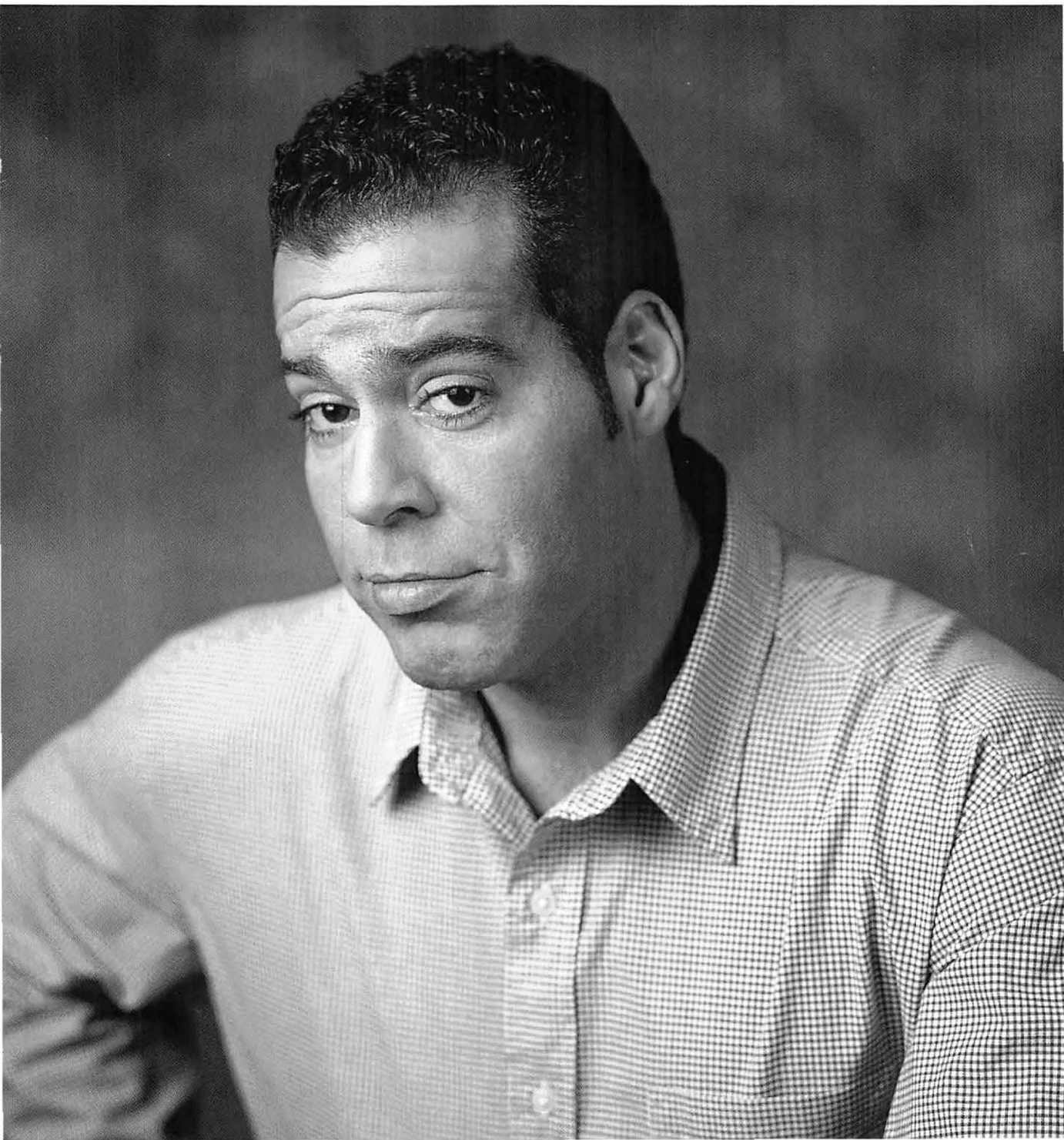
\$1529.98 CDW 272021

All pricing subject to change. For all prices and products, CDW® reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes or typographical errors in advertisements. All products sold by CDW are third party products and are subject to the warranties and representations of the applicable manufacturers. Please refer to www.cdw.com for additional terms and conditions.

©2002 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 PCW8572B/C 3/02

**“I just told management
the firewall is secure.”**

Translation: Do we have a firewall?



At CDW, we understand what it can be like in IT.

That's why it's our first priority to get you the brand name technology solutions you need. From PCs to software to security, we work to respond as fast as possible to deliver the order just how you want it. And to make the process as easy as possible.

From systems software to security, no matter what you need, CDW is your one-stop solution. In a flash, we'll get you what you need, and get it shipped out – usually the same day.



**One-Stop
Solution**

CDW assigns an account manager and also a team of product experts to your business. By working with you, we better understand your IT needs and know how to make your day a little easier.



**Personal
Expertise**

CDW is the one source you can count on to deliver all your technology solutions at competitive prices. Plus, technical expertise, along with the backing and reliability of a Fortune 500® company.



**Reliable
Resource**



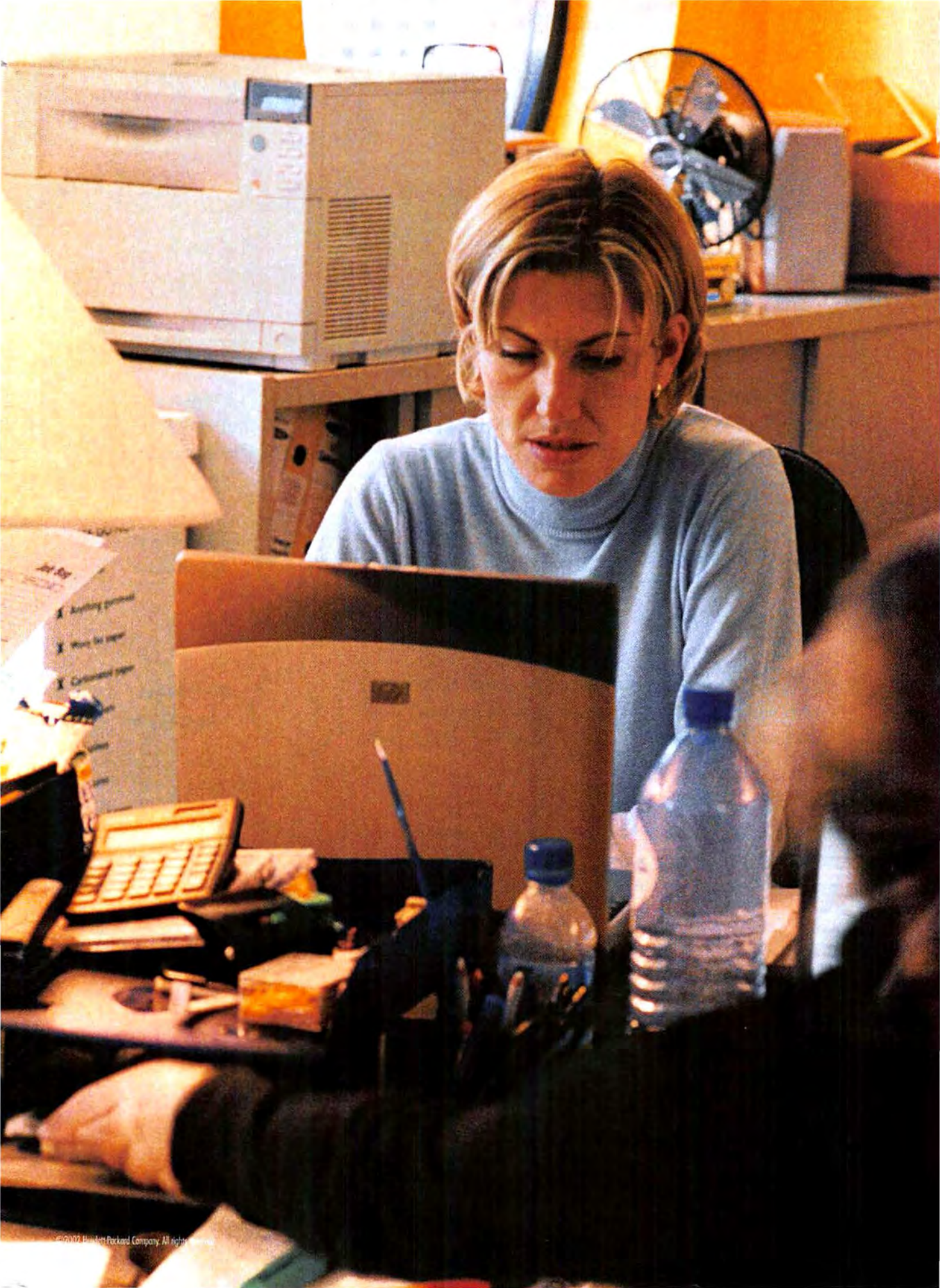
www.cdw.com



800.306.4239



*Computing Solutions
Built for Business®*





Does the brilliance on the outside of your presentation reflect the brilliance on the inside?



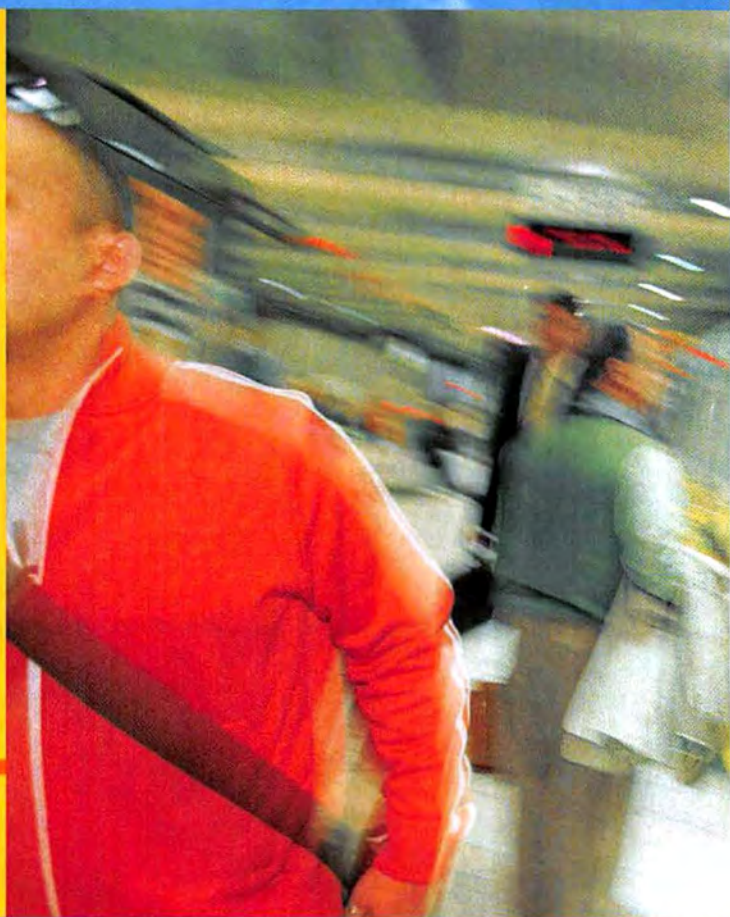
Does it demonstrate the months of effort you've put into the thinking? Does it make your point? Does it make it clear? Does it make it compelling? No matter what size your company is, you can continually present yourself in a confident, professional light with spectacular output from HP color printers. HP invents the

kind of powerful, flexible technology that can help any business make a big impression. Solutions that always start with you—your issues, your people, your opportunities. Give your brilliance a chance to be, well, brilliant. Find out more about our entire line of HP color printers at www.hp.com/go/smbprinters.

Things to do,

people to see.

yes you can.



Microsoft®



You can work outside the office in a whole new way.

Introducing Microsoft® Windows® XP Professional, the software that keeps you in touch and on the road at the same time. Features like Remote Desktop let you directly access your work PC from another PC. Windows Messenger allows instant, more expressive connections to customers and colleagues using real-time communications such as text instant messaging and videoconferencing. And wireless computing has never been so effortless. Take what you thought your PC could do, and throw it to the wind. With Windows XP, you can. www.microsoft.com/windowsxp



Microsoft
Windows XP
Professional

Seconds later, you're sold.



Built (and priced) to stand alone

One look and the decision is easy. Starting at just \$2199, the LifeBook® S Series dazzles with a vivid 13" display, a built-in bay for a DVD/CD-RW drive or a second battery,* and a stylish thin and light (under 4lbs.***) design. Visit our website to see this stand-out for yourself.

FUJITSU

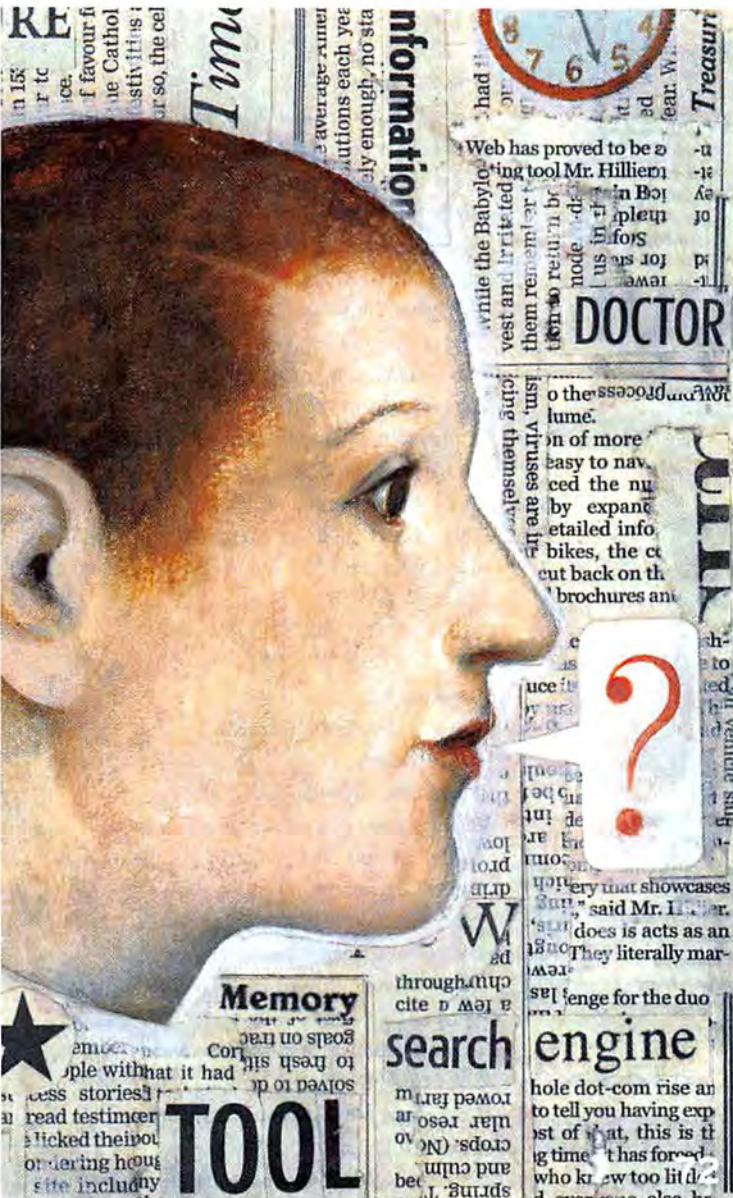
THE POSSIBILITIES ARE INFINITE

www.fujitsupc.com/s-series
1-877-372-3473



The LifeBook® S Series is powered by a low-voltage mobile Intel® Pentium® III Processor-M 800MHz which features Intel SpeedStep™ technology.

Fujitsu PCs use genuine Microsoft® Windows®
<http://www.microsoft.com/piracy/howtotell>



COVER STORIES

72 Best Free Stuff on the Web

The Internet still has some great freebies if you know where to look. Tools and services, information and advice, and leisure time goodies—they're all here. Plus our inductees into the Best Free Stuff Hall of Fame.

85 Fee vs. Free Software

The initial appeal of freeware is obvious—but once it's yours, you still have to use it. We matched no-cost programs against fee-based alternatives to see when free is better and when paying up-front makes sense.



PC WORLD

MARCH 2002
VOLUME 20 ♦ NUMBER 3
AOL KEYWORD: PCWORLD
WWW.PCWORLD.COM

FEATURES

DIGITAL VIDEO

90 Must-See DV

Digital video is becoming an increasingly valuable—and affordable—tool for creating everything from presentations and training films to home movies. We examine seven camcorders and seven video editing programs to find which are your best bets for professional-looking results.



NET TIPS

103 Rev Up Your Net Connection

Whether you have dial-up or broadband, there's always room for improving your online experience. If you're looking to shift your connection into high gear, check out our collection of 25-plus tips. We help you ensure a clean installation, optimize your setup, and diagnose lingering problems.

LCDs

117 The Skinny on Big, Flat Screens

If you've been longing for a large LCD monitor, you're in luck. Prices for 17-inch and 18-inch displays no longer hover at yacht-and-Learjet levels. We evaluate 15 great-looking, desktop-conserving flat panels and select two Best Buys.

Cover graphics by Greg Silva

TOP 100

- 128 Room for Multimedia
Our latest chart, *Top 10 Hard Drives*, debuts.
- 130 Top 15 Office PCs
- 132 Top 15 Notebook PCs
- 134 Top 15 Home PCs
- 137 Top 10 Hard Drives
- 139 Top 10 Printers
- 141 Top 10 CD-RW Drives
- 143 Top 10 Digital Cameras
- 145 More Reviews



47

DEPARTMENTS

- 17 Up Front
- 33 Letters
- 37 Consumer Watch
Prepare for a PC catastrophe.
- 43 Web Savvy
The wild world of Web ads.
- 47 Home Office
A caution flag on wireless nets.
- 49 Bugs and Fixes
More patches for Win XP holes.
- 178 Full Disclosure
Don't get played for a sucker.

RESOURCES

- 14 How to Contact PC World
- 163 PC World Marketplace
- 176 Advertiser Index



128

NOW AT PCWORLD.COM

REVIEWS

Top 10 Graphics Boards for Gamers

High-powered cards from NVIDIA and ATI make this month's chart. find.pcworld.com/20721

DOWNLOADS

Get Organized Now

Use these tools to keep track of contacts, create to-do lists, and remind yourself of appointments. find.pcworld.com/20722

COMING UP IN APRIL

Windows Tips: Scott Dunn shows how to milk the most from any version of the OS, from 9x to XP.

Complaint Department: Got a beef with a company? A host of Web sites will go to bat for you, offer advice, or just let you gripe.

Upgrades for Under \$100: Get ready to enhance your PC's graphics, audio, networking, and more.

Pick the Perfect PDA: We review everything from basic organizers to the latest advanced models and wireless PDA/cell phone hybrids.

NEWS & TRENDS

- 18 **The XP Verdict**
Lots of upgraders love Windows' latest version, but others have found it hard to install and incompatible with their existing hardware and software.
- 22 **FBI's Keyboard Cops Can Track What You Type**
The agency's Magic Lantern antiterrorism program raises concerns about its potential for misuse.
- 24 **P4 Price Cuts Put Pressure on Celerons**
The gap in cost between a bargain CPU and a more powerful chip is shrinking to insignificance.
- 26 **Buyer's Market: CD-RW Drives**
A glut of fast CD-RW drives has kept their prices low. And faster drives are just around the corner.
- 28 **Ease Your Broadband Jitters**
Faced with here-today, merged-tomorrow ISPs, you need to be prepared. We list the steps to take now.

NEW PRODUCTS

- 54 **Desktop PC**
Compaq Evo D500 Ultra-slim
- 55 **LCD Monitor**
ViewSonic ViewPanel VG191
- 56 **5-Megapixel Digital Cameras**
Nikon Coolpix 5000, Olympus Camedia E-20N
- 58 **Digital Camcorder**
Hitachi DZ-MV100A
- 60 **DVD+RW Drives**
HP DVD100i, Philips DVD+RW ReWriter, Sony DRU100A/C1
- 62 **Personal Digital Assistants**
Sony Clie PEG-T415, Compaq IPaq H3850
- 64 **Document Management Software**
ScanSoft PaperPort Deluxe 8
See page 55 for a complete list of new products reviewed.

HERE'S HOW

- 146 **Windows Tips**
Give Windows XP's Search feature the makeover Microsoft didn't, empower PowerDesk's File Finder.
- 150 **Internet Tips**
Identify and remove any spyware that lurks in your computer, switch your default Internet browser.
- 152 **Step-By-Step**
Prepare your PC before upgrading to Windows XP.
- 154 **Hardware Tips**
Pick USB for fast speed, hot-swap portability, and all-around ease of use; reutilize old AGP cards.
- 158 **Answer Line**
Change your default text editing program, fax documents from your PC without a modem.



FOR Bob Message

MESSAGE We need a cost effective printer for our field people to print proposals, color presentations, reports - any suggestions?

FOR Bob Message

MESSAGE Remote office automation project meeting Tuesday
Topic: Choosing a printer with wide hardware/software compatibility?

FOR Bob Message

MESSAGE Returning your call - Field printer BFI requires 24/7 nationwide service/support minimum.

Taking cost out of your business, more important today than ever before.

That's why Brother's Commercial Division is committed to providing superior and reliable business printers that increase productivity while reducing costs. This enables businesses like yours to more

effectively address critical organizational goals and challenges.

But it is our product reliability coupled with a responsive nationwide support and service network that has companies like yours putting Brother laser printer solutions at the top of their requisition lists.

Brother's Commercial Division welcomes the opportunity to put our resources to work for you. Contact us today so we can show you how we can positively impact your bottom line while enhancing your performance.

For more information, call 1-866-455-7713, ext. 905



Network Printer Solutions



Color Laser Solutions



Multi-Function Solutions



Desktop Laser Solutions



Fax Solutions

At your side.
brother®

© 2002 Brother International Corporation, Bridgewater, NJ • Brother International Corporation, Nagoya, Japan
For more information please call the Brother Fax-Back System at 800-521-2846 or visit our web site at www.brother.com

Upgrading your memory doesn't have to be complicated.

© 2002 Micron Technology, Inc. All rights reserved. The Memory Experts is a service mark and Crucial Technology, the Crucial logo and Micron are registered trademarks of Micron Technology, Inc. All other brands and names used herein are the property of their respective owners. Crucial Technology is a division of Micron Semiconductor Products, Inc., which is a wholly owned subsidiary of Micron Technology, Inc. Phone 208-383-5500, Fax 208-383-5521, E-mail crucial.sales@micron.com, Crucial Technology is not responsible for omissions or errors in typography or photography.



Online discounts for over 87,000 upgrades at:

www.crucial.com

or call toll-free 1-888-363-3065

Your only
source for
factory-direct
DDR!

256MB PC2100 DDR

\$71⁹⁹



You need Crucial RAM.

Select your system make and model at Crucial.com, and you'll find memory guaranteed to be compatible with your system or your money back.

It's that easy! Best of all, you'll get the same top-quality memory the world's leading computer makers install in their systems. Visit Crucial.com and get great memory upgrades at low, factory-direct prices.

Prices reflect an automatic 10% discount for ordering online. Prices were taken on 1/7/02 from [Crucial's](http://Crucial.com) Web site; however, prices can (and do) change daily. Prices may vary according to specific system requirements.



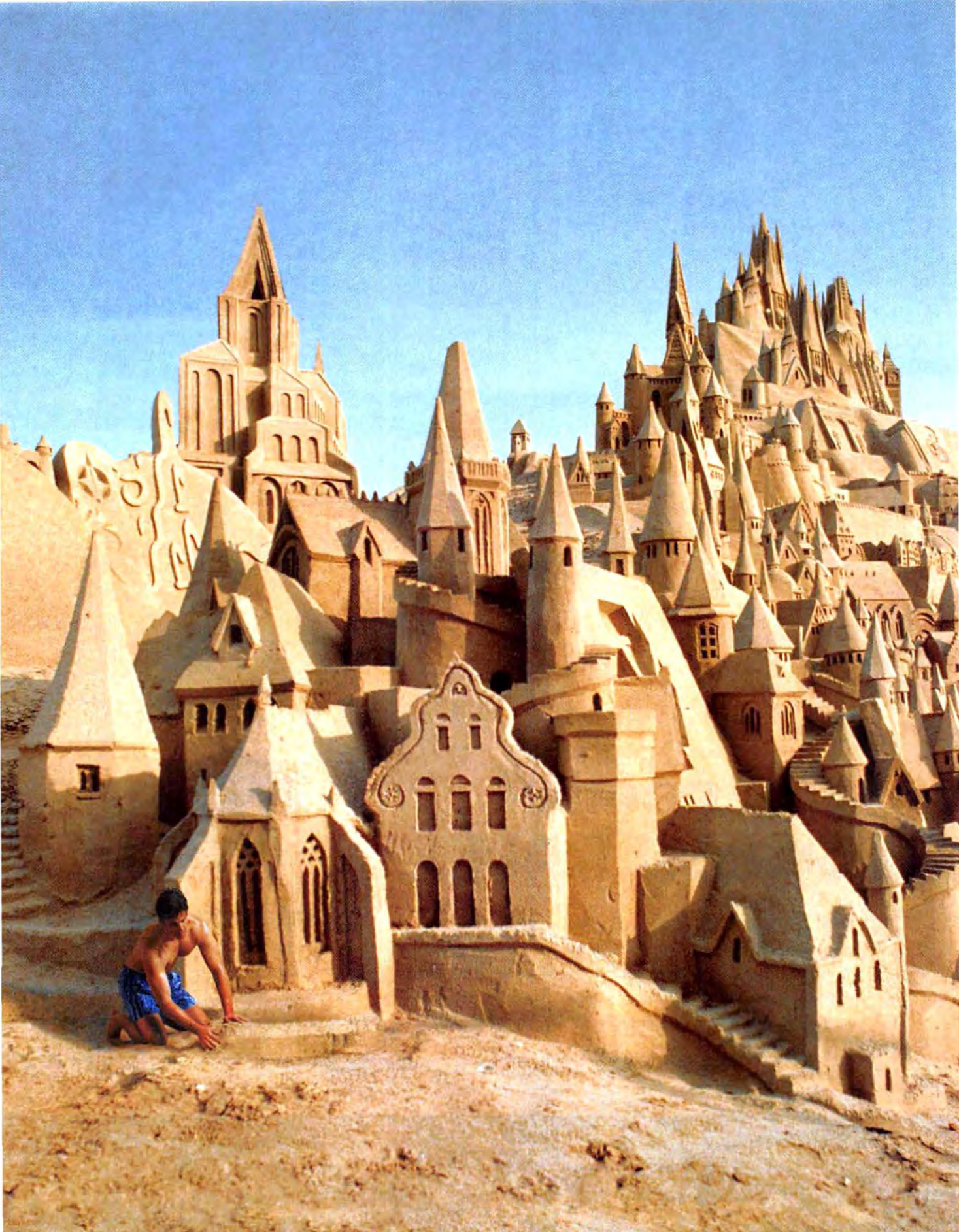
256MB PC133 SDRAM

\$56⁶⁹

for today's most popular systems

The Memory ExpertsSM

crucial[®]
TECHNOLOGY
A Division of Micron



1. Integrated Wi-Fi and Bluetooth technology available as options at time of order. ©2002 Toshiba America Information Systems, Inc. Portégé, Tecra, Satellite Pro and SelectBay are registered trademarks of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel, the Intel Inside logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Bluetooth is a trademark owned by Bluetooth SIG, Inc. and used by Toshiba under license. All other products and names mentioned are the property of their respective owners. All specifications, software, prices, and availability are subject to change. All rights reserved.



IMAGINE ACCOMPLISHING MORE THAN YOU EVER THOUGHT POSSIBLE.

Call 1-800-TOSHIBA or visit a Toshiba reseller today. www.toshiba.com

That's the experience
of Toshiba Mobile
Computing with Microsoft®
Windows® XP Professional
and Mobile Intel®
Pentium® III Processors.

Looking to take your mobile productivity to new extremes? Then get a Toshiba Mobile Computer with Microsoft Windows XP Professional and Mobile Intel Pentium III Processors – the best choices for mobile computing. Toshiba portables with Windows XP give you the productivity you need, with extended laptop capabilities, new ways of working remotely and effortless networking. Whether you're in the office, on the road, at home, or even at the beach, Windows XP Professional protects your data and personal files, while giving you expanded capabilities to accomplish more than you ever thought possible. Just another example of minds on the move.

Tecra® 9000 Portable
The ultimate power and performance



Tecra 9000

- Mobile Intel® Pentium® III Processor - M, up to 1.2GHz
- Up to six ways to connect* – integrated Wi-Fi (802.11b wireless LAN), Bluetooth™ wireless technology, Ethernet LAN, fast IR, i.Link® (IEEE 1394) and modem
- Common accessories with Portégé 4000 and Satellite Pro 6000 including Advanced Port Replicator, SelectBay devices and memory
- Secure Digital Media slot for easy file transfers with other digital devices
- Brilliant 14.1" TFT display

Portégé® 4000 Portable
Perfect balance of ultraportability and performance



Satellite® Pro 6000 Portable
Best performance for the best price



TOSHIBA

Toshiba PC's use genuine Windows® Operating Systems
www.microsoft.com/piracy/howtotell

PC WORLD

Introducing...

Automatic Renewal

Tired of
receiving
early
renewal
notices?

Renew
once and
avoid
future
hassles!

For more information,
call our customer
service department

1-800-234-3498

or go to

www.pcworld.com/customer

PC WORLD

PHONE:
415/243-0500

FAX:
415/442-1891

E-MAIL:
letters@pcworld.com

WORLD WIDE WEB:
www.pcworld.com

AOL KEYWORD:
pcworld

MAIL:
PC World Editorial
501 Second St. #600
San Francisco, CA
94107

EDITORIAL DIRECTOR Kevin McKean
CREATIVE DIRECTOR Robert Kaness

EDITORIAL

MANAGING EDITOR Kimberly Brinson
EXECUTIVE PRODUCER Andrew Eisner
EXECUTIVE EDITORS Tracey Capen,
Harry McCracken, Ramon G. McLeod,
Randy Ross
ASSISTANT MANAGING EDITOR
Paul-Michael King
SENIOR EDITORS Edward N. Albro,
Yardena Arar, Rex Farrance, Rebecca
Freed, Karl Koessel, Michael S. Lasky,
Alan Stafford, Peggy Watt
SENIOR ASSOCIATE EDITORS
Richard Baguley, Andrew Brandt,
Tom Mainelli, Anne B. McDonald,
Aoife M. McEvoy, Dennis O'Reilly,
Anush Yeghazarian
SENIOR REPORTER Tom Spring
ASSOCIATE EDITORS Grace Aquino,
Seán Captain, Lisa Cekan, Eric Dahl,
Alexandra Krasne, Kalpana
Narayanamurthi, Melissa J. Perenson
STAFF EDITOR Robert Jackson
ASSISTANT EDITOR Heather Morra
SENIOR PRODUCER, DOWNLOADS
Max Green
SENIOR COPY EDITORS
Stephen Compton, Steven Gray,
Frederic Fane Wolfer, Tracy Yee
COPY EDITOR Tim Koerner
RESEARCH EDITOR Kristina Saar
EDITORIAL PRODUCTION ASSOCIATE
Henry Pham
ASSISTANT TO THE EDITORIAL DIRECTOR
Laura Blackwell
ADMINISTRATIVE ASSISTANT
Felicia Williams
BUSINESS MANAGER Thomas Pena

ART AND DESIGN

DEPUTY ART DIRECTOR Barbara Adamson
ASSOCIATE ART DIRECTORS Kate Godfrey,
Pierre Granier
ASSISTANT ART DIRECTOR Beth Kamoroff
DESIGNER Sean McDonald
ASSOCIATE DESIGNERS Diego Aguirre,
Marlene Tobias

CONTRIBUTING EDITORS

Steve Bass, George Campbell,
Scott Dunn, Brad Grimes, Judy Heim,
Stuart J. Johnston, Anne Kandra,
Dan Littman, Stephen Manes,
James A. Martin, Stan Miastkowski,
Scott Spanbauer, Lincoln Spector,
Kirk Steers, Carla Thornton,
Daniel Tynan, Kim Zetter

PC WORLD TEST CENTER

TEST CENTER DIRECTOR
Ulrike Diehlmann
MANAGER OF BENCHMARK DEVELOPMENT
James Motch
SENIOR PERFORMANCE ANALYSTS
Elliott S. Kirschling, Jeffrey Kuta
ASSOCIATE PERFORMANCE ANALYST
Robert P. James
PERFORMANCE ANALYSTS
Tony K. Leung, Thomas Luong
SENIOR TEST CENTER COORDINATOR
Julian Weatherby
TEST CENTER COORDINATOR
Julio C. Giannobile

PCW COMMUNICATIONS

PRESIDENT AND CHIEF EXECUTIVE OFFICER
Jeff Edman
PUBLISHER Bob Ostrow
SENIOR VP, COO/CFO Vicki Peilen
SENIOR VP, HUMAN RESOURCES
Richard Willoughby
VP, CONSUMER MARKETING
Shawne Burke Pecar
FOUNDER David Bunnell
FOUNDING EDITOR Andrew Fluegelman

SUBSCRIPTION SERVICES

PC World Subscriber Services, P.O. Box
37571, Boone, IA 50037-0571
INTERNET: www.pcworld.com/customer
E-MAIL: pcwcustserv@cdsfulfillment.com
PHONE: In the U.S. 800/234-3498
New orders 800/825-7595
FAX: 415/882-0936

QUESTIONS AND SUBMISSIONS

Send material electronically to the
appropriate online address listed below,
or mail it to *PC World*. We reserve the
right to edit letters. *PC World* pays \$50
for published *Here's How* tips and
questions; accepted submissions will be
acknowledged by payment. Editors
cannot guarantee personal responses to
all questions.

ANSWER LINE: answer@pcworld.com
BUGS AND FIXES: bugs@pcworld.com
CONSUMER WATCH:
consumerwatch@pcworld.com
FULL DISCLOSURE: steve@cranky.com
HARDWARE TIPS: kirk_steers@pcworld.com
HOME OFFICE: steve_bass@pcworld.com
INTERNET TIPS: nettips@spanbauer.com
LETTERS: letters@pcworld.com
ON YOUR SIDE: onyourside@pcworld.com
PRIVACY WATCH:
privacywatch@pcworld.com
STEP-BY-STEP:
stan_miastkowski@pcworld.com
WEB SAVVY: websavvy@pcworld.com
WINDOWS TIPS: scott_dunn@pcworld.com

NEW PRODUCT ANNOUNCEMENTS

Address press releases to *New Products*
at *PC World*, or call 415/978-3212.

REPRINTS AND PERMISSIONS

You must have permission before
reproducing any material from *PC*
World. Write to *PC World*, Reprints and
Permissions, 501 Second St. #600, San
Francisco, CA 94107; include a phone
number. To order reprints of your com-
pany's editorial coverage in *PC World*,
call 717/399-1900 ext. 129.

BACK ISSUES

PC World issues and article copies are
available on microfilm and microfiche
from UMI, 300 N. Zeeb Rd., Ann
Arbor, MI 48106-1346; 800/521-0600.

MAILING LISTS

Occasionally we make our subscribers'
names available to other companies
whose products may interest you. To
have your name excluded from these
mailings, send a request with your
mailing label to Subscriber Services,
P.O. Box 37571, Boone, IA 50037-0571
or e-mail us at pcwcustserv@cdsfulfillment.com.

? Think about it

Warning:

Your online broker may not want you to see this.



ONLINE FEATURES & SERVICES

DATEK

E-TRADE

AMERITRADE

FIDELITY

SCHWAB

Limit or Market Equity Order Commissions
(1 - 5,000 Shares Traded Online)

\$9.99

\$19.95
Limit and Nasdaq Market orders
\$14.95
Listed Market orders only

\$13.00
Limit
\$8.00
Market

\$30.00
Limit
\$25.00
Market
+2¢/share over 1,000

\$29.95
+3¢/share over 1,000

Free and Unlimited Streaming Real-Time Data

Quotes, Level II,¹ Portfolios, Charts, Last Sale, Index Quotes

Quotes, Level II, Watch Lists, Charts²

No

Quotes, Level II³

Quotes⁴, Level II, News, Charts, Time & Sales⁵

Free and Unrestricted Direct Access Trading Platform

Datek Direct⁶

No

No

No

No

Commitment on Executing Marketable Orders

Within 60 seconds or commission-free⁷

None

Limited⁸

None

None

There's no hiding the truth. When you compare Datek to the competition, you'll see what sets us apart. Our innovative routing technology, streaming, real-time information and free access to research tools give experienced traders the advantage in today's market. Isn't it time you got everything you need to trade at your level?

Get **10 FREE online equity trades*** when you open an account.

Apply today at www.datek.com/mag5 and enter offer code **DCM**.

www.datek.com/mag5

Built to trade™

1-877-88-DATEK



Comparison data is based on a phone survey conducted 11/09/01, supplemented by published information.

* Open and fund an account with a minimum initial deposit of \$500 before 4/30/02 and get 10 commission-free online equity trades. Free trade credits will expire within one year of issue date if not used. Limit one new account offer per type of account. Offer cannot be combined with other offers. Other terms may apply.

1. Level II quotes on the Streamer® brand real-time quotation service are available free for those who trade more than 20 times a month and maintain a minimum account balance of \$500 with Datek. Nonprofessional users who trade 20 or fewer times per month can access Level II quotes for \$9.99 per month, while professional users can have access for \$50 per month.

2. Only Power E-TRADE customers making 30+ trades per quarter are eligible for Level II quotes and watch lists. Only E-TRADE Pro customers making 75+ trades per quarter are eligible for streaming charts.

3. Only Powerstreet Pro customers making 72+ trades in a rolling 12-month period are eligible for streaming quotes and Level II quotes.

4. Only Signature Services Platinum customers are eligible for streaming quotes.

5. Only Signature Services Platinum customers who have made 120+ commissionable trades in the past year are eligible for Level II quotes, streaming news, charts, and time and sales.

6. Datek Direct™ is a tool, as the name implies, that allows customers to direct their Nasdaq orders to a specific execution venue. The name should not be deemed to imply that a customer is dealing directly with the marketplace. All orders are processed through Datek Online Financial Services LLC, a registered broker/dealer. Please note that, once you have activated Datek Direct™ all the other features in your Datek account will continue to operate without change.

7. Datek will not charge a commission (\$9.99) for any marketable online order that is not executed within 60 seconds, measured from the time that "processing" began until the time the order is "executed." This applies to all orders using Datek's "Auto Routing" on any NYSE, AMEX, or Nasdaq stock that are marketable after 9:45 A.M. ET, are marketable upon entry and remain marketable for 60 seconds. The market in the stock must not be locked, crossed or halted. We do not extend this commitment to short sales, OTC Bulletin Board Stocks, Option Trades, or any order that is "stopped" at a price by a specialist/market maker awaiting price improvement, or during Extended-Hours Trading sessions.

8. Ameritrade provides a "10-second guarantee" on qualifying S&P 100 Internet equity market orders entered between the hours of 9:45 A.M. ET and 3:59:50 P.M. ET between October 10, 2001 and December 31, 2001. Any qualifying order not executed within 10 seconds will be commission-free. Other fees may apply.

High volumes of trading and volatility may result in executions at prices significantly away from the price quoted or displayed at the time of order entry.

Real-time quote privileges differ for professional users.

System response and access times may vary due to market conditions, system performance and other factors.

©2002 Datek Online Financial Services LLC. Member NASD/SIPC

CTX

COMMITTED TO XCELLENCE™

For eyes that spend long hours staring at the screen, nothing compares to the ergonomically designed FlatView LCD™. Flicker-free. Radiation-free. And beautifully bright, the FlatView LCD™ allows you to work longer and more efficiently without straining your eyes.

A perfect example is our breathtaking new PV720A 17" FlatView LCD™ metallic-silver display. So stylish and sleek, you'll want one for its looks alone. Yet with its brilliant colors, razor-sharp images and the versatility of pivoting from landscape to portrait, along with space saving and classy, easy to attach speakers, you'll be getting one for its unparalleled performance as well.

DRAMATICALLY DIFFERENT

Technology. Quality.
Performance. And Value. All
backed with a 3 year limited
warranty on parts, labor and
backlight and a commitment
to excellence. That is the
CTX dramatic
difference.

Features

- Screen: 17.0"
- Brightness: 250
- Contrast Ratio: 350:1
- Speakers: Attachable
- Pivot mode: Free Software Included

• **Portrait Function**
30% more information!

Visit our website at:

www.ctxintl.com

or call toll free 877-857-7846
for information on CTX products.





Why Your CD-RW May Be Obsolete

Restrictive new copyright protections could lock you out of your own music CDs.

EVER LISTEN TO MUSIC CDs on your computer? Or burn favorite songs onto a mix CD to play in your car or at a party? If so, the recording industry's new copy-protection schemes could come as a big shock to you.

That's because some antipiracy methods render music CDs unplayable on many computers. These same methods aim to make it impossible for people to rip music tracks and create MP3 files for use in a portable player. Worse, some early implementations have resulted in degraded music CDs that can't even be played on ordinary audio players.

PC World has been reporting on these developments as they've occurred (see "New Shackles on Your CD, Video Copying" in our January *News & Trends* section, or visit find.pcworld.com/20361), and many of you have responded. This comment by a West Hartford, Connecticut, reader was typical: "I want the ability to copy something I bought, unfringed, as long as it is for my consumption. Copy protection has never worked and never will. It will cost the entertainment industry more in implementation, dollars, and goodwill than it ever dreamed."

PROTECT THE ARTISTS

NOW, THERE'S nothing wrong with copyright owners trying to protect their property. Musicians, artists, writers, and their intermediaries—including record labels and publishers like PC World—all depend on copyright law to stop blatant rip-offs.

The problem is that even sophisticated safeguards can often be cracked. Hackers long ago broke the Content Scrambling System used to protect DVDs. And within hours of the release of Windows XP, Asian programmers had bypassed Microsoft's smart new antipiracy system.

The result: Copy-protecting music will prevent innocent fans from transferring tracks to their MP3 player or burning a party disc (all perfectly legal activities if the disc is for personal, noncommercial use). Meanwhile, serious thieves and de-



termined file-swappers will eventually devise ways to hack anticopying codes.

More troublingly, as copy armor grows clumsier, it may render virtually obsolete a lot of today's hardware—including the many CD-RW drives people have bought in recent years. It may also discourage the experimentation and innovation that push the whole field forward.

Instead of chasing a technological fix, why not deal with the issue head-on? Build a small fee into the cost of rewrit-

able media and hardware to cover royalty payments to artists and record labels.

There is precedent for such a move. In 1992, Congress passed a law that affirms people's right to make personal copies while requiring hardware manufacturers to pay a royalty on certain recording devices. The act also imposes a 3 percent royalty fee on sales of blank audio CD-Rs (which are tagged differently from standard data CD-Rs), digital audiotapes, and MiniDiscs. It would be simple to extend the law to all recordable media.

USE THE JUSTICE SYSTEM

AS FOR ILLEGAL file sharing, court action was highly effective in shutting down Napster, and concerted efforts can also succeed against the decentralized file-sharing networks that have taken its place; witness the effectiveness of the FBI's two-year crackdown on so-called warez software piracy rings (see find.pcworld.com/20342).

These moves may not represent perfect solutions to the problem of digital piracy. We would be happy to hear any other ideas you may have, including those for better copy protection. But at least these proposals don't hobble the technology in an attempt to stop the miscreants. ■

PC World staffers Eric Dahl, Ramon McLeod, Melissa J. Perenson, and Anush Yeghazarian contributed to this article. Send your comments to kevin_mckean@pcworld.com. Kevin McKean is editorial director of PC World.

Tell Us What You Think: Visit www.pcworld.com/pcwininput and rate this issue—you could win \$500. You'll need your subscriber number from the mailing label to take this survey online. The Web site explains the official rules and also how to participate in the drawing if you're not a subscriber. You can enter from February 1 through February 28, 2002.

NEWS & TRENDS

EDITED BY RAMON G. McLEOD

INSIDE

- 20 XP FAMILY LICENSE SNAFU
- 22 FBI'S KEYBOARD COPS CAN TRACK WHAT YOU TYPE
- 24 PENTIUM 4 PRICE CUTS SQUEEZE CELERONS
- 26 BUYER'S MARKET: CD-RW DRIVES
- 26 WILL COPY CONTROLS KILL OFF CD-RW DRIVES?
- 28 ISP EVAPORATION

THE XP VERDICT

HARDWARE HEADACHES ABOUND, BUT SOME READERS LOVE THIS OPERATING SYSTEM ANYWAY. BY SCOTT SPANBAUER

SURPRISE, SURPRISE: Windows XP doesn't walk on water. Despite the biggest beta test program ever and claims that Windows XP would be the best Windows to date, the much-heralded new operating system turns out to be merely very good, rather than miraculous. Instead of universally smooth upgrades and broad compatibility, some upgraders are getting nailed by misidentified hardware, unexplained reboots and crashes, and hardware and software vendors who've been slow to support the new OS—snafus that also plagued Windows Me and Windows 2000 upgrades.

IT'S THE DEVICES, MICROSOFT

THAT'S NOT TO SAY everybody is experiencing problems. Roughly half of several hundred PCWorld.com users

responding to an informal survey reported positive upgrade experiences. The other half fared worse, and many eventually removed the OS from their PCs. Though the

survey results are far from scientific, they do suggest that upgrading to Windows XP is nothing to undertake lightly.

On the day that XP debuted, Microsoft had already released

megabytes of software compatibility updates and bug corrections (see "XP's Gotchas" at find.pcworld.com/20381 for a report on XP software compatibility updates from Microsoft and other vendors). Since then, the company has fixed additional bugs, including a



XP FAN—ULTIMATELY: Information systems manager John Klim's upgrade left him with an unusable system, so he performed a clean install. "This time it worked like a dream," he says.

PHOTOGRAPH: KEN FRICK



EX-XP USER: Private investor Su Sayre returned her brand-new XP notebook to Dell because of video and Palm-connection problems.

serious security flaw (for details, see *Bugs and Fixes*, page 49), and two less-critical but irritating glitches that botched file searches and sent XP's clock drifting out of sync with Internet time servers. Microsoft is already working on Windows XP Service Pack 1, which the company says will appear by summer and include support for USB 2.0 devices.

A flurry of bugs and bug fixes isn't exactly unusual with a new software release, and XP users who visit the Windows Update Web site and download the critical updates should be largely unaffected by XP's debut jitters. And almost every surveyed reader who registered a comment on the dreaded Windows Product Activation process deemed it "painless," and "no big deal." Yet few readers were prepared for the sheer

volume of printers, scanners, modems, and other devices that XP failed to support.

Boulder, Colorado, private investor Su Sayre didn't even have to install an XP upgrade to run into trouble with the OS. She bought a new Dell Inspiron 8100 in early November with Windows XP prein-

The much-heralded new operating system turns out to be merely very good, not miraculous.

stalled. But problems with the notebook's NVidia display controller, plus trouble connecting to Sayre's Palm V handheld, persuaded her to ship the system back to Dell within two days despite hours spent on the phone with Dell tech support. "Given the time I was on hold, I conclude that

I wasn't the only person arranging a return and that many of us out here cherish our old, dependable Windows 9x systems," she declares.

Part of the problem is that Windows XP, like Windows 2000 and Windows NT before it, is incompatible with drivers written for Windows 9x versions. Since Windows 2000 debuted two years ago, many manufacturers have made the switch to the new driver model, increasing the chances that your peripherals will work with XP. Some continue to lag behind or have decided—much to their customers' dismay—not to invest the considerable resources needed to write drivers for older and discontinued devices (see the table on page 21 for those that cropped up in our survey results). In some cases, even Windows 2000 drivers won't work in Windows XP because of changes in the operating system's architecture.

To bridge the compatibility gap, Microsoft has supplied makeshift drivers in Windows XP that provide basic functionality for printers, scanners, and other peripherals but lack support for the advanced features the devices may have, such as double-sided or high-resolution print modes, or faxing and scanning in multifunction units. Upgraders learn of the degraded functionality only after the XP installation is complete.

Brent Lawrence, an assistant church pastor in Skokie, Illinois, found that the driver included in Windows XP for his NEC 1260 laser printer (which he purchased less

IN BRIEF

Product Pipeline

DESIGNER DISPLAYS: The latest flat-panel monitors from Samsung boast a high-class pedigree: They were designed by F.A. Porsche of sports car fame. The 15-inch SyncMaster 151P and the 17-inch SyncMaster 171P, priced at \$549 and \$899, respectively, can be swiveled a full 360



degrees for viewing by users on both sides of a desk, making them good candidates for use in banks, customer service centers, or anyplace where more than one person will be looking at a display.

SKINNY CAMERA: Minolta's DiMAGE X sets a new standard for sleekness in a 2-megapixel, 3X optical zoom digital camera. Roughly the size of a floppy disk, it's only 0.75 inch thick—and it stays that way thanks to an innovative design that allows the camera to zoom without extending the lens. The DiMAGE X is due by March at a suggested price of \$399.



PRICING

XP FAMILY LICENSE SNAFU

WHEN FIRST ANNOUNCED, Microsoft's Family License program for Windows XP sounded like at least a small concession to consumers who, thanks to the operating system's Product Activation technology, could no longer use one copy of the OS to upgrade several home PCs. The program allowed people who purchased one upgrade copy of Windows XP (either Home Edition or Professional) to use the installation CD for multiple PCs by buying more licenses—without additional CDs—at a small discount. Before launch, Microsoft said the discount would probably run between \$10 and \$30, and that Family Licenses would likely be sold by retailers as well as by Microsoft.

But the post-launch reality turned out to be less rosy. Family Licenses have yet to be

than three years ago) supported only 300-dpi output. Before upgrading his system to Windows XP, Lawrence had been able to print at 600 dpi under Windows 98. When he pursued NEC for a driver update, the company informed him that as a result of "limited resources" it would not be producing a fully functional Windows XP driver for the printer. Lawrence blames both Microsoft and NEC. "If [Microsoft] had time to include a driver that supported [the printer] partially, why not take a little extra time to squeeze out the full resolution? As for NEC, it has lost any of my future business," he says.

Lawrence wound up reluctantly reverting his PC to Win-

offered by any major retailer. And while Microsoft's Web site did offer them—for a bottom-of-range \$10 off the regular retail price of an XP upgrade—people who actually tried to buy them a month or so after



XP's launch were told that Microsoft had run out of them. At the time, Microsoft said it had underestimated demand for the licenses.

That situation was "unfortunate and shouldn't have happened," according to XP product manager Kristian Gyorkos,

who adds that the company has since addressed the problem. "Everyone now should be able to get [a Family License] via Microsoft.com."

who adds that the company has since addressed the problem. "Everyone now should be able to get [a Family License] via Microsoft.com."

Gyorkos had no explanation for why retailers aren't offering the discounted licenses. But he said that easing the financial burden of buying multiple copies of XP upgrades at \$99 or \$199 a shot (for Home Edition and Professional, respectively) was only a secondary benefit of the Family License program. It was primarily intended to offer convenience, saving a second trip to the store for people who decided, after buying one copy of XP, that they wanted to upgrade several PCs. In other words, if your family is large and everyone upgrades a PC, XP will still set you back a bundle.

—Yardena Arar

Jeff Sandler, senior product manager for printers at Brother

Industries, says the delay in producing updated drivers for Windows XP has been unavoidable because of demands on both the manufacturer and Microsoft's Windows Hard-

ware Quality Labs, which certifies the drivers. "When the world changes, think of the thousands and thousands of products that have to get updated. The sheer volume of testing that has to happen has

been the bottleneck," Sandler asserts. Like many other hardware makers, Brother promises to post XP drivers for most of its products early this year.

Lack of support for a crucial

device was the most common reason our survey respondents gave for backing out of an XP upgrade. But a surprising number said they were willing to replace incompatible hardware, often at a cost of hundreds of dollars, in exchange for XP's stability.

But rather than switching hardware, Microsoft Windows XP product manager Mark Croft says, XP users should complain loudly to manufacturers. This strategy has a proven track record: Hewlett-Packard initially balked at producing Windows 2000 drivers, but finally did so in response to numerous and bitter customer complaints.

"The more grassroots pressure [vendors] get, the more likely that they'll turn around on this," Croft says.

CLEAN INSTALLS STILL BEST

ADDING TO the confusion around Windows XP's hardware support, many upgraders say that despite the Upgrade Advisor's warnings that a particular device would be incompatible, it ended up working after all. That was particularly true of scanners and software-based modems. Worse, XP carries on Windows' traditional difficulty with properly discovering installed hardware during upgrades. Readers reported that upgrades failed to identify devices that Microsoft's Upgrade Advisor ruled compatible, but subsequent from-scratch installs on the same system yielded better results.

After determining that his home computer met Windows XP's minimum system requirements, information systems manager John Klim

of Huntington, West Virginia, launched into his XP upgrade without a second thought. "In hindsight, not the best move," Klim acknowledges. The installation seemed to go well, but it resulted in an unusable system—no Internet connection, no e-mail, applications missing, and only a generic video driver. After a week spent recovering from the disaster, Klim resorted to the power-user's favorite installation trick—the clean install. "This time it worked like a dream," Klim says, and declares XP the best version of Windows yet.

Windows XP product manager Kristian Gyorkos says generic drivers may sometimes work unexpectedly with a particular device. As for clean installs that identify hardware that an upgrade

doesn't, Gyorkos says quirks in the previous installation of Windows could be the culprit. He insists that XP's device-discovery capabilities are the best ever in a Windows OS.

IT CAN CRASH!

BUT WHILE MOST survey respondents agree with Microsoft that XP is the most stable Windows yet, it's clearly not crashproof. Numerous survey respondents (and this author) have encountered spontaneous reboots on otherwise stable systems, even after a clean install—a problem that appears to be linked to incompatible device drivers and to third-party firewall software. Instead of locking up at the blue screen of death—the default crash scenario in Windows NT 4 and Windows 2000—Windows XP

simply reboots the computer. After the reboot, XP asks your permission to upload a trouble report to Microsoft with system-state information at the time of the crash.

Microsoft's Croft says these crash reports give the company an unprecedented ability to track and iron out Windows XP's bugs. Until those bugs are squashed, if you are interested in Windows XP's clear benefits, proceed with caution. Since the only way to know exactly how well XP will support your system is to install and use it, consider dual-booting XP with your current operating system—at least until you're prepared to let your unsupported hardware go. ▶

IN BRIEF

Site to See

FORGET Funk & Wagnall's: If the right word is eluding you, just drop by YourDictionary.com. At this self-styled language portal, you'll find not only quick word defini-



tions and thesaurus entries, but also links to dozens of Web resources—foreign dictionaries, rhyming dictionaries, quotation collections, specialized dictionaries for topics such as cooking or computers, and even word games. You can also shop for translations and other language-related services, or read articles written by site founder and former Bucknell professor Dr. Robert Beard, aka Dr. Language.

Tidbyte

CONNECTED: Sprint PCS users will soon be able to access their Microsoft Exchange or Lotus Notes data on a cell phone or a PDA—without IT support. Due by early spring, Sprint PCS Business Connection Personal Edition will let individuals retrieve e-mail, calendar entries, and contact information by installing an application on their work PC (which must be turned on and connected to the Internet). Pricing has not been announced.

COMPATIBILITY

PERIPHERALS AND XP: WHAT DOESN'T WORK



DEVICE	Vendor	Models	Web sites
Unsupported printers	Canon	BJC-5000, BJC-5100, LR-1, LBP 8A1/A2, LBP-460/465, MultiPASS 800, 1000, C2500, C3000, C5000	find.pcworld.com/20382 find.pcworld.com/20401
	HP	Deskwriter series	find.pcworld.com/20402
	Kodak	PPM200	find.pcworld.com/20403
Feature-limited printers	Brother	Most multifunction and laser printers	find.pcworld.com/20421
	Epson	Many older models	find.pcworld.com/20422
	HP	Older Deskjets and 2000C/2500C, OfficeJet series (new drivers for some due April 2002)	find.pcworld.com/20423 find.pcworld.com/20424
Unsupported scanners	Canon	CanoScan FS 2710/2720, IX-3010, IX-4015, IX-4025	find.pcworld.com/20425
	Epson	Most Perfection and Expression models (drivers for all due in mid-2002)	find.pcworld.com/20426
	Mustek	BearPaw 2400/CS/CU, 2400 USB (drivers for all due in March 2002)	find.pcworld.com/20427
Feature-limited scanners	Umax	Most Astra models	find.pcworld.com/20428
Unsupported cameras	Canon	Powershot A50, A5, 350, 600, Pro70; E05-ID and D30 (drivers in development)	find.pcworld.com/20429
Unsupported modems	Creative	Creative Modem Blaster External, USB, ADSL	find.pcworld.com/20430
	U.S. Robotics	Sportster 33.6 Faxmodem (internal)	find.pcworld.com/20432

SNOOPWARE

NEW TECHNOLOGIES, LAWS THREATEN PRIVACY

THE FBI'S 'MAGIC LANTERN' KEYSTROKE LOGGER COULD HELP CATCH TERRORISTS, BUT AT WHAT COST TO YOUR FUNDAMENTAL RIGHTS?

THEY SAY the first casualty of war is truth. In the digital age, however, the initial victim may be the right to privacy for many Americans—criminals and innocent suspects alike.

Last November, the FBI acknowledged the existence of Magic Lantern, a Trojan horse program it is developing that will render encryption useless on a suspect's computer by logging the user's keystrokes. Coupled with laws that Congress passed following September 11th, Magic Lantern will give the agency unprecedented access to digital communications.

But is the government using the fight against terrorism as an excuse to gain long-sought surveillance powers, or is it merely trying to keep pace with tech-savvy criminals?

GENIE IN A BOTTLE

MAGIC LANTERN reportedly will allow an agent to plant a keystroke logger in a specific computer by using a virus-like program. Once activated, the logger will capture words and numbers as a subject types them (before encryption kicks in), and will transmit them back to the agent.

Privacy advocates say the as-yet-undeployed program is the government's attempt to obviate a bid (so far unsuccessful) to collect master keys from encryption software vendors,



which would have let officers unscramble a suspect's data.

"The government wants to be able to get into people's computers—that's the surveillance agenda," says Jim Dempsey, deputy director of the Center for Democracy and Technology. "Any capability that lets them [the government] do that, they will seek."

The FBI says it needs such tools to combat criminals. "In many ways law enforcement is playing catch-up," says FBI spokesperson Paul Bresson.

"It's no secret that criminals and terrorists are exploiting technology to further crime. The FBI is not asking for any more than to continue to have the ability to conduct lawful intercepts of criminals and

terrorists," Bresson argues.

Dempsey says the program goes too far, however. More than just getting into your data, he says, it lets the FBI get "into your brain."

"The program would not only capture messages you sent, it would capture messages that you wrote but never sent—things that perhaps you thought were a bad idea and [deleted]. This is the government using the Internet to get into people's houses and into their minds."

KNOCK, KNOCK

AT ISSUE IS the fundamental right the Fourth Amendment grants citizens to prior notice when the government conducts a search and seizure.

"In order for the government to seize your diary or read your letters, they have to knock on your door with a search warrant," Dempsey explains. "But [this tool] would allow them to seize these without notice."

Most privacy advocates say it's not the technology that worries them, but the lack of judicial oversight in its use. Jennifer Granick, director of Stanford Law School's Center for Internet and Society, says she doesn't object to the FBI's using such tools, but she says she worries about misuse.

"Advances in technology may require new law enforcement techniques," Granick notes. "These tools, if properly used within the system of checks and balances, may work, and then we can embrace them." But, Granick says, the same privacy protections that apply everywhere else should also apply in the digital world.

The Patriot Act, passed by Congress in October 2001, weakens those protections in two major ways, says the Center for Democracy's Dempsey.

The Act lets law enforcement agencies conduct surveillance under looser rules previously applicable only to foreign intelligence cases, he says. It also broadens law enforcement's ability to intercept Internet transactional data such as e-mail addresses.

And while the act aims to assist in "terrorist" investigations, its surveillance provisions are not limited to that area, according to Dempsey.

Critics say they're also concerned that talk likening hackers to terrorists could lead to investigations of innocent ►

SONY

making business pleasure

0% Financing!

Purchase a C-Series Projector or select Sony Professional Products between January 1, 2002 and March 31, 2002, and make no payments until January 2003**!

Project SAVINGS!



As low as \$1,999!**

The Golden Rule of Business: Make it Better and Make it for Less. Sony's new C-Series SuperLite™ Projectors do just that. At just 5 lbs., 5 oz., they deliver incredibly bright images (1000 ANSI lumens***) with outstanding picture quality from three 0.7" LCD panels. And they do it all for as low as \$1,999.

That's not a typo; they're only **\$1,999**. And, they're not just stripped down, no-frills models either. They're fully loaded with a 4X digital zoom, digital keystone correction, remote control, custom carrying case, and an ingenious flip-top control panel. What's the catch? Getting one before they're all sold out.

©2001 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications subject to change without notice. Sony and SuperLite are trademarks of Sony. **Visit www.sonyfinancial.com for list of specific models and promotion terms and conditions. Financing available through Sony Financial Services, LLC. ** Estimated U.S. retail selling price. Actual retail selling price may vary. ***ANSI Lumen is a measuring method of the American National Standards Institute (72.228). Since there is no uniform method of measuring brightness, specifications will vary among manufacturers.

Call **1-800-472-SONY** ext. **CS4** today to get the Sony projector you've always wanted at a price you never imagined. Or visit www.sony.com/projectors

PC owners when hackers surreptitiously commandeer their PCs to launch Internet attacks against government sites.

APPEASING CRITICS

TO ALLAY such concerns, Barry Steinhardt, associate director of the American Civil Liberties Union, wants the FBI to open Magic Lantern—and any other similar program it creates—to congressional and independent review prior to its deployment. “We still don’t know whether Carnivore has been used in the way it’s supposed to be used,” he says.

Carnivore, a controversial

tool the FBI uses to collect e-mail passing through the servers of Internet service providers, is supposed to pick up only e-mail messages relevant to an investigation (see January’s *Consumer Watch* at find.pcworld.com/20641 for more information). But critics say that there is little oversight to ensure that the FBI uses the tool appropriately.

And Dempsey says that a keystroke logger—with its unlimited access possibilities—offers even more opportunity for abuse by over-eager law enforcement officials.

Still, the primary concern of

most critics is the legislative carte blanche that the Patriot Act seems to give the FBI for conducting its investigations.

Though there has been talk on the Senate Judiciary Committee about “fixing” the Patriot Act, the ACLU’s Steinhardt says we’ll probably have to wait some 18 months to see how the Act plays out in court cases before there will be any movement to change it.

In the meantime, he says, “People should contact members of Congress to get them to take their oversight responsibilities seriously.”

—Kim Zetter

IN BRIEF

Did You Know?

55%

Fifty-five percent of adult Internet users logged on to some type of government Web site within the past year, and 21 percent conducted some government business online—a greater percentage than those who performed bank transactions, paid a credit card bill, or traded stocks online.

Source: eMarketer's "Daily Habits of Adults: Web Sites Visited in 2001." © 2002 eMarketer, Inc.

BUYER'S GUIDE

P4 PRICE CUTS SQUEEZE CELERONS

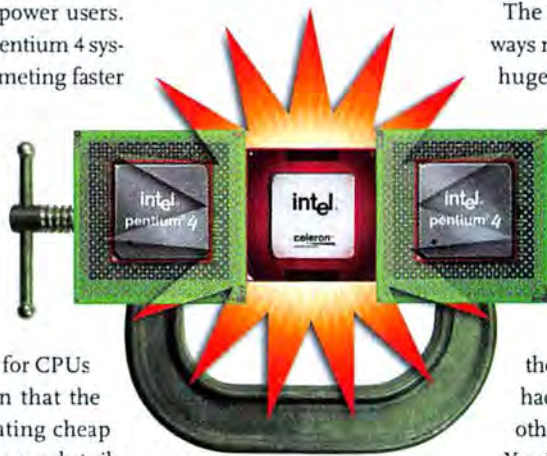
THE PRICE GAP BETWEEN CELERON AND P4 PCs IS SHRINKING. WHAT'S YOUR BEST BET?

IT USED TO BE simple for buyers of Intel-based systems: Units with Celeron chips were for PC consumers on a budget, while Pentium-based computers were for power users. But today, with Pentium 4 system prices plummeting faster than a downhill skier on a run at the Winter Olympics, does the conventional wisdom still seem valid?

Yes and no. Shrinking prices for CPUs in general mean that the price gap separating cheap chips from their upmarket siblings has narrowed. Muddying the waters further is the fact that clock speeds don't tell the whole performance story.

To see exactly how far apart the prices of similar P4- and

Celeron-based systems are, we configured a pair of PCs with the two chips at each of three major vendors' Web sites: Compaq, Dell, and Gateway.



As much as possible, we opted for very similar or identical components—same-size hard drives, 256MB of RAM, similar monitors, and so on. The P4 PCs had 1.4-GHz to 1.6-

GHz CPUs; the Celerons used either 1.1-GHz or 1.2-GHz chips. Not surprisingly, in view of the target buyers, the P4 systems came with graphics boards, while the Celerons provided integrated graphics on their motherboards.

The Pentium PCs were always more costly, but not by a huge amount. Price differences ranged from \$200 between the two Gateways (the 1.5-GHz P4 unit cost \$1059, while the 1.1-GHz Celeron cost \$859) to a scant \$61 between the two Compaqs (one PC had a 1.6-GHz P4, and the other a 1.2-GHz Celeron).

You're likely to notice the performance difference between Celeron and Pentium 4 systems running business apps, however. Though we did not test the specific systems we priced at the Web sites, a

1.1-GHz Celeron system with 256MB of RAM that *PC World* did recently test earned a PC WorldBench 4 score of 81, while five tested 1.5-GHz P4 systems with 256MB of RAM averaged a 91 score—a difference of about 12 percent.

What does it mean for buyers? The truly cost-conscious will still stick with Celerons, says Giga Information Group research fellow Rob Enderle. “After all, \$100 is \$100, and that adds up if you're a corporate buyer purchasing hundreds of PCs,” he says.

Other users are likely to find P4s increasingly enticing. But if you're leaning toward a P4-based PC, make sure you're not seduced by an attractive price tag into picking up a system that skimps on other useful components—that's one way vendors are bringing P4 systems even closer in price to their Celeron siblings.

—Yardena Arar ▶



Goat expert



RAM expert



No one knows your office needs like the experts at Office Depot. From maximizing computing power to minimizing office clutter, we not only have what small business needs—we have what small business needs to know.™
1-888-GO-DEPOT www.officedepot.com

Office DEPOT.
What you need. What you need to know.™

PRICING GUIDE

BUYER'S MARKET: CD-RW DRIVES

TOUGH MARKET FOR VENDORS BENEFITS USERS—AND OTHER BONUSES ARE AHEAD.

CD-RW DRIVE makers may be hurting right now, but buyers are feeling no pain. Technology changes over the past year that have prompted vendors to unload older products—and changes among the vendors themselves—continue to yield a good selection of drives at super prices for buyers.

The top CD-R write speeds have nearly tripled, from 12X to 32X. Buffer underrun technology (which helps prevent ruined discs during CD-R burning) has become de rigueur in new CD-RW drives. And typical prices for leading-edge drives have fallen from \$300 to \$150 in a matter of months, with second-echelon 24X CD-RW drives now down to a record low of \$90.

Why such steep drops? Vendors have excess inventories

because of the weak economy, which lowered user demand and decreased PC-bundled sales. Some industry experts had predicted prices would stabilize by the end of 2001, but that has not yet occurred because drive production continues to be strong.

Edward Meadows, president of CenDyne, which markets both drives and media, says, "Manufacturers have bought the parts, so they have to go ahead and build and sell the drives." But then they'll sell at cost, or below, to unload the existing inventories, he adds.

You'll see several similar drives on store shelves. For example, Philips Consumer Products has released a 20X/10X/40X CD-RW drive, and is about to ship a 24X unit, with a 32X due soon. Why? Stores



PRICES FOR CD-RW drives, even top 32X and 24X models, are at an all-time low.

want drives to hit the \$79, \$99, \$129, and \$149 price points to attract a wide variety of users.

SPEED BUMPS

DRIVES CAPABLE OF 32X CD-R write speeds have only recently become common, and already there's talk of drives with top-end 40X and 48X write speeds to come later this year. No announcement has been made, but 40X drives are expected by as early as April.

A caveat: As drives become faster, the additional user benefit shrinks, says Wolfgang Schlichting, an IDC analyst.

Write speed is not uniform across a drive surface. Most 24X CD-RW drives use the Zone CLV (Constant Linear Velocity) method to achieve top speed. They divide the disc into inner, middle, and outer zones and write data at a constant speed—16X, 20X, and 24X, respectively—within each zone. A 24X CD-RW drive should have an average transfer rate of about 3.3 MBps (or 22X), which more accurately reflects its speed. A 32X CD-RW drive should perform at a rate of about 3.9 MBps (27X).

EXTRAS

IN TODAY'S market, vendors are eager to distinguish their drives. Sony plans to release a second CD-RW drive with a Memory Stick slot, to simplify the task of copying photos taken with a Sony digital camera to disc. Other vendors use longer support hours, faster interfaces for external drives (for example, USB 2.0 or IEEE 1394), or more robust software, among other attractions, to lure customers.

The bottom line: If you want one, now is a good time to shop for a new CD-RW drive.

—Melissa J. Perenson ▶

CONSUMER ALERT

ARE CD-RWs LESS USEFUL?

THIS YEAR, thanks to lower costs, CD-RW drives should make significant inroads even into the business space, says IDC analyst Wolfgang Schlichting. They're already fairly common in home PCs. But CD copying, a key application for the consumer CD-RW market, is threatened by new copy protection schemes for audio CDs now being introduced by the recording industry.

Because many consumers buy CD-RW drives not only for data backup, but also—or even primarily—to mix their own custom audio CDs, such schemes may decrease the drives' value. All of the major labels say that they're looking at CD copy protection, and major players such as Macrovision, which creates protection schemes, expect their products to be in millions of CDs in the next year.

Some CDs are already on the market with such protection. And Universal recently became the first label to use a new, dual-protection scheme for a CD (the soundtrack to *The Fast and the Furious*): It has locked, uncompressed audio files that you can't play on a PC and preripped files in an MP3-like format Windows that PC owners can play but can't use for a custom CD.

ViewSonic's ViewPad™ Tablet PC: It's where computing is going.

Comfortable pen-sized stylus stays tucked away when not in use.

Use the digital camera for documents, email and even video conferencing.

Quick-launch Internet/e-mail/power at the touch of a button.

Expansion options abound with PC Card slot for modules like GPS navigation.

Access network services like email or the Net when away from your desk with built-in WiFi™ wireless LAN connectivity.

Experience full color, full screen Internet on the big-but-not-bulky 10.4" 600x800 TFT touchscreen.

2 USB ports for easy cabling to peripherals like printers or external drives.

Record voice messages and reminders with built-in microphone.

Built-in fast Ethernet port for company LAN or home broadband connection.

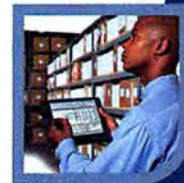
Access the Net from virtually any phone line with fast internal 56Kbps modem.

Listen to multimedia files with built-in stereo speakers.

Enter data directly on touchscreen or with full-sized wireless keyboard (included); add the optional docking station for instant access to cabled peripherals and built-in CD-ROM drive.



The ViewPad 1000 Tablet PC features a 10GB hard drive for local data storage and an integrated 802.11b transceiver for wireless connectivity.



Also available is the ViewPad 100 SuperPDA with color 10.4" touchscreen and Windows CE™. Awarded 4 out of 5 Stars by PC Magazine, January 2002.



Learn more about ViewPad Authorized Solution Providers: Visit ViewSonic.com or call 800-888-8583x2 today.

The wait is over. As the leader in *visual technologies*™ and the number one monitor display company in the USA*, ViewSonic once again delivers the quality and features demanded by today's mobile professionals.

The new ViewPad line provides the perfect mobile platform for information-rich applications. With support for Microsoft® Windows® 2000, Windows CE®, HTML, Java™, Citrix® ICA®, and Microsoft RDP, plus a host of expandability features, ViewSonic ViewPad products can be configured to meet almost any mobile requirement. Visit ViewSonic.com or call us at **800-888-8583x2** today to *see the difference*® when your applications go wireless.



ViewSonic
See The Difference!™

*Leading non-active CRT monitor brand: Stanford Resources, Inc. (Monitrak Q3 2001). Specifications subject to change without notice. Corporate names and trademarks stated herein are the property of their respective companies. Copyright © 2002 ViewSonic Corporation. All rights reserved. [10446-00B 12/01]

INTERNET ACCESS

EASE BROADBAND JITTERS

WARY THAT YOUR BROADBAND PROVIDER MAY SUDDENLY EVAPORATE? HERE ARE SOME STEPS YOU CAN TAKE TO PROTECT YOURSELF.

CHANGE IS the only constant, an old saying goes, and boy, when you're talking about broadband Internet access, is it ever true. As service providers go bankrupt, consolidate, or disappear, analysts say consumers should prepare for more dips and twists on this Internet roller-coaster ride.

The cable ISP landscape—rocked last fall by the Excite@Home shutdown—is especially ripe for shakeups in 2002, analysts say. Comcast Corporation's purchase of AT&T Broadband, which absorbed Excite's customers, could spark additional cable and

ISP consolidation, according to Patti Reali, principal analyst with Gartner Dataquest.

What does this mean for the consumer? Watch for more changes to e-mail addresses—along with sluggish Net access and intermittent outages—as AT&T Broadband, Comcast, and Cox Communications subscribers make transitions to new networks.

Additionally, "innovation is going to be slower than if we had vibrant competition," says Joe Laszlo, an analyst with Jupiter Media Matrix. With fewer providers

around, the broadband ISPs won't have to worry that their rivals may try to offer better features or steal customers.

CONTROL YOUR DESTINY

EVEN IF you weren't affected by the Excite@Home closure or the AT&T Broadband buy-out, you might have been a victim of a DSL provider's bankruptcy last year. But there are several ways to protect yourself from future turmoil:

Get a backup Internet access account, either prepaid or through a second service. Prepaid Internet dial-up access—offered by vendors such as AT&T, MaGlobe, Slingshot, and Sprint—operates much as prepaid phone cards do, and also is handy when you're traveling. For example, Sprint sells a \$10 card that gives users 8 hours of Net time.

Use a second provider to gain a backup e-mail address, such as a free Web-based account from Microsoft's Hotmail or Yahoo Mail. Executives of the big new cable broadband entity that will be known as AT&T Comcast are already warning that it may be necessary for millions of their

IN BRIEF

Downloads

Head to find.pcworld.com/20501 to find these files.

TOP 5

- FreeZip** 253KB
Compress and decompress files quickly, for free.
- Trojan Remover** 1490KB
Remove Trojan horses from your hard drive, and repair any damaged files.
- RealOne (beta)** 8579KB
Next-generation media player includes a built-in browser, CD-burning software, and access to a subscription service.
- IMpersona** 253KB
An animated head vocalizes your text as you send your friends instant messages.
- PowerToys for Windows XP** 939KB
Add helpful and time-saving functions to your XP desktop.

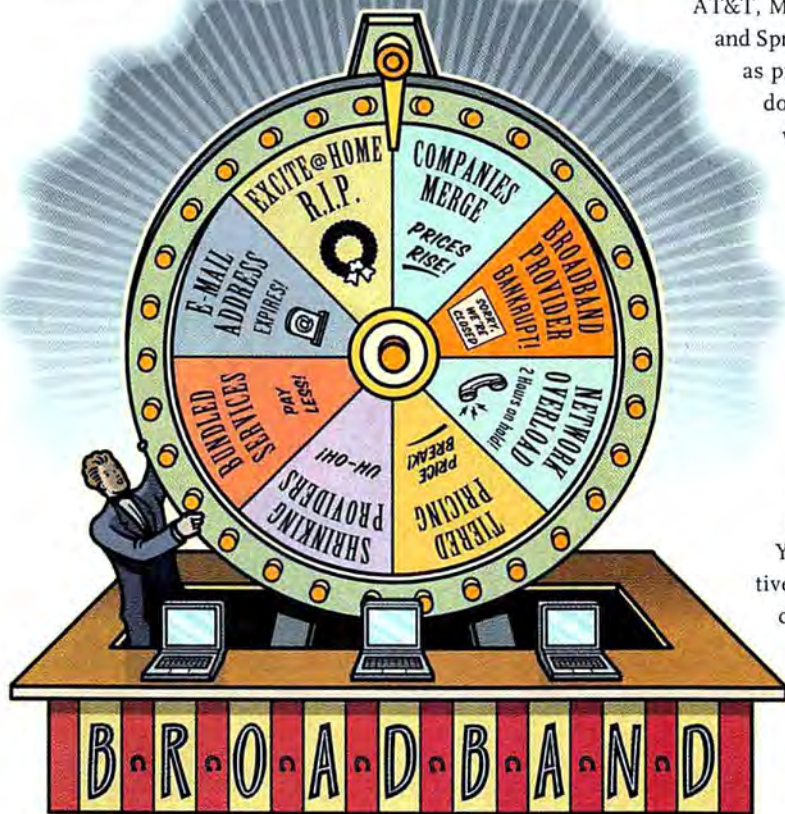
current customers to change their e-mail addresses after the merger, so taking a little preventive action couldn't hurt.

Evaluate other companies for price breaks. In 2002, you'll likely find cheaper rates from a competing ISP selling service on your existing cable network. Both AT&T Comcast and AOL Time Warner promise to open their networks to ISPs such as EarthLink and Microsoft's MSN.

Don't throw your records away. If you think the future looks bleak for your ISP, be sure to keep complete billing records in case you need to ask for a refund. If you become convinced that your ISP is sinking, do your homework and find a reliable replacement.

With all this uncertainty in the air, why not return to less-shaky dial-up service? Modern cliché or not, it's true: Once you have broadband, you just won't want to go back.

—Tom Spring ■



GIDDY-UP



Our color printer is faster than 90% of today's office printers. And any business can afford it.
There's a new way to look at it.

90% of today's office printers can't outrun us.* The Xerox Phaser® 860 network color printer gives you 16 full color pages a minute with an industry-leading first-page-out of only 10 seconds. We're talking about vibrant color up to 1200 dpi from a printer starting at \$1999 including Black Ink

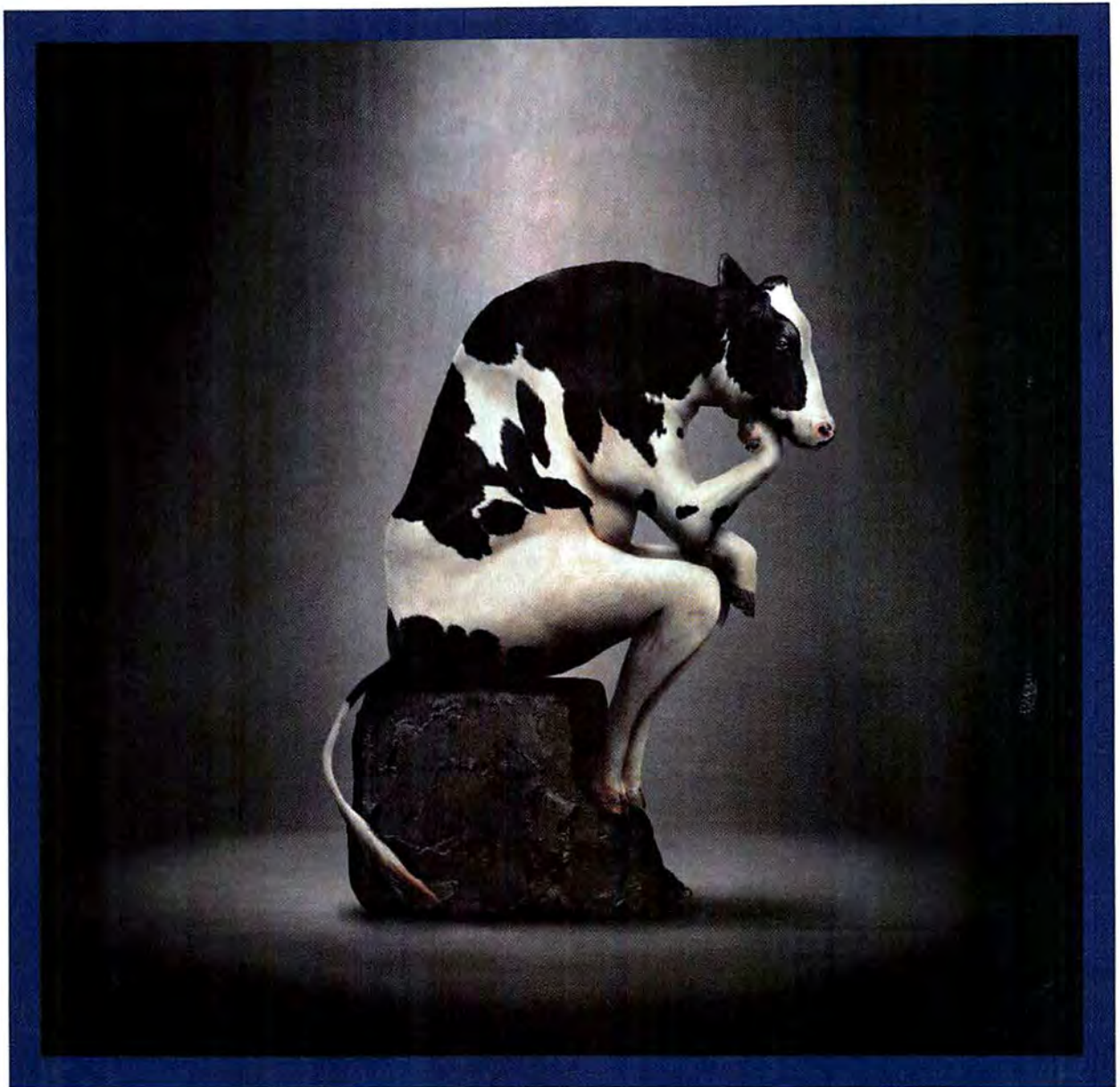


for Life.™ Imagine the savings. But then again, helping you run your office efficiently is what our full line of network color printers is all about. To learn more about the Phaser 860 so many are racing to, call 1-877-362-6567 ext. 1853 or visit xerox.com/officeprinting/zebra1853



THE DOCUMENT COMPANY
XEROX

*Based on current market data by IDC. †Estimated U.S. retail price. Reseller price may vary. Maximum 5 boxes of ink per month per unique serial number. Copyright © 2002 XEROX CORPORATION. All rights reserved. Xerox, The Document Company, Phaser and There's a new way to look at it are registered trademarks of XEROX CORPORATION. 36USC220506



Why a Gateway PC is the smartest computer you can buy.

When you consider our cutting-edge technology, unsurpassed customer commitment and budget-conscious prices, buying a Gateway* computer is an intelligent choice. And because our complete line of notebooks and desktops are loaded with Intel* processors and come

in all shapes and sizes to meet your personalized needs, the decision is all the more easy. We even have Gateway* stores across the nation set up to teach you how to use your computer. Just call or come into one of our stores and see why choosing Gateway is a no-brainer.

¹Pocket Streets for Microsoft® Windows® CE requires Windows® CE 2.0 or later. Hardware available separately. ²TO AVOID BEING CHARGED A MONTHLY FEE, CANCEL BEFORE ONE-YEAR PERIOD ENDS. One-year period begins 30 days from receipt of system. You may incur surcharges even during promotional period for premium services, or long distance charges on your phone bill, depending on location and calling plan. Communication surcharges may also apply with some access numbers and in AK. For details and access numbers call 1-800-846-2000. Check with your local phone company to determine whether the access number you select is a local call for your calling plan. New U.S. members 18 and older only. Major credit card or checking account required. Use may be limited, especially during peak usage. ³Prices and configurations subject to change without notice or obligation. Prices exclude shipping and handling and taxes. Not responsible for typographical errors. ⁴Monthly payment estimated, based on standard system price (excluding shipping/handling/taxes), 48 month term, and 14.9% APR. The APR is not guaranteed and may change. Actual payment amount



\$1899*

Gateway® 700X

- Intel Pentium® 4 Processor 2.0GHz
- 15" LCD Flat Panel Display
- 256MB PC800 RDRAM
- 80GB 7200RPM Hard Drive
- 24x CD-RW Drive & 16x DVD-ROM Drive
- Boston Acoustics® BA745™ 3-Piece Speakers
- Microsoft® Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- 1-Year America Online® Internet Access (new members only)²
- \$1899* or as low as \$53/mo. (14.9% APR for 48mos.)³



\$1199*
(After \$100 mail-in rebate.)⁴

Gateway 500S

- Intel Pentium® 4 Processor 1.60GHz
- 15" LCD Flat Panel Display
- 128MB DDR SDRAM
- 20GB Hard Drive
- 32MB NVIDIA™ GeForce2™ MX200 AGP Graphics
- 16x CD-RW Drive
- GCS300 Speakers
- Microsoft Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- 1-Year America Online Internet Access (new members only)²
- \$1199* or as low as \$34/mo. (14.9% APR for 48mos.)³ (After \$100 mail-in rebate.)⁴



\$999*
(After \$100 mail-in rebate.)⁴

Gateway 300S

- Intel Celeron® Processor 1.20GHz
- 128MB SDRAM
- 15" LCD Flat Panel Display
- 20GB Hard Drive
- 16x CD-RW Drive
- GCS300 Speakers
- Microsoft Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- 1-Year America Online Internet Access (new members only)²
- \$999* or as low as \$28/mo. (14.9% APR for 48mos.)³ (After \$100 mail-in rebate.)⁴



Need high speed Internet? Ask us how to save up to \$240 on broadband Internet access.⁵



Epson® Stylus® C80 Printer - \$149* (after Gateway rebate)

Features ultra-fast print speeds, individual ink cartridges and water-resistant/fade-resistant Epson Dura Brite ink.



Solo® 9550

\$2599

Who needs a desktop when you've got the Solo 9550?

- 15.7" SXGA TFT Active Matrix Display
- Mobile Intel® Pentium® III Processor-M 1.13GHz
- 512MB SDRAM
- 30GB Ultra ATA Hard Drive
- Integrated v.90 Modem
- Integrated 802.11b Wireless Connectivity
- Modular DVD/CD-RW Combo Drive and Floppy Drive
- Microsoft Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- \$2599* or as low as \$73/mo. (14.9% APR for 48 mos.)³



Solo 3450

\$1899*

Thin is definitely in.

- 12.1" XGA TFT Active Matrix Display
- Mobile Intel Pentium III Processor 750MHz
- 320MB SDRAM
- 20GB Ultra ATA Hard Drive
- Integrated v.90 Modem
- Modular CD-ROM Drive and Floppy Drive
- Microsoft Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- \$1899* or as low as \$53/mo. (14.9% APR for 48 mos.)³



Solo 5350

\$1499*

A lightweight heavyweight.

- 14.1" XGA TFT Active Matrix Display
- Mobile Intel Pentium III Processor-M 1.06GHz
- 256MB SDRAM
- 10GB Ultra ATA Hard Drive
- Integrated v.90 Modem
- Modular 8x DVD-ROM Drive
- Microsoft Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- \$1499* or as low as \$42/mo. (14.9% APR for 48 mos.)³



Solo 1400

\$999*

(After \$100 mail-in rebate.)⁴

A great notebook doesn't have to be expensive.

- 14.1" XGA TFT Active Matrix Display
- Mobile Intel Celeron® Processor 850MHz
- 128MB SDRAM
- 10GB Ultra ATA Hard Drive
- Integrated v.90 Modem
- Integrated 24x CD-ROM Drive and Floppy Drive
- Microsoft® Works Suite 2002¹
- Microsoft® Windows® XP Home Edition
- \$999* or as low as \$31/mo. (14.9% APR for 48 mos.)³ (After \$100 mail-in rebate.)⁴

Gateway PCs use genuine Microsoft® Windows®

<http://www.microsoft.com/piracy/howtotell>



Gateway Money;)Ware™ Package

Get ready for the tax season and organize your finances with ease using Gateway's Money;)Ware package. Priced at \$129 (with system purchase).¹

Or get Microsoft® Money Suite 2002 \$99 (with system purchase).²



Gateway Photo;)Ware™ Picture This! Photo Solution

This all-in-one package lets you take photos and print them out using your Gateway PC. Prices starting at \$99 (with system purchase).¹

800-555-2099
En Español 800-555-2052

Come into your local
Gateway store.

gateway.com



AOL Keyword: Gateway

and repayment term may vary. ¹For rebate details visit www.gateway.com/rebate. ²Savings based on cost of total cost of cable modem, professional installation and three months of broadband service, which are all included with this offer. These costs vary by market and customer's actual savings will depend on the provider offerings available in their area. Call 1-800-846-2000 for details. ©2002 Gateway, Inc. All rights reserved. Gateway Terms & Conditions of Sale apply. Gateway.com and Gateway Country Stores, LLC are separate legal entities. Gateway, the Gateway Stylized Logo, the Black-and-White Spot Design and Solo are trademarks or registered trademarks of Gateway, Inc. in the U.S. and other countries. The Intel Inside Logo, Intel and Pentium are registered trademarks and Celeron is a trademark of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. America Online and AOL are registered servicemarks of America Online, Inc. All other brands and product names are trademarks or registered trademarks of their respective companies. Ad code: 007739

New Technology Breakthrough!

Build & Automate:

- Fastest Engine
- Transparent On-line Defrag
- Smart Scheduling
- Full Network Controls
- Push Installation

Full Compatibility:

- Windows 9x
- Windows ME
- Windows NT
- Windows 2000
- Windows XP

Diskeeper 7.0

Maximum System Performance — Zero Administration

Automatically eliminate disk fragmentation and unleash full system speed — on one desktop or across your entire site!

NEW DISKEEPER® 7.0 "Set It and Forget It"™ disk defragmenter for Windows® is so advanced it runs itself, precisely when needed. It's like hiring an expert to constantly monitor your system's performance and keep it at peak levels. New Diskeeper 7.0 defragments drives so thoroughly and with such blazing speed, it makes manual "built-in" technology completely obsolete.

In today's economic climate, it's just as important to know that Diskeeper 7.0 can extend the productive life of your systems up to three years, significantly reduce your TCO and cut help desk calls in half. It's one reason 9 out of 10 corporations use Diskeeper over any other defragmenter. In fact, it costs money every day your machines are running without Diskeeper. *Follow the link on this page to buy it now.*

www.pw1.diskeeper.com



Visit our web site at
www.execsoft.com
1-800-829-6468

Advanced Features:

- **New!** "Push Install" eliminates the time and cost of manual installation with fast, two-click remote operation.
- **New!** Microsoft recommended lightning fast boot-time defrag for important system files — remotely control & schedule across site.
- **Exclusive:** "Smart Scheduling"™ monitors and maintains peak system performance intelligently and unobtrusively without requiring assistance.
- **Certified** at the highest level for Windows XP/2000/NT® and fully compatible with Windows 9X.



"Disk fragmentation can cause performance problems. You should consider running a defragmentation program on a regular basis."* — Microsoft Windows NT Server Resource Guide

© 2001 Executive Software International, Inc. All Rights Reserved. DISKEEPER, Executive Software, the Executive Software logo, "Set It and Forget It" and "Smart Scheduling" are either registered trademarks or trademarks of Executive Software International, Inc. in the United States and/or other countries. Microsoft, Windows, and the flag logo are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All other trademarks and brand names are the property of their respective owners. *From Microsoft Windows NT Server Guide. Reproduced by permission of Microsoft Press. All Rights Reserved.

LETTERS

LETTERS@PCWORLD.COM

**COLOR PRINTER
HEADACHE**

**SITE LISTING FEES
PROTESTED**

**A LITTLE RUSE
FOR PRIVACY**



GOTCHA! THE XP DEBATE CONTINUES

REGARDING "XP's Gotchas" [*News and Trends*, January]: I run my computer very hard, and I am completely impressed with the stability of Windows XP. In my opinion this is the best operating system Microsoft has put out since Windows 95. Let's face it: There will never be a perfect OS. People have different uses for their systems, and making a computer compatible for everyone is nearly impossible! So to those who are experiencing loads of problems with XP, I do sympathize. But what other choices are you left with?

*Alexander Setzler
Brooklyn, New York*

LETTER OF THE MONTH

The Best Advice Money Can't Buy

EVER SINCE THE PC became a mainstream consumer product, we haven't heard the end of PC problems, their elusive solutions, and the shortcomings of tech support. I'm always appalled when I read of people spending hours on hold for tech support, getting wrong advice, or paying for costly technician visits—some ending up with issues never resolved.

What irks me even more is the lack of attention given to the best technical support money *can't* buy: advice from friends.

I HAVE DECIDED to stay with my Windows 95 system until I hear better news about XP. I think it stinks that people who purchase a brand-new computer with Windows XP preinstalled should have to download numerous fixes to run it properly. Is there any other totally new product that the customer needs to repair by himself? People who defend Microsoft ought to take an objective look at what is really going on: Can't buy a new PC without XP. Can't run a new machine without fixing it myself. Is this supposed to be good for me?

Terry Murray, Cincinnati

ADD THIS TO your list of "gotchas": As it turns out, XP is not capable of recognizing CompactFlash cards with more than 32MB of storage. One major reason I upgraded from Windows Me was the better digital imaging controls advertised for XP. Apparently, someone at Microsoft forgot to check compatibility with the lat-

The Internet also has many resources that provide solutions for PC problems. If you can't find the answers there, surely there's someone in your circle of friends and family who knows something about the issue, and maybe they know someone with the exact solution for your problems.

We learn more from a knowledgeable friend than from a heated two-hour discussion with a techie on the phone. Never call tech support again.

Joel Taimango, via the Internet

est storage devices for digital cameras. The current "fix" from HP and Microsoft is to use a card that is smaller than 32MB or to purchase a card reader.

Brad Calvert, via the Internet

YOUR ARTICLE WAS right on the money. I have an HP ink jet printer that is—or was—capable of double-sided, large-format, and high-resolution printing. Although Windows XP has drivers that work with my printer, I am no longer able to access these features, which prompted me to buy this ink jet in the first place. It seems HP no longer offers online support for my product, and there are no upgrades or fixes available to make my printer compatible with Windows XP.

Linda Lyons, via the Internet

SQUEEZING OUT SMALL-BUSINESS SITES?

JANUARY'S "New Web Survival Guide," in the section on paid placements in search engine listings, mentions that "Yahoo does permit a commercial Web site operator to pay a fee to expedite the review process" and also "does not guarantee inclusion in the directory."

Yahoo and several other major search engine sites now require that commercial sites *must* pay for their listings. This means that if you have a small business and want to get listed in Yahoo, it will cost you hundreds of dollars just to get looked at—and eventually only large businesses will have the financial clout to be listed.

That's bad news for small-business sites and the Web developers that support them. I, for one, can't afford to send Web directories several hundred dollars each in hopes of getting a listing. Several of my sites were listed in Yahoo before it went with this "pay to play" model, and they enjoyed moderate traffic. Shortly after ►

Yahoo's change, traffic dropped off dramatically, and has declined steadily since.

Roy Petersen, via the Internet

CAVEATS ON PRINTERS

JANUARY'S "All-Purpose Printers" was informative but failed to mention a problem common to many ink jet printers. When printing black-and-white photos, they use cyan, magenta, and yellow ink. However, producing black-and-white

CORRECTIONS

THE TANGENT VALERA in third place on the value portion of February's *Top 15 Office PCs* chart should have been listed as having a 1.2-GHz Athlon processor, a 30GB hard drive, and an EVGA GeForce2 graphics card. These configuration errors do not affect either the system's position on the chart or its overall value score.

PC World regrets the errors.

images this way is an archival disaster. Producing them with black ink alone results in better image permanence.

Bob Nadler, via the Internet

I SUGGEST ANOTHER category for rating printers: "Ease of unpacking and repacking to return a unit that doesn't work."

My ratings, from my own experiences:

- Canon S300: Most difficult to unpack, with sealing tape everywhere. Ink cartridges are individually wrapped with tie twists.
- HP Deskjet 940c: Medium amount of difficulty to unpack; moderate tape.
- Lexmark Z33: Easiest to unpack; no excess packing material; minimal tape.

Robert Newcombe
La Cañada, California

A WILY TRICK

STEVE BASS HAS some good advice in his January *Home Office* column, "Wily Tricks to Thwart Rascally E-Thieves." However, he overlooks one trick I've used for years.

Most organizations that request your birth date or Social Security number do so only for identification, and don't check it for validity. I give them a false SSN and birth date—and have had no problem.

Unless an organization needs to pull a credit report on you, it'll never know the difference. And you've built in another small layer of identity protection.

Tom Tcimpidis, via the Internet

NETWORKING IN A SNAP

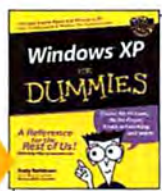
REGARDING JANUARY'S *Step-By-Step* ["Set Up a Network in a Snap"]: I just completed such a project, and the result was great. But I found that Microsoft's networking software in Windows Me and 98 worked better than the software provided by my hardware's manufacturer. This alternative was not mentioned in the article.

J. Bernstein, via the Internet ■

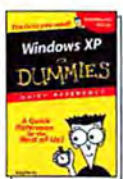
PC World welcomes your letters to the editor. Send e-mail to letters@pcworld.com.

Nobody Does Windows XP Like We Do

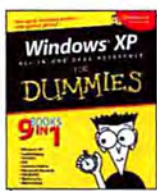
The new edition of the all-time #1 computer book bestseller!



For Dummies®



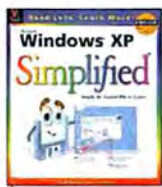
For Dummies®
Quick Reference



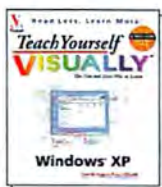
All in One For
Dummies®



Great Digital Media
with Windows® XP



Simplified®



Teach Yourself
VISUALLY™



In an Instant



Bible

We offer Windows XP guides for every user level and learning style—including one that's perfect for you.

www.hungyminds.com

Pick up the book that's right for you
—visit your computer book retailer today!

For Dummies, the Dummies Man logo, A Reference for the Rest of Us!, Visual, the Visual logo, Teach Yourself VISUALLY, Simplified, Read Less - Learn More and all related trade dress are registered trademarks or trademarks of Hungry Minds in the United States and other countries, and may not be used without written permission. Windows and Windows XP are trademarks or registered trademarks of Microsoft Corporation. All other trademarks are the property of their respective owners.

Anthro on the inside.
Milan, Paris and London
on the outside.



fit
system



When you first glance at our new fit system furniture, you'll likely think, 'Hey, looks like Anthro's designers spent their summer vacations in Europe.' Then when you start putting your computer and accessories on (and in) your fit furniture, you'll realize it's as sturdy and flexible as anything Anthro makes. Our good folks are ready to help you choose the right fit system for you. Contact us at ANTHRO.COM or 1-800-325-3841.

ANTHRO
TECHNOLOGY FURNITURE

Sound
BLASTER

AUDIGY

24-bit Audio that will Astound you...

Connectivity that will Empower you



Easy File Transfer and Create Home Movies



Back up Massive Data and MP3 Files



Low Latency LAN-Like Gameplay



Sound Blaster®
Audigy™ Platinum eX
with dual SB1394 ports

Sound Blaster® Audigy™ offers stunning audio quality with 100dB SNR, 24-bit audio clarity and EAX® ADVANCED HD™ effects. Combine that with the power of the integrated SB1394™ port and you have the definitive PC audio solution. The SB1394™ offers optimum performance and speed by allowing you to connect up to 63 other IEEE® 1394 enabled devices including external hard drives, hi-speed CDRWs and other Sound Blaster® Audigy™ cards. With an amazing transfer rate of up to 400 Mbps, it enables you to seamlessly transfer/back-up massive MP3 collections, enjoy low latency LAN-like multi-player gameplay and PC to PC networking and also hook up your DV Camcorder to edit your home videos.

Learn more about Audigy™ ADVANCED HD™ and SB1394™ at www.soundblaster.com.

©2002 Creative Technology Ltd. The Creative logo is a registered trademark of Creative Technology Ltd. in the United States and/or other countries. All brands or product names listed are trademarks or registered trademarks and are property of their respective holders.

24bit
96kHz / 100dB SNR

EAX
ADVANCED HD

DOLBY
DIGITAL

CREATIVE



CONSUMER WATCH

ANNE KANDRA

INSURING YOUR PC

PRIVACY WATCH:
SNOOPY SOFTWARE

ON YOUR SIDE: A PC
WITH NO RECOVERY DISC

When Bad Things Happen to Good PCs

Computer catastrophes happen. Here's how to prepare—and recover.



KAREN HERTZOG AND her husband had just finished dinner. "As we paid the bill, we got a call at the restaurant saying there had been an accident at our house," says Hertzog, a dog trainer. "The ten-minute drive home took us about two minutes." A fire had started in the toaster of Hertzog's Emmaus, Pennsylvania, home.

The couple's newly renovated farmhouse had to be gutted and completely restored, and most of their furniture and appliances were ruined. But damage to Hertzog's PC, where she stored her client data and other records, was less apparent.

The fire was confined to the first floor and Hertzog's office is upstairs. "Most of [the office equipment] looked fine," she says. "So we sent it off to a company that cleans things after a fire." Over the next months, though, Hertzog noticed the performance of her system deteriorating.

"It was a gradual process," Hertzog says. "First my external floppy drive went, then my CD-ROM. Next was the Zip drive. Meanwhile, my copier, printer, and fax machine were also breaking down and rusting—even though they were never directly exposed to fire or water."

Computer calamity takes many forms: theft, an accidental drop, a hard-drive crash, even a Kool-Aid spill. It can happen any time, so it makes sense to prepare.

Fortunately, Hertzog was able to save all the data on her computer and eventually persuaded her insurance company to replace the damaged PC and other office equipment, but it wasn't easy. The company wanted her to provide, among other things, evidence describing how a PC could be damaged from exposure to smoke and high temperatures. "I spent hours doing research," Hertzog says, "and it seemed that nobody knew much about what happens to PCs after a fire."

KEEP IT COOL

MICHAEL BEARY, general manager of ESS Data Recovery in Carbondale, Illinois, explains it simply: "Heat causes the metal oxide coating on the hard drive platters to expand. This affects track alignment and weakens the magnetic strength of each bit over time, eventually leading to hard disk failure." In fact, Beary says, heat is the number one cause of hard drive failure. And it doesn't take a catastrophic house fire to toast a PC's hard drive or other component—even a heavy session of multitasking could do it. "As hard drive technology packs more and more bits into each square inch of platter space," Beary says, "hard disks become more and more sensitive to heat. Since most PCs don't come with hard drive cooling units, the best way to preserve the life of your hard drive is to install a fan." (The fan in your PC may be cooling the CPU only.)

Beary also advises customers to stop using their PCs at the first signs of ►

instability. "A partially failed device is the most dangerous," he says, "because users will keep trying to use it. The longer it's used, the more damaged the drive gets, and the less likely it is to be recovered."

The cost of restoring data isn't small. It can range from \$300 to \$4000, Beary says.

You may never have an experience like Hertzog's. But eventually, as Beary warns, "every hard drive will fail." And whether that failure is due to fire, flood, or mysterious ghosts in the machine, you'll want to be sure you have a safety net. Your first step? Back up your data. Then call your insurance agent and find out exactly how—or whether—your PC is covered. The answer may surprise you. Some standard homeowners' and renters' insurance policies don't cover PCs at all. Those that extend any coverage limit it to events such

as theft, fires, storms, and power surges; they almost never cover accidents such as spills, drops, and general hardware failure. Some put a cap on the amount they'll pay to cover a damaged or lost computer, and many don't cover data recovery.

REPLACING A DINOSAUR

AND SINCE PCs depreciate faster than used Yugos, even reassuring promises to pay for replacing your system aren't so reassuring when you're talking about a computer. Let's say you bought a PC with a 15-inch monitor and a 500-MHz processor two years ago. If your system is destroyed, many policies would pay only for replacing that now-antiquated system. With the cost of the deductible, filing a claim might not even be worthwhile.

Also, many homeowners' policies don't

cover business PCs at all, so if you have a home office, don't assume your PC is included like your television and fridge. You might need to buy additional coverage—known as an endorsement—for it.

Many insurance companies offer policies specifically for PCs. These policies have fewer restrictions than standard plans. For example, they'll cover accidents such as drops or spills both at home and away, and they carry little or no deductible. PC-specific policies are worth considering if you have an expensive system or if you travel frequently and want to be sure your notebook is protected. These policies often cover the full replacement value and the cost of data recovery should your PC fail for nearly any reason.

Finally, here are some additional ways to protect against data disaster: ▶

PRIVACY WATCH

Stopping the Snoops Within Your Software

EVER HAD A "FRIEND" who listens sympathetically to the details of your personal life, then turns around and repeats the information to everyone? Some software is becoming more and more like that gossipy pal: It nestles into your hard drive—and then reports everything it sees to its creators.

Sometimes the check-ins are benign, and many software manufacturers are up-front with what their programs disclose about you. Antivirus scanners, for instance, download updates to keep themselves working properly, and might report back on viruses your PC contracts.

Other programs are nosier. Take, for example, GoZilla, a free download manager. This tool from Radiate lets you resume an interrupted download or pause large downloads—certainly a useful application for dial-up Internet users. But GoZilla also collects user demographics, keeps an eye on where you surf, and tracks your online activity. GoZilla is very blunt about its intentions: The company will share any data

it collects with anyone it wants. It gets kudos for honesty, but the company's forthrightness doesn't offer much solace.

Even when the vendor's intentions are noble, snoopy software can backfire. Last year, Verant Interactive, operators of the online game EverQuest, decided to crack down on players who were using files on their hard drive to cheat. Verant decided the only way to end the unfair play was to require that any new player to a game of EverQuest allow a Verant program to scan their entire hard drive

for the cheat files. After a fierce weeklong outcry against what many considered to be the digital equivalent of a cavity search, Verant backed down. The program was never released.

Still more insidious are programs that bait you with offers of great free services and then turn around and exploit your personal information. Gator, an online wallet program that makes filling in online order forms easier, also targets advertising to you based on your Web surfing history and your geographical location.

That's fine, as long as you know what you're getting into. Unfortunately, that may not always turn out to be the case. One way that Gator convinces users to accept its ActiveX applet is through a dialog box that pops up unbidden at other Web sites. Surfers who don't read the box carefully can mistakenly assume that Gator, like Flash, is necessary for viewing the Web site. If you make this assumption and click

'Yes,' Gator will slip onto your system and start to track your online behavior via cookies and other silent means.

Ultimately, there's only one way to take complete control of the information that leaks out of your system as a result of snoopy software: Get a good firewall program like ZoneAlarm (www.zonelabs.com). It should at least let you know when some application decides to phone home with information about you.

— Andrew Brandt



ILLUSTRATION: JACK GALLAGHER

◆ Make sure to store backups of essential business data in a separate location. Online backup services such as @Backup (www.backup.com) and Virtual Backup (www.virtualbackup.com) offer a convenient method. But be warned: Without a broadband connection, making an online backup can be an all-day exercise.

◆ Save all your receipts and paperwork for equipment and repairs. Insurance companies love documentation.

◆ Consider using special software such as the \$25 Active Smart (www.ariolic.com/activesmart), which alerts you to hard disk trouble before your data is destroyed.

◆ Look for a data recovery company that offers free telephone consultation and won't charge you if it can't recover your data. If your hard drive is still under warranty, ask its manufacturer for a list of approved data recovery firms. Otherwise, you risk voiding the warranty.

Karen Hertzog says, "I never thought something like this would happen to me."

Fortunately, serious fires are rare, but computer crises hit hundreds of people every day. Sooner or later, one may happen to you. Be ready. ■

Anne Kandra is a contributing editor, Grace Aquino an associate editor, and Andrew Brandt a senior associate editor for PC World. E-mail us at consumerwatch@pcworld.com.

ON YOUR SIDE

No Recovery CD With New Computer

I BOUGHT AN HP Pavilion 7965 preloaded with Windows XP, but I received no OS recovery disc. HP said it no longer provides the CD-ROM with its XP-equipped systems; the recovery software is on a hidden partition of the C: drive. If my hard drive breaks during the warranty period, I can send my system to HP to have it replaced with a new drive with the same software. But what happens if my hard drive crashes after the warranty expires? Did I not pay for the XP license when I bought the computer? Am I not entitled to the software that came with my PC?

John Schwoppe, Omaha, Nebraska

On Your Side responds: Pavilion Product Manager Mark Bony says HP placed recovery software on the hard drive to make recovery easier than installing from a CD-ROM. But since some users prefer to have the disc, HP is working to have recovery discs available for the cost of shipping. If your PC's warranty has expired, Bony says, you will be able to buy a replacement hard drive from HP preloaded with the software that came with your PC. If you want to buy a replacement hard drive from another manufacturer, HP will replace your software, according to Bony.

-Grace Aquino

HOW DO YOU SAY PERFORMANCE
COMBINED WITH EXCEPTIONAL VALUE
IN JAPANESE?



No matter where in the world you translate it, nothing screams performance and value like iiyama professional monitors. From the beginning we've set standards as the first FST-type color monitor in the world, the first to offer a 3-year warranty on CRT, parts and labor, and the first to earn unprecedented 12 *PC World* Best Buy awards.

How do we do it? By supplying products of uncompromising quality and performance at a competitive price. Our award-winning line up meets a broad range of requirements for size, clarity, technology and value.

Discover the iiyama difference. See for yourself why our quality makes us the industry leader. Call us toll-free, 800-394-4335 or visit www.iiyama.com.



iiyama

EXCEPTIONAL PERFORMANCE & VALUE RIGHT UNDER YOUR NOSE.

© 2001 iiyama North America. All rights reserved.



What powers *your* success?

Gateway's Olympic nerve center provides the computing infrastructure for multiple venues before, during and after the Olympic Winter Games of 2002, with business taking place at 10 separate venues spanning 1,250 square miles over 17 days. As the Official Computer Hardware Supplier to the Salt Lake 2002 Games, Gateway has a full line of

desktop, notebook and server solutions powered by Intel® processors to meet the rigorous demands of the Olympic Winter Games — and your business. Our unrivaled technology solutions, fiercely competitive values and dedicated team of business sales representatives can help meet your business goals as well. Let us champion your success. Call us today.



Gateway powers the Olympic Winter Games
with great people, great solutions and great value.

1. Prices and configurations subject to change without notice or obligation. Prices exclude shipping and handling and taxes.

2. Limited warranties and service agreements apply; visit gateway.com or call 1-800-846-2000 for a free copy. Technician will be dispatched, if deemed necessary by Gateway, following other troubleshooting methods. On-site service not available in all locations; you may be required to take or send your product to an authorized service location. On-site service excludes mice, keyboards, docking stations, external peripherals and monitors.

3. FCC Class A products may not be sold for home use.
4. Maximum data transfer rate dependent upon multiple variables.

©2002 Gateway, Inc. All rights reserved. Gateway Terms & Conditions of Sale apply. Not responsible for typographical errors. Gateway.com and Gateway Country Stores, LLC are separate legal entities. Gateway, the Gateway Stylized Logo, Solo and the Black-and-White Spot Design are trademarks or registered trademarks of Gateway, Inc. in the U.S. and other countries. The Intel Inside Logo, Intel, Pentium and Celeron are registered trademarks in the U.S. and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the U.S. and other countries. Ad Code: 007702

Take your business to the next level with Gateway, Official Computer Hardware Supplier to the XIX Olympic Winter Games.

Gateway® 500L Business Desktop

Packed with processing power, expandable memory and high-quality graphics for design and presentations. The power you need at an affordable price.

- Intel® Pentium® 4 Processor 1.50GHz
- 128MB SDRAM
- 20GB Hard Drive
- 32MB AGP Graphics, Integrated Intel 10/100 Ethernet and Integrated Business Audio
- 15" CRT Monitor (13.8" viewable)
- 20X min/48X max CD-ROM Drive
- Microsoft® Windows® XP Professional

\$999¹



Gateway 930 Series Server

A new high-speed server for workgroups, E-Commerce and other applications. Excellent data storage capacity, advanced features to prevent downtime.

- Supports 1.26GHz Intel Pentium III Processor with 512KB Cache (Dual-Processor Upgradable)
- 256MB PC133 ECC SDRAM (expandable to 4GB)
- 18GB Ultra160 SCSI SCA (10,000RPM) Hard Drive
- Integrated 1-Gigabit Ethernet
- FCC Class A Emission Standard¹

Starting at **\$1499¹**



Who powers *your* success?

Gateway, a leading seller of consumer and business PCs in the country, was named the official computer hardware sponsor of the 2002 Olympic Winter Games as well as a sponsor of America's Olympic Team for 2002 and 2004. Gateway will supply the Salt Lake Organizing Committee and the U.S. Olympic Committee with more than 5000 PCs to help track official event results, statistics and standings for Olympic officials, athletes, coaches, spectators and the media — a large-scale operation requiring Gateway's world-class technology capabilities powered by Intel® processors. When the Games are over, The Gateway Foundation will donate virtually all of the computer systems used by the Salt Lake Organizing Committee to schools and community associations across America.

Gateway E-3600 Managed Desktop

This mainstream, network-ready PC delivers centralized PC management and the power to run multiple programs.

- Intel Pentium 4 Processor 1.50GHz
- 128MB PC133 SDRAM
- 40GB (7,200RPM) Ultra ATA Hard Drive
- 32MB AGP Graphics, Integrated Intel 10/100 Ethernet and Integrated Business Audio
- 17" CRT Monitor (15.9" viewable)
- Microsoft® Windows® XP Professional
- 3-Year Limited Warranty²
- 3-Year On-Site Service²

\$1149¹



Solo 5350LS Notebook

Power through projects with a notebook that rivals the performance of a desktop — yet offers mobility to go wherever the job takes you.

- 14.1" XGA TFT Active Matrix Display
- Mobile Intel Pentium III Processor-M 1.06GHz
- 256MB SDRAM and 10GB Ultra ATA Hard Drive
- Modular 3.5" Diskette Drive
- Modular 24X CD-ROM Drive
- Integrated 10/100 Ethernet
- Integrated V.90 56K Modem
- Microsoft® Windows® XP Professional
- 3-Year Limited Warranty²

\$1599¹



Gateway® PCs use genuine Windows® Operating Systems
<http://www.microsoft.com/piracy/howtotell>

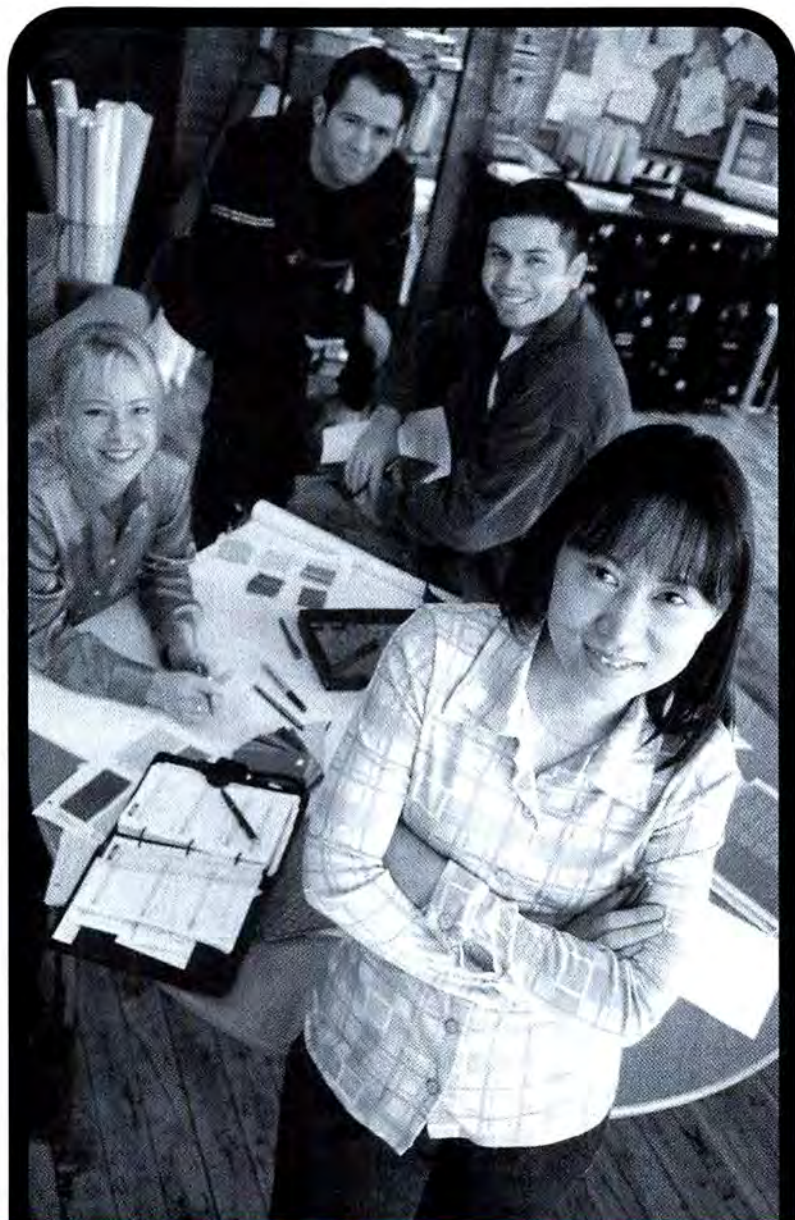
800.846.2572

Come into your local Gateway® store.

gateway.com



The most difficult part of running a small business just went away.



Starting a business is exciting.

Running one is another story. With

Oracle Small Business Suite, all

your business processes are streamlined

and connected in one easy-to-use

system. You save time. You save

money. You grow your business.

For just \$99 a month. Now that's exciting.

“★★★★★”

5 Stars
PC Magazine

December 2001

Call 1-800-SmallBiz or
visit oraclesmallbusiness.com
for a Free Trial.

ORACLE

smallbusiness suite



WEB SAVVY

BRAD GRIMES

Yet Another Word From Our Sponsor

The new, annoying, unavoidable world of online ads.

YOU DON'T NEED a talking head like me to tell you the Web is rife with advertising. And those pesky online marketers are only getting started. Ads keep growing more intrusive—from pop-up ads to videos that take over your browser.

Here's my take on Web ads: I'm happy to be bombarded with digital commercials if they keep my favorite free services—like EFax, the New York Times's Web site, and Yahoo Finance—in business. (In fact, PCWorld.com uses a number of advertising techniques, some fairly annoying, to pay the bills.) And some of the new in-your-face ads don't faze me. For instance, sites like Salon.com have tried forcing people to view oversize ads before they can see content. As long as you agree to accept those sites' cookies, you should see the ads only once a day.

ENOUGH IS ENOUGH

BUT I HAVE A BIG problem with online companies that use technology to manipulate or annoy me more than offline advertisers already do. Case in point: A site I frequent ran ads recently for a truck company. The silhouette of a monster

stomped across the screen, obscuring most of the Web page. Then a truck fell from the sky, spewed some slogan, and disappeared. After this interlude, I could proceed. It was as if Britney Spears had sauntered across the TV screen during *Everybody Loves Raymond* to hawk Pepsi.

Pop-under ads are another annoyance. They differ from pop-ups—and elude some anti-pop-up utilities—because they open in a window behind your main browser window. Then they sit on your desktop until you notice them. Advertisers are also dabbling in video ads taken straight from TV. Recently my Net connection had to swallow a Coke ad that bogged down one of my favorite sports sites.

Unfortunately, there's not much that a Web surfer can do about online advertising. One way you can respond: Avoid Web sites that serve up obnoxious advertisements. And stay away from utilities like Gator (discussed in *Privacy Watch* on page 38) that snoop on you and hijack other companies' sites.

Another option is to download one of



the many free ad-filtering programs out there. I've found, however, that these utilities are far from perfect and need constant tweaking. My favorite ad killer is AdSubtract, but it erased ads with such gusto that it also filtered out photos and icons. PopUp Killer kept closing my main browser window, and WebWasher let some pop-under ads through. (Visit find.pcworld.com/12282 for download links to all three programs.)

If you want to stomp as many ads as possible, you can disable JavaScript in your browser (see find.pcworld.com/18521 to learn how). But chances are good that, once you do so, some of your favorite sites will no longer work.

The bottom line is, you can't avoid online ads entirely. And that's okay. We all know Web sites need advertising to survive. But if a site can't stay afloat via ads that don't drive its customers crazy—or via subscription fees, e-commerce, or some other means of revenue—it probably wasn't useful in the first place. ■

Contact PC World Contributing Editor Brad Grimes at websavvy@pcworld.com.

GIMME FIVE

Keep Your Finances in Order

- 1. Yahoo Finance:** Still the simplest, fastest-loading personal finance site. Has stock quotes and other basics, plus a growing array of financial tools, including online bill payment. quote.yahoo.com
- 2. MSN Money:** Great commentary from CNBC and terrific, insightful investment columnists. moneycentral.msn.com
- 3. Quicken.com:** Distinguishes itself with an impressive section on starting and run-

- ning a small business. Also includes tax and retirement advice. www.quicken.com
- 4. Gomez.com:** Ratings of online banks, brokerages, insurance carriers, mortgage lenders, credit card sites, and real estate agencies. www.gomez.com
- 5. SmartMoney.com:** If money issues confuse you, this is a good place to get organized. Clear, concise, how-to advice on all financial matters. www.smartmoney.com



Please resist the temptation to strut into your meetings.



SONY®

DREAM ON™ >>>>

A Powerful Notebook built for those who mean business. The GR comes loaded with all the tools, software, and connectivity you need for creating stellar presentations, finishing projects in record time, or simply adding some flair to your everyday work. And the best part is, you'll look good doing it.

GR
VAIO

GR Series Notebooks

Microsoft® Windows® XP Professional or
Microsoft® Windows® XP Home Edition

AGP-enabled ATI MOBILITY™ RADEON™ -D graphics chip

16 MB DDR SDRAM

30 GB² removable hard drive

Integrated 10/100Base-T Ethernet

Swappable multi-bay with CD-RW/DVD combo drive

Dual battery capability

Sony digital video/audio editing software package

1.5" thin, about 6 lbs.³ light

VGA out/NTSC video out

Other configurations available at select dealers

Models

Starting at \$1,599*

CR390

Mobile Intel® Pentium® III
Processor 1.20 GHz¹ - M

15" SXGA+ TFT screen

512 MB SDRAM

CR370

Mobile Intel® Pentium® III
Processor 1.13 GHz¹ - M

15" XGA TFT screen

256 MB SDRAM (expandable to 512)

The Ultimate in Connectivity

The GR comes equipped with an iLINK® (IEEE 1394) interface, Memory Stick® slot, USB, and supports wireless LAN capabilities. Connect to an array of business-related peripherals to easily transfer and store all your audio, video, and data files. High connectivity means higher productivity.



iLINK



Memory Stick



Wireless LAN

BUY NOW AND GET A FREE WIRELESS MODEM FROM GOAMERICA**

When you sign a one-year contract with CoAmerica's wireless Internet service.

Visit your local retailer or www.sony.com/vaio. To find a reseller near you, call 877-276-SONY. Also available at CDW, Insight Direct, Microwarehouse, PC Connection, PCMail, and Zones Incorporated.

Sony VAIO GR with Microsoft Windows XP. Experience it.

Sony PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

©2002 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Prices, specifications, and promotions are valid only in the U.S. and are subject to change without notice. Prices and promotions do not include applicable sales tax or shipping and handling. Manufacturer suggested retail price. Actual price may vary. Sony, VAIO, the VAIO logo, the Sony logo, Memory Stick, iLINK, and Dream On are trademarks of Sony. Intel, the Intel Inside logo, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries. All other trademarks are trademarks of their respective owners. This PC meets the minimum hardware requirements to run Microsoft Windows XP. Hardware drivers, if necessary, are available from Sony upon the release of Windows XP. Certain software product(s) included with this computer may include features such as copy protection and content management technology. USE OF THE SOFTWARE PRODUCT(S) REQUIRES AGREEMENT TO APPLICABLE END-USER AGREEMENTS AND FULL COMPLIANCE WITH APPLICABLE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and privacy policies will be detailed during initial launch of the software product(s), or upon certain re-installations of the software product(s) or reconfigurations of the computer, and may be completed by Internet or telephone (toll charges may apply). Preinstalled versions of software may not be identical to retail versions. ¹GHz denotes microprocessor internal clock speed; other factors may affect application performance. ²GB means one billion bytes when referring to hard drive capacity. Accessible capacity may vary. ³With weight saver in multi-bay. ⁴iLINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connector. All products with an iLINK connector may not communicate with each other. *With \$100 Mail-in Rebate on GR370 and 390 notebook models only. Offer valid 1/15/02-5/31/02. While supplies last. **Offer valid with the purchase of an eligible Sony VAIO notebook and enrollment in GoAmerica's 12-month service plan in the U.S. only. Other restrictions and early cancellation fees may apply; wireless coverage not available everywhere. While supplies last. Valid 7/1/01-3/31/02.



MOUTHWATERING

SIZZLING

42" PLASMA DISPLAYS

When a quick-service restaurant wanted their burgers to look as good as they taste, they came to Hitachi. Now our Plasma Displays are showing off their product, and winning appetites in stores all over. Incorporating ALIS technology, Hitachi's award winning plasma displays render rich and vibrant color, achieve distortion-free images, and increase the screen's longevity. Whether you are showing images or sharing information, Hitachi's Plasma displays are the ultimate presentation tool to make you and your presentation shine. And nothing is better for business than that.

For more information about Hitachi presentation products, call 1-800-225-1741 or visit www.hitachi.com/mmpp

HITACHI
Inspire the Next



HOME OFFICE

STEVE BASS

Going Wireless? Consider Cost, Security

Sure, wireless networks are convenient, but here's why I'm sticking with cables.

"IT'S THE SIZE of a Buick," I shouted to my wife, Judy, through the floorboards, "and it's got fangs!" I was crawling under the house, yanking new cabling for a PC that I was adding to our home network. "It's just a spider," she yelled back. Sometimes she's no help at all.

There are now four PCs wired to the network: mine, my wife's, a test PC, and a new system in the guest room for visitors. (Yep, I said *wired*. More on why in a sec.)

It cost me only \$120 for four network cards, a router, and cabling—not counting the days I spent wriggling around in our house's crawl space, yanking new wire, and fending off lethal arachnids.

I could have avoided my brush with death by using a wireless network, which connects a desktop transmitter to a DSL or cable modem. (By the way, you can call it Wi-Fi or 802.11b if you want to sound like a tech nerd.) The transmitter broadcasts the Internet connection to transceivers—sort of like two-way radios—in each PC on the network. The transceivers

also let you share files and printers. Wi-Fi has a top speed of 11 mbps, but real-world speeds are about 5 mbps—slow in comparison with wired-network speeds of between 10 and 100 mbps. Still, 5 mbps is plenty fast for my networking needs. Unfortunately, though, wireless also costs at least twice as much as wired.

I test-drove two brands of wireless networks: the Orinoco Residential Gateway RG1000, and the EtherFast Wireless AP from Linksys. Linksys's system has the edge over Orinoco's because it's a little cheaper (under \$350 total for Linksys, versus almost \$400 total for Orinoco), but both are a cinch to install. They come with wizards (the software kind, not the ones with pointed hats) to help you get everything up and running in about an hour.

agencies, businesses, schools—and even a bank. I could have browsed the Web on someone else's account or created a Hot-mail account and sent untraceable e-mail. If we were unscrupulous hackers, we could easily have broken in and examined—or deleted—files on any of those wireless-networked PCs.

Visit Frank's Web site (wireless.pasadena.net) to get additional details on wireless security and equipment.

Still, you're not powerless to protect your wireless network from intruders. Be sure to turn on WEP (Wired Equivalent Privacy), the IEEE's security protocol that's

part of the Wi-Fi spec, and change its encryption keys weekly. If you're a business user, don't trust WEP alone; add a virtual private network. All networked PCs should have a firewall, and all shared files should be password protected.

Flaws and all, a wireless network can make sense if you don't have a crawl space or an attic to run wires through and you don't want to snake wires down hallways and stairs. And I have to admit that it's nifty to be able to use my notebook's wireless connection from just about anywhere in the house.

Gotta go. The hot tub just hit 104 degrees, which means it's time for me to grab my notebook and go to work. ■

Contributing Editor Steve Bass is president of the Pasadena IBM Users Group. He can be reached at steve_bass@pcworld.com.



EtherFast

★★★★☆

EtherFast Cable/DSL Router (BEFSR41), \$76, or EtherFast Wireless AP + Cable/DSL Router (BEFW11S4), \$179; Wireless USB Network Adapter, \$96; Wireless Network PC Card, \$68 (\$240 to \$343 total, street)

Linksys

www.linksys.com

Orinoco

★★★★☆

Residential Gateway RG1000, \$198; Orinoco USB Client, \$120; Orinoco Turbo 11MB PC Card, \$71 (\$389 total, street)

Agere Systems

www.orinocowireless.com

WIRELESS = WIDE OPEN

SO WITH THE WONDERS of wireless networking, anyone with a steady pulse is probably wondering why I don't cut the cord and go wireless all the way. Well, there's the higher cost I mentioned, but there's a more important reason to wait, summed up in one word: security.

Computer security expert Frank Keeney took me for an eye-opening ride around Pasadena, California. Frank brought along a notebook computer, equipped with a wireless PC Card and an antenna mounted on the car's roof. In a half hour of "war driving" (as he called it), we accessed over 40 wireless networks in homes, real estate

HUGHES



NOW YOUR TEAM HAS SPEED ON ITS SIDE.

Introducing broadband by satellite from DIRECWAY,[™] high-speed Internet that's available everywhere.

Now it's easier than ever to get all the online research you need to put your fantasy team in first place. And it doesn't matter where you live, because DIRECWAY is available all across the continental United States. DIRECWAY is always on, with no dialing up or logging on. And it won't tie up your phone line. Best of all, DIRECWAY gives you super fast downloads and streaming media that's smooth and clear. So you can stay on top of the latest football news, watch highlights online, or do anything else you like. It's the new high-speed Internet service that keeps you in the game, no matter where you live.

For more information, visit us at getDWAY.com



DIRECWAY

Broadband that's out of this world.[™]



BUGS & FIXES

STUART J. JOHNSTON

Windows XP: XPeck Hassles

Microsoft fixes some glitches—including biggies—in its new operating system.

THINKING ABOUT getting Windows XP? Maybe you should wait until the dust settles. My e-mail in-box has been flooded with reports of bad "Xperiences" with the new operating system (see our news story on page 18 for more details on XP's specific problems).

One serious snag: If you purchased a new PC with Windows XP preinstalled, and you subsequently re-install, repair, or upgrade XP, Microsoft says that you may lose some important files and settings, including files you store in XP's Shared Documents folder. This bug does not affect users who upgrade to XP from another OS.

Microsoft issued a patch to fix the problem. Unfortunately, the fix cannot retrieve your lost data and settings—another good argument for frequent backups. Find the patch at find.pcworld.com/20001 or go to the Windows Update site (find.pcworld.com/19081) to grab XP's Critical Updates.

XP SECURITY THREATS

WHAT ELSE IS wrong with Windows XP? This: It allows crackers to get access to your

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.



computer through the Universal Plug and Play feature.

Universal Plug and Play is an extension of the Plug and Play system that has been around for years. Plug and Play is meant to let you automatically use devices connected to your computer—like printers and scanners—without having to futz around with installation disks and device drivers. Universal Plug and Play allows your machine to find and use devices connected anywhere on a network.

However, a pair of flaws in the way that Universal Plug and Play "discovers" devices could enable a bad guy to crash your system, or even take complete control of it.

Devices compatible with Universal Plug and Play send out messages, called *notifications*, to tell XP that they're available for use. A hacker

could send you a message that is designed to look like a genuine notification. In reality, though, the false message would contain too much data, causing Universal Plug and Play to overflow. The malevolent hacker could then run code that circumvents XP's security protections.

A second hole also involves bogus Universal Plug and Play notifications sent over the Net, but is less serious. However, it could also affect Windows Me users if they have enabled Universal Plug and Play. (Windows 98 users would be affected only if they have installed the Windows XP version of Internet Connection Sharing.)

Legitimate Universal Plug and Play notifications sometimes contain the URL of a server where Windows can find information that lets the OS use the device. A fake notification could contain a URL that sends Windows too much information. Fortunately, this hack would only cause your computer to slow drastically or crash. Microsoft's patch takes care of both problems. Visit Windows Update or jump to find.pcworld.com/20002 for the patch. ■

Stuart J. Johnston is a contributing editor for PC World.

IN BRIEF

IE Security Flaws

MICROSOFT HAS posted a cumulative patch for Internet Explorer that fixes all known security holes in IE 5.5 and 6.0, three of which were only recently discovered. Hop to find.pcworld.com/20281 to get this patch.

Romantic Worm

WATCH OUT for W32.Gokar@MM. This worm is suave and comes with subject lines like "Just one kiss will make it better." The worm won't damage your PC, but it will mail itself to everyone in your address book. Go to find.pcworld.com/20003 for McAfee's removal advice or visit find.pcworld.com/20021 for Symantec's instructions.

Beware BadTrans

A KNOWN WORM is back in a new variation, and I've received dozens of infected e-mails from readers. Dubbed W32.BadTrans.B@MM, the worm not only e-mails itself to your friends, but also records your passwords and forwards them to the hacker. Jump to find.pcworld.com/20022 for Symantec's removal information, or to find.pcworld.com/20023 for McAfee's set of instructions.



When you stop coming up with
new challenges, we'll stop coming
up with new monitors.



NEC



More real-world solutions from the best-selling brand of flat panel monitors. Today's specialized applications demand the right tools. So the NEC MultiSync® product line is always growing, always offering better ways to work. You'll find high resolution, flicker-free viewing; a choice of colors; touchscreen and protective glass technologies; flexible integration options; and models that afford both landscape and portrait viewing. Even the industry's first full line of thin-frame monitors for increased versatility in multi-monitor applications. And, unlike conventional CRT monitors, flat panel technology offers space-saving design and 60% less energy consumption for long-term efficiency.

Innovation continues to run in the family: from Ambix™ digital/analog dual input technology that ensures long-term compatibility to XtraView+™ for wide angle viewing to OmniColor™ technology for precise color values. All the display solutions you need—all from the world's largest line of flat panel monitors.

Learn more at www.necmitsubishi.com or call 888-NEC-MITS.

NEC ranked as the #1 flat panel monitor branded vendor in the Stanford Resource—iSuppli Flat Panel Monitor Quarterly Report, Q2 '01. MultiSync is a registered trademark, and Ambix, XtraView+, and OmniColor are trademarks of NEC-Mitsubishi Electronics Display of America, Inc.

©2002 NEC-Mitsubishi Electronics Display of America, Inc.
All rights reserved. Simulated images in monitors.



Our innovative line of thin-frame flat panel monitors allows you to see more image, less frame.

SEE MORE.™

NEC / MITSUBISHI
NEC-MITSUBISHI ELECTRONICS DISPLAY

At this price, businesspeople often
mistake me for a desktop.





The Dell PowerEdge 500SC—the desktop-priced small business server. With up to an Intel® Pentium® III Processor and up to 180GB internal storage, I'm the perfect solution for any company looking for an affordable server to run small networks or workgroups. You get outstanding price-to-performance and a direct relationship with Dell. So, whether it's basic applications, remote sites or dedicated applications, I offer great server functionality at a desktop price. Best of all, I'm easy to set up and ready to expand. But what else would you expect? After all, I am a Dell.



Dell Rated #1 in Intel Server Satisfaction
Technology Business Research
 Corporate IT Buying Behavior and Customer Satisfaction Study
 3rd Quarter
 – December 2001

Dell | Small Business

PowerEdge™ 500SC Server

NEW Basic Server at Our Lowest Price

- Intel® Celeron® Processor at 1.10GHz
- 128MB 133MHz ECC SDRAM
- 20GB¹ (7200 RPM) IDE Hard Drive
- Embedded Intel® 10/100 NIC
- 48X Max IDE CD-ROM
- 1-Yr Next Business Day On-Site Service,² 1-Yr Limited Parts Warranty,³ 1-Yr 24x7 Dedicated Server Phone Tech Support
- Sale Price Includes \$100 Discount (Limited Time Offer⁴)

\$499 QuickLoan: **\$13/mo., 48 mos.¹¹**
E-VALUE Code:
10809-290204

Recommended upgrades:

- 2nd 20GB¹ (7200 RPM) IDE Hard Drive, add \$89
- 3-Yr Next Business Day On-Site Service,² add \$149

PowerEdge™ 1500SC Server

NEW Simple and Strong Server

- Intel® Pentium® III Processor at 1.13GHz
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM
- 18GB¹ (10K RPM) Ultra3 SCSI Hard Drive
- Embedded Dual-Channel Ultra3 SCSI Controller
- Embedded Gigabit NIC
- 1-Yr Next Business Day On-Site Service,² 1-Yr Limited Parts Warranty,³ 1-Yr 24x7 Dedicated Server Phone Tech Support

\$1299 QuickLoan: **\$35/mo., 48 mos.¹¹**
E-VALUE Code:
10809-290212

Recommended upgrades:

- Redundant Power Supplies, add \$149
- NEW PowerConnect™ 2124* 24-Port Unmanaged Switch with Gigabit Port, add \$399

PowerEdge™ 1400SC Server

Small Business Value Server

- Intel® Pentium® III Processor at 1.0GHz
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM
- 18GB¹ (10K RPM) Ultra3 SCSI Hard Drive
- Embedded Ultra3 SCSI Controller
- Embedded Intel® 10/100 NIC
- 1-Yr Next Business Day On-Site Service,² 1-Yr Limited Parts Warranty,³ 1-Yr 24x7 Dedicated Server Phone Tech Support

\$799 QuickLoan: **\$21/mo., 48 mos.¹¹**
E-VALUE Code:
10809-290207

Recommended upgrades:

- PowerConnect™ 2016 16-Port Switch, add \$149
- 3-Yr Next Business Day On-Site Service,² add \$239
- MS® Windows® 2000 Server, add \$799

PowerEdge™ 2500 Server

Robust and Scalable Server

- Intel® Pentium® III Processor at 1.13GHz
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM
- 18GB¹ (10K RPM) Ultra3 SCSI Hard Drive
- Embedded Dual-Channel Ultra3 SCSI Controller
- Embedded Intel® 10/100 NIC
- Redundant, Hot-Plug Cooling Fans
- 3-Yr Next Business Day On-Site Service²
- Optional Redundant Power Supplies
- Optional Embedded Dual-Channel RAID Solution

\$1899 QuickLoan: **\$50/mo., 48 mos.¹¹**
E-VALUE Code:
10809-290218

Recommended upgrades:

- 2nd 18GB¹ (10K RPM) Ultra3 SCSI Hard Drive, add \$249
- PowerConnect™ 3024* 24-Port Managed Switch, add \$699



Affordable small business servers. Easy as **DELL**

Visit www.dell.com/pcworld or call toll free **1-800-847-4143**.

Call: M-F 7a-8p Sat 8a-5p CT

Pricing, specifications and availability may change without notice. Taxes and shipping charges extra, and vary. Cannot be combined with other offers or discounts. U.S. only. Dell cannot be held responsible for errors in typography or photography.

¹This device has not been approved by the Federal Communications Commission for use in a residential environment. This device is not, and may not be, offered for sale or lease, or sold or leased for use in a residential environment until the approval of the FCC has been obtained.

²For a copy of our Guarantees or Limited Warranties, write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, Texas 78682. ³Service may be provided by third party technician. ⁴Service will be dispatched, if necessary, following phone-based troubleshooting. To receive Next Business Day service, Dell must notify service provider before 5 pm (depending on service contract) customer's time. Availability varies. ⁵For hard drives, GB means 1 billion bytes, accessible capacity varies with operating environment.

⁶Monthly payment is based on a 48-month, 12.49% interest rate for qualified small business (SBD) customers. Your interest rate and monthly payment may be same or higher, depending on your creditworthiness. Minimum transaction size of \$500 is required. OFFER VARIES BY CREDITWORTHINESS OF CUSTOMER AS DETERMINED BY LENDER. Taxes, fees and shipping charges are extra and may vary. Not valid on past orders or financing. QuickLoan is from CIT OnLine Bank to small business customers with approved credit. ⁷QuickLease arranged by Dell Financial Services L.P., an independent entity, to qualified small business (SBD) customers. Offer only applicable for a 24-month Fair Market Value (FMV) QuickLease. Offer valid on hardware products only. Applicable taxes, fees and shipping not included. Minimum transaction size of \$500 is required. At the end of the FMV QuickLease term, the Lessee shall have the following options: purchase the equipment for the then FMV, is new (in lease) or return the equipment to the Lessor. Please contact your Dell Financial Services representative for further details. All terms are subject to credit approval and availability, and are subject to change without notice. Not valid on past orders or leases. ⁸Limit 5 new system purchases per customer. Dell, the Dell logo, E-Value, PowerEdge and PowerConnect are trademarks of Dell Computer Corporation. Intel, Intel Inside, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. MS, Microsoft, and Windows are registered trademarks of Microsoft Corporation. ©2002 Dell Computer Corporation. All rights reserved.

Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

USE THE POWER OF THE E-VALUE CODE.
 Match our latest technology with our latest prices. Enter the E-VALUE code online or give it to your sales rep over the phone. www.dell.com/evalue

NEW PRODUCTS

EDITED BY ANUSH YEGYAZARIAN AND YARDENA ARAR

Skinny Desktop, Big Features



COMPAQ'S sleek, petite new Evo D500 Ultra-slim.

DESKTOP PC

COMPAQ'S NEW, \$1585 **Evo D500 Ultra-slim** boasts an innovative desktop design that's sure to please IT departments and small offices. It comes with attractive components—including a 15-inch LCD monitor—at a fair price, as well.

The new case of the D500 weighs less than 12 pounds and is only 12.4 inches in

depth, yet our preproduction unit still packed a 1.3-GHz Celeron CPU, a 20GB hard drive, 256MB of SDRAM, a DVD-ROM drive, integrated ethernet, and an optional 802.11b wireless networking module that plugs into a special USB port (\$189, included in price above). But its real strength is its design.

FLEXIBILITY

ONE OBVIOUS advantage of the D500 Ultra-slim is the system's petite size, sure to be appreciated in cramped set-

tings. Other slim desktops share that advantage, but Compaq goes a step further by including a notebook-style MultiBay for modular components. That extra provides businesses with true flexibility and cost savings: Small or medium-size offices can stock the same MultiBay parts for both desktops and notebooks, and can easily

replace and reconfigure units (as long as those offices are Compaq shops, of course). Popping the included DVD-ROM drive in and out of the MultiBay was a cinch.

The D500 Ultra-slim can also switch quickly from a desktop to a tower configuration, using an included stand. Given the slimline design, you might expect the case's interior to be cluttered or crowded—it was neither. The case was also easy to open: I simply took off two thumbscrews and popped the lid. You can remove the hard drive without tools by unhinging the latch and sliding out the drive. I also found that adding the machine to my wired home network was a breeze.

On the other hand, as you might expect, there are no

available drive bays or slots. As a result, your only expansion option is the MultiBay.

You get the usual audio and video ports as well as five USB ports. Ports for a headset, a microphone, and one USB device are conveniently located on the unit's front panel. Our system also came with an optional module (\$49, included in the price above) that provides serial, parallel, and PS/2 ports for legacy devices; it snaps on in the back. Unless you really need the legacy ports, however, I would stick with the USB ports.

STEADY, NOT SPEEDY

THOUGH THE D500 should be adequate for standard office tasks, as you might expect of a Celeron-based unit, it won't win any speed races. It had sufficient muscle to let me watch a DVD movie with smooth picture and stable sound even as I worked in

Evo D500 Ultra-slim

Compaq
(Preproduction unit, not rated)
A good choice for small to medium-size businesses and cramped home offices, but expandability is limited.
Street: \$1585 (\$1347 without options)

find.pcworld.com/20141

- 54 DESKTOP PC**
Compaq Evo D500 Ultra-slim
- 55 LCD MONITOR**
ViewSonic ViewPanel VG191
- 56 DIGITAL CAMERAS**
Nikon Coolpix 5000,
Olympus Camedia E-20N
- PORTABLE MP3 PLAYER**
Digitalway MPIO-DMK
- 58 DIGITAL CAMCORDER**
Hitachi DZ-MV100A
UTILITY
Ontrack SystemSuite 4
- 60 DVD+RW DRIVES**
Hewlett-Packard DVD100i, Philips
DVD+RW ReWriter, Sony DRU100A/C1
- 62 PERSONAL DIGITAL ASSISTANTS**
Compaq iPaq H3850, Sony Clie
PEG-T415
- PORTABLE MOUSE**
Kensington PocketMouse Pro
- 64 DOCUMENT MANAGEMENT**
ScanSoft PaperPort Deluxe 8
- SPEECH RECOGNITION**
Dragon NaturallySpeaking 6 Preferred

another application. Its performance was good for a 1.3-GHz Celeron system; the unit earned a PC WorldBench 4 score of 96. However, that fell just short of the performance of a similar value-oriented Sys unit that used AMD's 1-GHz Duron chip and was tested with half the memory: The Sys machine had a PC WorldBench 4 score of 100. (Both models ran Windows 2000 Professional; the Compaq unit is also available with Windows XP Professional.)

You get a good deal for your money, though, especially given the included 15-inch Compaq LCD monitor with its crisp and clear picture. And I was impressed with the comfort afforded by the bundled Compaq keyboard. It has standard shortcut keys, allowing one-button access to e-mail, Internet searching, and Compaq help, among other things. The integrated SoundMax Digital audio was less pleasing—while even and adequate, it was sometimes tinny. The unit also came with a three-button USB mouse.

The Evo D500 Ultra-slim's design, price, and features, along with a three-year on-site parts and labor warranty, make this system a good choice for small to medium-size businesses or for home offices with little space.

—*Mariaelena Quale*

Easy on the Eyes: 19-Inch LCD Monitor

LCD MONITOR

TOILING AWAY as I do with a 17-inch screen, even a 19-inch CRT would be a big improvement, but a 19-inch LCD monitor—now that's really something. ViewSonic's new 19-inch **ViewPanel VG191** with supercrisp text is definitely worth a look—if you have a spare \$1249.

The VG191 is a step up from most CRTs for viewing text: At its native resolution of 1280 by 1024, the shipping LCD's precise, flicker-free pixels rendered clean, crisp characters in Microsoft Word and Excel. Its graphics also looked good, but in a comparison with some top-scoring 18-inch models from this month's LCD roundup (see page 117), the VG191 couldn't compete with the depth and richness of its rivals' colors. Like many high-end LCDs, the VG191 offers both analog and digital inputs, but I noticed little difference in image quality between the two options.

The VG191 has a clean, basic design. It lacks some extras, like a USB hub or built-in speakers, but it includes other convenient features. The adjustable

VIEWSONIC'S
lovely and large
19-inch View-
Panel VG191
LCD monitor.

base, for example, smoothly telescopes up and down, and swivels about 45 degrees to either side. The field of vision—the angle at which the screen remains viewable as you move from side to side or up and down—is about 140 degrees (the full range, from one extreme to the other). While that's a very good range, I noticed that the screen began to look darker at approximately 30 degrees from center.

The screen also rotates from landscape to portrait mode—a nice feature for working in long text documents or for viewing Web pages. Included software lets you smoothly reorient the screen after you rotate it, but rotating the panel itself is a bit clunky. ViewSonic's standard four-button controls

allow you to easily access advanced adjustments such as color temperature and screen sharpness.

The ViewPanel VG191 is a good buy at the street price of \$1249. However, some vendors should soon be shipping 19-inch LCD monitors for under \$1000, so you may want to wait.

—*Scán Captain* ▶

ViewPanel VG191

ViewSonic

★★★★☆

It's expensive, but the VG191 will reward you with a huge, crisp image that displays text especially well.

Street: \$1249

find.pcworld.com/20182



Livin' Large: Cameras With Pixel Power

DIGITAL CAMERAS

THE LATEST digital cameras from Nikon and Olympus boast a 5-megapixel maximum resolution, and they deliver beautiful snapshots.



NIKON'S Coolpix 5000 has a pleasing point-and-shoot design.

But these cameras are expensive: At \$1999, the Olympus Camedia E-20N is a significant investment for even serious sharpshooters. The Nikon Coolpix 5000 is comparatively less pricey at \$1100—not chump change, but for its class, the camera is a good value.

Coolpix 5000

Nikon

★★★★★

Powerful camera with a point-and-shoot design that makes it easy to carry around.

List: \$1100

find.pcworld.com/20161

Camedia E-20N

Olympus

★★★★☆

Bulky, pricey camera littered with buttons and dials, but also loaded with features.

Street: \$1999

find.pcworld.com/20181

You get plenty from both cameras. With a resolution of nearly 5 million pixels, each can deliver crisp, colorful prints even when the images are blown up to 11 by 14 inches. Such large images require a lot of storage, so each camera comes with a 32MB memory card—sufficient room for roughly two dozen or so pictures taken in an 8:1 JPEG compressed mode, or two taken in the highest-quality, uncompressed mode. The memory slots of both cameras can also accept IBM's 1GB Microdrive, if you require additional storage.

COOL COMFORT

THE COOLPIX 5000 is a great camera for those who want versatility and lovely pictures. It's also a bit easier to use than the E-20N. It sports a point-and-shoot design with a comfortable right-hand grip, and offers a 3X optical zoom. You can attach optional Nikon lenses (such as a wide-angle or fish-eye) to it as well.

The Coolpix's multilevel menu system takes some getting used to, but the camera also provides a good range of manual settings for adjusting exposure and ISO speed. With so many controls to tweak, you can get pictures with very accurate color, lighting, and detail, tailored to your tastes.

Both cameras have an LCD that you can tilt at an angle so taking, say, a close-up nature shot is easy to do. The Coolpix's LCD flips out to a 180-

degree angle and rotates. With this odd yet handy feature, you can view yourself on screen when taking self-portraits.

BULKY BUT PACKED

WITH SO MANY buttons and dials, the bulky Olympus E-20N looks quite intimidating and difficult to use—especially for novices. Mastering these controls does take time, but once you do, you'll find they offer shortcuts for a host of functions—such as adjusting the shutter speed for over- or underexposing your pictures.

The E-20N is a digital SLR (single-lens reflex) camera, which means what you see in the viewfinder is nearly identical to the image you'll get. The SLR design also provides manual focus and a zoom ring for clarity and sharpness. The unit's optical zoom is 4X.

The E-20N's LCD pops out to about a 90-degree angle. It delivers a sharp image, but I found that it refreshes slowly: If you pan the camera around, the on-screen image will appear a tad blurry. Unlike the Coolpix, which has only a CompactFlash slot, the E-20N has two memory slots for extra storage—one for SmartMedia (the type of card supplied with my shipping unit) and the other for CompactFlash. The E-20N lets you toggle between the two memory modes.

Both cameras are promising, thanks to their good-quality photos and wide range of controls. But given their prices,

QUICK TAKES

Tiny and Tune-full

NOT MUCH BIGGER than a pack of gum, Digitalway's **MPIO-DMK** makes taking your music anywhere a snap. The \$209 shipping model that I tested has 128MB of flash memory—enough for about 30 high-quality MP3 songs. The Explorer-like PC software is simple: Just highlight the songs you want and click a button to load them to the player. The strap on the included earpiece headphones allows you to wear the player like a pendant. You can also attach the device to an armband or a belt clip, though that takes a longer headphone wire. Upgrade the headphones anyway: The bundled set produced only so-so sound and wasn't too comfortable. Digitalway/Digital Global Network, find.pcworld.com/20184.

—Sean Captain

unless you're a pro or a serious amateur with deep pockets, you'll be better off with a 3- or 4-megapixel model.

—Grace Aquino ▶



OLYMPUS'S Camedia E-20N can use two types of memory cards for storage.

Keeping black & white on the run!



Minolta Co., Ltd., Osaka, Japan



**PRISMLASER
TECHNOLOGY**

magicolor 3100 shown with
optional 1,000 sheet input feeder

© 2001 MINOLTA QMS, Inc. The MINOLTA QMS logo, magicolor, magicolor 3100 Cheetah and PRISMLASER Technology are trademarks or registered trademarks of MINOLTA QMS, Inc. All other trademarks or registered trademarks are the property of their respective owners. *Estimated street price. Dealer prices may vary. Images provided by kind courtesy of digitalvisiononline.com.

16 ppm color

the speed you need to survive
magicolor® 3100 "Cheetah"

16 ppm full-color output. Precise, beautiful prints. All the result of an innovative print method called PRISMLASER Technology™. One printer ready to attack all your office needs. Watch out black and white! The fastest magicolor laser printer has just been unleashed—only **\$2999***. For more information call **800-523-2696**.

- Built-in automatic duplexing
- Standard 10/100Base TX Ethernet®
- 1200 dpi
- 350 MHz RISC processor

MINOLTA
QMS

The essentials of imaging

www.minolta-qms.com

Store Your Home Video on DVD-RAM

DIGITAL CAMCORDER

MOST VIDEO cameras use tape of one type or another, but the Hitachi **DZ-MV100A** is the first that records to durable DVD-RAM discs. However, it lacks some of the high-end features you might expect and costs nearly \$2000, far more than most digital camcorders on the market.

Our shipping unit looks like a standard camcorder, but at

DZ-MV100A

Hitachi

★★★☆☆

An interesting alternative to standard DV camcorders, but is too expensive and lacks some expected features.

List: \$1995

find.pcworld.com/20143

2.1 pounds, it is about twice as heavy as those in this month's roundup (see page 90). Its main distinction is its DVD-RAM media format: A disc lasts longer than conventional tape, speeds video imports to a PC, and allows far more efficient navigation, letting you skip from scene to scene with one click instead of waiting for fast-forwards or rewinds.

The DZ-MV100A uses 8cm discs instead of the more-familiar 12cm discs. Its media holds 60 minutes of video per disc (30 minutes per side) in fine mode (at a resolution of 704 by 480) and 120 minutes (60 minutes per side) in standard mode (352 by 480 resolution). In fine mode, the video quality is similar to that of a

HITACHI'S DZ-MV100A camcorder, priced at \$1995.

DV camcorder, but with slightly more background noise.

In standard mode, the video was much blockier and showed obvious compression artifacts. The camera also lacks some common features, such as a low-light mode and digital effects. It has standard analog input and output ports, as well as a USB port, but no fast IEEE 1394 port.

You can do basic video editing on the camera and hook it to your TV to play your videos.



But to properly edit your video, you need to get it onto your PC, with either a DVD-RAM drive or a DVD-ROM drive that's compatible (most aren't). Hitachi bundles a suitable DVD-ROM drive with the camera for \$46 more.

PowerDVD-VR software is included for playback. Hitachi will soon add Panasonic's DVD-MovieAlbumSE for editing video (the camcorder currently lacks a compatible editing program). Unfortunately, the beta version of the Panasonic program failed to work on our test system under Windows XP and had problems on a Windows Me system, as well. Panasonic's software is currently the only one available that can import the video and convert it to a file format compatible with other video editing programs. Hitachi says these bugs should not be present in the shipping version of the software.

Recording video onto DVD-RAM discs certainly has some advantages, but it is still way too expensive: At approximately \$35 each, the DVD-RAM discs cost more than three times what a DV tape does, and the DZ-M100A is about twice the price of a comparable DV camcorder.

—Richard Baguley ▶

SystemSuite Gets Bigger, Better, Buggier

UTILITY

ONTRACK'S SystemSuite 3 won a Best Buy from us last year for its combination of functionality, ease of use, dependability, and price. **SystemSuite 4** provides some great new tools and makes standard chores easier. But it may be losing a little ground in the dependability department.

Prior SystemSuite versions came with a defragmenter, diagnostics, tools to restore lost data and regain hard drive space, and an antivirus program, among others.

Version 4 adds a tool that syncs your PC to an atomic clock via the Web; a Windows error message tracker; and printed documentation on what to do in an emergency.

You also get a firewall—a must for broadband users and typically not offered in a non-security-themed utilities suite.

Four Maintenance Wizards simplify common tasks. For example, the FixUp Wizard directs a backup of critical files, a hardware-problems diagnosis, and a drive scan. The All-In-One Wizard does the work of the other three wizards and adds a virus scan; you can schedule its run, too.

My major complaint with SystemSuite 3 was that the antivirus program did not scan e-mail as it came in. With version 4, it does—or it's supposed to. In my tests, only when I opened an infected message did the virus scanner object. Ontrack sent me a

patch to fix this problem, but it didn't work. Another glitch: After I first ran the All-In-One Wizard on a Windows XP PC, Word XP wouldn't load until I let Word reinstall part of itself. Both problems may be unique to my PC—I searched various Net locations for similar complaints without much success.

SystemSuite 4 may be imperfect, but it's still a very good tools set, and generally still has an edge over its rivals.

—Lincoln Spector

SystemSuite 4

Ontrack Data International

★★★☆☆

A few bugs mar an otherwise excellent set of tools.

List: \$60

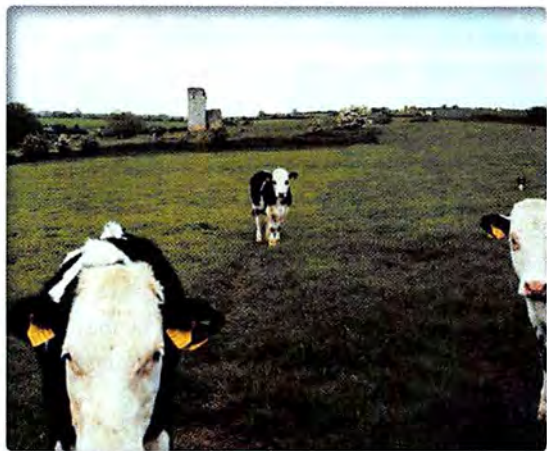
find.pcworld.com/20183



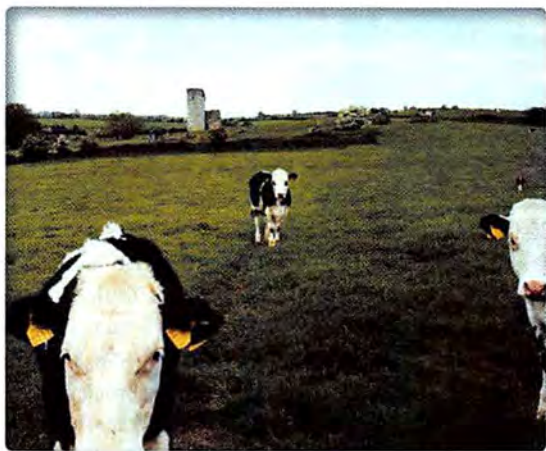
MORE VIDEO TIPS FROM SCOTT & ERIC™

“Music is a tried and true way to add drama and impact to your videos. As you can see here.”

Before music.



After music.



DUN-dun-DUN-dun-DUN-dun... What would the shark footage in *Jaws* be without that, huh? Or what if they'd used "It's A Small World" for the shower scene in *Psycho*?

Clearly, music can make a world of difference—especially in your home videos. And Pinnacle Studio™ version 7 makes it amazingly easy to jazz up your videos with music—your own or choose from a built-in library of songs and sounds—along with hundreds of special effects,

titles, and transitions. Then burn 'em to CD or DVD with Pinnacle Express™. Now, along with preserving memories, you're creating tightly edited cinematic works of art. It's fast. It's a blast. And it's made possible by Pinnacle Systems, the folks who've won 8 Emmys for Technical Achievement. So, whether it's "Home On The Range" or an old Def Leppard tune, adding music is just one of the ways Pinnacle can bring your videos to life.

Get a \$25 manufacturer's rebate.*



Buy Pinnacle Studio version 7 and Pinnacle Express DVD/CD authoring software and we'll send you a check for \$25. (Sorry, the free Porsche was a no go. — Scott & Eric) For details and more tips, visit www.pinnaclesys.com/effects.

P PINNACLE

Available at:



COMPUSA



MICRO CENTER

*Buy ANY Pinnacle Studio version 7 product AND any Pinnacle Express product between 2/15/02 and 4/30/02 and fill out our Pinnacle Express/Studio coupon available at www.pinnaclesys.com/effects. Return completed coupon, dated sales receipt, and the official UPC codes from the boxes of both products to the address on the coupon to receive your \$25.00 rebate check. Rebate request must be postmarked no later than 5/31/02. Allow 6-8 weeks for delivery. ©2002 Pinnacle Systems, Inc. Pinnacle Systems is a registered trademark and Pinnacle Studio, Pinnacle Express and 'More video tips from Scott & Eric' are trademarks of Pinnacle Systems, Inc. All other trademarks are the property of their respective owners.

Fast Pack of Rewritable-DVD Drives



SONY'S DRU100A/C1 and Philips's DVD+RW ReWriter drives.

DVD+RW DRIVES

AFTER YEARS of promises, DVD+RW drives from HP, Philips, and Sony have finally shipped. The good news? All store up to 4.7GB of data per disc and rewrite discs more than twice as fast as rival Pioneer's DVR-A03 DVD-R/RW drive (which uses another rewritable-DVD format). They also run rings around their rivals in writing CD-R/RW. The bad news? Unlike the Pioneer drive, they can't write to write-once DVD media.

Write-once discs, such as the DVD-R discs used by the Pioneer, are typically made from what's known as high-reflectivity media, and so are far more compatible with the huge installed base of DVD movie players and DVD-ROM drives. Vendors wouldn't give us a hard estimate, but our best guess is you have a 50-50

chance that an older player or drive will read a DVD+RW disc (or one of the DVD-RW discs that the Pioneer uses).

The DVD+RW Alliance is aware of this problem and has put together a spec for its own write-once disc called DVD+R. And DVD+RW drive manufacturers are rumored to be including DVD-R support in future models. Unfortunately, you cannot retrofit the current crop of DVD+RW drives with +R or -R capability.

PICK YOUR DVD+RW

STILL, THE SPEED and the capacity of DVD+RW drives make them excellent backup devices and all-in-one optical drive solutions. We test-drove three new drives: HP's \$500 **DVD100i** (we looked at a pre-production model in the No-

vember 2001 issue), Philips's \$599 **DVD+RW ReWriter**, and Sony's \$549 **DRU100A/C1**.

All three live up to their specs, writing DVD+RW at 2.4X, CD-R at 12X, and CD-RW at 10X; they read CD-ROM at up to 32X and DVD-ROM at 8X. (For CD media, 1X equals 150 KBps; for DVD, 1X equals 1.38 MBps.) In contrast, the Pioneer writes DVD-RW at 1X, CD-R at 8X, and CD-RW at 4X. The DVR-A03's reads are also fairly modest, handling CD-ROM at up to 24X and DVD-ROM at 4X. (Note: The box of the Philips model claims 2.5X DVD+RW writes; however, that drive writes at the same 2.4X speed as the Sony and HP.)

For all of the drives, the installation procedure is problem-



HP'S \$500 DVD100i has an appealing software bundle.

free. The only significant difference between the three products is their bundled software. The HP DVD100i is packaged with RecordNow for the mastering chores, DLA

(Drive Letter Access) for packet writing, Simple Backup for, well, backup, and PowerDVD for playing DVD movies. Sony's DRU100A/C1 lacks backup software but comes with the B's Recorder mastering program, B's Clip for packet writing, and WinDVD for DVD movies. Philips's DVD+RW ReWriter ships with Nero 5 for mastering, InCD for packet writing, and PowerDVD for movie playback; it too lacks backup software. In addition, all provide Sonic's MyDVD for importing or capturing video, burning DVD movies, and storyboarding. In our opinion, HP's bundle is the most feature-rich and the easiest to use, though Nero is by far the most powerful mastering program.

The street prices for these three DVD+RW drives hover around \$525; the Pioneer DVR-A03 sells for less than \$450. If speedy backup is your primary concern, a DVD+RW drive might be in order, even though the DVR-A03 is both cheaper and more compatible. Most users, however, should probably wait another generation to get both speed and better compatibility.

—Jon L. Jacobi ▶

DRU100A/C1

Sony

★★★★☆

Nice rewritable-DVD drive with speed to spare for backups; however, it too lacks bundled backup software.

List: \$549

find.pcworld.com/19801

DVD100i

Hewlett-Packard

★★★★☆

An excellent performer and the cheapest of the three drives here. Also has the best software bundle of the trio.

List: \$500

find.pcworld.com/14460

DVD+RW ReWriter

Philips

★★★★☆

Speedy rewritable-DVD drive is an excellent choice for backup duties, but its software bundle lacks a backup utility.

List: \$599

find.pcworld.com/19821



ELECTRONICS

Space Saver



Go ahead, size it up.

The new Samsung 171B TFT-LCD is sure to exceed your expectations on every measure. Its Xtrawide™ viewing angle, exceptional brightness, high contrast and slim design make it a space saver and an eye saver.

Best of all, the 171B is just one of over 40 monitors from the world's #1 manufacturer. Whether you are looking for a large screen TFT-LCD, high-resolution Aperture Grill or image-accurate DynaFlat™ monitor, Samsung has a model to fit your needs and desktop perfectly.



SIZE	171B	151B	171S	151S
RESOLUTION	1280x1024	1024x768	1280x1024	1024x768
BRIGHTNESS	250cd/m ²	230cd/m ²	220cd/m ²	230cd/m ²
CONTRAST	400:1	300:1	350:1	300:1
VIEWING ANGLE (H/V)	170°/170°	140°/120°	160°/120°	140°/120°
PITCH	0.264mm	0.297mm	0.264mm	0.297mm
WARRANTY*	3 yr Limited	3 yr Limited	3 yr Limited	3 yr Limited

* includes backlight

Visit our web site: samsungusa.com/monitor
or call 1800 SAMSUNG.

SAMSUNG DIGITall
everyone's invited™
samsungusa.com/monitor

Posh PDAs for Big Spenders

P D A s

ANY PERSONAL digital assistant can store your address book and calendar. But new high-end models from Sony and Compaq target well-heeled buyers searching for more than the basics.

SVELTE CLIÉ

AT JUST about 0.4 inches thick and 4.3 ounces, Sony's Palm-based **Clíé PEG-T415** is today's leanest PDA, undercutting even Handspring's skinny Visor Edge. Yet Sony managed to squeeze in a Memory Stick slot on top, so you can add storage (above the included 8MB of RAM) or even a camera module, without adding bulk. The detachable cloth cover shields a sleek silver (or black) case and a monochrome screen—but, as with the color Clíés, the LCD's resolution is twice that of other Palms, making the display more readable. Other

older-Clíé holdovers: a USB HotSync cradle and a Jog Dial for navigating sans stylus. Unlike previous Clíés, the \$300 T415 can be synced on a Windows XP PC.

The T415 ships with several Sony apps, including one that lets you use the device as a universal remote. You can't program it, however, so you can use it only with a limited number of consumer electronics devices. I got my shipping unit to control my Panasonic VCR, but not, surprisingly, my Sony CD changer. With a Paint application similar to the one in Windows, you can create and manipulate images (not much fun on the mono screen); with another bundled utility you can set up Memory Stick-based apps to run automatically when the stick is inserted into its slot. You also get DataViz's software for working with Microsoft Word and Excel documents.

IPAQ-ING MORE

COMPAQ, meanwhile, sets its sights squarely on the corporate market with its new PDA. The \$599 **IPaq H3850** retains the general look and feel of its popular predecessors while delivering Microsoft's new Pocket PC 2002 OS; it also has a built-in Secure Digital disk slot on top. The unit's gorgeous 65,536-color screen gets protection from a slide-on plastic cover that can be flipped to either side—and removed completely if you want to substitute other ex-



SONY'S NEW CLIÉ is the thinnest Palm-based PDA to date.

pansion modules, such as a wireless modem. These modules fatten the 5.7-ounce base unit, but I had to attach one while syncing—otherwise my shipping unit wouldn't fit properly in its cradle.

Compaq augments Microsoft's software bundle (which includes Office, a media player, and an e-book reader) with an array of primarily corporate applications, such as a program for accessing data from a server. You also get a Pocket PC version of IBM ViaVoice that allows you to issue voice commands to the device, but I found it more trouble than it was worth.

Neither unit comes cheap. But for corporate high-flyers,

QUICK TAKES

Traveling Mouse

FOR ANYONE who's used to a desktop mouse, notebook pointing devices will never feel right. But toting a bulky mouse and its unwieldy cables adds to your travel load. Enter Kensington's ingenious **PocketMouse Pro**. This \$40 portable optical mouse is slightly flatter than most desktop mice and works well for both lefties and righties. Best of all: A compartment in its body conveniently stores its 2-foot, retractable USB cable, which is just the right length for use with any laptop. Also, no special driver is required with Windows 98 SE and later or with Mac OS 8.5. In short, the PocketMouse Pro is just that, pocket-size and a pro. Kensington Technology Group, find pcworld.com/19841.

—Michael S. Lasky



Compaq delivers the most connectivity options in a handsome package, while the Clíé PEG-T415 offers those willing to splurge on a monochrome PDA a lot of Sony's much-touted style.

—Yardena Arar ▶



AT \$599, THE Compaq IPaq H3850 is pricey but packed.

Clíé PEG-T415

Sony

★★★★☆

Slimmest Palm to date boasts a built-in Memory Stick slot and maximum snob appeal for a monochrome PDA.

List: \$300

find.pcworld.com/19823

IPaq H3850

Compaq

★★★★☆

Ideal Pocket PC for a well-heeled corporate traveler who wants to stay connected and productive on the road.

List: \$599

find.pcworld.com/19822



Projector



Flatscreen monitor




Portable PC



TV monitor

© 2001 eBay Inc. Designated trademarks and brands are the property of their respective owners.

Everybody needs something. And the odds are you can find a good deal on that something at eBay. With millions of items listed every week, we've got just about every presentation tool you could want, new or used. So before you go spending weeks searching for a bargain, you might want to check us out first. Go to eBay.com or AOL keyword: eBay and register where you see this:  [welcome new users](#)



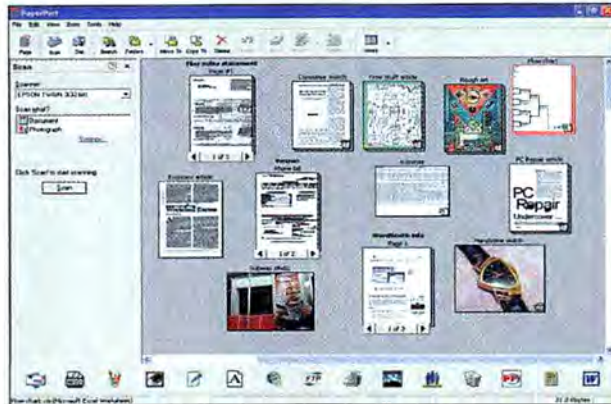
Get Your Docs in a Row With PaperPort

DOCUMENT MANAGEMENT

A SCANNER alone can't tame information overload—it just moves your paper stacks from the real world onto your hard drive. Enter ScanSoft's **PaperPort Deluxe 8**, the newest version of a venerable, ingenious personal document manager.

PaperPort's intuitive interface seems to resemble that of Windows XP's Explorer, with searchable folders showing thumbnails of scanned documents, photos, and other files. But this virtual desktop outperforms Windows' own. For instance, it has simple tools for annotating pages and tweaking snapshots.

Most important, it intelligently processes documents and moves them to the appro-



PAPERPORT'S VIRTUAL DESKTOP packs powerful document-management tools that Microsoft's Windows XP Explorer lacks.

appropriate apps. Drag a scanned page to your word processor, and PaperPort's optical character recognition turns it into editable text. Scan a form, and fill it in on screen. And so on.

This upgrade isn't sweep-

ing, but its interface has improved. It also handles photos better—for example, you can now download images directly from a camera. And for the software's price, you get a year's subscription to Paper-

PortOnline, a Web service for storing and sharing files.

PaperPort's OCR continues to have trouble deciphering elaborately formatted pages, such as magazine articles. And when I used PaperPort-Online to transfer scanned directions to my PDA, they arrived as a bitmap that was too small to read. Dragging the files to a word processor first helps to get around that. All in all, though, PaperPort is a slick tool that makes any scanner more useful.

—Harry McCracken

PaperPort Deluxe 8

ScanSoft

★★★★☆

Clever product that lets you get more from your scanner; tricky formatting can trip the OCR.

List: \$100; \$70 upgrade

find.pcworld.com/19824

Dragon: Worth Talking To

SPEECH RECOGNITION

YAKKING TO the PC isn't everyone's cup of tea. But if you have trouble typing or want to give your hands a break from the keyboard, **Dragon NaturallySpeaking 6 Preferred** can help. Despite its financial turmoil, Lernout & Hauspie was acquired by ScanSoft in December; ScanSoft released this new \$200 version that merges the features of L&H's

Voice Xpress 5 and Dragon NaturallySpeaking 5 into one.

After you finish the required training (it takes about 5 minutes) you're ready to start. Accuracy was relatively good from the get-go with this shipping product, although Dragon goofed several times: For example, it heard "Sabbath" when I uttered "snag," and "every horror" instead of "everywhere." As always, the recognition improved a bit when I did additional training. The new version is supposed to filter out "ums" and "ahs"; for the most part, Dragon did ignore these sounds, but at times it picked up random words, even during silences.

Other new stuff: You can add contact names from Lotus

Notes and Microsoft Outlook/Outlook Express, and create custom commands ("insert my sig"). Plus, making on-the-fly corrections by voice is now more efficient, with more options on how to do it. The interface is also more intuitive.

Included is the Plantronics SR1, a comfortable, noise-can-

celing headset. You're advised to run the software on a Pentium II-400 (or faster) PC with at least 128MB of RAM—and you'll need the power. Dragon won't replace your keyboard—typing is just faster at times—but it's a useful alternative if you want to use your voice.

—Aoife McEvoy ■

Dragon NaturallySpeaking 6 Preferred

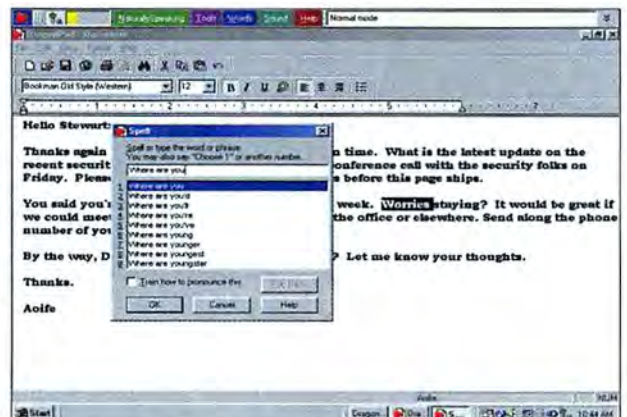
ScanSoft

★★★★☆

It's easier to use and offers extra perks, but you must train, train, train. And it's expensive.

List: \$200; \$99 upgrade

find.pcworld.com/19281



WHEN YOU WANT to add a correction that doesn't appear on Dragon's suggested list, you can either type it or spell it out loud.

Now APC helps you solve your network problems before they happen

Can 10 Million Customers Be Wrong? Not About APC Smart-UPS®.

The world's most preferred server protection now comes with even more intelligence.

APC Smart-UPS employ APC's PowerChute® Business Edition software to provide safe shutdown, power event analysis, recommended actions and mass configuration capability. Remote management is possible with APC's Web/SNMP Management Card.



For high-level network management, APC Enterprise Manager software is the answer. This scalable software allows management of hundreds or thousands of Smart-UPS simultaneously, regardless of how large an area they are distributed across.

APC's Smart-UPS range in size from 420VA to 5000VA and are perfect for protecting everything from small business servers to enterprise-level servers.

Contact APC today and let APC's Legendary Reliability™ work for you!



"APC UPS equipment is such an integral part of our network, it pays for itself every day."

Chris Michaels
Chief Technology Officer
Voyager.net [now dba CoreComm (www.core.com)]

APC Enterprise Manager* Features:

- Real-time Status and Event Notification:**
 - Enables IT Managers to view status information of APC devices across the network at a glance and receive e-mail notification when there is a change in status
- Recommended Actions:**
 - Displays probable cause of power event and recommends a course of action to correct the problem, reducing the need for training and speeding troubleshooting
- On-Demand Battery Status Reports:**
 - Detailed reports on battery age, load, health, etc., facilitate the timely replacement of UPS batteries, reducing a major risk of downtime
- Downtime and On-Battery Reports:**
 - Unique reports help determine runtime throughout the network
 - Helps network administrators to increase availability by pinpointing devices that require additional runtime and aids in Service Level Agreement management

Customize your Smart-UPS® with remote management and rebooting capabilities.



Smart-UPS® 1000 Tower
#1 2001 "Best in Show"
Internet Week and
Network Computing

APC Smart-UPS® Features:

- Improved Battery Management:**
 - Extended Range AVR Boost and Trim reduce battery usage
- Multiple Communication Ports:**
 - Provide for USB and Serial connection
- Built-in SmartSlot™:**
 - Lets you customize your Smart-UPS with remote management and rebooting capabilities, among other features
- Improved, easier to read LED Display**
 - Display and alarms alert you to changes in battery and load conditions

APC
Legendary Reliability™

Also Look for Rack and 3-phase UPS Solutions from APC!



*Optional software for APC Smart-UPS. Not included.

Register to win a **NEW APC Smart-UPS® 1500 today!**

To order: Visit <http://promo.apc.com> Key Code d635y • Call 888-289-APCC x6328 • Fax 401-788-2797

All entrants will receive a FREE APC Enterprise Solutions Kit!

SNAP SHOTS

A step-by-step guide to using the latest digital photography products



DIGITAL CAMERAS today are becoming as sophisticated as their manual, 35mm film counterparts. But that often leaves shutterbugs scratching their heads, instead of snapping first-class photos. Photographers, experts say, should explore the basics of the craft before investing in a digital camera.

"Digital cameras today are way feature-rich," says digital artist Sean McCabe. "That gives you the potential for better picture quality, and larger sizes. But the same principles of photography still apply to both the digital and non-digital worlds."

Cameras should give users some control over their lighting, composition, and focus. But a truly versatile device will also take advantage of high-performance and high-speed PCs and Internet connections.

SPONSORED BY:

Creative
Technology Ltd.
www.creative.com/pcca/m600/

Cameras That Do It All

Creative Technology Ltd. has built a camera, the PC-CAM 600, that combines digital still camera capabilities with full-motion Webcam and videoconferencing.

With 16MB of memory, the PC-CAM 600 stores more than 200 photos at a Web-friendly 640x480 resolution. But it also works as a digital voice recorder, storing up to an hour of audio, and captures up to 75 seconds of full-motion video (with audio) when it is detached from the PC.

When attached to a computer via USB, the PC-CAM 600 delivers video at up to 30 frames per second. This is ideal when streaming video for messaging applications like Yahoo! Instant Messenger. (The camera is also bundled with videoconferencing and Web publishing software, as well as photo and video editing applications.)

McCabe also notes that the same cameras that pro-

CREATIVE TECHNOLOGY'S PC-CAM 600, pictured above, combines digital still camera capabilities with full-motion Webcam and videoconferencing.

duce surprisingly sharp pictures for the Web sometimes generate substandard printouts. Not so with the PC-CAM 600: with its XGA CCD sensor, capable of snapping 1.3-Megapixel images, the camera turns out high-resolution prints measuring up to 5" x 7."

Quality output also depends on a quality printer. But more expensive media and consumables can help users get the most out of their inexpensive inkjet printers.

"You can buy paper that is made specifically for digital photographs that looks pretty darned good," McCabe says.

McCabe also encourages digital picture-takers to consider getting their images "developed" online. Leading film and camera manufacturers now offer silver halide prints for both digital and film images.

Creative's PC-CAM 600 has the hardware to ensure that its users' high-resolution pictures are worthy of permanent print output. The camera's strobe flash with red-eye reduction and dual-aperture multi-element glass lens takes much of the worry and guesswork out of snapshots.

Photos To Go

And cameras that make photography easy and spontaneous are fast becoming the standard at home and in the field.

Outdoors, the PC-CAM 600 avoids the bulky, boxy look often associated with inexpensive digital cameras. With its compact, fluid shape, the camera fits easily in a pocket or purse.

And easy handling is critical to capturing good pictures, McCabe says. "You want something that can go where you go, that will be there to help tell your story."

CREATIVE

PC-CAM

600



The New Shape in PC Cameras

A revolution in PC camera flexibility and design is here.

For photos away from your computer, the compelling shape will get you noticed. At your PC, you'll be amazed at the quality it brings to your video chatting, video e-mail, and web photos. Ordinary PC cameras use a VGA sensor, but the PC-CAM's genuine XGA CCD sensor has a higher native resolution for the clarity and detail you need for quality photography.



Intrigued? Visit www.creative.com/pccam600/

1.3 Megapixel 1280x960 photos • 16MB of built-in memory
Stores over 200 photos • XGA CCD Sensor • Easy USB Connection

CREATIVE

©2002 Creative Technology Ltd. The Creative logo is a registered trademark of Creative Technology Ltd. in the United States and/or other countries.

BUSINESS STRATEGIES

Keeping Hackers At Bay

As if picking up after their kids and pets wasn't enough, small and home office workers must now tend to their own little corners of the Internet.

So-called "always-on" cable and DSL connections are making PC users highly vulnerable to hacker intrusions, and more likely to be used as unwitting "zombies" in distributed denial of service (DoS) attacks against major Internet Web sites.

"You should never switch to an always-on Internet connection without a firewall in place," says Dallas, Tex.-based IT consultant Steve Knox.

Without one, Knox says, a hacker can cripple a small business by destroying and stealing its data, and ruin its reputation by stealing its clients' information, too.

Computer advisory firm Computer Economics reports that virus attacks worldwide cost businesses over \$13 billion in 2001. In many cases, viruses came quickly on the heels of their predecessors, catching businesses off guard.

And Internet security companies like Sunnyvale, Calif.-based McAfee Corp. are warning of a new "hybrid threat" on the Net: hackers who once tagged Web sites with sophistic messages are now planting dangerous new viruses on corporate and government networks.

The hybrid threats, plus the growing number of broadband connections, could make 2002 another costly year for businesses online.

SOHO Security

That's why Knox and other experts say SOHO users must take greater responsibility for their network security and content filtering. Fortunately, they say, application service providers and hardware manufacturers have already developed easy-to-install safeguards for home offices.

Knox uses hardware security appliances on the high-speed networks he installs at small offices.

He says that even inexperienced users will find that many routers and switches are exceedingly easy to configure and won't sacrifice strength or flexibility.

"And many of these devices do so much more than provide a firewall," he says.

Santa Clara, Calif.-based NETGEAR Inc. has an especially wide array of networking devices that are easy to set up and that provide increased Internet security and parental control.

NETGEAR designs and develops networking products that lets home and small business users share Internet access, peripherals, digital content, and applications among multiple personal computers and other Internet-enabled devices.

One of the company's Cable/DSL routers, for example, has a true firewall capability with intrusion detection, denial-of-service prevention, and Network Address Translation

(NAT) to protect SOHO networks against hackers. And the device also gives parents and network administrators complete control over contact with the network.

Its Virtual Private Network (VPN) wired routers, 802.11b wireless routers and access points, 100 Mbps switches, and a variety of wireless and wired network adapters are designed to be both reliable and affordable. And NETGEAR offers free customer support 24 hours a day, seven days a week.

Vanquishing Viruses

Steve Knox also recommends that home office workers consider purchasing "Internet-based networks, anti-virus applications, and e-mail filtering and content filtering software."

Security experts at McAfee note that installing an anti-virus computer program is not an effective barrier against some viruses. They say such programs are often ineffective against

Continued on page 3



SPONSORED BY:

McAfee Corp.
www.mcafee.com

NETGEAR Inc.
www.netgear.com

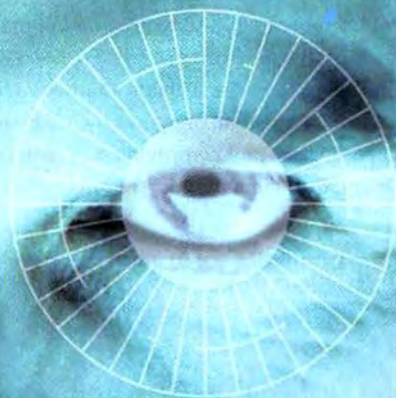
PROTECT YOUR PC

VIRUSSCAN

ONLINE

FROM VIRTUAL EVIL

01 Scan Date 6/14/01 3:07:01 PM
02 Scan Status Scan Completed, 1 virus detected
03 Folder(s) Scanned c:\
04 Scan Options Include Subfolders, Scan All Files
05 File(s) Scanned 7872
06 File(s) Infected 1
07 Scan Results Infected with MS2/04Z-worm



0A11111111001010101000000000
1011NEW0101010110110101101011
101GENERATION1001011010101011
0100111011100F01010SOLUTIONS
01010101000010110110101100010
10FOR01010A111010101110000101
101101011010101010NEW0100111010
00011000000101010GENERATION1010
1010101010101010101010101010



Continued from page 1

new variants of existing viruses, and viruses that use email programs to spread themselves. These threats spread quickly and can decimate local area networks (LANs), which are common in most small and home businesses.

Without 24/7 protection for their always-on Internet connections, businesses are at the mercy of hackers who can corrupt and steal data from PCs, notebooks, and other digital assets.

McAfee's Internet-based antivirus service, VirusScan Online, protects networks against the virus threats with a thorough, dependable, and up-to-the-minute database. It's a godsend for small LANs and businesses with simple network topographies, and for those who can least afford the time, budget, or resources for enterprise-level anti-virus protection.

SOHO businesses use VirusScan Online to protect each of their PCs separately, and to provide update services to each node on the network.

VirusScan Online provides a viable alternative to this traditional approach for small networks by independently protecting separate PCs and by providing update services to each node or PC on the network. In combination with



McAfee's Internet-based antivirus service, VirusScan Online

McAfee's Personal Firewall technology, VirusScan Online offers users a complete, node-based Net defense strategy.

Devices like NETGEAR's cable/DSL firewall routers prevent DoS attacks, report Internet access and intrusion information, and alert users in real time to intrusive attempts.

SOHO users, by combining security hardware and software solutions in one comprehensive strategy, can create a rock-solid and virtually maintenance-free firewall against today's and tomorrow's online menaces.



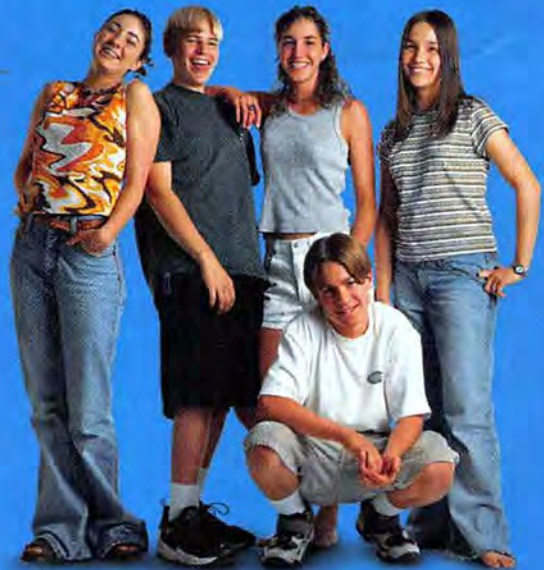
Practice safe surf.

Thanks to cable and DSL, your family enjoys a far more exciting Internet experience. But if you're connecting around the clock, you might also be surfing some dangerous territory.

With NETGEAR's® award winning routers, it's a snap to make multiple Internet connections family-friendly. Hardware-based firewall protection keeps hackers from getting into your home. And simple, selectable parental controls such as content filtering keep the kids from getting into the sites you object to.

To learn more about NETGEAR's complete line of wireless, broadband firewalls, and VPN routers, visit us at www.netgear.com. And remember, safe surf starts with you.

Everybody's connecting.™



"An Overall Rating of Excellent!"



©2001 NETGEAR, Inc. NETGEAR is a registered trademark and "Everybody's connecting" and "Gear Up" are trademarks of NETGEAR, Inc. All rights reserved. Other brands and product are trademarks of their respective holders. Specifications subject to change without notice. 007211A

NETGEAR®

"Stunning, jet-black system wowed us
with its speed and sound quality..."

-PC World



Eight Custom Colors Available

✦ The Alienware[®] Difference

- Built by Skilled Alienware[®] Technicians
- Stringent 200-point Quality Control Process
- Fully Upgradeable with No Proprietary On-board Components
- The Most Advanced and Personalized Online Customer Support
- Custom Built to Your Specific Needs

✦ Award-Winning Systems

With an Alienware[®] system, PC gaming is taken to a new level unmatched by standard PC systems. Alienware[®] systems are available in eight custom colors and with the most advanced graphics rendering hardware available and intense theater quality sound. Our systems will leave you wondering how you ever played games on anything else.



ALIENWARE | HIVE-MIND™

- ✦ Intel[®] Pentium[®] 4 Processor at 1.6GHz
High-Performance Heatsink/Cooling System
- ✦ Intel[®] 845D Chipset Motherboard
256MB DDR SDRAM (PC-2100)
Black Floppy Drive 1.44MB
- ✦ 60GB 7200RPM Ultra ATA100 Hard Drive
- ✦ NVIDIA[®] GeForce3™ 64MB DDR
Koolmaxx™ Video Cooling System
- ✦ SoundBlaster[®] Audigy™ 5.1 Gamer Sound Card
- ✦ Creative[®] Inspire™ 5.1 5700
Speaker & Subwoofer System
16X/40X DVD-ROM Drive
Black Dragon Full-Tower ATX Case 340-Watt PS
Black 107-Enhanced Keyboard
Microsoft[®] Intellimouse Explorer
U.S. Robotics V.90 56K Voice/Data/Fax Modem
Intel[®] PRO/100 S Network Card
- ✦ Microsoft[®] Windows[®] XP Home Edition
1-Year Toll-Free 24/7 Technical Support
with Aliencare On-Site Home Service
Personalized Owner's Manual
Optimized & Configured for High-Performance
FREE Alienware[®] Custom Mouse Pad

\$1,799.00

Financing as low as \$49/MO., 48 MOS.



ALIENWARE | AREA-51™

- ✦ Intel[®] Pentium[®] 4 Processor at 2.2GHz
with 512KB Advanced Transfer Cache
High-Performance Heatsink/Cooling System
Intel[®] 850MV Motherboard
512MB RDRAM (PC-800)
Black Floppy Drive 1.44MB
- ✦ 100GB 7200RPM Ultra ATA100 Hard Drive 8MB Cache
- ✦ NVIDIA[®] GeForce3™ Ti 500 64MB DDR
Koolmaxx™ Video Cooling System
- ✦ SoundBlaster[®] Audigy™ 5.1 Gamer Sound Card
Klipsch[®] ProMedia™ 5.1 THX 500-Watt
Speaker & Subwoofer System
16X/40X DVD-ROM Drive
Plexwriter 24X/10X/40X CD-RW IDE
Black Dragon Full-Tower ATX Case 340-Watt PS
Black 107-Enhanced Keyboard
Microsoft[®] Intellimouse Explorer
U.S. Robotics V.90 56K Voice/Data/Fax Modem
Intel[®] PRO/100 S Network Card
- ✦ Microsoft[®] Windows[®] XP Home Edition
1-Year Toll-Free 24/7 Technical Support
with Aliencare On-Site Home Service
Personalized Owner's Manual
Optimized & Configured for High-Performance
FREE Alienware[®] Custom Mouse Pad

\$2,999.00

Financing as low as \$82/MO., 48 MOS.

ADVICE

Book

The issue is simple. Clients hire agencies to assist them in marketing products. It's a job that agencies for spend more than \$500 million on each year. The creation of brand names, the development of marketing strategies, and the making of ads. From the client's point of view, the service is expected to pay for itself. On the other hand, agencies are expected to generate their own business. You should consult with a specialist in

TELEVISION

array of services are reaching works — Labatt pairing it not stoop

Web

exp market despite advertising from

Radio

success stories! Cal read testimonial picked their order including it com on di radio 12121



Domain

agencies help you. There are November chat rooms s to look emails are sent to message. There are agency, As same proas, and and proclaim. For were you

TOOL

Memory

through a few cite a few search engine hole dot-com rise an to tell you having expst of that, this is thg time it has forced who know too little d ever one else ha ward. Now it is a but its value lists every'ing to being a couch or unhealthy cr strategies to kee

search engine

through a few cite a few search engine hole dot-com rise an to tell you having expst of that, this is thg time it has forced who know too little d ever one else ha ward. Now it is a but its value lists every'ing to being a couch or unhealthy cr strategies to kee

News

through a few cite a few search engine hole dot-com rise an to tell you having expst of that, this is thg time it has forced who know too little d ever one else ha ward. Now it is a but its value lists every'ing to being a couch or unhealthy cr strategies to kee

TV

ve rece espo cred wa t 19 its i 11 eigh n v

LEISURE

bylonian N first new on lastec olanin the n retu in 15 r tc ce.

Time

f favour for ne Catholic asty (this as or so, the cele

information

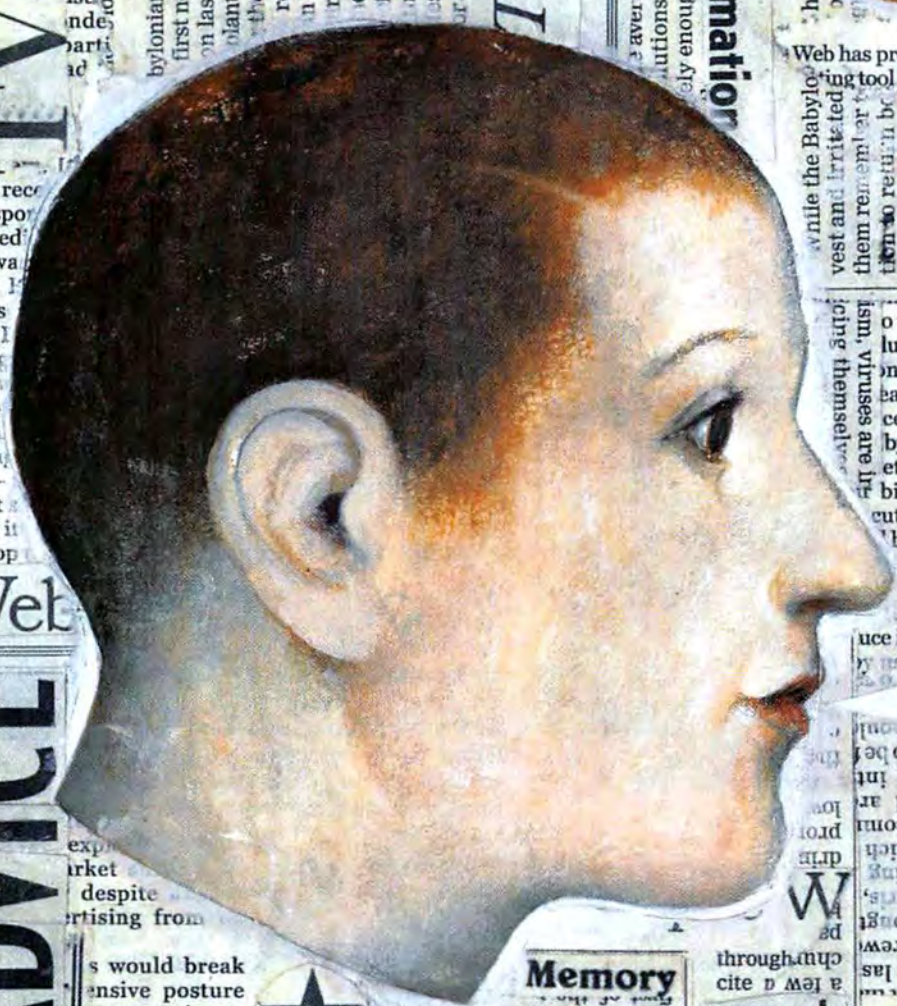
average Ameri- tions each year. ely enough, no stats

DOCTOR

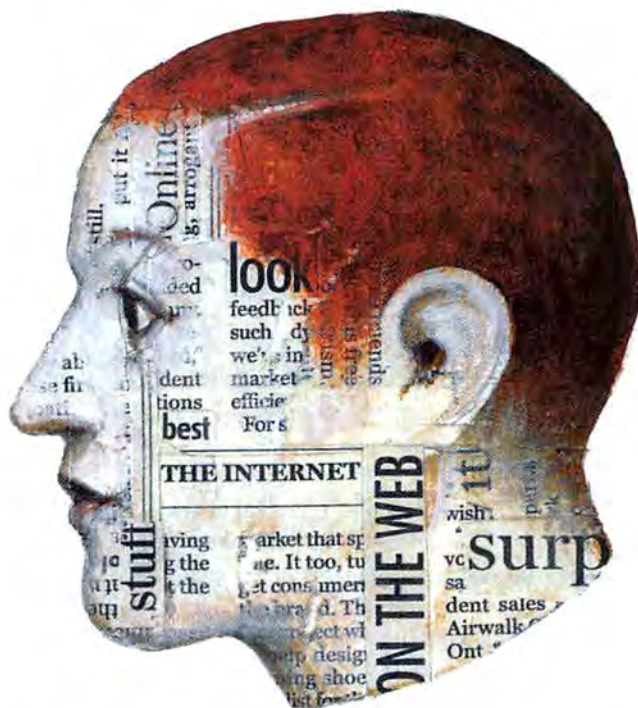
Web has proved to be a ing tool Mr. Hillier in Bo in 17 plep for s for s we

Treasur

had the Babylo- ing them remem'ar then to return be node -de us in for s we



Best Free Stuff on the Web



Think all the goodies are gone? Our seventh annual roundup uncovers surprising treasures—from must-have tools to unique new services.

SPECIAL REPORT: Free Stuff

OKAY, ADMIT IT: You took one look at our cover this month and thought, "There can't possibly be any new free stuff on the Web—at least not anything worth the effort of opening a browser for." But if you think the only thing free on the Net these days is the free fall of all those dot-com companies, we've got news. You can still get something for nothing online—sites, services, and downloads that are great for work or play. And we've found the best of the bunch: an array of winners you haven't read about a million times before, plus our picks for the free stuff Hall of Fame.

Some of the best free stuff available on the Web today is potent software that's yours for the downloading: office suites, utilities, and even operating systems. On page 85, we offer our take on how four free applications compare to their for-pay counterparts.

Got a favorite freebie we didn't cover? Drop us a line at freestuff@pcworld.com. ▶

BY KIM ZETTER

ILLUSTRATIONS BY GERARD DUBOIS

Tools & Services

A Search-Engine Sleeper

YAHOO, GOOGLE, ALTAVISTA—there are lots of great search engines already. So why check out an obscure new contender like **ILor** (www.ilor.com)? For starters, it's built on top of Google, so you get the same excellent search results that you'd get at Google's site. But ILor gives you four new options for viewing the results. Place your cursor over a link on the results page, and you can add the link to a custom list. Later, you can view the list, which is great if you're searching several topics and want to track all relevant results. Or you can e-mail it to a friend. You can also open the link in a new window (and avoid having to hit the Back button to return to your results); open the link in a minimized window that's out of the way until you need it; or anchor your results page (this puts a link to the page in a small window so you can dig deeply into a site and then return to your results with a single click). The tools are so useful you'll wonder why Google doesn't offer them.

News You Can Use

IF YOU NEED A CURE for the information-overload blues, try Infogate (www.infogate.com), a terrific utility that cuts through the mass of news on the Net to zero in on the stories you want to read. The 790KB Infogate download produces a toolbar with a live feed of headlines (which are updated as long as you're connected to the Internet) categorized by topics you choose. Click the *Personalization* button and type keywords to get breaking news from sources like CNN and Reuters. You can set the toolbar to alert you when, for instance, the latest NCAA tournament scores come in. To read full stories, click on a headline while you're online, and a window will open with links to the stories. The program's "follow me" feature sends information to your cell phone or pager.

Collective Memory

LONG BEFORE THE DAWN of the Web, Usenet connected people of like minds and interests in its electronic version of a 19th-century salon. Now **Google Groups** (groups.google.com) gives you search engine-style access to over 700 million messages posted to Usenet groups during the past 20 years. It's a fascinating compendium of information on everything



NEWS LEADER: Infogate's trim toolbar delivers a live feed of breaking headlines on the topics you care about.

from the Challenger explosion to Microsoft's legal woes. Google has even culled historical gems from the archive with special links; an example is Tim Berners-Lee's announcement of what later became the World Wide Web. And this isn't just the cyber equivalent of a time capsule. You'll find up-to-the-minute chatter and advice on every topic under the sun—and you can post your own messages.

Calculate This

TIRED OF HAVING your system bog down for half an hour while you download a file that was supposed to take only minutes? Before you hit the Download Now button, stop by the Calculators On-Line Center's **File Download Time Calculator** (find.pcworld.com/19681) and enter the size of the file you want to snag. The calculator will quickly estimate the amount of time the download should actually take, based on its size and the speed of your Net connection (56-kbps modem, DSL, or whatever). While you're at it, check out some of the more than 14,000 other specialized calculators listed here, such as one for measuring focal depth and exposure times for different photography con-

ditions. Another intriguing offering is a Java applet that calculates how far from a traffic light you need to hit your brakes to stop on time. (The calculation is based on car speed and brake-delay time—no mention of cell phones in the equation.)

Window Cleaning

LOOKING SIMULTANEOUSLY at several sites—say, at the home pages of four online newspapers—usually means having to toggle back and forth between multiple windows. But **Quickbrowse** (www.quickbrowse.com) cleans up window clutter by pasting up to six pages that you specify into one, long window for easy scrolling (for \$13 every three months, you can obtain additional pages and receive a daily e-mail of your sites). You can specify a

list that contains the URLs you want, or simply choose from ready-made lists for themes such as tech news or comic strips. The QuickBrowse site also offers Qb-Search, a metasearch engine that employs the same clever principle: Enter search terms, and you can get results from up to 17 different engines and directories, stitched into a single page. (It's a handy way to search multiple sites with one click, even though Google is conspicuously absent from the source list.) Use the Quickbrowse This button to choose links from the search results and have all the pages open in a single window.

Squelch Those Ads

TAKE MADISON AVENUE to the cleaners with **WebWasher** (find.pcworld.com/19661), a utility for eliminating bandwidth-hogging online ads. This 1.2MB program also blocks cookies and Web bugs that let companies monitor your online wanderings. (You can specify which cookies you want to block, allowing only those that ease your Web movements.) Most important, without all those annoying pop-up and jumbo-size ads, your surfing will go smoother and faster.

To Catch a Spy

YOU DOWNLOADED a fantastic free utility, and now your screen is rife with pop-up ads. Could the program be spyware? **Spychecker** (www.spychecker.com) will help you find out. Spyware is ad-supported software that deposits a tracking tool on your hard drive to send data about you and your surfing habits to advertisers. Not all ad-supported software is spyware, and most ad companies say the data they collect isn't matched to your identity. But Spychecker lets you decide what to tolerate. At Spychecker's site, type in the name of the freeware app you're considering, and Spychecker will tell you whether that program is a known spy. The site also supplies the name of the advertiser behind the spyware, as well as a link to the company's privacy policy. To see whether your PC is already infected with spyware, use **Ad-Aware** (find.pcworld.com/19701), a free 833KB utility that detects and eliminates the most commonly used spyware.

Information & Advice

Manual Labor

LOST THE MANUAL to your Kenwood stereo or Sony cell phone? **LiveManuals** (www.livemanuals.com) has manufacturer product guides with diagrams for a bevy of goods—from coffeemakers to videoconferencing equipment—as well as warranty and support information. You'll need to download the LivePlayer plug-in to view the manuals. You view the manuals in your browser, and can print out the pages you need. If you can't figure out how to operate the product after reading the manual, you can view a tutorial with audio. You won't find PCs here, but there are manuals for digital cameras, printers, and fax machines. And you can also open a product portfolio that lets you store a list of products you own to help you track when your warranties are due to expire. (You have to supply your address, too, so let's hope that the database is well-protected against hackers.)

HALL OF FAME

Still Free—and Fantastic—After All These Years

THESE DAYS, it seems that just when you get attached to a free offering on the Web, its proprietor either takes it away or starts charging for it. But some top-notch, long-running freebies are here to stay—at least we hope they are. Here's our Free Stuff Hall of Fame.

Adobe Acrobat Reader (find.pcworld.com/19741): Must-have utility for reading PDF documents.

AOL Instant Messenger (www.aim.com): Our favorite instant-messaging program on the Web. (Note: *PC World* provides computer content to AOL.)

Citysearch (www.citysearch.com): A directory of what's happening in your city; great if you've got a life or are looking for one.

DSL Reports (www.dslreports.com): All broadband news and information, all the time.

Efax (www.efax.com): Lets you get faxes via e-mail, no fax machine or phone line required.

Encarta (www.encyclopedia.msn.com): An encyclopedic world at your fingertips.

Evite (www.evite.com): Automates invitations; if only it could clean up after the party.

Google (www.google.com): The best big-name search engine for taming the chaotic Web.

MapQuest (www.mapquest.com): Maps and driving directions when you feel a little lost.

Nolo.com (www.nolo.com): Lots of helpful free articles from this publisher of legal reference books to get you ready for your day in court.

PC Pitstop (www.pcpitstop.com): A personal pit crew (and *PC World* partner) dedicated to helping you optimize your PC's performance.

Pretty Good Privacy Freeware (find.pcworld.com/19742): Personal encryption for times when it's no one's business but your own.

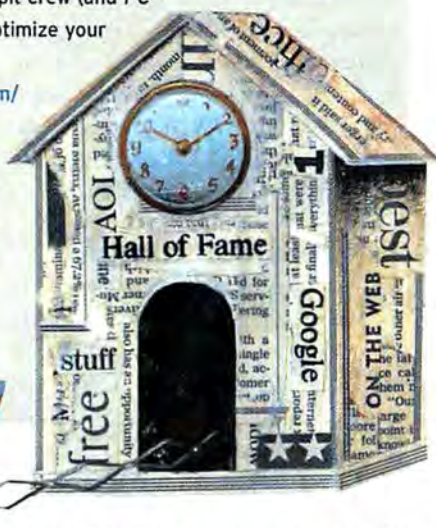
Winamp (www.winamp.com): Unobtrusive MP3 player free of ads or proddings to upgrade.

Yahoo Mail ([mail.yahoo.com](mailto:yahoo.com)): Still

the most reliable and hassle-free no-cost e-mail service.

Picture This

YOU LOVE TO take photos, but all of your pictures come out under- or overexposed. The Web is full of tips that can help with this and other photographic quandaries. **PhotographyTips.com** is a good site for beginning shooters, with lots of information on composing a picture and working with light, as well as helpful analyses of pictures that went wrong—useful for both film and digital photographers. Another worthy site, **Photo.net**, caters to both hobbyists and pros, with message forums, pithy product and book reviews, and gorgeous photographic travelogues. And for digital camera enthusiasts, **Megapixel.net**, a Canadian site,



is one of the finest resources around, with tons of tips and techniques, amazing images, helpful camera reviews, and excellent photo submissions from readers.

News TV

WHEN YOU CAN'T get to a television for your news fix, jump over to **Feedroom** (www.feedroom.com). This video streaming portal, partnered with NBC and other news organizations, provides live and pre-recorded video stories of local, national, and international news. The video appears in a small TV-screen graphic, which you can expand to full screen. The ▶

full-screen version, though, is less crisp. A free feature called VideoAlert lets you receive a daily e-mail containing a link to video clips of the day's headline stories. You can also e-mail clips to your friends. Though the site looks and sounds best if you have a broadband connection, you can adjust the stream for dial-up use.

Domain Man

THERE ARE DOZENS of accredited domain name registrars through whom you can set up a new domain for your business or personal site, but prices among them vary from under \$10 to over \$100. **RegSelect** (www.regselect.com) tracks data on more than 50 domain registrars. The site includes information about prices, special features such as forwarding address services, as well as notes giving the bottom line on each company. Its "bargain bundles" collection lists inexpensive options and package deals. To find out whether a registrar you're dealing with is accredited by ICANN (the Internet Corporation for Assigned Names and Numbers), go to find.pcworld.com/19721.

The Uncle of Search Engines

IF A BUTLER NAMED JEEVES can have his own search site, then why not Uncle Sam? Billed as a "one-stop shop" for government info, **FirstGov** (www.firstgov.gov) can link visitors to any of more than 47 million pages across all three branches of the federal government. You can track your Social Security earnings, apply for a student loan, download needed government forms, look up consumer product recalls, or find out what the FDA has to say about herbal health remedies. A tutorial for new users helps you navigate the site. Warning: Government sites are prime targets for hackers—so be careful about supplying sensitive data online, such as your Social Security number.

The Doctor Is Online

THE PRINT EDITION of the Merck Manual has been a bible of health care for over 100 years. This Web-based edition (www.merck.com/pubs) comes in two versions:



READ THE (ONLINE) MANUAL: LiveManuals has browser-based guides for tech gear.

text only, and an interactive version with photos, video, and animation. (It's a good thing, too, because the site's design is pretty dull.) Take a quiz to see if you have a fungal infection, or click the Pronunciation tab and highlight a word to hear a voice pronounce it. You also get links to associations and institutions that specialize in particular areas of medicine.

ONLINE GIVING

Free Stuff Gets Charitable

IT'S BETTER to give than to receive, of course. And dozens of sites let you support charitable and non-profit programs without digging into your wallet. Click on a button, and the site's advertisers will donate a predetermined amount to the charity. The amount per click is tiny (and you're generally limited to a click a day), but it adds up when thousands of surfers join in.

Why do site sponsors make donations based on your clicks? Simple: They get to promote their products through ads you view, and they gain positive PR through their association with the site. But before helping any charity collect funds—online or offline—make sure you know the facts on such important matters as the percentage of donated funds the charity actually puts toward its cause.

The Rainforest Site (www.rainforestsite.com), The Hunger Site (www.thehungersite.com), and The Breast Cancer Site (www.thebreastcancersite.com) are sister for-profit sites that invite you to help save rain forest land, feed the hungry, and provide mammograms for women who can't afford them. Each clearly explains how it works and what it has accomplished: The Rainforest Site, for instance, says that its visitors' clicks helped to preserve 4700 acres of land in 2000. For links to other click-for-charity sites, check out DigitalCharity.com, a directory of more than 50 such destinations.

See December's *Consumer Watch* (find.pcworld.com/19743) for more tips on identifying reliable online charities and making contributions to them safely.

Click on Click 'n' Clack

SO YOU'VE WASTED another hour of your life listening to Tom and Ray Magliozzi (Click and Clack, the Tappet brothers) on National Public Radio. Now you can kill even more time with their irreverent **Car Talk** Web site (www.cartalk.cars.com). By turns informative and hilarious, the site offers advice about buying, selling, repairing, and caring for your car, plus driving tips for road and weather conditions, poetry, and listener love/hate mail. You can search the Mechan-X-Files to find a "great, honest, hard-working" mechanic in your area, or just settle for one who hasn't been sued. You can also get a free report with links to information on recalls, crash tests, owner complaints, and theft

statistics. And of course there are audio clips of the brothers' antics on their radio show. ▶



SONY

DREAM ON™ >>>>

Recording video isn't just a point and shoot proposition. You've got to make sure there's enough battery power. And enough light. You've got to hold the camera steady. Or, you've got to get a Sony. Only Sony Handycam® camcorders have Worry-Free Recording™ — a virtual safety net of features that ensures the best possible video, in virtually any situation. For instance, our InfoLithium® rechargeable battery with AccuPower™ meter lets you know exactly how much recording time you have left. And it's on every Hi8™, Digital8®, and MiniDV Handycam camcorder. Because every moment is too important to miss. www.sony.com/di

Handycam.



You'll also get great video of your newborn's first bath.



©2001 Sony Electronics Inc. All rights reserved. Reproductions in whole or part without written permission is prohibited. Sony, the Sony logo, Digital8, Hi8, Dream On, Handycam, Worry-Free Recording, InfoLithium, and AccuPower are trademarks of Sony.

Leisure Time

Digital Made the Radio Star

GOT A LONGING FOR THAT CHEESY, all-80's radio station you used to listen to back home or the Moscow rock station you discovered on your last vacation? **RadioTower** (www.radiotower.com) links you to over 1300 online radio stations from 80 countries, including news, sports, and financial/business stations. Simply download the free RealPlayer or Windows Media Player and browse by station name, country, or music category. With free radio like this, it's no wonder that fee-based Net music (see page 86 for our take on Real's offerings) hasn't caught on yet.

Change of Face

IF YOU'RE TIRED of a world dominated by Times New Roman and Courier, **Font-Face** (www.fontface.com), **Larabie Fonts** (www.larabiefonts.com), and **Pizzadude** (www.pizzadude.dk) will brighten your days with hundreds of inventive Windows-compatible typefaces for any mood. Most are free, and many that do charge a small fee have freeware versions available. FontFace features such typefaces as Take-out (Chinese restaurant lettering), Blood of Dracula (with dripping letters), and Star Jedi (inspired by *Star Wars*).

Culture Club

YOU'LL FEEL SMARTER just adding this erudite site to your Favorites list. A brilliant collection of ideas on subjects from Laurel and Hardy to Freud and Jung, **Arts & Letters Daily** (www.aldaily.com) mimics a 19th-century broadsheet, and is jam-packed with fascinating articles culled daily from publications around the world. Witty teasers like this one pull you into the stories: a wood without pigs is like a ballroom without women (for an article on animal husbandry). There are also links to 19 newspapers from around the globe, 74 journals and magazines, radio stations, and columnists—from the prickly Molly Ivins to the patrician George Will. Make it your home page and you'll never lack for interesting party talk.



FONTFACE'S fun, free typefaces can give even ho-hum documents a little pizzazz.

Fenced In

HELL HATH NO FURY like a British cyclist scorned. It all began when the stuffy owners of an iron fence in London posted a sign warning commuters not to lock their bikes to the fence. So the outraged author of **What Should I Put on the Fence?** (www.whatshouldiputonthe fence.com) has been locking everything but his bike to the fence ever since: a tricycle (not technically a bicycle), an ironing board, even a pot of tea (for the haggard handyman who has to trim away the items daily with a hacksaw). This kind of quirky, personality-driven site is what helped make the Web popular in the first place. See the photos and read the author's engaging narrative ("Wife worries about fence obsession") documenting the Keystone Kops-like shenanigans; then nominate your own offering to the fence gods.

Gittin' Jiggy Wit It

YOU LOVE JIGSAW PUZZLES but hate doing the same ones over and over. Jig-Zone (www.jigzone.com) has over 800 photos and 32 puzzle shapes to choose from. Pick from categories like art & architecture and travel & culture, then choose the number of pieces and their shape, such as 91 pieces shaped like lizards or 247 triangular-shaped pieces. A timer tracks how long it takes you to solve the puzzle. If you get frustrated, click the "solve" button to see the pieces fall into

place. Think it's child's play? Try the blue shark puzzle (in murky water of varying shades of aquamarine) with 247 triangle-shaped pieces, and you'll be hitting that Solve button pretty quickly. If crossword puzzles are more to your taste, pay a visit to **Puzzle Choice** (www.puzzlechoice.com), which has printable puzzles for solving offline, plus interactive versions.

By the Book

MANY FREE E-BOOK sites promise a lot of titles but then deliver only obscure material you'd never want to read. But **MemoWare** (www.memoware.com) has over 10,000 PDA documents for reading on Palm, Pocket PC, and other handheld computers. And the quality is as impressive as the quantity. Among the wealth of offerings are literature (classic and contemporary novels, children's stories, and mysteries), business, philosophy, and religious titles. In addition, you'll find files that are useful for everyday tasks, such as ones containing worldwide airport codes and airline 800 numbers, medical infor-



PUZZLER'S PARADISE: JigZone offers a cornucopia of designs and shapes—and you'll never lose a piece.

mation from the National Institutes of Health, dictionaries in various languages, sporting event schedules, area codes for the United States, and the IRS's list of per diem rates allowable for business travelers in various cities and countries. The offerings go on and on. There's even a file containing an episode guide to three seasons of *The Sopranos*. Now that's useful. ■

Kim Zetter is a San Francisco Bay Area-based contributing editor to PC World.



ALL THIS AND MORE AT NETSCAPE.COM

News from CNN. Scores from Sports Illustrated. The latest from Entertainment Weekly, People and InStyle. Plus Instant Messenger, MapQuest, weather, search and email. The list goes on and on. See for yourself.

Visit the new Netscape.com today.

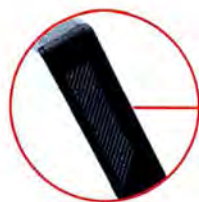
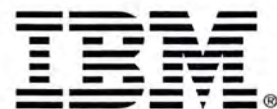


Netscape.com™

All the net you need

© 2001 Netscape Communications Corp. Photos are the copyrighted property of their respective owners and are used with permission. Netscape.com, the Netscape logo, CNN.com, CNN.com, EW.com, InStyle.com, People.com, and Time.com are trademarks of the AOL Time Warner, Inc. companies. All other trademarks are the exclusive property of their respective owners. All rights reserved.





Dual wireless antenna system
(select models)



Amplify your aspirations with a ThinkPad notebook.

New systems feature a dual antenna system that's integrated right into the display of select models. But why is that better, you ask? Well, the display provides a large surface area that sits above the system when in use – making the IBM ThinkPad® notebook extremely effective at sending and receiving wireless signals. But when it comes to revolutionary design, that's only a starting point. In fact, many new models are available with built-in wireless capabilities and the latest Mobile Intel® Pentium® III Processor - M for heightened notebook performance. You see, value and innovation are hereditary traits shared by the entire ThinkPad family. And that may be why **they've won over 800 awards to date**. So choose any of our new notebooks – including the remarkably affordable ThinkPad R Series – and you'll get innovation dialed up to 10.

New! Microsoft® Windows® XP

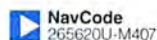
Take advantage of the most powerful Microsoft operating system to date. It'll bring advanced mobility, premium security, enhanced reliability and greater networking options to your IBM systems.



NOTEBOOKS

IBM ThinkPad R30*Best blend of portability and essential features*

Mobile Intel® Celeron® processor 900MHz
13.3" XGA display
128MB SDRAM
10GB hard drive • Ultrabay™ Plus CD-ROM
Integrated Ethernet and modem
8MB Trident CyberBLADE graphics
NEW! Microsoft® Windows® XP Home Edition
Lotus® SmartSuite® Millennium license
PC Doctor • Adobe Acrobat Reader®
2.7-hr. Li-Ion battery
5.3 lbs. travel weight
1-year limited warranty

\$1,179

SuccessLease® for Small Business \$42/MO., 36 MOS.

SWAPPABLE OPTIONS:

IBM 128MB 133MHz Memory Upgrade (Part #19K4652) \$34
ThinkPad Essential Kit (Part #31P6481) \$69.99

IBM ThinkPad A30*High-performance desktop alternative with exceptional versatility*

Mobile Intel Pentium III processor 933MHz - M
Supports Enhanced Intel SpeedStep Technology
14.1" XGA display
128MB SDRAM • 20GB hard drive
Ultrabay 2000 CD-ROM
Integrated Ethernet and modem
16MB ATI Mobility Radeon graphics
Microsoft Windows 2000 Professional
Lotus SmartSuite Millennium license
PC Doctor • Adobe Acrobat Reader
3.2-hr. Li-Ion battery • 6.6 lbs. travel weight
1-year limited warranty

\$1,749

SuccessLease for Small Business \$62/MO., 36 MOS.

SWAPPABLE OPTIONS:

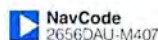
CMS ABS Plus Adapter (Part #22P8154) \$299.99
ThinkPad A Series Li-Ion Battery (Part #02K6878) \$165

Looking for Microsoft Office XP,¹
2000 Small Business or XP
Professional with your IBM system?

Simply contact us to order it at an
additional cost.

IBM ThinkPad R30*Best blend of portability and essential features*

Mobile Intel Pentium® III processor 1.0GHz featuring
Intel SpeedStep™ Technology²
13.3" XGA display • 128MB SDRAM
15GB hard drive • Ultrabay Plus CD-RW
Integrated Ethernet and modem
 Integrated 802.11b wireless technology
8MB Trident CyberBLADE graphics
Microsoft Windows 2000 Professional
Lotus SmartSuite Millennium license
PC Doctor • Veritas RecordNow
2.8-hr. Li-Ion battery • 5.3 lbs. travel weight
1-year limited warranty

\$1,849

SuccessLease for Small Business \$66/MO., 36 MOS.

IBM 32MB USB Memory Key (Part #22P5296) \$89
ThinkPad R Series Li-Ion Battery (Part #02K6821) \$139

IBM ThinkPad X22*Extra-light, extra-small ultraportable*

Mobile Intel Pentium III processor 800MHz - M
Supports Enhanced Intel SpeedStep Technology
12.1" XGA TFT display
128MB SDRAM
20GB hard drive
Integrated Ethernet and modem
8MB ATI Mobility M6 graphics
NEW! Microsoft Windows XP Professional
Lotus SmartSuite Millennium license
PC Doctor • Access ThinkPad
2.8-hr. Li-Ion battery
3.4 lbs. travel weight
3-year/1-year battery limited warranty

\$2,149

SuccessLease for Small Business \$76/MO., 36 MOS.

IBM 1GB Microdrive™ (Part #07N5574) \$379
256MB 133MHz SDRAM (Part #19K4654) \$60

IBM ThinkPad R30*Best blend of portability and essential features*

Mobile Intel Pentium III processor 1.0GHz featuring
Intel SpeedStep Technology
14.1" XGA display • 128MB SDRAM
30GB hard drive • Ultrabay Plus CD-RW
Integrated Ethernet and modem
 Integrated 802.11b wireless technology
8MB Trident CyberBLADE graphics
Microsoft Windows 2000 Professional
Lotus SmartSuite Millennium license
PC Doctor • Veritas RecordNow
2.8-hr. Li-Ion battery • 5.3 lbs. travel weight
1-year limited warranty

\$2,049

SuccessLease for Small Business \$73/MO., 36 MOS.

ThinkPad Port Replicator (Part #02K8667) \$179
HP DeskJet 350C Portable Color Printer
(Part #19K5690) \$279.99

IBM ThinkPad T23*Perfect blend of performance and portability*

Mobile Intel Pentium III processor 1.13GHz - M
Supports Enhanced Intel SpeedStep Technology
14.1" XGA display
128MB SDRAM
20GB hard drive
Integrated Ethernet and modem
Ultrabay Plus DVD-ROM
16MB S3Graphics SuperSavage IXC
Microsoft Windows 2000 Professional
Lotus SmartSuite Millennium license
PC Doctor • Access ThinkPad
Titanium Composite top and bottom covers
3.5-hr. Li-Ion battery • 4.6 lbs. travel weight
3-year/1-year battery limited warranty

\$2,449

SuccessLease for Small Business \$87/MO., 36 MOS.

ThinkPad Dock (Part #263120U) \$529
ThinkPad SuperDisk (LS-240) Ultrabay 2000 Drive
(Part #08K9616) \$289

**Direct
To You**

Call toll free 1 866 426-0506 or
Click www.ibm.com/shop/M407

to buy direct, locate an IBM reseller or for more information.



NavCode™ Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

Look for this symbol to quickly find
wireless-enabled IBM systems.

IBM PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

Warranty Information: For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709. Attn: Dept. JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. ¹Certain Microsoft® software product(s) included with this computer may use technological measures for copy protection. IN SUCH EVENT, YOU WILL NOT BE ABLE TO USE THE PRODUCT IF YOU DO NOT FULLY COMPLY WITH THE PRODUCT ACTIVATION PROCEDURES. Product activation procedures and Microsoft's privacy policy will be detailed during initial launch of the product, or upon certain reinstallations of the software product(s) or reconfigurations of the computer, and may be completed by Internet or telephone (full charges may apply). ²Memory supports both system and video. Accessible system memory may be up to 8MB less than the amount stated, depending on video mode. GB = 1,000,000,000 bytes when referring to storage capacity; accessible capacity is less. ³Some software may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply. ⁴These model numbers achieved an eTesting Labs, Inc.'s BatteryMark™ 4.0.1 Battery Runtime Time of the times shown above. This test was performed without independent verification by eTesting Labs, Inc.; eTesting Labs, Inc. makes no representations or warranties as to these test results. BatteryMark is a trademark of Ziff Davis Publishing Holdings Inc., an affiliate of eTesting Labs Inc., in the US and other countries. A description of the environment under which the test was performed is available at ibm.com/pc/w/thinkpad/batterylife.html. Includes battery and optional travel bezel instead of standard optical drive in Ultrabay 2000, if applicable; weight may vary due to vendor components, manufacturing process and options. Telephone support may be subject to additional charges. For onsite service, customer may be asked certain diagnostic questions before a technician is sent. Prices do not include tax or shipping and are subject to change without notice. Reseller prices may vary. SuccessLease is offered by third-party providers of business financing approved by IBM Global Financing. SuccessLease terms and conditions provided by the third party. Featured monthly lease payments include pre-specified purchase option at end of lease, to qualified business customers only, installing in the US. Documentation fee and first month's payment due at lease signing; taxes are additional. Offer may be withdrawn or changed without notice. Options cannot be leased separately. ⁵With Intel SpeedStep, processor speed may be reduced to conserve battery power. All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM cannot be responsible for photographic or typographic errors. SuccessLease and all IBM product names are registered trademarks or trademarks of International Business Machines Corporation. Lotus and SmartSuite are registered trademarks of Lotus Development Corporation and/or IBM Corporation. Intel, Intel Inside, the Intel Inside logo, Pentium and Celeron are registered trademarks and SpeedStep is a trademark of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. ©2002 IBM Corp. All rights reserved.



Breed success **with success.**



IBM NetVista™ desktops have earned over 90 industry awards, in under two short years.

Aside from all the accolades, new M, A and X Series desktops also offer four unique design profiles, so you won't have to force fit PCs to match your working environment anymore. Plus, nearly all new models are available with the power of an Intel® Pentium® 4 processor, and feature common system boards for easier upgrades and management. Of course, nothing can help you tie everything together like IBM. Our complete range of services and software complement groundbreaking hardware like our IBM @server xSeries systems – which were specially designed for the demands of e-business. That's probably why **IBM is the #1 supplier of servers in the U.S.*** Choose IBM for your business, because after all – it's easier to propagate success with a true thoroughbred.



DESKTOPS

IBM NetVista A Series

Leading-edge technologies and affordable prices

Intel® Pentium® 4 processor 1.60GHz
128MB SDRAM
20GB* hard drive
CD-ROM
Integrated 10/100 Ethernet
16MB NVIDIA Vanta AGP 4X graphics
NEW! Microsoft® Windows® XP Professional
Lotus® SmartSuite® Millennium license†
Norton AntiVirus (V6.20.04) license‡
PC Doctor • ConfigSafe
Stealth black tower
15" IBM monitor (13.8" viewable, Part #15MONB1)
3-year parts/1-year onsite labor limited warranty*

\$979  NavCode
635025U-M407

SuccessLease® for Small Business \$35/MO., 36 MOS.

For only \$60 more, UPGRADE to a 17" IBM monitor (16" viewable, Part #17MONB1)

CUSTOMIZE YOURS:

128MB SDRAM Memory (Part #00N7965) \$60

IBM NetVista A Series

Leading-edge technologies and affordable prices

Intel Pentium 4 processor 1.80GHz
128MB SDRAM
40GB hard drive
CD-RW
Integrated 10/100 Ethernet
16MB NVIDIA Vanta AGP 4X graphics
NEW! Microsoft Windows XP Professional
Lotus SmartSuite Millennium license
Norton AntiVirus (V6.20.04) license
PC Doctor • ConfigSafe
Stealth black tower
17" IBM monitor (16" viewable, Part #17MONB1)
3-year parts/1-year onsite labor limited warranty

\$1,209  NavCode
635035U-M407

SuccessLease for Small Business \$43/MO., 36 MOS.

For only \$329 more, UPGRADE to a 15" TFT flat panel monitor (Part #15TFTB1)

CUSTOMIZE YOURS:

Lexmark X83 All-in-One (Part #22PB311) \$199.99

Microsoft® Windows 2000 Server or Microsoft Small Business Server 2000 software is available preloaded on select xSeries models.

Simply contact us to order it at an additional cost.

IBM NetVista A Series

Leading-edge technologies and affordable prices

Intel Pentium 4 processor 1.60GHz
128MB SDRAM
40GB hard drive
CD-RW
Integrated 10/100 Ethernet
16MB NVIDIA Vanta AGP 4X graphics
NEW! Microsoft Windows XP Professional
Lotus SmartSuite Millennium license
Norton AntiVirus (V6.20.04) license
PC Doctor • ConfigSafe
Stealth black tower
17" IBM monitor (16" viewable, Part #17MONB1)
3-year parts/1-year onsite labor limited warranty

\$1,119  NavCode
635026U-M407

SuccessLease for Small Business \$40/MO., 40 MOS.

For only \$329 more, UPGRADE to a 15" TFT flat panel monitor (Part #15TFTB1)

CUSTOMIZE YOURS:

IBM UPS 675 External USB (Part #33L3478) \$159

IBM NetVista X Series

Extraordinary, space-saving design with high performance

Intel Pentium 4 processor 1.60GHz
Black 15" integrated TFT flat panel display
128MB SDRAM • 20GB hard drive
CD-ROM • Integrated 10/100 Ethernet
16MB ATI Rage 128 Ultra AGP 4X graphics
NEW! Microsoft Windows XP Home Edition
Microsoft Works Suite 2001
Norton AntiVirus (V6.20.04)
PC Doctor
Integrated stereo speakers
1-year parts and onsite labor limited warranty

\$1,449  NavCode
228351U-M407

SuccessLease for Small Business \$52/MO., 36 MOS.

CUSTOMIZE YOURS:

IBM X Series Radial Arm* (Part #22P7332) \$219

Direct
To You

Call toll free 1 866 426-0506 or
Click www.ibm.com/shop/M407

to buy direct, locate an IBM reseller or for more information.

 NavCode™ Get the latest pricing and information fast. Use NavCode on the phone or on the Web

SERVERS

IBM @server xSeries 200VL

Designed to meet small business budgets

Intel Celeron® processor 850MHz
128KB L2 cache
128MB memory std./15GB max.†
20GB Ultra ATA/100 EIDE hard drive std.
Maximum internal storage of 120GB*
3.5" floppy disk drive
Integrated 10/100 Ethernet
CD-ROM
5 available slots/4 available bays
Toolless tower chassis with optional 4U rack mounting
IBM Director V2.2 system management software with exclusive Software Rejuvenation Technology
1-year parts and onsite labor limited warranty

\$619  NavCode
B48111X-M407

SuccessLease for Small Business \$22/MO., 36 MOS.

For only \$80 more, UPGRADE to an Intel Pentium III processor 1.0GHz (Part #848121X)

CUSTOMIZE YOURS:

IBM 10/20GB IDE Tape Drive* (Part #20L0549) \$285

IBM @server xSeries 220

Leading technology made affordable

Intel Pentium III processor 1.26GHz
Dual processor capable
512KB advanced transfer L2 cache
128MB memory std./4GB max
No hard drive std./max optional storage of 293.6GB
3.5" floppy disk drive • CD-ROM
Integrated 10/100 Ethernet and Ultra160 SCSI
5 available slots/5 available bays
Diagnostic LEDs, Automatic Server Restart and Predictive Failure Analysis*
Toolless tower chassis with optional 4U rack mounting
IBM Director V2.2 system management software with exclusive Software Rejuvenation Technology
3-year parts/1-year onsite labor limited warranty

\$1,049  NavCode
864641X-M407

SuccessLease for Small Business \$38/MO., 36 MOS.

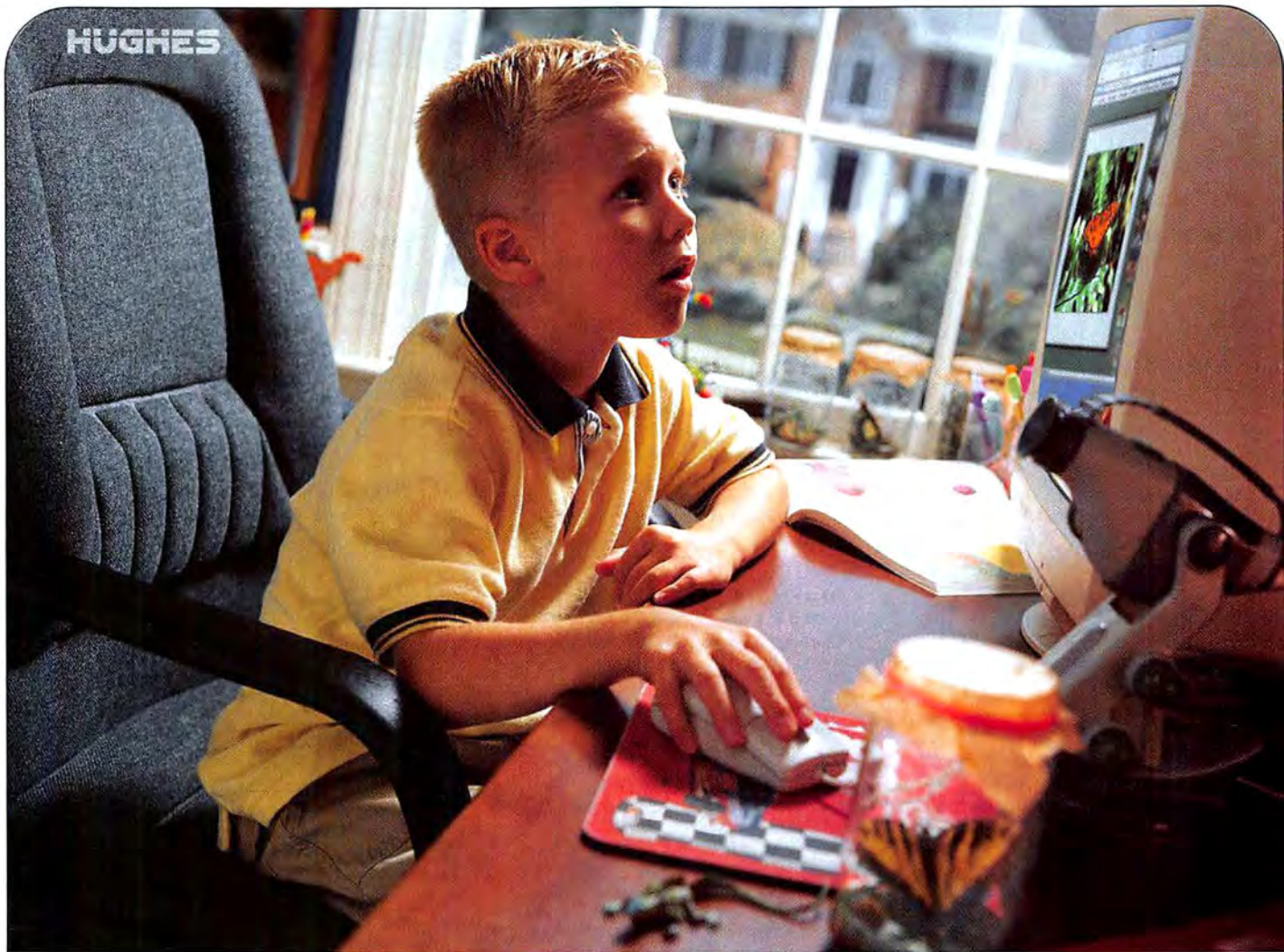
For only \$300 more, UPGRADE to a system with 3 hot-swappable hard drive bays (Part #86464AX)

CUSTOMIZE YOURS:

IBM 10K rpm 18.2GB Hard Drive (Part #00N6208) \$249

IBM PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

Warranty Information: For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709. Attn: Dept. JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. *Gartner Group Report, August 2001. †GB = 1,000,000,000 bytes when referring to storage capacity, accessible capacity is less. ‡Some software may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply. †Available for download through Access IBM. †Telephone support may be subject to additional charges. For onsite service, customer may be asked certain diagnostic questions before a technician is sent. *Prices do not include tax or shipping and are subject to change without notice. Reseller prices may vary. †SuccessLease is offered by third-party providers of business financing approved by IBM Global Financing. SuccessLease terms and conditions provided by the third party. Featured monthly lease payments include pre-specified purchase option at end of lease, to qualified business customers only, installing in the US. Documentation fee and first month's payment due at lease signing; taxes are additional. Offer may be withdrawn or changed without notice. Options cannot be leased separately. †Maximum memory and hard drive capacity may require the replacement of standard component with largest supported component available. †Actual storage capacity will vary based on many factors and may be less than the maximum possible. Numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology. Designed for business environment; radial arm must be installed in accordance with instructions provided. All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM cannot be responsible for photographic or typographic errors. SuccessLease and all IBM product names are registered trademarks or trademarks of International Business Machines Corporation. Lotus and SmartSuite are registered trademarks of Lotus Development Corporation and/or IBM Corporation. Intel, Intel Inside, the Intel Inside logo, Celeron and Pentium are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. ©2002 IBM Corp. All rights reserved.



A CHILD'S SENSE OF WONDER SHOULDN'T HAVE TO WAIT.

Introducing broadband by satellite from DIRECWAY,[™]
high-speed Internet that's available everywhere.

Now your kids can go wherever their imaginations take them—
regardless of where you live. DIRECWAY brings high-speed Internet
to everyone, all across the continental United States. DIRECWAY is
always on, with no dialing up or logging on. And it won't tie up your
phone line. Best of all, DIRECWAY makes Web surfing a lot more fun,
with downloads that are super fast and streaming media that's smooth
and clear. So your children can research butterflies for their school
project, watch nature videos online, or do anything else they like. Get
the new high-speed Internet service you can catch wherever you live.

For more information, visit us at getDWAY.com



DIRECWAY

Broadband that's out of this world.[™]

Fee vs. Free Software



Do you get what you pay for? We pit the leading free applications against for-a-price alternatives.

SPECIAL REPORT: Free Stuff

THOUGH GREAT FREE SERVICES are getting tougher to find on the Web, free software has never been better or more abundant. These days you can net everything from office suites to e-mail apps to firewalls without spending a dime. And while "free" used to mean "dumbed-down" or "crippled," some of today's no-cost apps, such as Outlook Express and ZoneAlarm, outshine most of their pay-to-use competitors.

But makers of many free applications are nudging users toward paid versions of the software. RealNetworks' RealOne media player, for instance, has features that work only if you subscribe to one of the company's audio or video services.

So what's the cost of living free? We compared some top free programs against their paid rivals, and tried paid versions of some of our favorite free apps. Read on to see when free software makes sense, and when you're better off paying up. Then go online (to find.pcworld.com/20761) for our e-mail face-off: Outlook Express vs. Eudora Pro. ►

EDITED BY ERIC DAHL

ILLUSTRATION BY GERARD DUBOIS

Office Suites

StarOffice vs. Office XP

Choose StarOffice if you need a solid word processor, spreadsheet, and presentation package but not a calendar/e-mail app, and you can deal with some file-format hassles. **Choose Office XP** if you can't risk suffering file-format glitches, need high-quality graphics, want an integrated e-mail and information manager app, or are willing to pay to get the best overall product.

AMONG OFFICE SUITES, Microsoft Office rules the roost—but Sun Microsystems' StarOffice 6.0 could be a fox in the henhouse. This upcoming upgrade to the free suite packs Writer (a word processor), Calc (a spreadsheet program), Impress (presentation software), and Draw (for basic graphics creation) into a 95MB download. (At press time, Sun said version 6.0 would be available by the end of June; until then, version 5.2 is available at the company's site.)

I tested a beta version of StarOffice 6.0 against Office XP Professional to see whether the free application can replace everyone's (well, almost everyone's) favorite office suite. (The full version of Office XP Pro costs \$579; upgrade versions of the standard suite cost \$239.) Although StarOffice doesn't handle Office files perfectly, it's a legitimate alternative if you have basic needs and XP gives you sticker shock. But Office's superior ease of use and graphics tools, plus its inclusion of Outlook, make it the better suite overall.

StarOffice does include most of Office's core features, such as a spelling checker, auto-sum and graphing compatibilities in the spreadsheet, and wizards for assembling slide shows. It actually outperforms Office XP in integration: You can hop between Writer, Calc, Draw, and Impress documents via a menu of all open files.

But in a world dominated by Office users, you have to be able to play nicely with Microsoft's file formats. And here, the StarOffice 6.0 beta offered mixed results. I could open and read Word, Excel, and PowerPoint documents with most of their formatting and functions intact, but I did lose Word macros. StarOffice can also export to Office formats; the conversion works well enough for casual use, but some elements—such as columns—got jumbled. And that could be a big problem if you're sending a document to an important client.

Office XP outshines StarOffice in rendering graphics. StarOffice's Draw creates rather flat-looking images, and Calc provides only 2D charts instead of the much more attractive 3D bar charts that are available in Excel. And StarOffice's

multiple addresses, for example), and it has well-integrated calendar and PIM functions. And even though Office's collaborative tools (such as its SharePoint Team Services intranet server) are imperfect, at least they're there—StarOffice has few features for workgroups that need to share files and information.

—Michael Gowan

Multimedia Players

RealOne vs. RealOne Premium

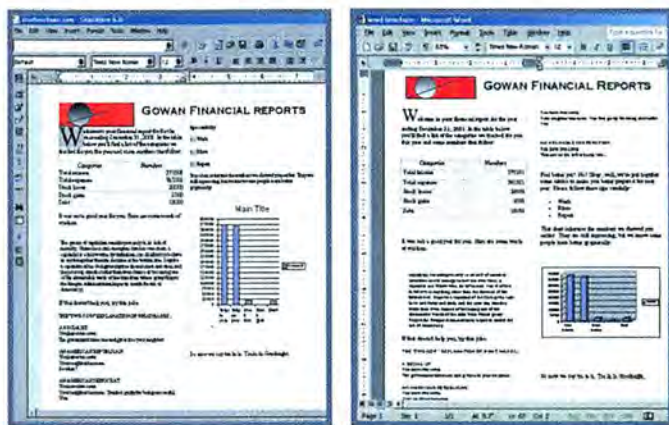
Choose the free RealOne player if you want to have a great-looking multimedia app that lets you watch video, rip digital audio, manage your multimedia library, and try video and audio programs available on the Web.

Choose RealOne Gold if you'd like to be a guinea pig for fee-based online entertainment or you can't get enough of *Survivor*.

FOR YEARS, two powerful outfits have battled to play digital video and audio on your PC: Microsoft (with Windows Media Player) and RealNetworks. Today you need both companies' free programs to take advantage of all the audio and video on the Web. But RealNetworks' RealOne applica-

tion (the successor to RealPlayer) introduces a new option: premium services, such as music downloads and exclusive video, for a monthly fee. For now, though, few users will find this for-pay content worth the cost—especially since the free version offers so much worthy entertainment and information.

RealOne's subscription services replace what Real used to call GoldPass subscriptions, giving you premium content for a monthly fee—kind of like cable TV. The company offers several subscription options: One is a \$10 per month membership package with access to premium



SUITE SIMILARITIES: StarOffice's Writer (left) and Office XP's Word are kissing cousins in look, feel, and features, but Word is easier to use.

online help needs, well, help: Its advice was often incomplete or lacked context. By contrast, Office XP leads you through functions step-by-step, and its Task Panes simplify common tasks. And if StarOffice had Office's Document Recovery feature I wouldn't have had to rewrite most of this review after the app crashed.

StarOffice also fails to offer an e-mail or a calendar application to compete with Office's Outlook—a major omission in a day when most folks consider e-mail as important as a word processor. Outlook handles all the necessary e-mail tasks (filtering e-mail or sending messages to mul-

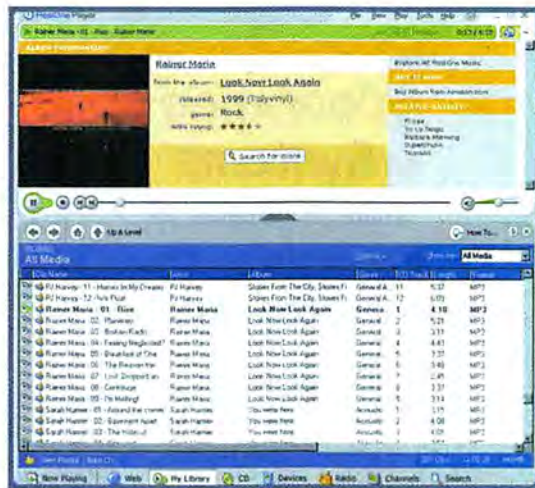
video, another is a \$10 per month music subscription including 100 downloads of music plus 100 music streams in a 30-day period. We looked at the \$20-a-month RealOne Gold option, which combines the video and music packages and throws in 125 more music downloads monthly.

The free and subscription services alike use RealOne Player. This nifty all-in-one multimedia application lets you watch video, listen to music, rip CDs into digital files, and manage your music and video collections. I used a beta version of the player to compare RealNetworks' free service and its RealOne Gold subscription service.

The membership service delivers some impressive-looking video content, just not enough of it to justify the \$10-per-month fee. I particularly enjoyed the ABC News programs, which include an entire week of *Nightline* episodes on demand and commercial-free. *Survivor* addicts can watch bonus footage that didn't make it onto that week's show. The membership service isn't limited to video offerings, either: Sports nuts will love the streaming audio broadcasts of every NBA and Major League Baseball game. The free version is limited to a handy "best of the Web" menu that collects sports, news, and entertainment clips from around the Net.

RealOne Music is RealNetworks' presentation of Musicnet, the digital music service that offers 80,000 songs from several major- and independent-label recording artists. The service's downloads come with severe restrictions, however. You can't burn the tracks to CD or copy them to a portable player. And you're just renting the music: If you don't carry over the songs to the next month (where they would count against that month's 100 total downloads), the tracks become dead-weight on your hard drive and won't play.

RealNetworks' music service also gives you access to RealOne Radio, 48 streaming radio stations in an array of genres. The songs are streamed at low bit rates,



REALONE PLAYER manages your media with style—even if you don't subscribe to RealNetworks' premium services.

however, which makes them sound like they're playing on a tinny AM radio. The free player limits you to a directory of free radio sites grouped by genre, but several of these sites sounded great and quickly became part of my daily listening routine.

Subscription-based Web media may be the wave of the future, but until more video content and better music services become available, you're better off saving your dollars and tuning into the Internet's wealth of free content while you still can.

—MG

Firewalls

ZoneAlarm vs. ZoneAlarm Pro

Choose ZoneAlarm if you want protection for no more than a few Internet-connected PCs, you don't know all that much about firewalls, and you want to save money.

Choose ZoneAlarm Pro if you need advanced network protection, or you want to safeguard PCs that use a virtual private network or Internet Connection Sharing.

IN THESE SECURITY-CONSCIOUS days, a firewall—which controls the flow of data into and out of your PC—has become an essential utility. *PC World* has often praised Zone Labs' ZoneAlarm. That program (free for individuals, \$20 for businesses) used to be Zone's only product, but the company now sells ZoneAlarm Pro, a more feature-rich version.

Fortunately, the free software's capabilities haven't diminished. ZoneAlarm provides just as much protection from hackers as the Pro version. The latter adds features for advanced users and management options for larger networks. ▶

FEATURES COMPARISON

Free and Paid Software

	PRODUCT	Company	Price	Value
Paid software	Office XP Professional www.microsoft.com/office	Microsoft	\$579	Still the standard in easy-to-use office apps.
	RealOne Gold www.realone.com	RealNetworks	\$20 per month	Paid content isn't worth the money unless you're a sports buff or a <i>Survivor</i> fan.
	ZoneAlarm Pro www.zonealarm.com	Zone Labs	\$40	Added features help protect servers and larger networks.
	Microsoft Windows XP Pro www.microsoft.com/windowsxp	Microsoft	\$299	Stable OS is compatible with Windows applications.
Free software	StarOffice 6.0 www.sun.com/staroffice	Sun Microsystems	Free	Office alternative covers most of the bases.
	RealOne www.realone.com	RealNetworks	Free	Exceptional free media player.
	ZoneAlarm www.zonealarm.com	Zone Labs	Free for personal use	Free firewall offers more-than-adequate protection for most users.
	Mandrake Linux 8.1 www.linux-mandrake.com	Mandrake	Free	Powerful and free OS carries a challenging learning curve.

I tested ZoneAlarm freeware and ZoneAlarm Pro version 2.6.362. Both programs can quarantine suspicious e-mail attachments; both can totally block network activity either at the click of a button or when the screen saver kicks in; and both include the handy Desk Band toolbar, a set of icons that offer quick access to more-advanced features.

But only the \$40 Pro version lets power users control many additional parameters. For instance, ZoneAlarm Pro can analyze its network surroundings and customize itself to protect a company's virtual private network.

Busy network administrators can save many hours of time by setting up auto-configuration scripts for ZoneAlarm Pro. Most important, the Pro version lets companies password-protect the firewall's settings; this stops workers from bypassing these settings and getting into trouble.

You don't have to be a corporate IT staffer to reap benefits from ZoneAlarm Pro: Thanks to its support for Windows' Internet Connection Sharing, you can protect every computer on a home network that shares a single Internet connection, by having the firewall run just on the gateway PC. For most individual users, however, the protection of ZoneAlarm is more than adequate, and paying \$40 to upgrade to the Pro version is overkill.

—Andrew Brandt



FREE FOR INDIVIDUALS, ZoneAlarm boasts antihacker tools that are potent enough to keep most users safe from cyber-intruders.

Operating Systems

Linux vs. Windows XP

Choose Mandrake Linux 8.1 if you want a stable, Microsoft-free OS with lots of free apps, and you don't mind tinkering.

Choose Windows XP if you want the easier-to-use OS and broader hardware and software support, and you have time and money invested in Windows.

HERE'S ONE BIG DIFFERENCE between Windows XP and Linux: XP costs from \$99 to \$299 for a Product Activation-protected copy that you can put on one PC, but you're free to install a single Linux CD on 500 machines if you'd like. And even though today's Linux and its applications still aren't as slick or intuitive as their Windows rivals, they definitely improve on their predecessors.

At the same time, XP is a considerable advance on Windows 9x in terms of stability, access control, and configuration options—traditional Linux strengths. So which OS belongs on your desktop? Let's see a show of hands. XP is a far more logical upgrade if you already know Windows, you use it for typical business or home tasks, and you have hardware and a suite of software for that OS.

But Linux remains an intriguing alternative for the technical types who have long sworn by it, as well as for budget-minded small businesses and nonprofits that are setting up an office from scratch.

Linux can be just as easy to install as Windows, but hardware compatibility remains a knotty issue. Distributors of various flavors of Linux maintain online databases of compatible devices. The OS usually handles items such as network cards easily, and drivers are available for many printers. But configuring USB devices and gadgets such as digital cameras takes some serious tinkering—assuming

they'll work at all. (Of course, some devices still have problems with XP, too.)

Most high-profile Windows applications are unavailable for Linux, but that doesn't mean Linux users are starved for software. Most of the 60-odd distributions available come with multiple office suites, browsers, firewalls, e-mail clients, and CD rippers, along with a profusion of tools for



TODAY'S LINUX HAS A Windows-like look, and free apps are plentiful and powerful. But don't consider this OS until you study hardware compatibility.

programmers and other techies. Sun's StarOffice (see page 86) comes in a Linux version, and there are high-quality alternatives to applications such as Adobe Photoshop. Still, Linux can't perform such Windows tasks as running QuickTime movies. And the OS is short on business applications such as accounting packages.

Stable, powerful, and free, Linux is one of the computing world's great bargains. And sites like www.linux.com/learn can help you find out if it's right for you. Just make sure you know what Linux is—and isn't—before you make the leap.

—Alexandra Krasne ■

Systemax™

Get a whole lot more!



Not all companies can afford or need a large IT department, so we created a support system that's so good, it feels like the Systemax Guy is right in the office with you. Amazing 24/7 customer support comes standard with every Systemax™ Venture™ PC.

Systemax Venture PCs feature the Intel® Pentium® 4 processor to give your business the computing power it needs for today's and tomorrow's demanding applications. Invest today in a Venture PC and you're set with tomorrow's technology.



It's like having a highly paid Tech Guy on staff.

(Without the highly paid part.)

Venture SU22 **NEW!**

Intel® Pentium® 4 Processor 2.20 GHz
256MB SDRAM
80GB Ultra ATA 7200 RPM Hard Drive
ATI 32MB SDRAM AGP Graphics
19" (.25dp) 18" Viewable Monitor
16X DVD^{*}
24x10x40 CD-R/RW[†]
SoundBlaster Live! 5.1 PCI Audio
Cyber Acoustics CA-3000 Speakers w/sub-woofer
Intel® 10/100 Ethernet
Microsoft® Windows® XP Professional
Microsoft® Office® XP Small Business²
7-Bay Mid-Tower Case
5/3 Year Limited Warranty
1[†] Year On-Site Service^{*}

\$1899 #980785
Lease \$64.00/Mo.

Venture SU17

Intel® Pentium® 4 Processor 1.70 GHz
128MB SDRAM
40GB Ultra ATA 7200 RPM Hard Drive
ATI 32MB SDRAM AGP Graphics
15" (.28dp) 13.8" Viewable Monitor
52X CD-ROM[†]
Business Integrated Audio
Cyber Acoustics CA-2015 Speakers
Intel® 10/100 Ethernet
Microsoft® Windows® XP Home
Microsoft® Office® XP Small Business²
7-Bay Mid-Tower Case
1/1 Year Limited Warranty
1[†] Year On-Site Service^{*}

\$999 #980777
Lease \$33.67/Mo.

Venture U16a

Intel® Pentium® 4 Processor 1.60 GHz
128MB SDRAM
20GB Ultra ATA Hard Drive
32MB AGP Graphics
52X CD-ROM[†]
Business Integrated Audio
Cyber Acoustics CA-2015 Speakers
Intel® 10/100 Ethernet
Microsoft® Windows® XP Home
7-Bay Mid-Tower Case
1/1 Year Limited Warranty
1[†] Year On-Site Service^{*}

\$629 #980808
Lease \$21.20/Mo.

Buy this PC at 2GHz
\$978 Lease \$32.96/Mo.

Systemax recommends Windows® XP Professional for business

Call your Systemax Specialist at Global Computer today...

1-888-932-7835

Configure your own Systemax PC at www.globalcomputer.com/pc

Systemax Venture PCs come with a 3.5" Floppy Drive, a 104-Window Keyboard, a Netscroll Mouse, 1 Year Extendable Limited Warranty and 24/7 Tech Support.

CD-ROM speeds are variable. Maximum speed shown. [†]Microsoft Office XP Small Business includes Microsoft Word, Excel, Outlook, Publisher and Small Business Tools. ^{}On-site service is provided by a third party, unaffiliated with Systemax. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft, MS and Windows are registered trademarks of the Microsoft Corporation. All products are trademarks of their respective manufacturers. All registered and unregistered trademarks are the sole property of their respective companies. Advertised configurations are active 2/10/02-3/10/02. Prices do not include shipping or applicable sales tax. Copyright 2001, Systemax Inc. Prices and configurations are subject to change without notice.



RCA'S CC9390 (above) is the costliest camcorder we tested. Want to be in front of the camera? You can detach its LCD screen.

CANON'S Elura 20MC (below) packs high-quality digital video into a body no larger than some MP3 players.



SHARP'S VL-NZ10U (above) uses a horizontally oriented body with a large LCD display that rotates for shooting from an angle.



**Best
BUY**

PANASONIC'S PV-DV701 (above) earns our Best Buy award by providing the best image quality in both ideal conditions and dark of night; it's also the easiest to use of the models we tested. It has features such as a big, bright LCD display and infrared capability, yet its price remains moderate.

DV Must-See

We pick the best camcorders and software for professional-looking digital videos.

NO LONGER A PRICEY technology reserved for news crews and documentary filmmakers, digital video is growing as a mainstream tool for creating everything from simple home movies to presentations and professional training films. For instance, Dr. Steven Schweitzberg, an associate professor of surgery at the Tufts University School of Medicine in Boston, tapes most of his operations so that he can demonstrate new surgical techniques to his peers. "I record the video with a mini-DV recorder," he explains, "and then transfer it to either a desktop or a laptop system, where I can edit it and dump it out onto videotape." Just think: *ER* without the commercials.

But you don't have to be a doctor with university funding to afford today's video editing equipment, and you don't have to be a brain surgeon to figure out how to operate it. We looked at seven digital video camcorders and found that, for the most part, they're easy to use, capture impressive footage, and offer substantial value. We also examined seven video editing software packages to see which applications can best help you craft your rough footage into a polished movie. ►

PHOTOGRAPHS BY KEVIN CANDLAND

Choosing a CAMCORDER

BY RICHARD BAGULEY

AS CAMCORDER PRICES have fallen from the stratosphere, more people have begun to realize the benefits of digital video over its analog predecessor; DV captures sharper pictures, and the images don't degrade when you copy tapes or transfer footage to a PC for editing. According to Ron Glaz, an analyst with International Data Corporation, around 4 million digital camcorders will be sold in 2002. Furthermore, he predicts, mini-DV camcorders will outsell analog models by 2004.

media. Hitachi's new DZMV100A, for instance, records to a DVD-RAM disc (see our review in this month's *New Products*). If you already have video that was shot with an analog camcorder, many DV models can bring your old footage into the digital age. Five of these camcorders (all except the JVC and the Samsung) can record from an external composite or S-Video source, allowing you to copy your old analog videos onto mini-DV tapes.

For comparison purposes (not as part of

rate charge-coupled devices to convert light in each of the three primary colors into electrical signals. Less expensive models, in contrast, rely on a single CCD.

A GOOD VIEW?

WE TESTED VIDEO quality by mounting each camera on a tripod and shooting an identical scene—a colorful toy train running in a loop—first inside the PC World Test Center and then outside on a sunny day. We used Fujifilm DV tape in each camera (except the analog model), and a panel of judges compared the video clips on identical color televisions. We also conducted some informal tests by asking several *PC World* editors to shoot several outdoor scenes simultaneously. Our

image-quality impressions depended on three factors: color, image stability, and the camcorder's ability to capture motion.

Camcorders adjust their color settings depending on the lighting. In a process called *white balancing*, the camcorder analyzes all the colors in an image, then interprets them to best match what the human eye would see. All camcorders handle this automatically; some more-expensive models, like the Canon XL1, let you make manual adjustments as well. Each of the seven models we reviewed captured realistic colors both indoors and outdoors. They also did a good job of transitioning from one lighting situation to another.

We encountered one minor problem with the Sony: Whereas the other camcorders use the entire field of view to determine the white balance, the Sony reads only the center of the image. In our lab tests with the Sony, that caused colors to shift whenever a brightly colored boxcar on our model train passed through the center of the frame.

Image stability wasn't a problem in our lab tests, where the devices were mounted on tripods, but once you put a camcorder in your hand, some degree of shakiness is

SAMSUNG'S SC-D67 (left) was the most awkward of our test units to use, but it's also the least expensive. JVC's GR-DVL815 lacks analog inputs, so you can't use it to convert your old VCR tapes into digitally editable files.



Camcorder vendors certainly offer plenty of variety to address the DV market. We found models in a range of shapes, sizes, and prices—from \$500 to \$1499. Our test units included the Canon Elura 20MC (\$1299), the JVC GR-DVL815U (\$799), the Panasonic PV-DV701 (\$899), the RCA CC9390 (\$1499), the Samsung SC-D67 (\$500), the Sharp VL-NZ10U (\$1200), and the Sony DCR-TRV17 (\$1100).

Like most DV camcorders, all of the models we tested use tiny mini-DV tapes, but some camcorders record on other

our review)—to put the image quality of our seven camcorders in perspective—we also tested an analog unit and a high-end digital model. The \$320 Canon ES420V uses 8mm analog tapes; the \$3500 Canon XL1, a semiprofessional digital camcorder, has a built-in sound mixer, interchangeable lenses, far better audio capabilities than the units in our roundup, and greater control over video adjustments. (Canon recently launched an updated version, the XL1S, but it was not available in time for our testing.) The XL1 uses sepa-

inevitable. Fortunately, all the cameras include some form of digital image stabilization: They adjust for small movements that could create blurry video, by shifting the image on the CCD slightly to compensate. Image stabilization worked pretty well on all the camcorders, but you

ors were the best of the bunch. We also liked the unit's bright LCD screen, which made it easy to frame our subjects.

With the exception of the RCA and the Samsung, all of the camcorders also double as digital cameras for taking snapshots. But don't toss out your digital still

units also include an infrared illuminator, which allows you to film in settings with little or no visible light. A camera's CCD can convert the infrared light, which is invisible to the human eye, to black-and-white video. None of the camcorders produced images of the same quality in the

None of the camcorders produced images of the same quality in the dark as they produced in daylight, but the best overall was the Panasonic.

won't get the rock-steady images you could achieve by using a tripod.

In our tests, we found relatively little difference in image quality among all the digital camcorders—including the semi-pro Canon XL1. The JVC and the Sharp models did produce the weakest images, which we rated Average and Good, respectively. But even these two units provided noticeably better footage than the analog model could. All the other DV camcorders earned a score of Very good, but in our judgment, the Panasonic's especially sharp images and accurate col-

camera: Our test models could capture images at a resolution of only 640 by 480 pixels, considerably less than today's digital cameras can muster.

Some of the camcorders (such as the Panasonic and the RCA) come with clip-on lights, and you can buy optional lights for the others. But there are times when you might want to shoot video in dimly lit settings, such as when someone's giving a presentation. The JVC, Panasonic, RCA, and Sony offer low-light modes that use low shutter speeds to capture more available light. The Panasonic, RCA, and Sony

dark as they produced in daylight, but the best overall was again the Panasonic: It captured the nicest color in low light, and it took the best-looking video when using the infrared illuminator.

UP CLOSE AND PERSONAL

EACH OF THE seven camcorders offers both optical zoom (via lens movement) and digital zoom (via software). The Samsung has the longest optical zoom, at 22X; the others offer 10X. All of the optical zooms moved smoothly, and the camcorders yielded good image quality at ▶

FEATURES COMPARISON

DIGITAL CAMCORDERS

CAMCORDER	Street price (11/30/01)	Image quality/ease of use	Rated/tested battery life (minutes) ¹	Weight (pounds)	LCD size (diagonal inches)	Zoom power (optical/digital)	Warranty for parts/labor	Comments
Canon Elura Z0MC find.pcworld.com/19021	\$1299	Very good/Good	45/53	0.9	2.5	10X/40X	1 year/1 year	Cute, expensive camcorder lacks some features—such as a night vision mode—but includes a remote control. ★★☆☆☆
JVC GR-DVL815U find.pcworld.com/19022	\$799	Average/Good	75/73	1.3	3	10X/400X	1 year/90 days	This JVC produced the lowest-quality images in our tests—though they were still respectable. Lacks analog inputs. ★★☆☆☆
Best BUY Panasonic PV-DV701 find.pcworld.com/19023	\$899	Very good/Very good	75/73	1.3	3.5	10X/500X	1 year/90 days	Great image quality, intuitive controls, and a good price make this camcorder the best of the lot. ★★★★★
RCA CC9390 find.pcworld.com/19024	\$1499	Very good/Good	75/101	1.4	3.5	10X/400X	1 year/90 days	This pricey model includes a bright, detachable LCD touch screen; a zoom microphone; and an external light. ★★☆☆☆
Samsung SC-D67 find.pcworld.com/19025	\$500	Very good/Fair	120/77	1.3	2.5	22X/500X	1 year/90 days	Large unit is hard to handle. Has small LCD screen and no analog inputs, but is also the least expensive model here. ★★☆☆☆
Sharp VL-NZ10U find.pcworld.com/19026	\$1200	Good/Fair	90/107	1	3	10X/300X	1 year/90 days	Hard to grip (fingers easily slip over the microphone or lens). Includes a remote control and a zoom microphone. ★★☆☆☆
Sony DCR-TRV17 find.pcworld.com/19027	\$1100	Very good/Good	80/82	1.4	3.5	10X/120X	90 days/90 days	Captures good video and sound. Includes a remote, plus MGI PhotoSuite 8.1 and VideoWave III SE software. ★★☆☆☆

¹ Approximate number of continuous minutes recording, with the LCD screen turned on.

both ends of their ranges. The JVC, Panasonic, RCA, Samsung, and Sony models all boast incredibly high digital zooms (up to 500X for the Samsung and the Panasonic). But at their higher settings, the cameras are magnifying such a small part of the image that all you can see is a blur. We wouldn't recommend attempting to film at any setting above 50X.

The camcorders have some notable differences in their designs. The Canon Elura 20MC is by far the smallest model. Standing at approximately 2 inches wide by 4 inches tall and weighing less than a pound, it's the only model here that you could comfortably fit into a coat pocket. Its small size does have disadvantages, however: Some of our testers found that their fingers didn't sit comfortably on the tiny controls. Also, you must plug in an included dock in order to use some basic features, such as an external microphone jack or an S-Video or composite output for sending video to a television. Another drawback of the diminutive Elura is its smallish color LCD screen, which measures only 2.5 inches on the diagonal. The Samsung SC-D67 has a 2.5-inch screen too, but all the other camcorder screens here measure 3 or 3.5 inches diagonally.

At the other extreme, the Samsung felt

excessively bulky and awkward. And the Sharp, which more closely resembles a digital camera than a camcorder, was difficult to handle because of its unusual design. We found that no matter how firmly we gripped the unit, our fingers were prone to slipping and blocking either the lens or the microphone.

LOUD AND CLEAR?

ALL OF THE camcorders captured reasonably good sound with their built-in microphones; but in general, models with front-mounted microphones performed better than those that had the mike positioned on top, such as the Canon Elura and the Sharp. In particular, if the person holding the Elura spoke, that person's voice would drown out everything else. Fortunately, all the camcorders except the JVC GR-DVL815U allow you to connect an external mike.

Several of the camcorders suffered other sound problems: The microphones on the Panasonic, Samsung, and Sharp models often picked up the sound of the lens mechanism when we zoomed the optical lens in or out. Speaking of zooming, the Sharp and the RCA each include a good zoom microphone, which consists

SONY'S DCR-TRV17 is the company's least-expensive mini-DV camcorder (Sony offers less-expensive Digital 8 models, however).



of several individual mikes that pick up sound from different directions. As the lens zooms in on a subject, the zoom microphone adjusts to pick up more sound from the front and less from the sides.

GOING THE DISTANCE

EVEN THE BEST camcorder is just dead weight if the battery gives out. But that doesn't seem to be a problem for the camcorders we reviewed: When we set them to record, with the LCD screen on, all but the Canon Elura ran for well over an hour. In fact, four of them exceeded their rated battery lives. The JVC and the Panasonic had the next shortest battery life, at 1 hour and 13 minutes apiece. The Sharp lasted longest, at 1 hour and 47 minutes.

All of the manufacturers offer bigger batteries. We tried the Canon Elura, for example, with the BP-422 extended battery pack (about \$95). Though it was heavier, the BP-422 extended the Elura's battery life from 53 minutes to over 3 hours.

DIRECTOR'S CHOICE

OF THE MODELS we tested, the Panasonic PV-DV701 provides the best overall package, combining a moderate price with the highest ratings in our video quality tests. It also includes plenty of nice features such as a big, bright LCD. Honorable mention goes to the cute Canon Elura 20MC. Its diminutive size makes it the easiest to lug around, but the tiny controls are tricky to handle. The Elura is also one of the most expensive models. ▶

Sharper Shooting

DIGITAL CAMCORDERS produce much better results than analog models, as these images show. The left frame is from our Best Buy mini-DV camcorder, the Panasonic PV-DV701; the right is from the Canon ES420V, which uses 8mm analog videotape. Details, such as the railroad crossing sign and the buttons on the CD player, are much sharper with the Panasonic.



Here's a concept: The best person to determine what goes into a PC is the person that will actually be the one using it.



Go online or call for our latest promotions.

Dell | Home

Dimension™ 4400 Desktop

Superior Performance, Smart Value

- Intel® Pentium® 4 Processor at 1.60GHz
- 256MB DDR SDRAM at 266MHz
- 40GB* Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., .27dp) E771 Monitor
- 64MB NVIDIA® GeForce2 MX Graphics Card with TV-Out
- 48X Max CD-ROM Drive
- 24X/10X/40X CD-RW Drive with Roxio's Easy CD Creator® (2" Bay)
- SB Live! 1024V Digital Sound Card
- Harman Kardon® HK-395 Speakers with Subwoofer
- 56K* PCI Telephony Modem for Windows®
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included*
- 1-Yr Limited Warranty; 1-Yr At-Home Service; 1-Yr 24x7 Phone Support

\$1199

Ask us about no payments for 90 days for qualified customers.
E-VALUE Code: 00899-500211

Recommended upgrades:

- 15" (15.0" v.i.s.) 1503FP Digital Flat Panel Display, add \$290
- 16X Max DVD-ROM Drive, add \$50
- 3-Yr Limited Warranty; 3-Yr At-Home Service; Lifetime 24x7 Phone Support, add \$139



Who knows exactly what you want in a computer? **You do.** A personal computer should be personal. I'm a Dell Dimension 4400 with a high-performance Intel Pentium 4 Processor. And I'm perfect for you because I'm put together around your PC needs. So whether you want your graphics and programs running super-smooth on DDR SDRAM memory (twice as fast as SDRAM), or just want a system with a CD Burner, Dell can help you build me so I'm perfect for you. And when it comes to service and support, no one beats Dell. So go online or call today, and discover how easy it is to build your own PC.



Your own custom-built PC. Easy as **DELL**

Order the easy way. Visit www.dell4me.com or call toll free 1-800-624-6139.

Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

New members only. Must register for ADL within 30 days of invoice. To avoid paying monthly membership fees, cancel during the 6 month promotional period. Even during promo period, telephone access charges on your phone bill (call your phone co. for details) and surcharges for premium services and 800# access may apply, including in AK. Availability may be limited, especially during peak times. For new, 18+ U.S. members with major credit card or checking account only. Limited time offer.

I've got strength in numbers...and in options.



Go online or call for our latest promotions.

Dell | Home Notebooks



Inspiron™ 2500 Notebook

Practical and Affordable Mobility

- Intel® Celeron® Processor at 900MHz
- 12.1" SVGA TFT Display
- 128MB Shared PC100 SDRAM™ (256MB Max)
- 20GB* Ultra ATA Hard Drive
- 24X Max CD-ROM Drive
- Intel Integrated 3D® AGP Video
- Sound Blaster® Compatible
- 59Whr Li-Ion Battery
- Internal Mini-PCI 56K* Capable Fax Modem

\$1049 or as low as **\$32/mo.** for 45 mos.¹²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-800210m

Recommended upgrades:

- HP® 318C Digital Camera, add \$149
- Notebook Surge Protector, add \$29
- Dell™ Notebook Protection Backpack, add \$79

Inspiron 4100 Notebook

Uncompromising Performance in a Thin and Light System

- Intel Pentium® III Processor at 1GHz-M featuring Enhanced Intel SpeedStep™ Technology
- 14.1" Ultra XGA+ TFT Display
- 256MB SDRAM at 133MHz (1GB Max)
- 20GB* Ultra ATA Hard Drive
- 8X Max DVD-ROM Drive
- 32MB DDR 4X AGP NVIDIA® GeForce2 Go™ 200 Video
- Sound Blaster Compatible Sound with Wavetable
- 59Whr Li-Ion Battery with ExpressCharge™ Technology
- Internal V.90/56K* Modem and 10/100 Fast Ethernet Combo

\$1729 or as low as **\$52/mo.** for 45 mos.¹²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-800217

Recommended upgrades:

- 8X CD-RW Drive, add \$99
- Portable Canon® BJC-85 Color Printer, add \$299
- Targus Defcon Security Device, add \$39

Inspiron 8100 Notebook

The Ultimate Multimedia Notebook

- Intel Pentium III Processor at 1.2GHz-M featuring Intel SpeedStep Technology
- 15" Super XGA+ TFT Display
- 384MB SDRAM at 133MHz (512MB Max)
- 40GB* Ultra ATA Hard Drive
- 8X Max DVD-ROM Drive
- 32MB DDR NVIDIA GeForce2 Go 4X AGP Graphics
- Sound Blaster Compatible Sound with Wavetable
- 59Whr Li-Ion Battery with ExpressCharge Technology
- Internal V.90/56K* Modem and 10/100 Fast Ethernet Mini-PCI Combo

\$2379 or as low as **\$71/mo.** for 45 mos.¹²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-800222

Recommended upgrade:

- 3-Yr Limited Warranty; 3-Yr Next Business Day On-Site Service; Lifetime 24x7 Phone Support, add \$299

Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

¹²New members only. Must register for AOL within 30 days of invoice. To avoid paying monthly membership fees, cancel during the 6-month promotional period. Even during promo period, telephone access charges on your phone bill (call your phone co. for details) and surcharges for premium services and 800® access may apply, including in AK. Availability may be limited, especially during peak times. For new, 18+ U.S. members with major credit card or checking account only. Limited time offer.

Prices, specifications, availability and terms of offers may change without notice. Taxes and shipping charges extra, and may vary. Valid for U.S. Dell Home Systems Company new purchases only. Dell cannot be held responsible for errors in typography or photography. For a copy of our Guarantees or Limited Warranties, write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, Texas 73682. *At-Home or On-Site service provided via third-party contract with customer. Technician will be dispatched.



Dimension™ 4400 Desktop

Superior Performance, Smart Value

- Intel Pentium 4 Processor at 1.60GHz
- 128MB DDR SDRAM at 266MHz
- 40GB* Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., .27dp) E771 Monitor
- 16MB ATI® RAGE™ Ultra Graphics Card
- 48X Max CD-ROM Drive
- Integrated Audio
- Harman Kardon® HK-195 Speakers
- 56K* PCI Data Fax Modem for Windows®

\$899 or as low as **\$27/mo.** for 45 mos.²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-500208a

Recommended upgrades:

- 256MB DDR SDRAM, add \$70
- 17" (16.0 v.i.s., .25dp) P792 FD Trinitron® Monitor, add \$140
- 16X/10X/40X CD-RW Drive with Roxio's Easy CD Creator®, add \$60
- Harman Kardon HK-395 Speakers with Subwoofer, add \$30

Dimension 4400 Desktop

Superior Performance, Smart Value

- Intel Pentium 4 Processor at 1.70GHz
- 128MB DDR SDRAM at 266MHz
- 40GB* Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., .27dp) E771 Monitor
- 16MB ATI RAGE Ultra Graphics Card
- 24X/10X/40X CD-RW Drive with Roxio's Easy CD Creator
- SB Live! 1024V Digital Sound Card
- Harman Kardon HK-395 Speakers with Subwoofer
- 56K* PCI Telephony Modem for Windows

\$1099 or as low as **\$33/mo.** for 45 mos.²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-500210

Recommended upgrades:

- 256MB DDR SDRAM, add \$70
- 19" (18.0" v.i.s., .26dp) M991 Monitor, add \$140
- Harman Kardon HK-695 Surround Sound Speakers with Subwoofer, add \$30
- 64MB NVIDIA GeForce2 MX Graphics Card with TV-Out, add \$40

Dimension 8200 Desktop

Cutting Edge Technology

- Intel Pentium 4 Processor at 1.80GHz
- 256MB RDRAM
- 40GB* Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., .27dp) E771 Monitor
- 64MB NVIDIA GeForce2 MX Graphics Card with TV-Out
- 16X Max DVD-ROM Drive
- 16X/10X/40X CD-RW Drive with Roxio's Easy CD Creator (2nd bay)
- SB Live! 1024V Digital Sound Card
- Harman Kardon HK-695 Surround Sound Speakers with Subwoofer
- 56K* PCI Telephony Modem for Windows

\$1499 or as low as **\$45/mo.** for 45 mos.²
No payments for 90 days for qualified customers.
E-VALUE Code: 00900-500214

Recommended upgrades:

- 15" (15.0" v.i.s.) 1503FP Digital Flat Panel Display, add \$310
- Turtle Beach® Santa Cruz™ DSP Sound Card, add \$40
- 24X/10X/40X CD-RW Drive with Roxio's Easy CD Creator (2nd bay), add \$20
- 80GB* Ultra ATA/100 Hard Drive (7200 RPM), add \$70

Dell | Standard Features

Each DELL system shown here has a number of standard features, including:

- MS® Windows XP Home Edition
- MS Works Suite 2002
- 6 Months of America Online® Membership Included*
- Dimension Desktops shown here include 1-Yr Limited Warranty, 1-Yr At-Home Service, 1-Yr 24x7 Phone Support
- Inspiron Notebooks shown here include 1-Yr Limited Warranty, 1-Yr Mail-In Service, 1-Yr 24x7 Phone Support

Dell | Solutions

Software and Accessories

Printers and All-In-One Print Centers:

- Epson® Stylus C80 Color Printer, \$149 after \$30 Epson Mail-In Rebate (reg. \$179)*
- Lexmark™ Z53 Color Printer, \$129
- Lexmark X83 All-In-One Print Center that Scans, Prints and Copies, \$199
- HP Office Jet K80, \$299

Scanners:

- HP ScanJet 4400Cse Scanner, \$99
- Epson 1250U Scanner, \$169

Digital Cameras:

- HP Photosmart C318 Digital Camera, \$149 after \$50 HP Mail-In Rebate (reg. \$199)*
- Kodak® DX3600 Digital Camera, \$299

Service and Support

How about some peace of mind to accompany your new Dell system?

Dimension Desktop Service Upgrades:

- Upgrade Dimension Desktops with 1-Yr Ltd Warranty, 1-Yr At-Home Service, 1-Yr 24x7 Phone Support to: 3-Yr Ltd Warranty, 3-Yr At-Home Service and Lifetime 24x7 Phone Support, add \$139 (4400 and 8200)

Inspiron Notebook Service Upgrades:

- Upgrade Inspiron Notebooks with 1-Yr Ltd Warranty, 1-Yr Mail-In Service, 1-Yr 24x7 Phone Support to: 3-Yr Ltd Warranty, 3-Yr Next-Business-Day On-Site Service, Lifetime 24x7 Phone Support, add \$299

Everything you'd ever want in a PC starts right here. Whether you're looking for high-performance multimedia to take on the road, or a versatile desktop that's perfect for home, Dell can custom-build a solution that is just right for you. And by making PCs to order and shipping direct instead of using a middleman retailer, Dell is able to give you the very latest technology at a low price, all backed by an award-winning service and support team that knows your PC like it's their own. So go online or call today, and discover a better way of finding, buying, and owning the perfect computer. A better way that's easy.



Easy to buy. Easy to own. Easy as **DELL**

Order the easy way. Visit www.dell4me.com or call toll free **1-800-624-6139**.

If necessary, following phone-based troubleshooting. To receive Next Business Day service, Dell must notify the service provider before 5 pm (customer's time). Availability varies. Other conditions apply. *For hard drives, GB means 1 billion bytes; accessible capacity varies with operating environment. †Download speeds limited to 53Kbps. Upload speeds are less (about 30Kbps) and vary by modem manufacturer and line conditions. Analog phone line and compatible server required. ‡Monthly payment based on 13.99% APR FOR QUALIFIED CUSTOMERS. OFFER VARIES BY CREDITWORTHINESS OF CUSTOMER AS DETERMINED BY LENDER. Under 90 Days Same-As-Cash feature, interest accrues during first 90 days if balance not paid within 90 days. Customers not eligible for 90 Days Same-As-Cash feature may be offered standard 48-month financing with APR rates ranging from 18.99% to 26.99%. Example: \$1,650 purchase price, at 19.99%, 48 monthly payments at \$51. Taxes and shipping charges extra and vary. From CIT On-line Bank to U.S. state residents with approved credit. Availability may be limited in some states. Limited time offer. *For rebate details and coupons, call 800-728-3665 for HP and 800-277-6187 for Epson. System and monitor purchase may be required for rebate. †Up to 11MB of system memory may be used to support integrated graphics. Intel, Intel Inside, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. MS, Microsoft and Windows are registered trademarks of Microsoft Corporation. America Online, AOL, the Triangle logo and Buddy List are registered service marks of America Online, Inc. ©2002 Dell Computer Corporation. All rights reserved.



Keep your E-VALUE CODE handy! It's the easiest way to find and build your perfect PC – at the lowest price – when you decide to order.

Editing SOFTWARE That Makes the Cut

BY PAUL HELTZEL

DIGITAL VIDEO CAMCORDERS take fantastic video, but without judicious editing you're likely to end up with more material than your audience can stand. Good video editing software makes it easy to harvest the best footage and assemble it with scene transitions, music, and other effects to make a slick, interesting movie.

To test video editing software, we took an hour of footage of a company picnic and then trimmed it down to a peppy 1.5-minute movie using seven leading packages: Adobe Premiere 6 (\$549), AIST MovieDV 4 (\$50), Discreet IntroDV (\$70), MGI Software VideoWave 5 (\$120), Pinnacle Systems Studio 7 (\$99), Sonic Foundry VideoFactory 2 (\$60), and Ulead

VideoStudio 6 (\$100). Is your system DV-capable yet? Many vendors also offer their software bundled with an IEEE 1394 card; Pinnacle, for example, sells its Studio DV 7 package for \$129.

The video editors we looked at are designed for beginner- or intermediate-level filmmakers and are moderately priced, with the exception of Premiere 6. We included Premiere because it has long been the standard by which other applications are judged. Most of the other manufacturers offer higher-end packages as well, but Premiere 6 is Adobe's least-expensive video editing application.

We created an editing script and then used each application to produce an iden-

tical movie. In the process, we evaluated how successfully each program handled five main editing steps: capturing video, importing audio tracks, organizing and trimming clips, adding transitions, and finally, outputting the finished movie.

CAPTURING VIDEO

TO GET STARTED, we dropped the mini-DV cassette into a camcorder and connected it via a cable to the IEEE 1394 port of a computer running Windows XP Home Edition. Importing video to our PC (sometimes called *transporting*) was easy because all the programs are compliant with the so-called OHCI-standard, which means that they should recognize any DV camcorder and control it remotely via on-screen controls (as long as the IEEE 1394 card is also OHCI compliant).

Pinnacle Studio 7 offers a handy feature to save hard drive space during transport. Typically, digital video is captured at a set data rate—about 3.6MB per second. With Studio 7's Preview mode, you can save small, temporary video files to lay out your edits. When you're done, the appli-

FEATURES COMPARISON

VIDEO EDITING SOFTWARE

PRODUCT	Street price (11/30/01)	Recommended CPU/RAM	Number of included transitions/filters	Type of editing format	Number of video/audio tracks	Key audio input formats	Key video output formats
Adobe Premiere 6 find.pcworld.com/19028	\$549	Pentium II-300/64MB	75/74	Storyboard, timeline	99/99	MP3, WAV, Windows Media Audio	AVI, DV, MPEG-1, QuickTime, RealVideo, Windows Media Video
AIST MovieDV 4 find.pcworld.com/19029	\$50	Pentium II-400/128MB	20/16 ¹	Storyboard, timeline	6/4	CD-Audio, DAT, MP3, WAV, WMA	Autodesk Movie, AVI, DAT, DV, MPEG-1, MPEG-2, QuickTime, RealVideo, WMV
Discreet IntroDV find.pcworld.com/19030	\$70	Pentium II-400/96MB	10/0	Timeline	1/2	AIF, MP3, WAV	AVI, DV, QuickTime
MGI Software VideoWave 5 find.pcworld.com/19031	\$120	Pentium III-500/64MB	60/27	Storyboard	1/5	CD-Audio, MIDI, MP3, WAV, WMA	AVI, DV, MPEG-1, MPEG-2, RealVideo, Video CD, WMV
Best Buy Pinnacle Systems Studio 7 find.pcworld.com/19032	\$99	Pentium II-300/128MB	155/7	Storyboard, timeline	1/3	MP3, WAV	AVI, DV, MPEG-1, MPEG-2, RealVideo, WMV
Sonic Foundry VideoFactory 2 find.pcworld.com/19033	\$60	Pentium II-400/128MB	174/115	Timeline	2/3	AIF, MP3, Sonic Foundry Perfect Clarity Audio, WAV	AVI, DV, MPEG-1, ² MPEG-2, ² QuickTime, RealVideo, Sonic Foundry Wave 64, WMV
Ulead VideoStudio 6 find.pcworld.com/19034	\$100	Pentium III-700/128MB	113/30	Storyboard, timeline	2/2	AIF, MP3, WAV	AVI, DV, MPEG-1, MPEG-2, QuickTime, Super VideoCD, VideoCD

¹ Additional transitions and filters sold as downloads.

² Though included in the base product we evaluated, MPEG-1 and MPEG-2 support may be offered only as added-cost plug-ins by the time you read this.

cation will capture only your selected video clips at full quality to implement your edits and render a completed movie.

IMPORTING AUDIO

MOST FILMMAKERS will tell you that viewers can tolerate imperfect video, but that poor audio is much harder to bear. To perk up our tape's weak soundtrack, we captured one song from a CD and imported another from an MP3 file. (See the software feature chart for a list of the audio formats that each program accepts.)

Once again, Pinnacle Studio 7 wins kudos for its straightforward interface. It offers an impressive array of audio-importing choices, and it describes them in simple terms such as "Record Voice-over" and "Add CD Music." It also includes royalty-free instrumental music.

None of the other programs matches Pinnacle Studio 7 for putting so many key audio options so close to your fingertips. For example, IntroDV allows you to import existing audio files from your hard drive, but it can't capture your voice from a microphone or record audio from a CD.

With that program, you'll need to use Windows' Sound Recorder or another audio capture program instead.

Adobe Premiere 6 has the same limitation. Once you get the audio in, however, Premiere offers a strong set of editing tools, including controls for setting sound levels that vary over the length of the movie, and controls for panning audio—taking the sound of a speeding truck, for instance, and sending it from the left speaker to the right. Sonic Foundry, best known for audio programs like Sound Forge XP, delivers such cool audio features in VideoFactory 2 as the ability to apply audio filters in order to improve sound quality or to add funky effects.

ORGANIZING AND EDITING CLIPS

THE PROGRAMS automatically break video into clips, based on differences in the camcorder's time code. They allow you to further divide clips into smaller pieces, and to trim footage from a clip's beginning or end by dragging an icon.

To start editing, you typically select the icon that represents a clip and drag it into a timeline or a storyboard interface. The benefit of a storyboard is its simplicity: You set the order of your video and audio clips by placing them in a set of sequential blocks, moving from left to right. You manage overlaps between clips via settings in dialog boxes. A timeline stacks the various video clips, sound tracks, and effects vertically and thus is more complicated, but it offers more control because you can see exactly how the clips overlap.

Premiere 6, MovieDV 4, Studio 7, and VideoStudio 6 offer both storyboard and



Best Buy SOFTWARE



PINNACLE SYSTEMS' STUDIO 7 is a breeze to learn and a cinch to use. At \$99, it's excellent for both novice and intermediate editors who want to create basic, professional-looking videos. People with higher artistic aspirations can try Sonic Foundry VideoFactory 2 or Adobe Premiere 6.

timeline modes, which we found useful. You can quickly organize a rough movie project in the simple storyboard mode, and then fine-tune it on a timeline.

Nearly all the programs function similarly and are easy to grasp. The one exception was MovieDV 4. We had to refer to the online manual throughout the editing process, and the documentation is too focused on explaining obscure technical specs, such as "adaptive line mesh technology," rather than basics like importing a still image. In contrast, VideoFactory 6's online help shows you how to accomplish a task, and even shows you where to click by using animations for each step.

TYING IT ALL TOGETHER

BOTH STORYBOARDS AND timelines let you add a transition by dragging an icon between clips. Most professional film editors prefer simple edits, or *straight cuts*—just one clip of video placed next to another—but all the packages we tried offer many more options. Some twirl your video as if it were turning in a pool of water; others "wipe" one clip across the screen as the next clip takes its place. Besides using these fancy transitions, you can add filters (effects) to provide artistic touches, such as a watercolor look. ▶

Comments	
Professional-level video editor is pricey and has the toughest learning curve of the programs reviewed here. ★★★★★	
Inexpensive, feature-filled editor has precise tools for customizing the look of your footage, but it's hard to learn. ★★☆☆☆	
Straightforward video editor is almost as easy to learn as Pinnacle Studio 7, but has more-limited audio capabilities. ★★★★★	
Beginner-friendly program provides solid video-editing capabilities and a simple storyboard interface. ★★★★★	
Very user-friendly; versatile enough for most people. Advanced users will want more customization options. ★★★★★	
Intermediate-level editor comes at a great price. Not as easy to learn as Pinnacle Studio 7. ★★★★★	
Capable video editor at a reasonable price. Nonstandard interface takes some time to learn. ★★☆☆☆	

Storyboard vs. Timeline

Studio 7 and Premiere 6 offer premade transitions and tools to edit them, but Premiere 6 lacks some often-used transitions we'd like to see, such as fade to black. You must create those elements on your own, but you can save them for future use. In contrast, VideoFactory 2 makes transitions especially easy to control: Right-clicking a transition opens a contextual menu of ways to modify it, such as making a title screen fade out or scroll up.

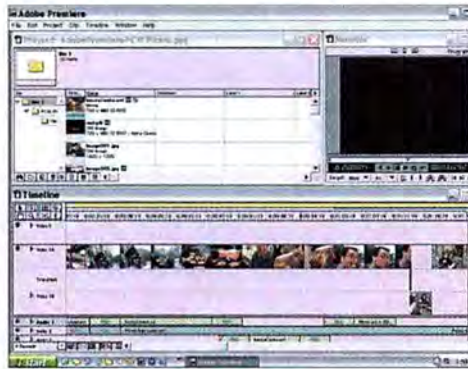
To finish our movie, we imported some still shots and used the programs' titling features to add end credits. Ulead's VideoStudio 6 offers 18 predesigned title styles—templates that you can customize to your taste. You may well want to make modifications: We found the templates a bit garish. MGI VideoWave 5, on the other hand, had some of the classiest title styles and the clearest menus for adjusting formatting. After we became accustomed to MovieDV 4's unorthodox controls—including an on-screen joystick for positioning text—we found them quite handy.

Premiere 6 and, unsurprisingly, Studio 7 include Pinnacle's Title Deko, a popular tool for creating titles and editing text for-

A STORYBOARD FORMAT, as shown below left in Pinnacle Studio 7, lets you assemble thumbnail images representing video clips in linear order. A timeline format, shown in Adobe Premiere 6 below, uses separate, stacked bars to show the duration of each element—such as video clips, audio tracks, and transitions—and how they overlap. Some programs, including Studio 7 and Premiere, let you switch between storyboard and timeline.



STUDIO 7 lines up clips in a storyboard at the bottom of the screen and shows a preview in the upper right.



PREMIERE 6'S TIMELINE stacks video, audio, and other tracks in a sophisticated timeline.

matting. It works much like a page-layout program such as QuarkXPress or Adobe InDesign. Anyone who has used a word processor can quickly learn to use Deko.

GOING TO THE MOVIES

ALL THE PACKAGES let you export your movie back to a DV camcorder, and all of them offer compression options such as MPEG-1, for the Web or for a CD, and MPEG-2, for creating DVDs (if you have a DVD-Recordable drive). The chart on page 98 lists key output formats for the programs, and the online version of this story (at find.pcworld.com/19321) includes a table that helps

you pick the best format for your needs.

Premiere 6 offers the most extensive Web output tools, including the ability to choose audio compression independently of video compression, but it doesn't permit you to export your work directly to a DVD-Recordable drive. In contrast, MGI VideoWave 5 has a prominent button for creating DVDs that

can be played in most computer DVD-ROM drives and set-top players. You can also create video CDs that will play in any CD-ROM drive. MovieDV 4 offers plenty of formats to choose from, but it doesn't provide much guidance in choosing the best format to suit a particular need. Pinnacle Studio 7 offers fewer options, but its interface is also far less complicated.

VIDEO EDITOR'S CHOICE

WITH A VERY friendly interface and a modest price, Pinnacle Studio 7 takes our Best Buy award. It's especially good for novices, but it's powerful enough to make business presentations.

Premiere 6, which includes tools such as professional-quality transitions and filters, is the most full-featured application, but it's not the best choice for beginners or casual users. Offering a similar interface to Premiere's at about one-ninth the cost, Sonic Foundry's VideoFactory 2 deserves an honorable mention for its sophisticated timeline, top-notch audio tools, and unique tutorial system. ■

Richard Baguley is a senior associate editor for PC World. Paul Heltzel is an author, video editor, and traveler who happily wanders the country in his 1969 Airstream Safari.



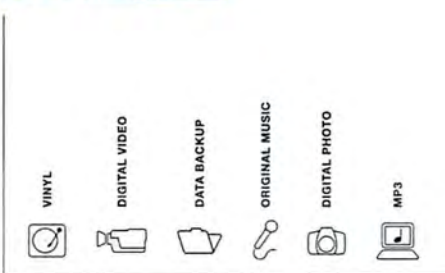
MGI VIDEOWAVE 5 gives you ample control over the appearance of titles, and easy-to-use menus for formatting them.

room to burn



Need more space? Try a digital solution. Back up your data, even burn all your video, MP3s and multimedia presentation files onto CD. You can even create your own personalized jewel cases for each disc. Anyone can do it with Easy CD Creator[®] 5 Platinum, from Roxio. The best selling CD burning software in the world. Learn more at roxio.com/easycd5. Mac[®] users look for Roxio's Toast[®] 5.

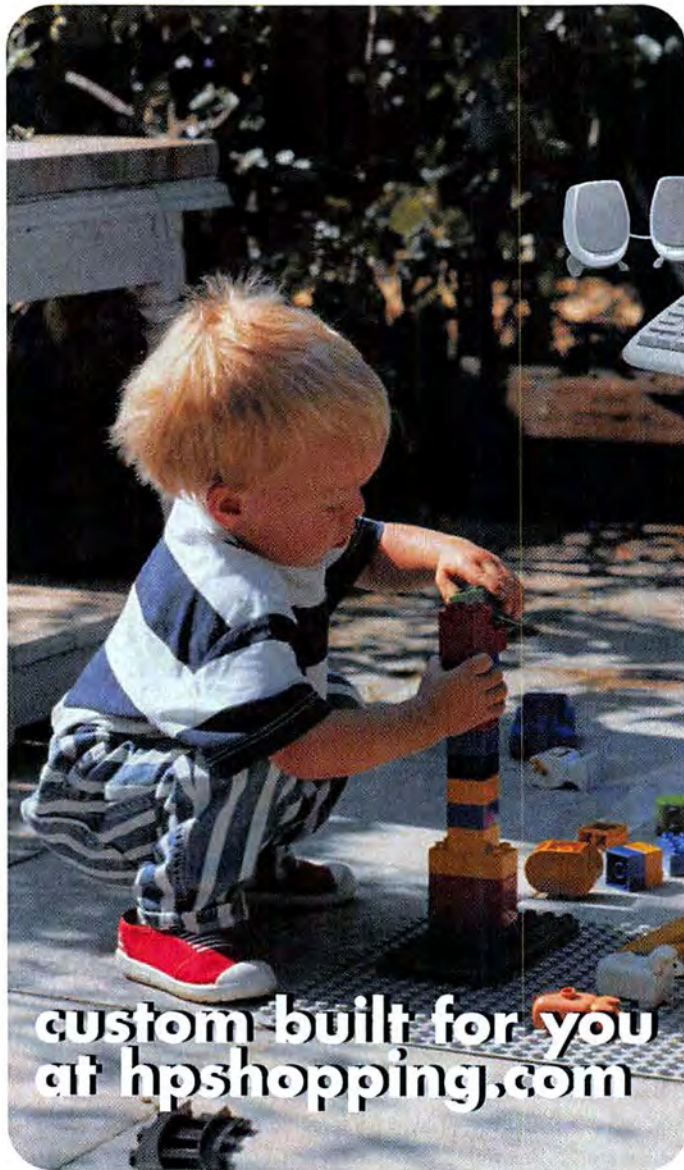
Now Windows[®] XP compatible.





hpshopping.com

A subsidiary of Hewlett-Packard



custom built for you
at hpshopping.com



sample configuration:

- AMD Athlon™ XP processor 2000+ with QuantiSpeed™ architecture*
- QuantiSpeed™ architecture outperforms competitive 2.0 GHz PC Processors
- 512 MB DDR Memory
- 60 GB Hard Drive
- 16x8x40 Max. CD-RW Drive
- 16x Max. DVD Drive
- 32 MB SDR Nvidia TNT2 M64 video card up to 12 months AOL included†

only \$1200.00!**

(add a monitor and get \$150 back by mail)

* AMD Athlon XP 2000+ operates at 1.67GHz

**Price reflects sample configuration. Product availability, price and promotion subject to change.

† Free AOL Internet Services for up to one year (\$239 value) with the purchase of any new HP Pavilion PC. Visit hpshopping.com for more details about this offer.

Save \$150!

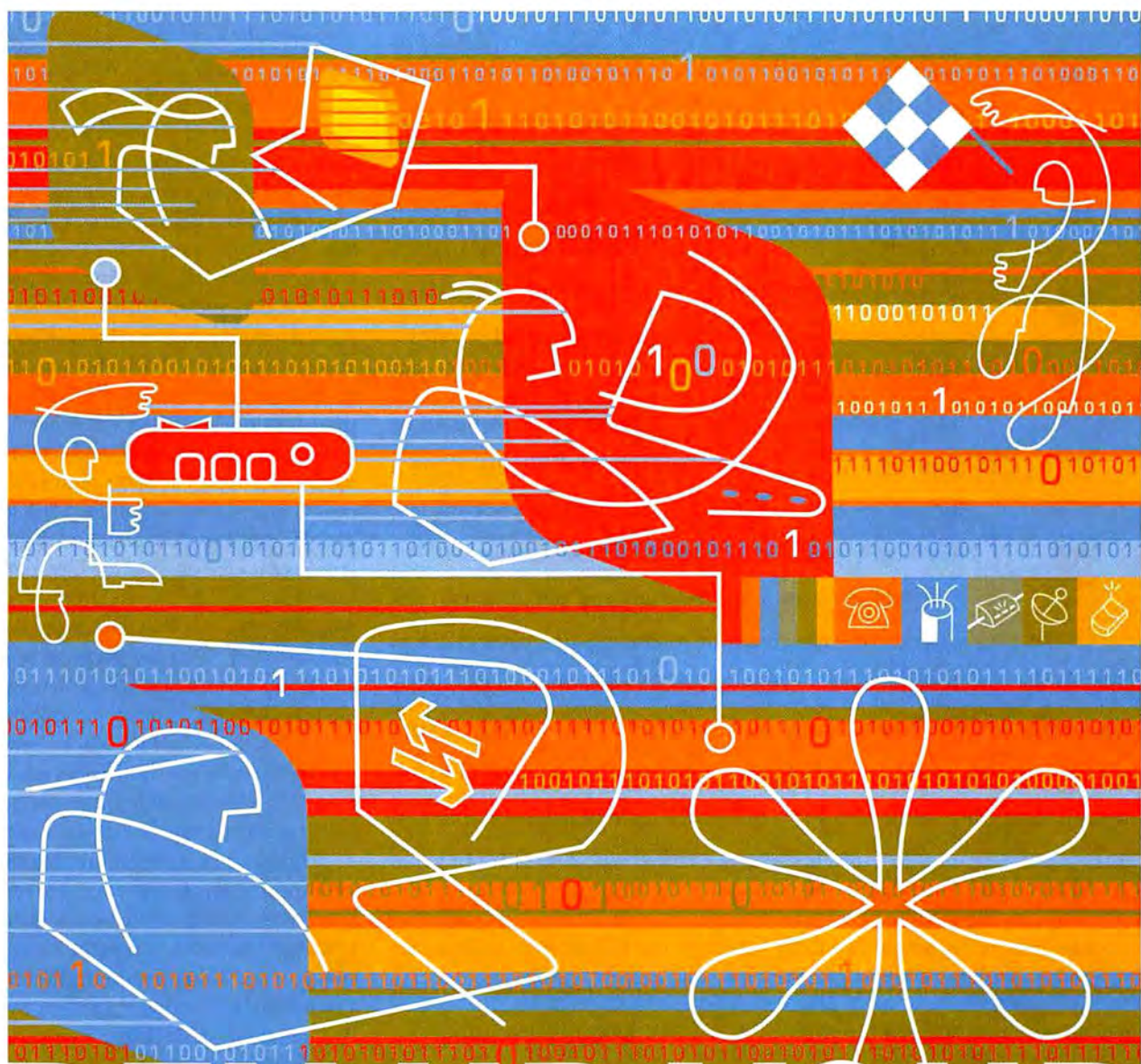
Customize your hp pavilion PC complete with an MX or F-series monitor and save \$150 with mail-in rebate. And now you can protect your PC investment with an upgraded 3 year warranty for just \$99. See hpshopping.com for details.



customize your pc online or call us at:

1.888.774.6847

source code: CS1



REV UP YOUR Net Connection

29 ways to keep your cable, DSL, satellite, or dial-up modem link cruising—and maybe even find a new gear. **By Kirk Steers** ▶

ILLUSTRATIONS BY CELIA JOHNSON

Key



DIAL-UP MODEM



CABLE



DSL



SATELLITE



WIRELESS



ALL

IS YOUR INTERNET CONNECTION as fast and trouble-free as it could be? Probably not. Is there something that you can do to make it better? Definitely.

A cable connection is fast—sometimes. The many different types of DSL are zippy, too, but the installation hassles they sometimes entail are legendary. Then there are the dark horse candidates: satellite and wireless. These offer quick downloads, but who knows what'll happen when sunspot activity picks up or some other atmospheric phenomenon interferes? Finally, there's the venerable dial-up modem. It's definitely not speedy, but it isn't too old to be taught a few new tricks.

Whatever kind of connection you use, you can get more performance out of it. Our 29 tips cover dial-up,

DSL, cable, satellite, and fixed wireless. First we briefly describe what you need to know before making the connection, then we discuss optimizing your link, and finally we explain how to troubleshoot a faulty connection. Naturally, some tips apply to a single type of Internet link, and others apply to multiple types. Each tip is marked with one or more icons that identify the connection methods it refers to (see the above key).

More and more people use their Internet link to log in to a corporate network from their home or other remote location, usually via a virtual private network. We offer a quick look at VPN in "Connection Inc." on page 106. And we describe utilities and Web sites that will help you move into the fast lane in our "Supercharged Surfing" chart on page 105.

GET READY TO REV

THE BEST WAY TO improve your likelihood of establishing a fast and trouble-free Internet connection is a good, clean installation. Follow these tips to avoid being left at the starting line.



Do not burn your bridges. If you're upgrading to a high-speed connection, keep your dial-up modem functioning.

You may need it right away to download device drivers or other files required to complete your broadband installation.

You'll also want your dial-up modem at hand as a backup when your broadband connection goes on the fritz—which it will.




Prepare your PC. If setting up your new Internet service will require a house call by a technician, make life as easy as possible for the installer. Is your PC easy to access, and is it located near a telephone jack or coaxial cable? Or will your connection need an extralong extension that the installer may not have? Anticipate any unique needs of your work environment, and make sure the installer is aware of them in advance.

Double-check that your PC meets all hardware and software requirements for your new service. Is the required connection—whether a PCI slot, a serial port, or a USB port—open and working properly? Check Windows' Device Manager for yellow error flags, and fix any hardware problems before the installer arrives (see **FIGURE 1**). How you open Device Manager varies depending on your version of Windows, but one way is to right-click *My Computer*, choose *Properties*, and look for a tab or button labeled 'Device Manager'.

Have your modem drivers and OS files handy on floppies or other removable media, or copy them to your hard disk to give yourself superfast access to them. (You need to copy only the .cab files from your Windows or System Recovery CD.)





    **Treat the installer like a long-lost friend.** Any broadband installation can be frustrating, but installers and service personnel are rarely responsible for back-office screw-ups. Most installers are hard-working professionals with a tool belt full of off-the-record tips about your broadband setup. Sometimes a little goodwill—and maybe a cookie or a can of soda—can save you hours of frustrating calls to tech support.

 **Learn your limits.** In nearly all cases, your local phone company will send a technician to your house to check the DSL suitability of the phone lines running from your house or building to the closest switchbox (which is usually just a few dozen feet away). The technician will determine your maximum available data throughput, among other things, based on your distance from the local telephone office. The closer you are to the local office, the faster your potential top connection speed. (Typically, your PC must be within 20,000 feet of the central office to qualify for DSL service.) Ask the technician what your location's best rate is so you can avoid unrealistic expectations.



Avoid the circle of blame. DSL installations—and some cable installations—require more than one visit to your location by technicians: the first time to test the line and prepare the

wiring, and the second to hook up the service. These tasks can be performed by different divisions of the same company or (in the case of many DSL installations) your local telephone company initially, and then by a separate ISP. When problems arise, each company or division may blame the other. Your best defense is to ask the company representative who takes your order exactly who is responsible for what tasks and how they can be contacted. Be sure you have this information *before* anyone shows up at your door. Also, keep copious notes about *everything*, including names, dates, what was done, and what was promised. The calm but squeaky wheel does get the oil.

    **Do it yourself?** You can install any of the four types of broadband connections yourself, but there's no guarantee that doing so will save you time or money. Cable and DSL providers offer self-installation kits that PC-savvy customers can probably handle with few or no problems. If you think a Makita is a kind of sled dog, however, installing a satellite or wireless system probably isn't for you; it requires an affinity for power tools and a commitment of several hours at least. Unfortunately, many people discover that installing broadband yourself can easily become a nightmare. Keep the following two points in mind:

- **Don't take chances with hardware:** In theory, any properly installed network card will work with any Internet access device. In practice, you can't count on it. Always use the products recommended by your ISP. Check the company's Web site for a list of compatible items.

- **Use the equipment provided:** Though the cable connecting a broadband modem to your PC's ethernet port may look like a standard ethernet cable, it might not be one. Some DSL and satellite installation kits use a special crossover cable. Replacing it with a standard cable won't work.




   **Think outside the box.** If you'd rather not open your system's case, ask your cable, DSL, or wireless provider for an external



FIGURE 1: MAKE SURE YOUR connection hardware is working properly before you install a new Internet link.


modem that connects to your PC via USB. If you must use an ethernet connection, check out Belkin's \$50 USB Broadband Network Adapter external ethernet adapter; visit www.belkin.com for additional information.

USB 1.1 is rated at a throughput of 12 mbps, but in reality it's rarely higher than 8 mbps, and 6 mbps is typical. If you use videoconferencing or other data-hungry

Internet applications that require speeds above 8 mbps, consider adding a second, dedicated USB card for your broadband connection. Or wait for the arrival of hardware that uses the new, faster USB 2.0. PCs outfitted with USB 2.0 should be available very soon. See *Hardware Tips* on page 154 for more on the benefits of USB 2.0.

SHIFT INTO OVERDRIVE

YOU MAY THINK you're already getting peak performance from your Internet link, but chances are good that you could squeeze at least a few more kilobits per second out of your setup. These tips will help you get your connection running at full throttle.

 **Thanks for more memory.** Adding extra RAM to your PC won't make your modem work more efficiently, but it might substantially improve your online experience. When pictures, text, and ▶

INTERNET TOOLBOX

SUPERCHARGED SURFING

SOFTWARE	Price	Comments
EasyMTU find.pcworld.com/19785	Free	Helps you tweak the Windows Registry to accelerate your connection.
ExtraDNS find.pcworld.com/19786	Free 30-day trial; \$30 to keep	Hastens data retrieval by putting numerical Internet addresses on your hard drive so your PC doesn't have to look for them online first.
IPexpress find.pcworld.com/19783	Free (registration required)	Stores Web sites' IP addresses on your hard drive; speeds surfing by directing browsers to look there before they try a DNS server.
Net.Medic find.pcworld.com/19784	Free	Monitors data flow into, out of, and around your PC. Finds bottlenecks, provides standards for measuring online and PC performance.
Sam Spade find.pcworld.com/19781	Free	Provides a Windows interface for Ping, Tracert, and other data-monitoring functions.
TweakMaster find.pcworld.com/19782	Free 30-day trial; \$20 to keep	Optimizes Windows' Registry settings to speed up your connection.
SITES		
Bandwidth Place bandwidthplace.com/speedtest	Free	Offers downstream speed tests for dial-up connections and for both low- and high-end broadband (upstream tests are in the works).
DSLreports www.dslreports.com	Free	Great for all things DSL, and not bad for other things broadband, either. Includes a test page for analyzing your DSL connection.
Navas Group navasgrp.home.att.net	Free	Loaded with useful (sometimes technical) information about modem and high-speed Internet access.

other parts of a Web page come barreling through your modem and into your PC, they get stored in a portion of your PC's RAM called a cache. The size of the cache is controlled by a setting in your browser: The larger the cache, the more Web content you can store and the faster you can access it. If you repeatedly move back and forth between Web pages, a larger cache can save you lots of time. Furthermore, if your PC has less than 64MB of RAM, you owe it to yourself and your applications to add more. RAM is a very cost-effective upgrade: A typical 128MB memory module costs less than \$30, and some 256MB modules cost only a bit more. Note that

VPN

Connection Inc.

OFFICE WORKERS have never been so footloose.

Corporate networks are becoming easier and safer to access via the public Internet, so we can be "at work" wherever we find an Internet link. Remote connections are rarely as convenient or as fast as being on an office LAN, but more and more companies are finding that virtual private networks are easy and quick enough to get the job done.

For most organizations, the bottom line on VPNs is the bottom line: VPNs are a fraction of the cost of the dedicated leased lines used for remote access

in the past, in part because VPNs use employees' existing Internet service. Some cable-modem service providers claim that VPNs violate residential contracts; they require that people using a VPN as part of a low-cost residential agreement upgrade to a business account. Go to find.pcworld.com/20061 for more on this issue.

Even if they were free, VPNs would be shunned by businesses if they weren't secure. VPNs use "tunneling" to establish a secure connection between your PC and the corporate network gateway. See find.pcworld.com/20062 for a look under the VPN hood.

The low cost and security of VPNs are secondary to the increased productivity they make possible. For instance, my boss has no idea that VPNs have taken ten shots off my golf handicap. Visit find.pcworld.com/20063 to read more about my VPN/DSL adventures.

—Dennis O'Reilly

FAST TIP: Do Your Homework



INSTALLING HIGH-SPEED ACCESS is like getting your car repaired: The more you know, and the more you're involved, the likelier you are to achieve fast, efficient results. Take some time before the installation to research your connection method; in addition, try to ascertain the transmission speed you can expect, the problems you're likely to encounter, and the reputation of your service providers. See our "Supercharged Surfing" chart on page 105 for sites offering this and other useful information.

PC memory is a commodity, and prices can change rapidly.

When your system runs out of RAM, Windows copies the overflow data to the hard disk. To maximize the rate at which data flows on and off your hard disk, run Windows' Disk Defragmenter utility (in

most versions of Windows, you can locate it under the menu *Start•Programs•Accessories•System Tools*).



Wherefore UART thou?

Data moves BETWEEN your PC and your dial-up modem via a UART chip. On occasion the chip's Windows settings create a bottleneck that slows down the throughput. To change the settings, open Windows' Device Manager (in most versions of Windows, you can do this by right-clicking *My Computer*, choosing *Properties*, and clicking the *Device Manager* tab; in Windows XP, you have to click the *Hardware* tab under *System Properties* and then choose the *Device Manager* button). Next, double-click the entry for your modem and select the *Modem* tab. Set the entry in the 'Maximum speed' box to the highest possible value, which is usually 115200. If this adjustment causes problems, reset the entry to its previous value.




Update your driver. To get the most out of any device, Windows needs to use the most appropriate driver available, and you can't expect that driver to be the one already installed on your system. Many modems and network cards can function with drivers written for different models and even different makes, but you'll almost certainly get better performance from a device when you use the latest driver written specifically for it. To identify the driver you're currently using, open Windows' Device Manager and double-click the entry for your modem or network card. Select the *Driver* tab, and then choose *Driver File Details* (*Driver Details* in Windows XP). If the manufacturer's name and the product's model name and number don't match those of the device you're using, go to the vendor's Web site and download the latest driver for that device. Check the installed driver's version number to make sure it isn't out of date. Most manufacturers update their device drivers frequently.



What's your line? The technology used by 56-kbps modems to squeeze out transfer speeds above 33.6 kbps requires a very clean connection between your PC and your ISP's servers. The phone lines in some parts of the United States just aren't up to the task. If you hear static and other background noise when you're talking on your phone, demand that your phone company replace the wires running to your house. (Depending on your type of account, you may also get them to replace the wires inside your house.)


If you can't get new wires, try dialing a different access number for your ISP. Most providers offer more than one number for a given calling area. And make sure the transmission speed of the num-

ber you're dialing matches the speed of your modem. You may be using a 28.8-kbps line or a line that supports only a pre-V.90-vintage 56-kbps connection (K56flex or X2).


 **Hey, big sender!** Most high-speed connections are intended for people who want fast downloads rather than fast uploads, so their download speed far exceeds their upload speed. If you frequently send complex graphics files, large databases, or other big files over the Internet via ADSL, G.Lite, a one-way satellite link, or some other asymmetric service, you probably feel the pinch of their upstream data limits. The solution: Upgrade your service.

SDSL is a business-oriented DSL service that typically offers much faster upload speeds than ADSL or G.Lite—at a higher cost, of course. Expect to pay about double the rate you would pay for an asymmetric plan. Check out DSLreports (www.dslreports.com) for pricing information on the various flavors of DSL available.

If you're a satellite broadband customer, you probably use an analog modem to upload data. Direcway (www.direcway.com), from Hughes Network Systems and its partners, offers a two-way satellite-Internet service that costs about \$700 for equipment and installation, and about \$70 per month for Internet access. The StarBand (www.starband.com) two-way satellite service is available through the Dish Network and other partners at about the same price for equipment, installation, and monthly service.

 **Accelerate your log-ons.** You can probably get online faster by instructing your modem not to perform unneeded tasks. In Windows 9x, open *My Computer*, double-click *Dial-Up Networking*, right-click the icon for your dial-up connection (the default name is *My Connection*), and select *Properties*. On the *Server Types* tab, uncheck *Log on to network*, *IPX/SPX Com-*

patible, and *NetBEUI* (see **FIGURE 2**). In Windows Me, select the *Networking* tab in your connection's *Properties* dialog box and uncheck *NetBEUI* and *IPX/SPX Compatible*, and under the *Security* tab, make sure *Log on to network* is unchecked.

 **What's in a domain name?** When you click a hyperlink, your PC first sends the name of the desired site (such

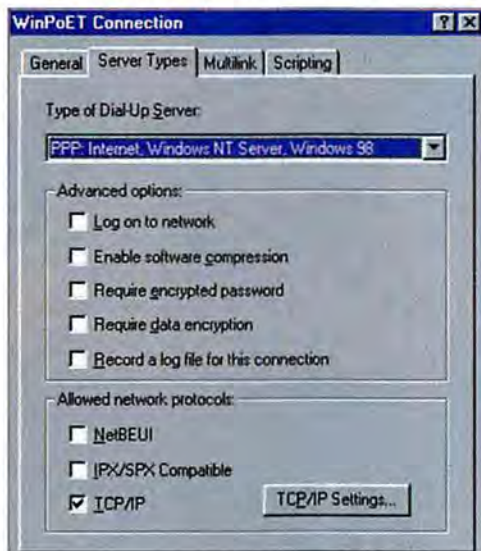


FIGURE 2: TRY SPEEDING UP your modem log-ons by unchecking options in Dial-Up Networking settings.

as www.leos-muffler-repair.com) to a massive list of names and their corresponding numeric IP addresses (such as 127.0.0.1). The list, known as the Domain Name Server, translates the site's name into its numeric form and sends the request on its way.


You can speed up your connection by shortening this lookup step. Normally, your request travels to your ISP, where it is sorted through zillions of names and addresses. CBS Software's IPexpress, ExtraTools' \$30 ExtraDNS, and similar


utilities let you create a small DNS on your hard disk, which obviates the lookup process. The performance increase these programs make possible varies widely from system to system, but they're certainly worth a try. At find.pcworld.com/12282 you'll find links to downloads of these utilities—and all the other ones mentioned in this article (trial versions of the shareware).

Be certain to keep the DNS file on your hard drive up-to-date, though. If a Web site changes its DNS entry, it could drop off your browser's radar.


THE INTERNET MECHANIC

ONE DAY YOU'RE racing around the Internet at breakneck speeds, and the next you feel like you're hauling a double-wide trailer. Things naturally fall apart, but they don't have to stay that way. The following tips will get your Net connection back in high gear.

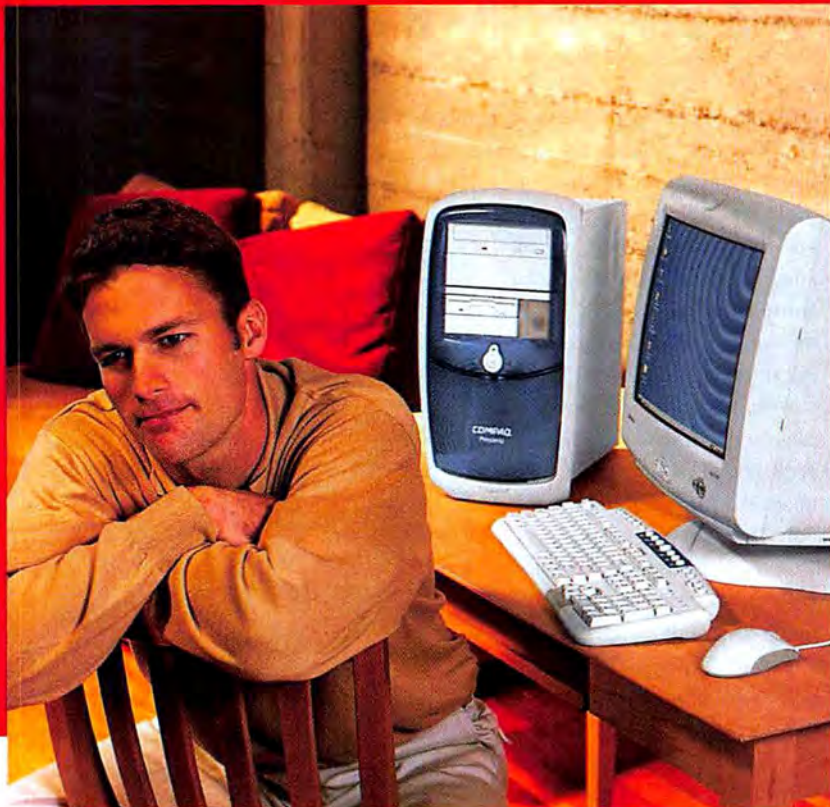
 **Are you all plugged in?** If you have no connection at all, start your troubleshooting by checking the obvious. Is everything plugged in tightly and powered on? Check your surge protectors. Sometimes their switches get thrown accidentally, or a power outage or nearby electrical storm may trip their circuit breakers. Make sure every cable and connection to and from your PC is firmly in place; a connector that looks firmly seated may actually be loose.

 **Check your ISP's status.** The problem may be at your service provider's end. Browse to the company's Web page if you can get online. If you can't, call the company's tech-support line. With luck, it will be a toll-free number; with even more luck, you won't wait on hold so long that you grow a crust. ▶

FAST TIP: Is Newer Better?

 **ANYONE USING A MODEM** that runs at 33.6 kbps or slower should buy a new modem. If you use a 56-kbps V.90 modem, however, there's little reason to upgrade to a V.92 modem. Though the new V.92 standard does offer faster dial-ups, quicker uploads, and support for call waiting, it doesn't substantially improve data download speed. And for the new features to work, your ISP must also support V.92, which ISPs aren't exactly rushing to do. Still, if your ISP does support V.92, it might be worth considering.

WELCOME
TO YOUR



DIGITAL SANCTUARY.

Immerse yourself in the digital world. These Compaq Presario Desktop PCs with Intel® Pentium® 4 Processors can bring graphics to life, burn music on CD, and render home movies on DVD. Let us build one for you. Call or visit our website for yours, and go on a nice long digital retreat.

COMPAQ
Inspiration Technology

Compaq PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

*All prices shown are Compaq Direct selling prices and do not include applicable sales tax and shipping, are valid in the U.S. only, and are subject to change or cancellation without notice. Illustrations may not accurately represent exact configurations priced. Retail prices may vary. Compaq is not liable for editorial, pictorial, or typographical errors in this advertisement. Financing on approved credit by arrangement with Compaq Financial Services through MBNA America Bank, N.A. Payment based on a 48-month term at 14.99% APR. Your APR may be higher. There is no fee on Compaq purchases billed directly to your account. However, there is an access check fee of 3% of the U.S. dollar amount of each advance check (\$5 min./\$30 max.). For hard drives, GB=1024 bytes. 16X DVD-ROM drives read a minimum of 5545 Kbps and a maximum of 21640 Kbps. 24X CD-RW drive data transfer rates may vary as follows: for recording to CD-R media, the max transfer rate may be up to 3600 Kbps (use 24X discs for best performance); for writing to CD-RW media, the max transfer rate may be up to 1500 Kbps (use 4-10X high-speed media discs for best performance); for reading CD media, the max transfer rate may be up to 6000 Kbps. Actual transfer rates may vary depending on media quality. *ITU V.90 modems are designed only to allow faster downloads from K56flex- or V.90-compliant digital sources. Maximum achievable download transmission rates are currently unknown, may not reach 56 Kbps, and will vary with line conditions. *Six Months of AOL Internet Access included offer valid on the purchase of a Compaq Presario 5000T and 6000T PC between 10/15/01 through 05/01/02 direct from



Digital Pro

Presario 8000T-2.2

\$1999[†]

As low as \$56 per month[†]

- Intel® Pentium® 4 Processor 2.20 GHz
- Microsoft® Windows® XP Home Edition
- 512 MB PC2100 DDR SyncDRAM
- 80.0 GB (7200 rpm) UltraDMA Hard Drive¹
- 16X DVD-ROM Drive²
- 24X CD-RW Drive³
- 56K ITU V.90 Modem⁴
- Integrated 10/100 Network Interface Card
- Sound Blaster™ Live! Value 5.1
- JBL Platinum Speakers with Digital Audio Port
- 64 MB DDR nVidia GeForce3 Titanium 200 with TV-Out
- Compaq CV735 17" Monitor (16.0" VIA)
- Six Months of AOL Internet Access Included⁵

Personalize by choosing:

- Gold Starter Kit: Add \$80
- Compaq CV935 19" Monitor (18.0" VIA): Add \$140



Power User

Presario 8000T-1.8

\$1499[†]

As low as \$42 per month[†]

- Intel Pentium 4 Processor 1.80 GHz
- Microsoft Windows XP Home Edition
- 256 MB PC2100 DDR SyncDRAM
- 40.0 GB (7200 rpm) UltraDMA Hard Drive¹
- 16X DVD-ROM Drive²
- 24X CD-RW Drive³
- 56K ITU V.90 Modem⁴
- Integrated 10/100 Network Interface Card
- Soundmax II Digital Audio
- JBL Platinum Speakers with Digital Audio Port
- 64 MB SDR nVidia GeForce2 MX200 with TV-Out
- Compaq CV735 17" Monitor (16.0" VIA)
- Six Months of AOL Internet Access Included⁵

Personalize by choosing:

- Silver Starter Kit: Add \$50
- 512 MB SyncDRAM: Add \$100

Family Champion

Presario 5000T-1.7

\$1099[†]

As low as \$31 per month[†]

- Intel Pentium 4 Processor 1.70 GHz
- Microsoft Windows XP Home Edition
- 256 MB PC2100 DDR SyncDRAM
- 40.0 GB (5400 rpm) UltraDMA Hard Drive¹
- 48X Max CD-ROM Drive²
- 24X CD-RW Drive³
- 56K ITU V.90 Modem⁴
- Integrated 10/100 Network Interface Card
- Soundmax II Digital Audio
- JBL Platinum Speakers with Digital Audio Port
- 32 MB nVidia M64 Pro
- Compaq CV535 15" Monitor (13.8" VIA)
- Six Months of AOL Internet Access Included⁵

Personalize by choosing:

- Bronze Starter Kit: Add \$30
- Microsoft Windows XP Pro: Add \$99

Whiz Kid

Presario 5000T-1.6

\$899[†]

As low as \$26 per month[†]

- Intel Pentium 4 Processor 1.60 GHz
- Microsoft Windows XP Home Edition
- 256 MB PC2100 DDR SyncDRAM
- 20.0 GB (5400 rpm) UltraDMA Hard Drive¹
- 48X Max CD-ROM Drive²
- 56K ITU V.90 Modem⁴
- Integrated 10/100 Network Interface Card
- Soundmax II Digital Audio
- JBL Platinum Speakers with Digital Audio Port
- 32 MB nVidia M64 Pro
- Compaq CV535 15" Monitor (13.8" VIA)
- Six Months of AOL Internet Access Included⁵

Personalize by choosing:

- Compaq CV735 17" Monitor (16.0" VIA): Add \$50
- 24X CD-RW Drive³: Add \$119

MyMovieSTUDIO. Just \$499.

Create and share your own home movies. Add MyMovieSTUDIO to your Compaq Presario Desktop PC. The editing software and easy access ports for digital cameras and camcorders will make it simple to produce quality films.

Just plug in and edit. It's that easy. Connect your camera into the easy access ports to download your home videos onto your PC. Then edit your footage with Studio DV software. You can save your movie onto your hard drive, or burn it onto a DVD using your DVD-R/RW & CD-RW combo drive.

It's a blockbuster. You can play your movie on most DVD players. So gather your family and friends, pop it in, and wait for that Best Picture nomination.

toll - free

> Buy direct from Compaq | 1-800-603-4031 | compaq.com/athome

> To buy direct from Compaq in Puerto Rico, call toll-free 1-800-668-5341. > Para comprar de Compaq directamente en Puerto Rico, llame gratuitamente al 1-800-668-5341.

Compaq or through Compaq "Built For You" kiosks available at certain Compaq retailers. To avoid being charged a monthly AOL fee, simply cancel before six-month promotional offer ends. Premium services carry surcharges, and communication surcharges may apply in certain areas, including in AK, even during promotional period. Members may incur telephone charges on their phone bill, depending on their location and calling plan, even during promotional period. Acceptance of the applicable AOL Internet Access agreement is required. Please see agreement for details at AOL keyword: TGS. Available to new members in the U.S., age 18 or older, and a major credit card or checking account is required. 48X Max CD-ROM data transfer rates may vary from 2500 to 7200 Kbps. Microsoft® Windows® XP Home Edition installed. Compaq, the Compaq Logo, Inspiration Technology, and Presario are trademarks of Compaq Information Technologies Group, L.P. in the U.S. and other countries. Intel, the Intel Inside Logo, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft, MSN, and Windows are registered trademarks of Microsoft Corporation. America Online and AOL are registered service marks of America Online, Inc. Products and company names mentioned herein may be trademarks and/or registered trademarks of other companies. ©2002 Compaq Information Technologies Group, L.P. 1324/03-02

FOR YOUR



POWER TRIP.

Be invincible on the road. Just get the Compaq Presario 1700T Notebook with the Mobile Intel® Pentium® III Processor-M. With power like this, you'll be traveling in style. Watching DVDs on planes. Listening to your favorite tunes. Even checking in with the office. And doing it all longer, thanks to extended battery life. Let us build one of these notebooks just for you. Call or visit our website. And have a nice power trip.

COMPAQ
Inspiration Technology

Compaq PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

*All prices shown are Compaq Direct selling prices and do not include applicable sales tax and shipping, are valid in the U.S. only, and are subject to change or cancellation without notice. Illustrations may not accurately represent exact configurations priced. Retail prices may vary. Compaq is not liable for editorial, pictorial, or typographical errors in this advertisement. Financing on approved credit by arrangement with Compaq Financial Services through MENA America Bank, N.A. Payment based on a 48-month term at 14.99% APR. Your APR may be higher. There is no fee on Compaq purchases billed directly to your account. However, there is an access check fee of 3% of the U.S. dollar amount of each advance check (\$5 min./\$30 max.). For hard drives, GB=billion bytes. *24X Max CD-ROM data transfer rates may vary from 1500 to 3600 Kbps. 11U V.90 modems are designed only to allow faster downloads from K56flex- or V.90-compliant digital sources. Maximum achievable download transmission rates are currently unknown, may not reach 56 Kbps, and will vary with line conditions. *8X DVD-ROM drives read a minimum of 4463 Kbps and a maximum of 10820 Kbps. *8X CD-RW drive



Power User

Presario 2700T-1.0

\$1499[†]

As low as \$42 per month¹

Mobile Intel® Pentium® III Processor 1.00 GHz-M

Microsoft® Windows® XP Home Edition

15.0" TFT XGA Active Matrix Display

128 MB 133 MHz SyncDRAM

30.0 GB UltraDMA Hard Drive²

8X DVD-ROM Drive³

ATI Mobility Radeon™ with 4X AGP and 16 MB

Dedicated Video Memory

56K ITU V.92 Modem⁴ with Network Interface Card

Lilon Battery

IEEE-1394 Port

Personalize by choosing:

32 MB Dedicated Video Memory; Add \$99

8X CD-RW FutureBay™ II Drive⁵; Add \$175

Jet Setter

Presario 2700T-1.0

\$1349[†]

As low as \$38 per month¹

Mobile Intel Pentium III Processor 1.00 GHz-M

Microsoft Windows XP Home Edition

14.1" TFT SXGA+ Active Matrix Display

128 MB 133 MHz SyncDRAM

20.0 GB UltraDMA Hard Drive²

24X Max CD-ROM Drive³

ATI Mobility Radeon with 4X AGP and 16 MB

Dedicated Video Memory

56K ITU V.92 Modem⁴ with Network Interface Card

Lilon Battery

IEEE-1394 Port

Personalize by choosing:

8X DVD-ROM Fixed Drive⁶; Add \$75

Presario 2700T QuickDock; Add \$149

Road Warrior

Presario 1700T-1.0

\$1419[†]

As low as \$40 per month¹

Mobile Intel Pentium III Processor 1.00 GHz-M

Microsoft Windows 2000 Professional Edition

14.1" TFT XGA Active Matrix Display

256 MB 133 MHz SyncDRAM

20.0 GB Hard Drive²

8X DVD-ROM Drive³

ATI Mobility Radeon with 4X AGP and 8 MB

Dedicated Video Memory

56K ITU V.90 Modem⁴ with Network

Interface Card

Lilon Battery

IEEE-1394 Port

Personalize by choosing:

Additional Lilon Battery; Add \$99

Presario 1700T QuickDock; Add \$89

Road Scholar

Presario 1700T-1.0

\$1299[†]

As low as \$37 per month¹

Mobile Intel Pentium III Processor 1.00 GHz-M

Microsoft Windows 2000 Professional Edition

14.1" TFT XGA Active Matrix Display

128 MB 133 MHz SyncDRAM

20.0 GB UltraDMA Hard Drive²

24X Max CD-ROM Drive³

ATI Mobility Radeon with 4X AGP and 8 MB

Dedicated Video Memory

56K ITU V.90 Modem⁴ with Network

Interface Card

Lilon Battery

IEEE-1394 Port

Personalize by choosing:

Compaq Carrying Case; Add \$39

8X DVD-ROM Drive⁶; Add \$70

The New Mobile Intel Pentium III Processor-M

Rev it up. The new Mobile Pentium III Processor-M has been clocked at speeds up to 1.20 GHz. Plus, the 512 KB cache stores twice the data as before to give you quicker access to programs. So buckle up.

Power on. This innovative new chip supports Deeper Sleep and Enhanced Intel SpeedStep™ technology, which means it conserves power every charge it gets. That prolongs your battery life, so you can keep going.

Get on the fast track. What are you going to do with all that power? Run bigger programs, like DVDs and games. You'll have richer graphics, too. So order your Compaq Presario Notebook with Mobile Pentium III Processor-M today. And more power to you.

toll - free

► Buy direct from Compaq

1-800-328-9003

compaq.com/athome

► To buy direct from Compaq in Puerto Rico, call toll-free 1-800-668-5341. ► Para comprar de Compaq directamente en Puerto Rico, llame gratuitamente al 1-800-668-5341.

data transfer rates may vary as follows: for recording to CD-R media, the data transfer rate may vary from 150 to 1200 Kbps; for writing to CD-RW media, the data transfer rate may vary from 150 to 600 Kbps; for reading to CD media, the data transfer rate may vary from 1500 to 3600 Kbps. Microsoft® Windows® XP Home Edition or 2000 Professional Edition installed. Compaq, the Compaq Logo, Inspiration Technology, Presario, and FutureBay are trademarks of Compaq Information Technologies Group, L.P. in the U.S. and other countries. Intel, the Intel Inside Logo, Pentium, and Intel SpeedStep are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft, MSN, and Windows are registered trademarks of Microsoft Corporation. Products and company names mentioned herein may be trademarks and/or registered trademarks of their companies. ©2002 Compaq Information Technologies Group, L.P. 1324/03302

Check your credit history. A dead connection may be due to an accounting snafu. Has your credit card been lost or stolen in the last few months? Or has its expiration date passed? Customers who use a credit card number for automatic payments to their ISP often forget to call in a new account number or new expiration date. And thanks to today's paperless accounting systems, you may not receive a warning before your ISP shuts down your service for nonpayment. If it's simply a matter of updating your credit card information, a phone call should get you up and running again in a few hours.

Turn on Oprah. If you subscribe to a cable television service, turn on your television. If your cable TV signals aren't reaching you, neither are your cable data signals. Unfortunately, a dead satellite TV signal doesn't always imply trouble with your satellite data signal (assuming that you use Direct Duo or a similar data-TV combination). That's because satellite data and television signals move through different circuits. Still, if you have no satellite television signal, it may justify a call to your service provider.

Throw some light on the subject. Cable, DSL, and satellite modems have several status lights for monitoring incoming and outgoing data. Your modem's documentation should tell you what the lights on your modem mean. Most modems have some or all of the following indicators:

- **Power/status:** This light confirms that the modem is running. A constant flashing may indicate internal hardware or firmware problems.
- **Sync or link:** This light signals a successful link with the service provider.
- **LAN activity:** This light shows that data is passing between the modem and your ethernet card.

FAST TIP: What's Coming and Going

YOU CAN KEEP an eye on your Internet performance with Vital Signs Software's Net.Medic, a free utility that monitors the flow of data into, out of, and around your PC. Net.Medic helps you find bottlenecks and provides a standard for measuring future online and PC performance. Point your browser to find.pcworld.com/18121 to download a copy.

FAST TIP: Reset Your Modem



MODEM NOT WORKING? Power it down, wait at least a minute, and then restart it. Check your documentation for the proper procedure for resetting your device. It may take a while to reestablish a connection with your ISP, and—depending on your type of service—your provider may have to reset the connection device.

• **Line activity:** This light lets you know that data is moving between your computer's modem and the Internet.

• **Interfere with interference.** DSL signals are much more sensitive to line interference than are the voice signals that share the same line. If you experience intermittent data-transfer slowdowns, something may be hindering your DSL signal. Disconnect phones, fax machines, and other telephony devices that share your DSL line. Also check the microfilters

when you use the phone, demand that your phone company repair the line.

• **Don't get dumped.** Occasionally getting disconnected from your ISP is a fact of online life. V.90 modems operate close to the limits of existing phone lines, so any disturbance can wreak havoc on their connection. Unfortunately, you can do little to control problems originating in external phone lines. But you can do several things to help your internal lines:

• **Disable call waiting:** If you don't, every

incoming call will disconnect you. To disable this feature while online, add a *70 prefix to the dial-up telephone number listed in your ISP's Dial-Up Networking entry.

• **Slow things down:**

Open your modem's entry in Device Manager by right-clicking

My Computer and selecting *Properties* (in Windows XP, click the *Hardware* tab and then the *Device Manager* button). Double-click the entry for your modem, choose the *Modem* tab, and lower the value in the 'Maximum speed' box ('Maximum Port Speed' in Windows XP). This may slow your connection a bit, but it may also help you avoid disconnects. Next, choose the *Connections* tab and select *Port Settings* (in Windows XP, choose the *Advanced* tab and click the *Advanced Port Settings* button). Experiment with different buffer sizes to see whether adjusting this variable helps alleviate your connection woes.

• **Check Windows for hardware problems.**

Make sure your modem, network card, USB, or satellite modem card is properly installed in Windows. Open Device Manager by right-clicking *My Computer* and choosing *Properties* (in ▶



FIGURE 3: THE SAM SPADE UTILITY makes it easy to use DOS's Ping utility to track the movement of Internet data packets.

installed for each of these devices; one of them may not be properly connected.

The G.Lite version of DSL supposedly doesn't require microfilters for the other devices that share the same phone line as the DSL modem. If you're having problems, install microfilters anyway.

The interference may be coming from outside your location. Look for events or patterns that may help you and your service provider identify the source. For example, bad weather may cause trouble on a poorly insulated line.

If you hear scratchy sounds or static



Reach new profits,
new customers and
New Zealand.

SIGN UP FOR OUR WEB HOSTING SOLUTIONS AND SAVE UP TO \$850.*

Want to reach your goals? Try reaching out, with Interland. A leading provider of business-class hosting for small to medium size businesses. We'll help you reach new profits, new markets and newly found success. How? With an extraordinary range of online tools. Everything from Web hosting to e-commerce to marketing support. And if you call today, you'll save up to \$850. So help your business reach its full growth potential. And help yourself to \$850.

Give your online business room to grow with our shared and dedicated Web hosting plans.

INTERLAND'S TRUE ADVANCED PLAN

- Disk storage 300 MB
- Monthly transfer 10 GB
- 50 POP e-mail boxes
- Free installation
- Free month of hosting
- Free site FTP
- Interland's True Advanced Shared Plan starting at \$49.95/mo.

SAVE UP TO \$200*

INTERLAND'S ACCELERATOR 100 PLAN

- Disk storage 18 GB hard drive
- Monthly transfer 30 GB
- 150 POP e-mail boxes
- Free installation
- 3 mo. Free Web Trends: Analysis and reporting for optimal Web site management
- Interland's Accelerator 100 Dedicated Plan starting at \$549.95/mo.

SAVE UP TO \$850*

Call Interland at **1-800-503-0841** or visit Interland.com

*Interland's True Advanced Shared Plan savings valid only on a 12 mo. account with a monthly minimum of \$49.95. Interland's Accelerator 100 Dedicated Plan savings valid only on a 12 mo. account with a monthly minimum of \$549.95. Offer valid until 2/28/02. Promotions cannot be combined with any other Interland offers. Subject to credit approval, availability and other terms and conditions available on Interland.com. ©2001 Interland, Inc. All Rights Reserved.



Windows XP, choose the *Hardware* tab and click the *Device Manager* button). Select the entry for each device. If all is well, the 'Device status' box will say 'This device is working properly.' If the device isn't working properly, an error message will describe the nature of the problem.

Is it you, your ISP, or the Internet? You spend hours talking on the phone, reinstalling software, and tweaking your PC's settings only to hear the support tech say, "Gosh, I'm stumped. The trouble must be out on the Internet." To avoid wasting time and energy in the future, try to identify the cause of a slow or nonexistent connection before contacting tech support. Here are a few places to start.

•Ring it with Ping: Ping is a small utility in DOS that's a bit techie but well worth using to diagnose a broadband connection gone bad. The program sends a signal from your PC to a selected Internet address and then waits for a return signal. If you receive a response, you know a connection can be made. If not, Ping may help you locate the trouble.

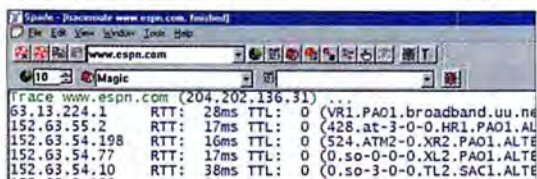


FIGURE 4: TRACERT PROVIDES more clues than Ping about the path your data packets take on the Internet.

Unfortunately, for security reasons, more and more Web sites—especially commercial sites—are being programmed not to return a Ping signal. A site can be overwhelmed by large numbers of maliciously sent Ping requests, for example; this is known as a denial-of-service attack. For troubleshooting purposes, however, you need only send a Ping request to an Internet address that you're pretty sure will respond, such as your ISP's address. (You can find the address in your TCP/IP settings under Control Panel's 'Network' or 'Network Connections' heading, depending on your version of Windows.)

Click *Start*•*Run* and type *ping* followed

FAST TIP: Restart Your PC

IT'S AMAZING how many times you can make your problems disappear simply by restarting your PC. Be sure to leave your system powered down for at least 30 seconds before you restart, though. As your PC reboots, keep a close eye on the text displayed on your monitor; error messages may offer clues to whatever it is that ails your PC.

by a space and then the IP address of your choice. Better yet, download Sam Spade, a free program created by Steve Atkins that puts an easy-to-use graphical interface on Ping and several other useful DOS utilities. **FIGURE 3** shows the results of a Ping signal sent to the ESPN Web site using Sam Spade. The times, listed in milliseconds, represent the signal's round trip. Visit find.pcworld.com/18141 to download Sam Spade.

If you send a ping request to **127.0.0.1** and don't get a reply, the problem may be due to your PC's network settings. If you do get a reply but continue to experience connection problems, send a Ping request to your default gateway; this is your PC's portal to the Internet, whether it's located at your ISP, within your local network, or elsewhere. To find your default gateway in Windows 9x and Me, click *Start*•*Run* and type *ipconfig*, or ask your ISP. (You'll also find your default gateway listed in your TCP/IP settings' properties in Control Panel under 'Network' or 'Network Connections', depending on your version of Windows.) A successful Ping signal here suggests that your connection problems lie outside your PC and local network, perhaps with your ISP.

•Trace it: If you've determined that the source of your problem in connecting to a Web site is external to you but isn't your ISP, you may find some useful information about it by running a DOS utility called Tracert. Tracert works just like Ping and can also be run from Sam Spade.

When your browser requests a Web page, the request travels from your PC to the ISP and then hops across a series of computers or routers to its destination. Tracert follows the route taken and dis-

plays an often-cryptic device name and travel time for each hop (see **FIGURE 4**). If a Web site is exceptionally slow, this list can tell you whether that slowness is due to the site's server or to one of the routers encountered by the packet along the way.

Usually you can't do much about Internet delays and bottlenecks. But if you notice that the first few routers Tracert lists are always the same for each trace, or have very similar names, these routers may belong to your ISP or to the company that provides Internet access to your ISP. If you experience constant slowdowns or a failure of one of these routers, call your ISP and pass along this information. You may speed things up for yourself and a lot of other people as well.

Go the distance. Sometimes you can't connect to a Web site because your data dies prematurely. All data packets sent on the Internet carry a Time to Live (TTL) number. Each time the packet passes through a router or similar device, its TTL value drops by one. When the TTL reaches zero, the packet dies. This keeps lost or damaged packets from bouncing around the Internet forever.

By default, Windows sets the TTL at 32; if your data must pass through more than 32 routers to get to its destination, it won't arrive. Instances of premature packet death are infrequent, but it does happen. To avoid it, reset the Default TTL setting located in the Windows Registry at: `HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters\DefaultTTL`. You can use Regedit to do this manually if you're Registry-savvy, or you can take the easy route and work with a utility such as Hagel Technologies' \$20 TweakMaster. Go to find.pcworld.com/18161 to download a free trial version. ■

Kirk Steers is a PC World contributing editor.

The latest tech products at the lowest prices on earth!



HP Vectra xe310
Celeron 1GHz
20GB HD
256MB Desktop

\$808⁹⁵

Monitor not included
Keyword: world59



NEC MultiSync LCD1550V
15" LCD Monitor

\$372⁹⁵

Keyword: world60



Canon CanoScan N1240U
1200x2400 dpi Scanner

\$199⁰⁰

Keyword: world61



Minolta-QMS magicolor
3100 Color Laser

\$2999⁹⁵

Keyword: world62



HP LaserJet 4100N
Laser Printer

\$1556⁹⁵

Keyword: world63



KDS ThinNote 376CH
P3 600MHz 128MB
Windows XP Home
Included

\$1249⁹⁵

Keyword: world64



IBM ThinkPad T23
P3 M1.13GHz
30GB HD
Windows 2000 Included

\$2884⁹⁵

Keyword: world65

Latest software



Microsoft
Windows XP
Home Upgrade

\$99⁰⁰

Keyword: world65



QuickBooks
Pro 2002

\$249⁹⁵

\$100 mail-in upgrade
rebate available
from Intuit for
previous owners of
QuickBooks Pro

Keyword: world67



Norton AntiVirus
Professional 2002

\$65⁹⁵

\$30 mail-in upgrade
rebate available
from Symantec.
See below for details.

Keyword: world68



Quicken
TurboTax Deluxe

\$37⁹⁵

\$10 mail-in rebate available
from Intuit and Free
TurboTax State product
(after manufacturer's
mail-in rebate)

Keyword: world69

Hot sellers!



Palm i705
Handheld Organizer

\$444⁹⁵

Keyword: world70



Linksys
Cable Modem

\$104⁹⁵

Keyword: world71



Netgear 8-Port
10/100 Switch

\$64⁹⁵

Keyword: world72



Sony 24x INT
CD-RW Drive

\$144⁹⁵

Keyword: world74



SanDisk 128MB
CompactFlash

\$59⁹⁵

Keyword: world73



Sony Spressa
16x EXT CD-RW
Firewire Drive

\$204⁹⁵

Keyword: world75

Cameras and more



Kodak EasyShare
DX3900 3.1MP
Digital Camera

\$349⁹⁵

Keyword: world76



Kodak DX 3600
2.2MP 6X Zoom
Digital Camera

\$269⁹⁵

Keyword: world77



Logitech
Cordless Freedom
Optical Keyboard

\$75⁹⁵

Keyword: world78



Microsoft
Wireless
IntelliMouse
Explorer

\$54⁹⁵

Keyword: world79

Go to www.buy.com or call **1-888-880-1030** AOL Keyword: buy.com

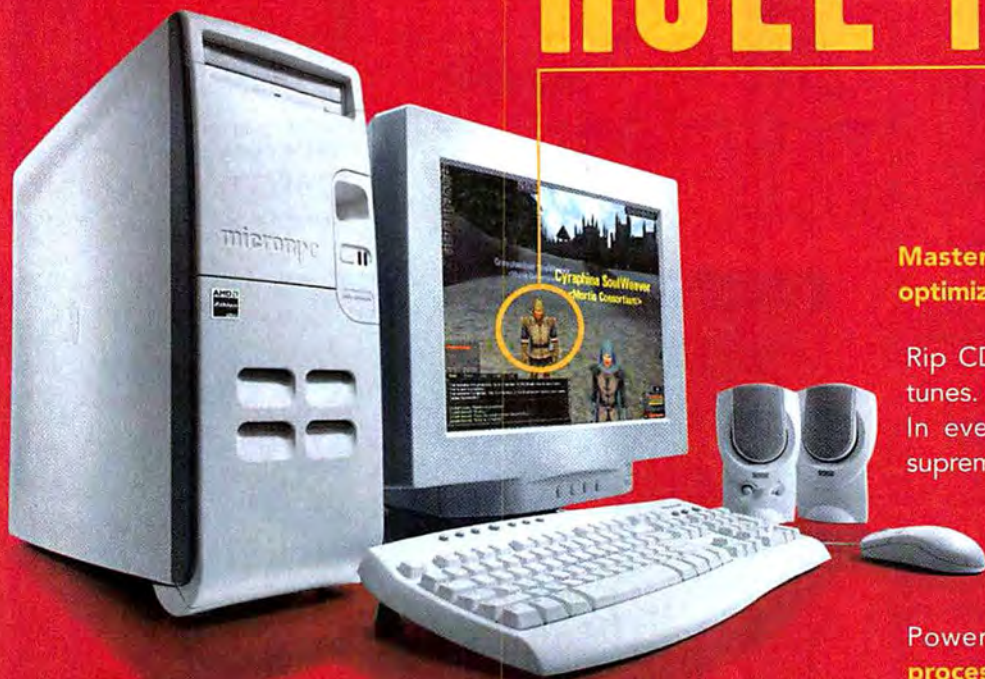
We gladly accept We also welcome your check.

QuickBooks rebate offer valid from 12/3/01 thru 1/31/03. Norton Antivirus upgrade rebate offer expires 12/31/02. Quicken TurboTax Deluxe rebate offer expires 4/15/02. buy.com reserves the right to cancel these promotions at any time. See site for offers, rebate coupons and details. All prices and product availability subject to change without notice. Unless noted, prices do not include shipping and handling and any applicable taxes. Product quantities limited. Please visit us at buy.com for more information including latest pricing, availability, and restrictions on each offer. Call 1-888-880-1030 for shipping rates. "buy.com" and "Lowest Prices on Earth" are trademarks of BUY.COM Inc. ©BUY.COM Inc. 2002. All rights reserved.

IT'S YOUR DIGITAL WORLD. RULE IT.



Extreme Performance
for Windows® XP



Master your digital domain with the optimized power of the Millennium™ XP+.

Rip CDs. Edit digital video. Listen to tunes. Or dominate your favorite game. In every digital realm, you'll be the supreme ruler.

Powered by the **AMD Athlon™ XP processor 1900+** with QuantiSpeed™ architecture, you'll enjoy sharp, smooth video, breathtaking theatre-like audio, and new levels of gaming intensity, where the boundaries of the game and reality become blurred.

And after battling those pesky vendors and siabra kedgers, you can relax knowing the Millennium XP+ is backed by service that won a Reader's Choice Award from PC Magazine (August 2001).

MILLENNIA™ XP+™ CREATIVE STUDIO \$1,696

- AMD Athlon™ XP Processor 1900+ with QuantiSpeed™ Architecture
- QuantiSpeed™ Architecture* outperforms competitive 1.9 GHz processors
- NVIDIA® nForce™ Platform Architecture
- 256MB PC2100 DDR SDRAM
- 40GB ATA-100 Hard Drive 7200rpm¹
- Integrated GeForce2 Graphics w/TV Out
- Studio DV 1394 FireWire Video Editing Card
- 16x48x Max. Var. Speed DVD ROM Drive
- 16x10x40x Max. Var. Speed CDRW Drive
- Dolby™ Digital 5.1 Integrated Audio
- Altec Lansing AVS200 Speakers
- 1-year MicronPC Desktop Limited Warranty
- Microsoft® Windows® XP Home
- Microsoft® Office XP Small Business w/MicronPC University Small Office Edition (A \$99 Value!)
- 17-inch MicronPC monitor (16" viewable)
- Lexmark Z23 Colorjet Printer
- Dark Age of Camelot is shown for illustration purposes only, and is not included in above price or configuration. Available from Mythic Entertainment www.darkageofcamelot.com. Check retail store near you or online for pricing.



Order Now. Your digital domain awaits.

Call 1.888.224.4138 or visit www.micronpc.com/studio6

MicronPC PC's use genuine Microsoft® Windows®
<http://www.microsoft.com/piracy/howtotell>

micronpc


©2001 MicronPC, LLC. All rights reserved. MicronPC, LLC is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice, prices do not include shipping and handling and any applicable taxes, unless specifically required to be included under applicable contract. Seller's return policy does not include return freight and original shipping/handling charges, and all return and warranty periods begin from the date a product is shipped, not when it arrived. A restocking fee may be charged upon the return of a product. All sales are controlled by seller's current terms and conditions of sale, and contract terms and conditions as applicable. Copies of seller's terms and conditions of sale and contract terms are available on seller's website or from its sales representatives. On-site service is provided at sole discretion of MicronPC, LLC. A diagnostic determination for on-site service must be made by a MicronPC service technician prior to the provision of on-site service. On-site service is provided by a third-party service provider under a separate service contract between you and the service provider. AMD, the AMD Arrow logo, AMD Athlon and combinations thereof are trademarks of Advanced Micro Devices, Inc. Microsoft and Windows are registered trademarks of Microsoft Corporation. Product names of MicronPC products are trademarks or registered trademarks of MicronPC, LLC. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies. DDR technology memory components are warranted under the applicable MicronPC limited warranty to function properly in the system in which they were factory-installed. MicronPC makes no warranty concerning the functionality of such components in any other system. Note: Advertised configurations may differ from award-winning configurations. 1. All hard drive sizes calculated with 1GB equal to 1 billion bytes. 2. MicronPC SATA modems capable of receiving downloads at up to 56Mbps and sending at up to 31.2Kbps. Due to FCC regulations on power output receiving speeds are limited to 53Kbps. Actual speeds may vary. *QuantiSpeed™ architecture operates at 1.6GHz. Game screen capture of Dark Age of Camelot used by permission of Mythic Entertainment. Mortis Consortium, Death Incorporated and TeamEgo are trademarks of TeamEgo.

THE SKINNY ON BIG, FLAT SCREENS

JUST AS 15-inch LCD monitors became a hot item last summer thanks to a precipitous price drop, 17- and 18-inch LCD monitors are now available at prices that demand a second look, although they still represent a hefty investment. What's the difference between an \$800 economy display and a \$1300 deluxe monitor? We tested 15 flat panels—eight 17-inch and seven 18-inch models—to find out.

Our test group included monitors from Benq, Compaq, CTX, Dell, Eizo Nanao, Iiyama, NEC-Mitsubishi, Planar, Samsung, and ViewSonic. The contenders ranged from an \$1899 luxury model that made our 18-inch chart on the strength of its outstanding features ▶

The new 17- and 18-inch LCDs are easy on the eyes and thrifty with precious desktop space. And they're getting easier on the wallet.

A large, dark-colored LCD monitor is shown at an angle, tilted upwards. It is mounted on a black, adjustable stand with a wide base. The monitor's bezel is visible, and the screen area is mostly blank. The background is a plain, light color.

EIZO NANAO
FlexScan L685

BY RICHARD JANTZ PHOTOGRAPH BY RICHARD ESKITE

FEATURES COMPARISON

LCD MONITORS

	17-INCH MONITOR	Street price (12/7/01)	Overall rating	Quality of text/graphics	Comments	Dimensions (width x depth x height, in inches)
1	Best BUY ViewSonic VG171 find.pcworld.com/19942	\$769	82	Very good/ Very good	Judged the best 17-inch model for both text and graphics, and at the second-lowest price; no frills except color calibration. ★★★★★	16.1 x 6.6 x 16.1
2	Compaq TFT7020 find.pcworld.com/19923	\$799	82	Good/ Good	Case sports built-in speakers with volume control plus a headphone jack; warranty includes on-site service and a money-back guarantee. ★★★★★	16.7 x 7 x 17.2
3	Planar PV174 find.pcworld.com/19948	\$800	79	Good/ Very good	Has built-in speakers plus headphone jack; on-screen controls offer lots of image-adjustment options; support phone lines are closed on weekends. ★★★★★	17.6 x 8.1 x 17.7
4	Benq FP751 find.pcworld.com/19941	\$779	78	Good/ Good	Thumbwheel under front of bezel adjusts controls up or down; IKey allows one-touch automatic image adjustment; speakers are built into case. ★★★★★	16.6 x 8.2 x 17.8
5	Dell 1702FP find.pcworld.com/19922	\$800	77	Good/ Good	Midpack performer on image quality and features places on the chart thanks to low price, high-quality support, and extensive easy-to-use controls. ★★★★★	17.3 x 8.7 x 18.1
18-INCH MONITOR						
1	Best BUY ViewSonic VG181 find.pcworld.com/19943	\$949	81	Good/ Good	Low price, solid features, and excellent support make a winning combination. Comes with two color-calibration apps; height-adjustable stand moves smoothly. ★★★★★	18.1 x 9.5 x 18.1
2	Planar PT1814NUV find.pcworld.com/19949	\$1119	80	Very good/ Very good	Earned the second-best score among 18-inchers for image quality; includes built-in speakers; RCA and S-Video inputs let you connect a TV, camcorder, or VCR. ★★★★★	18.4 x 10.3 x 17.8
3	NEC-Mitsubishi MultiSync LCD1830 find.pcworld.com/19944	\$899	80	Good/ Good	Lowest price among 18-inch models; LiquidView software sizes up fonts and icons for easier reading at high resolutions; controls are extensive. ★★★★★	17.1 x 8.5 x 17.8
4	Eizo Nanao FlexScan L685 find.pcworld.com/19921	\$1899	77	Very good/ Very good	Top scorer overall for text and graphics quality; base adjusts for height; thin bezel; offers two digital video inputs. ★★★★★	15.7 x 8 x 15.9
5	Iiyama AS4636D find.pcworld.com/19950	\$1275	75	Good/ Good	USB ports in base and side-mounted connectors are easy to reach; includes S-Video and composite inputs; fewer controls than other monitors. ★★★★★	16.9 x 8.3 x 16.8

● = Yes ○ = No

¹ Monitors can provide analog, digital, or both interfaces (dual) for connecting to a PC's video card. A monitor's digital input must be used with a digital video card.

² Multidomain vertical alignment.

³ In-plane switching.

and unbeatable image quality to a \$629 monitor that couldn't compete on graphics quality or features, and failed to earn a place on the 17-inch chart.

Our choices for the Best Buys occupy a middle ground that combines reasonable price with image quality good enough for daylong, everyday work. Remarkably, one company took both the 17- and 18-inch Best Buy spots. In the 17-inch category, the \$769 ViewSonic VG171 augments the best overall image quality in its class with a low price. Among the 18-inchers, the

\$949 ViewSonic VG181's solid features, under-\$1000 price, and strong image quality give it the edge over the competition. Both models benefit from ViewSonic's top-notch support, too.

WHAT TO LOOK FOR

BECAUSE THEY STILL COST AS MUCH AS SOME PCs, big LCDs require you to do some careful comparison shopping before plunking down your cash. Here's a quick tutorial on what to consider when you're shopping for these displays.

An LCD monitor's diagonal screen size as listed on the vendor's spec sheet is unambiguously what you get—unlike with CRT monitors, which have a viewable screen size about an inch less than the stated diagonal measurement of the tube.

Unlike with CRTs, support for multiple screen resolutions is not especially useful with LCDs. In our experience, all LCDs look best at their native (and maximum) resolution; in the case of our 17- and 18-inch models, it's 1280 by 1024 pixels. To display lower resolutions, LCDs use only a portion of the pixels they contain and then scale up the resulting image, with varying degrees of success. Typical-

Best BUY VIEWSONIC'S 17-inch VG171 monitor garnered impressive scores in our display-quality testing.



Visit find.pcworld.com/20661 for reviews of all products ranked in this chart or tested this month.

Weight (pounds)	Video board interface ¹	Tested video interface	Angle-of-view compensation technology	Horizontal/vertical viewing angle (degrees, vendor supplied)	Panel swivels	Monitor adjusts for height	Panel pivots to portrait mode	Color-adjustment/resolution-adjustment software	Number of USB ports upstream/downstream	Monitor warranty (years)	Tech support hours/days
14.3	Dual	Digital	Diffusion film	150/140	●	○	○	●/○	0/0	3	24/7
14.3	Dual	Digital	Diffusion film	150/140	●	○	○	●/○	0/0	3	24/7
19.4	Dual	Digital	MVA ²	160/160	○	○	●	○/○	1/4	3	11/5
15	Analog	Analog	Diffusion film	120/140	●	○	Optional	○/○	1/2	3	24/7
18.5	Dual	Digital	IPS ³	160/160	●	○	○	○/○	0/0	3	24/7
22	Dual	Analog	IPS ³	160/160	●	●	●	●/○	0/0	3	24/7
21.2	Dual	Digital	IPS ³	160/160	●	○	○	○/○	1/4	3	11/5
14.3	Dual	Analog	IPS ³	160/160	●	●	○	●/●	0/0	3	24/7
17.6	Dual	Digital	IPS ³	170/170	●	●	●	●/●	1/4	3	8/5
22	Dual	Digital	IPS ³	170/170	●	○	●	○/○	1/4	3	10/5

Data based on tests designed and conducted by the PC World Test Center. All rights reserved. See find.pcworld.com/10860 for details on PC World's Star Ratings.

ly, nonnative resolutions are so blurry as to be intolerable in daily use. The greater detail provided by a high-resolution screen is rarely a disadvantage, though. If 1280 by 1024 makes text and icons too small for your liking, you can increase their size by using either Windows' Display Properties control panel or a utility such as Portrait Displays' LiquidView (see find.pcworld.com/20481).

Having dual video interfaces—both analog (VGA-style) and digital (DVI) inputs—is desirable. In our testing, we've seen that an all-digital connection generally produces a better-quality image: DVI doesn't require the signal conversion (from digital to analog, and then back to digital) that an analog interface does. But to use the digital input, your PC must have a digital-capable graphics card, and these range in price from about \$150 to \$300.

DECODING THE SPEC SHEETS

THOUGH THE IMAGE QUALITY of an LCD monitor depends on several factors, two common specifications that are cited by display manufacturers are brightness and viewing angle. The brightness of an LCD monitor is measured in candelas per

**Best
BUY**

THE 18-INCH ViewSonic VG181 has great ergonomic features such as a height-adjustable base, and it costs only \$949.

square meter (cd/m²), or nits. The monitors that are reviewed here range in brightness from 200 to 300 cd/m². The higher this number, the greater the brightness the display can produce.

Viewing angle describes how far from the monitor's center you can sit before the picture starts to blur or lose contrast. Manufacturers provide a mea-



surement, in degrees, in both the horizontal (left/right) and the vertical (top/bottom) planes. Viewing angles typically range from 120 to 170 degrees. The greater the viewing angle, the easier it is to view the monitor when you're not sitting directly in front of it. Keep in mind, however, that the viewing-angle specifications cited in our features chart come from the manufacturers; *PC World* did not independently verify them.

Another factor that affects image quality is the technology used to compensate for displays' viewing-angle limitations. The least-expensive method uses a light-diffusing film to counteract angle-of-view distortion; two other systems, which operate on the liquid crystals inside the panel, are called in-plane switching (IPS) and multidomain vertical alignment (MVA). IPS and MVA are more expensive but also provide a wider viewing angle. We think IPS strikes the best balance between extending the viewing angle and maintaining a reasonable price. Unfortunately, manufacturers usually don't tell you which technology their monitors use. Check out our chart to get a feel for what's typical, and try out several displays before you buy one.

A PERFECT FIT: ERGONOMICS

ALL THE MONITORS we reviewed let you tilt the screen panel vertically, and most also let you swivel it horizontally. Far less common are monitors you can adjust for height, such as the Best Buy ViewSonic VG181 and the premium-priced Eizo Nanao FlexScan L685. This ergonomic extra may be worth its additional cost if it enables you to work comfortably for long hours.

Many LCD panels come with a base and software that permit you to pivot them from landscape to portrait orientation. This



ALL THE CONNECTORS on Iiyama's 18-inch AS4636D, including ports for TV or DVD, are within easy reach.

capability adds to the cost of the monitor, but it's useful for displaying long text documents such as Web pages and word processing files, as well as page layouts in desktop publishing programs.

STILL NOT A PERFECT WORLD

LCD MONITORS DO HAVE some drawbacks, including jaggy-looking type and pixel response times that are slower than those typical of CRTs; the latter can have the effect of text that blurs as you scroll or icons that leave trails as you move them around the desktop. Generally, the brightness and sharpness of text displayed on LCD monitors (as well as the high resolutions) far outweigh any jagginess you may perceive.

Most LCD monitors sold today redraw their screens fast enough to adequately display moving images. But when you play games or scroll through word processing files or Web pages, you may be bothered by pixel artifacts or blurriness. MVA-type LCDs have faster pixel response times than others, but currently they aren't very common for desktop use.

Another consideration is how many dead pixels constitute a defective panel. A dead pixel remains permanently lit or permanently dark because of a malfunctioning transistor, and it can be noticeable on screen. Manufacturers' policies about when they will replace a panel with dead pixels vary, so investigate your monitor vendor's policy before you buy to ensure that you won't get stuck with imperfections you can't live with. All the models in this comparison come with a three-year warranty on all parts, including the backlight. ■

Richard Jantz is a writer based in the San Francisco Bay Area.

IN THE LAB

HOW WE EVALUATE LCD MONITORS

TEST Center

PC WORLD employs the same tests for LCD monitors that we use for CRTs: A panel of 12 judges rates a monitor's text and graphics quality by viewing typical business letters, spreadsheets, Web pages, and scanned photos. And we look at screens designed to gauge how well a monitor displays very dark and very pale shades of colors and

gray. We also test LCD monitors using screens meant to provoke jitter and moiré.

The judges view a maximum of eight monitors side by side. For this comparison we viewed 17-inch and 18-inch models in separate sessions.

DIGITAL OR ANALOG?

PC WORLD CAN test only four digital-interface monitors at one time, so we judged some

monitors that have a dual interface using their analog connection for this comparison. We tested as many dual-interface monitors as possible via their digital inputs, giving preference to the higher-priced models, on the theory that they're more likely than lower-priced units to be run with a digital-capable video card.

For each test, judges award each monitor a rating on a

scale of 1 (worst) to 7 (best). We derive text and graphics quality word scores from these individual ratings. We base a monitor's overall rating on the scores it receives for text and graphics quality (each one accounts for 25 percent of the total score), price (20 percent), features and ease of use (20 percent), and service and support (10 percent).

—Rebecca Freed



Extreme Performance
for Windows® XP

\$749

POCKET EPC-II

- 56K V.90 Modem Built-in
- 10/100 Network Built-in
- 128MB SDRAM(max. 256MB)
- 10GB Hard Drive(max. 30GB)
- 4MB AGP Video Integrated
- 3D Sound Integrated
- 24x CD-ROM & Floppy Drive (optional DVD or CD-RW ROM)
- MS Windows XP or ME CD
- 1-Year Limited Warranty



Editors' Choice - Mar. 2002, PC Gamer magazine
Editors' Choice - Jan. 2002, C-Net Web
Best Buy Award - Dec. 2001, Computer Buyer's Guide & Handbook
Best Buy Award - Oct. 2001, Computer Buyer's Guide & Handbook
Best Buy Award - Jun. 2001, Computer Buyer's Guide & Handbook
Best Buy Award - Mar. 2001, Computer Buyer's Guide & Handbook
Best Buy Award - Feb. 2001, Computer Buyer's Guide & Handbook
Best Buy Award - Jan. 2001, Computer Buyer's Guide & Handbook

Online System Configurator & Rush Service Available

6x BEST BUY Awards In Year 2001

Corporate, School and Government POs Welcome

Life Time Toll Free Technical Support



\$399 BARGAIN AMD

- (www.ibuypower.com/product-pc/bargain.htm)
- **256MB PC133 SDRAM**
upgrade: 512MB PC133 SDRAM @ \$39
 - 40GB Ultra DMA Hard Drive
upgrade: 80GB Ultra DMA Hard Drive @ \$45
 - **16x DVD-ROM Drive**
upgrade: 16x DVD @ \$35
 - Integrated 8M Video & 3D Sound
 - 56K V.90 Fax/Modem w/Voice
 - 10/100 Network Build-in
 - 480 Watt PMPD Subwoofer Speaker System
 - Win98 Keyboard & Scrolling Internet Mouse
 - One Year On-Site Warranty - add \$39
 - MS Windows XP Home or ME Edition - add \$89
 - 17" Digital SVGA Monitor, 27mm - add \$155
 - 100MB Internal ZIP Drive - add \$49
 - IEEE-1394 PROCOMP Fire Wire Card - add \$29

AMD DURON 900	\$ 399	(bgsp021)
AMD DURON 1000	\$ 409	(bgsp022)
AMD DURON 1200	\$ 429	(bgsp023)

\$495 WORKSTATION PC

- PROCOMP 133MHz Main Board
- 256MB PC133 SDRAM
- 40GB Ultra DMA-100 Hard Drive
upgrade: 80GB Ultra DMA-100 Hard Drive @ \$35
- 56x CD-ROM Drive
upgrade: 16x DVD @ \$35
- 32MB nVidia Riva TNT-2 M64 4x AGP Video
upgrade: 64MB nVidia GeForce-2 MX400 @ \$39
- 10/100 Network Card
upgrade: 10/100 3COM Network Card @ \$39
- 17" Digital SVGA, 27mm Monitor @ \$69
- Win98 Keyboard & Scrolling Internet Mouse
- One Year On-Site Warranty - add \$39
- MS Windows XP Home or ME CD - add \$89
- 100MB Internal ZIP Drive - add \$49
- 56K V.90 Fax/Modem - add \$19
- IEEE-1394 PROCOMP Fire Wire Card - add \$29

Intel® CELERON® 800 Mhz	\$ 545	(wosp031)
Intel® CELERON® 900 Mhz	\$ 565	(wosp032)
Intel® CELERON® 1000 Mhz	\$ 585	(wosp033)
Intel® CELERON® 1200 Mhz	\$ 595	(wosp034)

\$819 POWER BEST BUY

- DDR UDMA-100 4x AGP Pentium® 4 MB
- 256 MB DDR PC2100 Memory
- 60GB Ultra DMA-100 HDD
upgrade: 80GB Ultra DMA-100 HDD @ \$45
- 16x DVD-ROM Drive
- 32MB nVidia Riva TNT-2 M64 Video
- 123 Watt Stereo Speakers
upgrade: Altec Lansing AVS500 Speakers @ \$45
- PS2 Win98 Keyboard & Scrolling Internet Mouse
- 17" Digital SVGA, 27mm Monitor
upgrade: 17" REAL FLAT 24mm Monitor @ \$59
- AC-97 Stereo 3D Sound
upgrade: S.B. Live Value 5.1 Sound Card @ \$39
- 56K V.90 Modem w/Voice
- MS Windows XP Home Edition CD
- One Year On-Site Warranty - add \$39

Intel® Pentium® 4 1.6 GHZ	\$ 819	(pbbsp031)
Intel® Pentium® 4 1.7 GHZ	\$ 849	(pbbsp032)
Intel® Pentium® 4 1.8 GHZ	\$ 879	(pbbsp033)
Intel® Pentium® 4 1.9 GHZ	\$ 939	(pbbsp034)
Intel® Pentium® 4 2.0 GHZ	\$ 1039	(pbbsp035)
Intel® Pentium® 4 2.2 GHZ	\$ 1259	(pbbsp036)

\$799 VALUE XP

- INTEL® i845 Chip 400FSB UDMA-100 P-4 MB
- 256 MB PC133 SDRAM Memory
- 40GB Ultra DMA-100 HDD
upgrade: 80GB Ultra DMA-100 HDD @ \$79
- 16x DVD-ROM Drive
- 64MB nVidia GeForce-2 MX400 Video
upgrade: 64MB GeForce-2 Titanium @ \$59
- 480 Watt PMPD Subwoofer Speaker System
upgrade: 7 Pieces Surround Speakers @ \$25
- PS2 Win98 Keyboard & Scrolling Internet Mouse
- 10/100 INTEL® Ethernet Network Onboard
- 17" Digital SVGA, 27mm Monitor
upgrade: 17" ViewSonic E70 24mm @ \$59
- AC-97 Stereo 3D Sound
upgrade: S.B. Audigy 5.1 Sound Card @ \$69
- 56K V.90 Fax Modem w/Voice
- MS Windows XP Home Edition CD
- One Year On-Site Warranty - add \$39

Intel® Pentium® 4 1.6 GHZ	\$ 799	(vasp031)
Intel® Pentium® 4 1.7 GHZ	\$ 849	(vasp032)
Intel® Pentium® 4 1.8 GHZ	\$ 899	(vasp033)
Intel® Pentium® 4 1.9 GHZ	\$ 945	(vasp034)
Intel® Pentium® 4 2.0 GHZ	\$ 1049	(vasp035)
Intel® Pentium® 4 2.2 GHZ	\$ 1279	(vasp036)

\$1039 BACK TO SCHOOL

- (www.ibuypower.com/product-pc/back-to-school.htm)
- DDR VIA-KT266A UDMA-100 Main Board
 - 512MB DDR PC2100 SDRAM
 - 60GB Ultra DMA 100 HDD
 - 24x10x40 CD-RW Drive
 - 64MB nVidia GeForce-2 MX400 AGP Video
upgrade: AC97 Stereo 3D Sound @ \$39
 - 56K V.90 Fax Modem w/Voice
 - 19" Digital SVGA Monitor, 26mm
 - PS2 Win98 Keyboard & Scrolling Internet Mouse
upgrade: MS Optical Intelli-Mouse @ \$27
 - 7 Pieces 1000 Watt Surround Sound Speakers
 - MS Windows XP Home Edition CD
 - Free Corel Office 2002 CD
 - One Year On-Site Warranty - add \$39
 - 16x DVD-ROM - add \$59

AMD Athlon™ XP Processor	\$ 1039	(btsp031)
1600+ with QuantiSpeed™ architecture	\$ 1049	(btsp032)
1800+ with QuantiSpeed™ architecture	\$ 1089	(btsp033)
1900+ with QuantiSpeed™ architecture	\$ 1139	(btsp034)
2000+ with QuantiSpeed™ architecture	\$ 1189	(btsp035)

\$829 AMD BEST BUY

- VIA KT-133A UDMA-100 4x AGP MB
- 512MB PC133 SDRAM
- 60GB Ultra DMA-100 Hard Drive
upgrade: 80GB Ultra DMA-100 HDD @ \$45
- 56x CD-ROM Drive
upgrade: 16x DVD-ROM @ \$35
- 24x10x40 CD-RW Drive
upgrade: 24x10x40 CD-RW Drive @ \$75
- 32MB nVidia Riva TNT2 M64 4x AGP Video
upgrade: Sound Blaster Live! Value 5.1 @ \$39
- 56K V.90 Fax/Modem w/Voice
- 17" Digital SVGA Monitor, 27mm
upgrade: 19" Digital SVGA Monitor 26mm @ \$69
- 480 Watt PMPD Subwoofer Speaker System
upgrade: 7 Pieces Surround Speakers @ \$25
- PS2 Win98 Keyboard & Scrolling Internet Mouse
- MS Windows XP Home or ME Edition CD
- One Year On-Site Warranty - add \$39

AMD Athlon™ XP Processor	\$ 829	(abbsp031)
1600+ with QuantiSpeed™ architecture	\$ 839	(abbsp032)
1700+ with QuantiSpeed™ architecture	\$ 869	(abbsp033)
1800+ with QuantiSpeed™ architecture	\$ 929	(abbsp034)
2000+ with QuantiSpeed™ architecture	\$ 979	(abbsp035)

\$1089 DVD PRO

- VIA KT-133A UDMA-100 4x AGP MB
- 512 MB PC133 SDRAM
- 60GB Ultra DMA-100 Hard Drive
upgrade: 80GB 7200 rpm HDD @ \$35
- 24x10x40 CD-RW Drive
- 16x DVD-ROM Drive
- 64MB nVidia GeForce-2 MX400 4x AGP Video
- Sound Blaster Live! Value 5.1 Sound Card
upgrade: Sound Blaster Audigy Gamer @ \$69
- 56K V.90 Fax Modem w/Voice
- 19" Digital SVGA Monitor, 26mm
- PS2 Win98 Keyboard & Scrolling Internet Mouse
upgrade: MS Optical Intelli-Mouse @ \$27
- 7 Pieces 1000 Watt Surround Sound Speaker
- MS Windows XP Home Edition CD
- Free Corel Office 2002 CD
- One Year On-Site Warranty - add \$39

AMD Athlon™ XP Processor	\$ 1089	(dvsp031)
1600+ with QuantiSpeed™ architecture	\$ 1099	(dvsp032)
1700+ with QuantiSpeed™ architecture	\$ 1139	(dvsp033)
1900+ with QuantiSpeed™ architecture	\$ 1189	(dvsp034)
2000+ with QuantiSpeed™ architecture	\$ 1239	(dvsp035)

\$1659 NIGHT DREAMER

- DDR VIA-KT266A UDMA-100 MB
- <BLACK> ANTEC Mid Tower Case
- 512MB DDR PC2100 SDRAM
- 80 GB Ultra DMA-100 HDD
- 64MB nVidia GeForce-3 Titanium-500 DDR Video
- Sound Blaster Live! Value 5.1 Sound Card
upgrade: S.B. Audigy Platinum @ \$159
- 16x DVD-ROM Drive
- 24x10x40 CD-RW Drive
- IEEE-1394 PROCOMP Fire Wire 3 Ports PCI Card
- 56K V.90 Fax Modem w/Voice
- <BLACK> 19" Digital SVGA Monitor, 26mm
- <BLACK> ALTEC LANSING AC554 Speakers
- <BLACK> PS2 Win98 Keyboard
- MS Windows XP Home Edition CD
- Free Corel Office 2002 & Norton 2001 CD
- One Year On-Site Warranty - add \$39

AMD Athlon™ XP Processor	\$ 1659	(nigsp031)
1600+ with QuantiSpeed™ architecture	\$ 1669	(nigsp032)
1700+ with QuantiSpeed™ architecture	\$ 1709	(nigsp033)
1800+ with QuantiSpeed™ architecture	\$ 1769	(nigsp034)
2000+ with QuantiSpeed™ architecture	\$ 1819	(nigsp035)

Fire wire feel the fire
PROCOMP
www.procomp.com.tw

www.IBUYPOWER.com
(888)462-3899

602 Monterey Pass Rd. Monterey Park, CA 91754 Tel: (626) 281-8262 Fax: (626) 281-0767 All prices effective on Feb 15, 2002

Price, Specification and terms are subject to change without notice. Picture may differ from actual products. We are not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. * 3 year limited warranty includes 3 years labor and 1 year parts only.



KINGSTON TECHNOLOGY: TAKING THE STRESS OUT OF MEMORY UPGRADES

www.shop.kingston.com

You already know that memory upgrades are the fastest, most reliable way to boost your PC's performance—so what's holding you back?

Many users are afraid that by installing new memory, they might damage their PCs. But the procedure is actually quite painless, and the results—from improved multitasking to eye-popping multimedia—are often substantial.

Now the largest independent memory manufacturer, Kingston Technology Company Inc., is helping users to successfully upgrade their own systems, through demonstrations and system-specific memory guides.

Visitors to www.Shop.Kingston.com can access detailed hardware advice as well as an easy-to-follow animated tutorial. "We wanted to show users how easy it is to install memory," says Jason Jacobi, a Kingston spokesman. "And once they see it for themselves, they can feel comfortable buying the upgrade they need to run today's leading software and operating systems, including Microsoft Windows XP."



KINGSTON MAKES IT EASY FOR YOU

Customers at Shop.Kingston.com already use the site's Memory Configurator to choose memory by system model, memory specification, or Kingston part number. PDA users, and those with digital cameras and MP3 players, can search for their upgrades by device type.

Now Kingston's animated online tutorial, "Memory Installation in 3 Steps," shows users how just how easy it is to install memory. The animated demo reviews a typical system's layout and components and illustrates the correct way to place modules in a PC's memory bays.

Kingston also provides free, detailed Adobe Acrobat PDF-formatted installation guides for PCs from leading manufacturers, as well as guides for installing Flash memory modules and software drivers.



First-time memory buyers will especially benefit by clicking on Kingston's animated installation guide, from the Shop.Kingston.com homepage. "It takes the anxiety out of the installation process for users at any level," says Jacobi. "After watching it, you won't be afraid anymore to take the cover off of your PC."

QUALITY YOU CAN COUNT ON

By installing their own modules, users can experience firsthand the high quality of Kingston's modules. IT professionals rely on Kingston memory to update their systems. And many leading PC manufacturers in the United States build Kingston memory right into their new machines.

Kingston each year builds and tests more than two million customized modules for hardware manufacturers and systems developers. Now consumers, through Shop.Kingston.com, can receive the same memory, and the same warranties, as Kingston's business customers.

"Kingston has a good handle on quality," says Kingston consumer Tim Scovell. "I'm always adding modules to my systems, and the Kingston memory works every time."

Kingston's memory is system-specific, and the company guarantees the compatibility of modules selected through the Kingston Memory Configurator. "It leads you to the exact memory your system requires," Jacobi adds.

In the unlikely event that a customer has trouble with his upgrade, he or she can call Kingston at 800-435-0640 and consult with a memory expert, 24/7.

With its latest support for novice upgraders, and with its 24/7 customer service, Kingston is making its memory products and professional-level support available to every consumer. "At Shop.Kingston.com," Jacobi says, "Web surfing, gaming, and exciting multimedia are going to be possible on more systems than ever before."



>> shop.kingston.com



256MB modules
starting at

\$55*

GIVE YOUR LAPTOP
MORE GET UP AND GO

SHOP FAST EASY SECURE



Kingston
TECHNOLOGY

*Promo pricing established as of ad release date. Pricing may change due to market conditions. Additional restrictions apply. Visit shop.kingston.com for details.



17600 Newhope Street, Fountain Valley, CA 92708 USA (714) 435-2600 Fax (714) 435-2699 © 2002 Kingston Technology Company, Inc. All rights reserved. All registered trademarks and trademarks are the property of their respective owners.



PC AMERICA: INVENTORY MANAGEMENT AT POINT OF SALE

www.pcamerica.com

While many motorists in Dimondale, Mich. say the family-owned Windmill Truck Stop is a home away from home, its controller, Kevin Edelmann, says it's been more like a house of accounting horrors. Besides monitoring retail fuel sales in the truck stop's "truckers only" area, he also has to keep an eye on commuters' and travelers' purchases in the king-sized complex's convenience store, family restaurant, motel, and auto service center. "Keeping track of all of that inventory has been a nightmare," Edelmann says.

The Point of Sale (POS) system that the Windmill had been using since 1982 did a fine job of ringing up sales, but it couldn't tell store managers anything about what was on the shelf. "The system only broke sales down by department," Edelmann says. "So it couldn't tell the difference between a tube of toothpaste and a bottle of shampoo."

Edelmann found only a few POS solutions that were easy to use, Microsoft Windows-based, and able to support multiple input devices. And none of them could manage the 20,000-plus items in the Windmill's convenience store and restaurant. "We desperately needed a solution that could bring all of these components of our business together," he says.



PC AMERICA

Things finally turned around at the Windmill once Edelmann deployed PC America's Cash Register Express (CRE 2000), a Windows-based POS program that works with ordinary PCs and peripherals, as well as barcode scanners, receipt printers, and pole displays (which show charges at the checkout counter). Now all of the Windmill's cashiers can use touch screens and barcode scanners to enter orders and update inventory. And setting up CRE 2000 could not be easier, says Edelmann. "PC America did



The home page for PC America speeds you to the point-of-sale products you need.

an excellent job pulling all of the hardware together initially. But the great thing about their software is that I can grab any component I want off the shelf and throw it together in no time. This is one slick program."

The Windmill has processed more than half a million transactions with CRE 2000 and PC America's Restaurant Pro Express (RPE 2000) since October 1999. And Edelmann predicts that PC America will continue to develop the software he needs to keep things running smoothly. "PC America is constantly improving upon their products," he says.

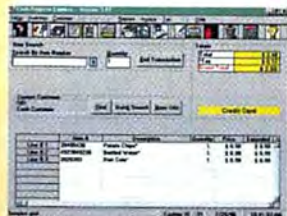
Now PC America is helping retailers like the Windmill to move beyond the sale itself to increase revenues. A new feature in CRE 2000 gives businesses the ability to print coupons on the bottom of sales receipts on an Epson TM-T88II receipt printer. They can use the coupons to advertise specials on slow business days (e.g., "10 Percent Off All Purchases Every Tuesday"), or to give their customers discounts on overstock items (e.g., "Get a Free Six-Pack of Pepsi on Your Next Visit").

CRE 2000's couponing feature promises retailers an excellent route to a crucial dimension in retail sales. "Repeat business is the most important aspect of any business," says PC America's president, Howard Gosman. "With this addition to our POS package, we are giving our customers a quick and easy-to-use method for creating it."



Cash Register Express Software for Windows...\$495

Computerize any type of retail store using Cash Register Express for Windows. Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. Cash Register Express



has more than 250 of the most desired point of sale features to help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

More Software for Your Retail Store

- ◆ Video Express
- ◆ Salon Express
- ◆ Auto Express
- ◆ RestaurantPro Express
- ◆ Barcode Express
- ◆ Label Works
- ◆ Inventory Track Express
- ◆ Credit Card Software
- ◆ All Single or Multiuser

All PC America Software requires Microsoft Windows. The software was written in Visual Basic using Microsoft Access Files. The source code is available.

CASH REGISTER EXPRESS™

More Profit!

More Sales!

More Customers!

Save Time, Reduce Theft,
Speed Checkout, Increase Accuracy,
Reduce Costs, Make Better Business
Decisions by computerizing
your Retail Store.



Dealers Wanted!

Join our dealer program.
It's FREE. It's the fastest way
to make money...AND
we make it EASY.

MORE INFO?

- ◆ Call Toll Free
1-800-722-6374
- ◆ www.pcamerica.com
- ◆ Fax on Demand
1-845-267-3551



**SYSTEMS
START AT
\$495.**

Cash Drawers \$189*
MMF, Logic Controls,
Indiana, APG

Programmable Keypads \$495*
Logic Controls, Cherry, Genovation
Credit Card Readers \$189*
Unitech, Mag-Tek

*All prices depend on make and model.



Barcode Scanners \$495*
Metrologic, Symbol, NJCR, Percon, PSC



Receipt Printers \$299*
Star, Ithaca, Citizen, Epson



Barcode Printers \$799*
Cognitive Solutions Barcode Blaster



Pole Displays \$289*
Logic Controls



Portable Data Collectors \$695*
American Microsystems AMS3000

1-800-PC-AMERICA

Call Toll Free 1-800-722-6374
PH: 1-845-267-3500
FX: 1-845-267-3550

PC America
60 N. Harrison Ave.
Congers, NY 10920



CRUCIAL.COM: MEMORY YOU CAN TRUST

www.crucial.com

Computer system failures can give anyone heart palpitations, but for Chuck Maray's customers, they can be a matter of life and death.

Maray is a customer service systems engineer at Camtronics Medical Systems Inc., a developer of imaging equipment and PC-based diagnostic workstations for cardiologists.

Part of Maray's job is to ensure the reliability of Camtronics' products, which are already in a quarter of the cardiology labs in the United States. But for a while, Camtronics thought it could save money by purchasing "no-name" memory on the Internet.

"I tried getting the best deal on RAM by buying no-name memory," Maray says, "And I had problems. There were times I couldn't even get a system to boot up after I installed the modules."



Now Maray buys Camtronics' memory upgrade modules factory-direct at www.Crucial.com.

Crucial.com is the award-winning retail Web site for leading memory manufacturer Micron Technology Inc., which tests all of its modules under extreme temperatures, voltages, and operating conditions. Crucial.com sells over 73,000 upgrades for more than 13,000 desktops, notebooks, servers, routers, printers, and electronic devices.

Maray earns a 10-percent discount with each purchase he makes at Crucial.com. But the real reason he stays with Crucial is that "they've never sold us a bad DIMM."

RELIABLE AND COMPATIBLE

Crucial.com backs all of its memory with a lifetime limited warranty and free technical support through its live-chat Expert Line, e-mail, and a toll-free telephone number. And the site's Safe Shopping Guarantee promises shoppers that their transactions are encrypted and personal information kept completely confidential.



Camtronics' IT department also uses Crucial.com to keep the 400 PCs at its Hartland, Wisc. headquarters up to date: the upgrades they buy from Crucial, Maray says, keeps the company's technology cost-of-ownership under control.

Crucial.com ensures the modules Maray and his coworkers buy are a perfect match for their desktop and portable systems through its Memory Selector tools.

The Memory Selector gives shoppers all the information they need in one place: customers simply enter their computers' make and model information, and the Memory Selector returns a list of Crucial memory upgrades that are guaranteed to work with that system.

Indeed, the site guarantees the compatibility of every module purchased through the Memory Selector.

The Web site also includes a CompactFlash Memory Selector to help users of digital cameras and other electronic devices locate the perfect upgrade. (All of the vendor's CompactFlash memory products are mechanically and electronically compliant with the CompactFlash Association's stringent specifications.)

Those who want to learn more about the advantages of using CompactFlash memory products can visit the Crucial.com library, which shows the benefits of CompactFlash cameras and explains the capacities of various CompactFlash memory cards.

"The Crucial Web site saves me time, by directing me to exactly the right upgrade, every time," Maray says. "I don't have to do any research outside of the site."



Your only source for factory-direct DDR!

256MB PC2100 DDR

\$61¹⁹

Upgrading your memory doesn't have to be complicated.



You need Crucial RAM.

Select your system make and model at Crucial.com, and you'll find memory guaranteed to be compatible with your system or your money back. It's that easy! Best of all, you'll get the same top-quality memory the world's leading computer makers install in their systems. Visit Crucial.com and get great memory upgrades at low, factory-direct prices.

\$34¹⁹

256MB PC133 SDRAM
for today's most popular systems



Prices reflect an automatic 10% discount for ordering online. Prices were taken on 12/17/01 from Crucial's Web site; however, prices can (and do) change daily. Prices may vary according to specific system requirements.

©2001 Micron Technology, Inc. All rights reserved. The Memory Experts is a service mark and Crucial Technology, the Crucial logo and Micron are registered trademarks of Micron Technology, Inc. All other brands and names used herein are the property of their respective owners. Crucial Technology is a division of Micron Semiconductor Products, Inc., which is a wholly owned subsidiary of Micron Technology, Inc. Phone 208-353-5500. Fax 208-363-5501. E-mail: crucial.sales@micron.com. Crucial Technology is not responsible for omissions or errors in typography or photography.

Order online:
www.crucial.com
or call toll-free 1-888-363-3065

crucial
TECHNOLOGY
A Division of Micron
The Memory Experts

TOP 100

EDITED BY MELISSA J. PERENSON

INSIDE

- 130 OFFICE PCs
- 132 NOTEBOOK PCs
- 134 HOME PCs
- 137 HARD DRIVES
- 139 INK JET PRINTERS
- 141 CD-RW DRIVES
- 143 DIGITAL CAMERAS
- 145 MORE REVIEWS

Top 15 Home PCs

Sony's sleek VAIO PCV-MXS10, with a built-in TV tuner, caters to video users.

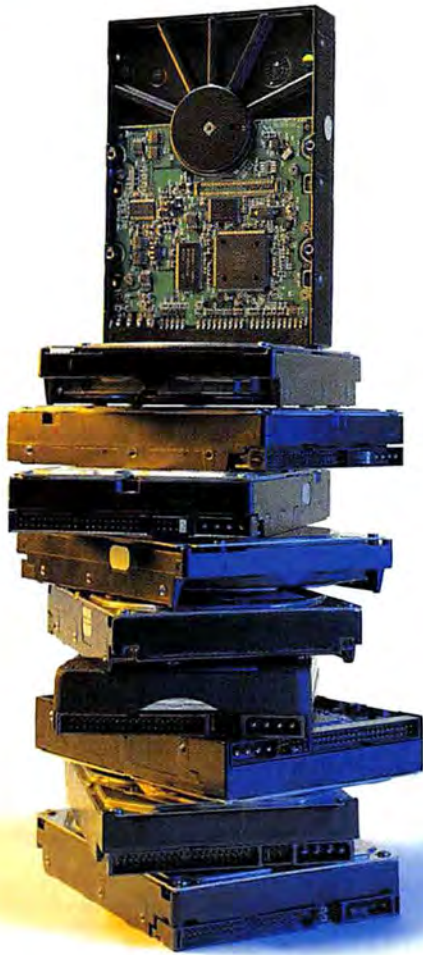
134



Plenty of Room for Multimedia

Sony's chic, new VAIO PCV-MXS10 may be pricey, but it packs a powerful punch for audio and video enthusiasts. The system—one of five that debut on this month's *Top 15 Home PCs* chart—includes a DVD-RW drive, an LCD monitor, and a roomy 80GB hard disk. If you're after more space for your multimedia files, you can supplement your system's installed hard drive with one of the models on our new *Top 10 Hard Drives* chart, which splits the drives into two categories—over and under 50GB. Meanwhile, if you're considering buying an LCD monitor, look at our roundup on page 117, which supersedes our usual *Top 10 Monitors* chart this month.

Freelance writers Joel Strauch and Carla Thornton, and PC World editors Richard Baguley, Tracey Capen, Seán Captain, Lisa Cekan, Rebecca Freed, Alexandra Krasne, Heather Morra, Melissa J. Perenson, Kalpana Narayanamurthi, and Alan Stafford contributed to this month's Top 100 section. Ulrike Diehlmann, Robert James, Elliott Kirschling, Jeff Kuta, Tony K. Leung, and Thomas Luong of the PC World Test Center performed testing on the products reviewed here, with support from Julio Giannobile and Julian Weatherby.



Top 10 Hard Drives

Maxtor stands tall among the competitors on our new *Top 10 Hard Drives* chart: Its high-capacity 120GB DiamondMax D540X drive is our Best Buy.



Top 10 Digital Cameras

Canon's compact PowerShot S40 offers outstanding image quality; Ricoh's Caplio RR1 (at rear) has an unusual design with a swiveling viewfinder, but it just missed making our chart.

Top 15 Notebook PCs

New to our power chart: Toshiba's \$3154 Tecra 9000, which includes both 802.11b and Bluetooth wireless antennas.



YOUR GUIDE TO THE TOP 100

EACH MONTH WE TEST a large number of PCs, printers, monitors, and other products. Only the best products land on the charts, which are refreshed monthly.

System configurations are shown as tested. The overall rating for each product is calculated on a 100-point scale and reflects results from our hands-on evaluations

and performance tests. A 90-point score is exceptional, while one in the 70s is above average.

The PC WorldBench 4 score is a measure of how fast a PC can run a mix of common business applications as compared with our baseline machine, a Gateway Select 1200 with a 1.2-GHz Athlon processor, 128MB of PCI33

SDRAM, and a 20GB hard drive. For example, a PC that scores 120 is 20 percent faster than the baseline system. The policies score is based on vendor support policies (not shown on charts). Please see find.pcworld.com/15720 for additional details on how we compile charts for the *Top 100*.

TOP 15 OFFICE PCs

	POWER SYSTEM	Issue tested	Overall rating	Street price (12/15/01)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY Polywell Poly 815TS-I260 find.pcworld.com/13161	Jan 02	82	Average \$1899	Windows 2000	Very good 122	Intel's Pentium III for servers powers this unit to the second-highest PC WorldBench 4 score on the chart. (★★★★ Nov 01)
2	Micro Express MicroFlex 18A find.pcworld.com/17482	Feb 02	82	Inexpensive \$1199	Windows 2000	Outstanding 127	Offers impressive performance at a low price, but has some generic components and lacks bundled applications. (★★★★ Feb 02)
3	Sys Performance 1800+ find.pcworld.com/17501	Feb 02	81	Expensive \$2236	Windows 2000	Outstanding 127	Plenty of processing power, a 17-inch LCD monitor, and a speedy CD-RW drive make this a strong package. (★★★★ Feb 02)
4	Pogo Linux Pogo Altura Workstation find.pcworld.com/18781	NEW	80	Average \$1990	Windows XP Professional	Very good 118	An above-average performer that can be configured as a dual-boot Linux/Windows XP system at no extra charge. (★★★★)
5	MicronPC Millennia Max XS find.pcworld.com/17481	Feb 02	80	Average \$1845	Windows XP Professional	Average 106	Includes a great monitor; but the tall, thin case could easily tip over. Price falls \$199 from last month. (★★★★ Feb 02)
6	Systemax Ascent-SA15 find.pcworld.com/18701	NEW	79	Inexpensive \$1299	Windows XP Professional	Very good 117	The first Athlon XP-1900+ PC to make the chart, this system showed solid performance on our PC WorldBench 4 tests. (★★★★)
7	HP Vectra VL420 find.pcworld.com/15240	Jan 02	78	Average \$2394	Windows 2000	Average 109	Corporate PC offers a well-designed case, ample management features, and an excellent LCD monitor. (★★★★ Dec 01)
VALUE SYSTEM				Percent of overall rating ▶	10 percent	25 percent	
1	Best BUY Micro Express MicroFlex 1200C find.pcworld.com/15221	Jan 02	83	Inexpensive \$999	Windows 2000	Very good 117	Excellent performance, ample expandability, and an affordable price keep this system at number one. (★★★★ Dec 01)
2	ABS Conquest VP find.pcworld.com/16700	Jan 02	80	Average \$1199	Windows XP Professional	Very good 115	An included IEEE 1394 interface bolsters this fast system; the monitor could be better, however. (★★★★ Jan 02)
3	Tangent Valera PC find.pcworld.com/10371	Jan 02	78	Average \$1129	Windows 2000	Very good 111	This PC offers dual-monitor capability and an integrated IDE RAID controller (but only one hard drive). (★★★★ Jan 02)
4	Sys TaskMaster 1000T find.pcworld.com/19361	NEW	77	Average \$1342	Windows 2000	Good 109	A good performer; in addition, the configuration we tested included a sharp 15-inch LCD monitor. (★★★)
5	IBM NetVista A22p find.pcworld.com/19341	NEW	77	Inexpensive \$1108	Windows XP Home	Average 91	This model features a pop-off front cover and easily accessible drive bays; manageability software can be downloaded. (★★★★)
6	Systemax Venture-UI7 find.pcworld.com/19381	NEW	77	Inexpensive \$899	Windows XP Home	Average 97	With adequate performance and a sub-\$1000 price, this system has appeal; but the chassis can be difficult to replace. (★★★★)
7	Compaq Evo D500 find.pcworld.com/15840	Jan 02	75	Average \$1115	Windows 2000 Pro	Average 100	Attractive case offers tool-less access to components, but limited expandability. Price drops by \$139. (★★★★ Jan 02)
8	Gateway E-3600 find.pcworld.com/15820	Jan 02	75	Average \$1459	Windows 2000	Average 99	Though an average performer, this system includes remote manageability and tool-less access to components. (★★★★ Jan 02)
				Percentage of overall rating ▶	20 percent	20 percent	

All systems tested or retested under our new PC WorldBench 4 test suite. See find.pcworld.com/10860 for details on PC World's Star Ratings.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. See "Your Guide to the Top 100" on page 129 for more details.

THIS MONTH ONE OF THE FIRST Athlon XP 1900+ systems we've tested makes the Top 15. A good overall performer and number six on the power chart, the Systemax Ascent-SA15 features Windows XP Professional and a 60GB hard disk. The other newcomer to our power chart is the Pogo Linux Pogo Altura Workstation, at number four. This system, which achieved a PC WorldBench 4 score of 118, includes a 1.53-GHz Athlon XP 1800+ processor, 512MB of SDRAM, and a 120GB hard disk.

The top ranks of both charts remain unchanged from last month. On the power side, the Polywell Poly 815TS-I260, which uses a 1.26-GHz Intel Pentium III CPU for servers, takes the top spot—and our Best Buy award—for the third month in a row. In the value rankings, the Micro Express MicroFlex 1200C, which uses a 1.2-GHz Athlon processor, once again wins our nod for Best Buy.

Visit find.pcworld.com/20221 for reviews of all products ranked in this chart or tested this month.

BASE CONFIGURATION								Extra features	Design/ documentation	Vendor's reliability/ service
CPU	RAM (MB/type)	Hard drive ²	Monitor size (diagonal inches)	Graphics board	Case type ³	Open bays/slots				
1.26-GHz Pentium III	256/ SDRAM	80 ⁴	19	Leadtek WinFast GeForce3	Midsized tower	5/3	Outstanding: 16X DVD-ROM drive, 12X/8X/32X CD-RW drive, V.90 modem, network adapter, Lotus SmartSuite Millennium Edition	Very good/ Adequate	1/5	
1.53-GHz Athlon XP 1800+	256/ SDRAM	40	17	CardExpert GeForce2 MX400	Midsized tower	3/2	Very good: 16X DVD-ROM drive, 12X/8X/32X CD-RW drive, V.90 modem, network adapter	Good/ Adequate	1/5	
1.53-GHz Athlon XP 1800+	256/ SDRAM	61	17 (LCD)	Gigabyte GV- GF2010	Midsized tower	4/4	Very good: 16X DVD-ROM drive, 24X/10X/40X CD-RW drive, network adapter, Corel WordPerfect Office 2002	Very good/ Adequate	1/5	
1.53-GHz Athlon XP 1800+	512/ SDRAM	120	19	Leadtek WinFast Titanium 200	Midsized tower	4/2	Very good: 16X DVD-ROM drive, 16X/10X/40X CD-RW drive, network adapter	Good/ Adequate	1/5	
2-GHz Pentium 4	256/ RDRAM	40	19	Micron GeForce2 MX400	Midsized tower	4/3	Very good: 16X/10X/40X CD-RW drive, V.90 modem, network adapter, Microsoft Office XP Small Business Edition	Good/ Good	Good/ Fair⁵	
1.6-GHz Athlon XP 1900+	256/ SDRAM	60	19	Matrox Millennium G550	Midsized tower	3/4	Very good: 16X/10X/32X CD-RW drive, network adapter, Microsoft Office XP Small Business Edition	Good/ Adequate	1/5	
2-GHz Pentium 4	256/ SDRAM	80	17 (LCD)	HP GeForce2 MX 400	Desktop	2/3	Outstanding: 16X/10X/32X CD-RW drive, network adapter, Wake-on-LAN, chassis-intrusion detection	Outstanding/ Adequate	Good/ Fair	
10 percent								10 percent	15 percent	30 percent
1.2-GHz Athlon	256/ SDRAM	40	17	Asus AGP-V7700	Midsized tower	3/3	Very good: 12X DVD-ROM drive, 12X/8X/32X CD-RW drive, V.90 modem, network adapter	Good/ Good	1/5	
1.4-GHz Athlon	256/ SDRAM	40	17	Leadtek GeForce2 Pro	Midsized tower	3/2	Very good: 16X DVD-ROM drive, 16X/10X/40X CD-RW drive, V.90 modem, network adapter	Good/ Adequate	1/5	
1.2-GHz Athlon	256/ SDRAM	30	17	EVGA E-GeForce2 MX	Midsized tower	4/5	Good: 12X DVD-ROM drive, network adapter, Corel WordPerfect Office 2000	Good/ Adequate	1/5	
1-GHz Athlon	256/ SDRAM	41	15 (LCD)	Gigabyte GA- GF1280-32E	Minitower	2/2	Good: 16X/10X/40X CD-RW drive, network adapter, WordPerfect Office 2002	Adequate/ Adequate	1/5	
1.6-GHz Pentium 4	256/ SDRAM	41	15	VisionTek GeForce2 MX	Midsized tower	2/3	Very good: 16X/10X/40X CD-RW drive, network adapter, Wake-on-LAN	Good/ Adequate	Good/ Fair	
1.7-GHz Pentium 4	256/ SDRAM	40	17	ATI Xpert 2000 Pro	Midsized tower	4/2	Good: 40X-52X CD-ROM drive, network adapter	Good/ Adequate	1/5	
1.7-GHz Pentium 4	256/ SDRAM	20	15	Compaq Vanta	Desktop	0/2	Average: 22X-48X CD-ROM drive, network adapter	Good/ Adequate	Good/ Poor	
1.7-GHz Pentium 4	128/ SDRAM	20	19	VisionTek GeForce3	Midsized tower	4/3	Good: 20X-48X CD-ROM drive, network adapter, Norton AntiVirus, LANDesk client manager	Good/ Adequate	Good/ Fair	
10 percent								10 percent	10 percent	30 percent

² In gigabytes.

³ We define vertical cases as towers (taller than 20 inches), midsized towers (15.5 to 20 inches), or minitowers (shorter than 15.5 inches); and horizontal cases as desktops (5 inches or taller) or compacts (shorter than 5 inches).

⁴ Total space on two hard drives.

⁵ Insufficient data to give a rating, or the rating is derived from the vendor's Reliability and Service survey scores for its home PCs.

Three new systems debut on the value chart. At number four is the Sys Taskmaster 1000T; our \$1342 test system came with a 1-GHz Athlon CPU and a sharp 15-inch LCD monitor. The fifth-place IBM NetVista A22p, based on a 1.6-GHz Pentium 4 processor, couples average performance with ample security and manageability features. Meanwhile, the \$899 1.7-GHz Pentium 4-based System-

ax Venture-U17, in sixth, is the least-expensive system on the chart.

Five other systems we tested this month didn't make the cut: the Dell OptiPlex GX240, the Hewlett-Packard E-pc 40, the Hewlett-Packard Vectra VL800, the Polywell Poly 880XP-1900, and the Premio Aries 845M. Visit find.pcworld.com/20221 to read reviews of these models and of the systems on our chart. ▶



THE IBM NETVISTA A22p ships with a Wake-On-LAN-enabled network interface card.

TOP 15 NOTEBOOK PCs

POWER NOTEBOOK		Issue tested	Overall rating	Street price (12/14/01)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY Dell Inspiron 8100 find.pcworld.com/14880	Jan 02	90	Very inexpensive: \$1658	Windows 2000 Good 100		Built for multimedia, with GeForce2 Go graphics plus IEEE 1394 and S-Video ports. Price falls \$408 this month. (★★★★☆ Dec 01)
2	IBM ThinkPad A30p find.pcworld.com/18122	Feb 02	89	Expensive: \$3099	Windows 2000 Outstanding 113		Desktop replacement has dual modular bays and huge hard drive. PDA syncing bay device is optional. (★★★★☆ Feb 02)
3	Dell Inspiron 4100 find.pcworld.com/16400	Jan 02	89	Average: \$2228	Windows 2000 Very good 107		Accommodates lots of add-ins; has dual pointing devices. Optional color screen backs cost \$20. Drops \$502 this month. (★★★★☆ Jan 02)
4	HP Omnibook 6100 find.pcworld.com/16402	Jan 02	86	Expensive: \$2849	Windows 2000 Very good 105		Corporate speedster has wireless-ready design and handsome, thin case with modular bay. Price falls \$400. (★★★★☆ Jan 02)
5	Gateway Solo 9550xl find.pcworld.com/16401	Jan 02	85	Average: \$2599	Windows 2000 Very good 107		Includes giant screen and high-end multimedia connections, but unit is big and heavy. (★★★★☆ Jan 02)
6	IBM ThinkPad T23 find.pcworld.com/14881	Jan 02	85	Expensive: \$3128	Windows 2000 Good 105		Equipped with a whopping 48GB hard drive and a big screen with a light at the top. (★★★★☆ Dec 01)
7	Toshiba Tecra 9000 find.pcworld.com/19841	NEW	83	Expensive: \$3154	Windows 2000 Good 101		Slim, all-silver unit with sloping front includes built-in Wi-Fi and Bluetooth wireless antennas. (★★★★☆)
VALUE NOTEBOOK		Percent of overall rating ▶		15 percent	20 percent		
1	Best BUY Gateway Solo 5350 find.pcworld.com/18242	Feb 02	83	Average: \$1799	Windows XP Professional Very good 94		Comes with removable hard drive, handsome black-and-silver case, and one modular bay, but no substantive extras. (★★★★☆ Feb 02)
2	Compaq Presario 1720 find.pcworld.com/19482	NEW	81	Inexpensive: \$1599	Windows XP Home Very good 95		Lightweight, well-equipped consumer laptop comes with DVD/CD-RW combination drive and IEEE 1394 port, all for a good price. (★★★★☆)
3	IBM ThinkPad R30 find.pcworld.com/16403	Jan 02	80	Average: \$2033	Windows 2000 Good 88		Two-spindle unit has most standard connections, a light at the top of the screen, and built-in 802.11b wireless support. (★★★★☆ Jan 02)
4	Compaq Presario 2701 find.pcworld.com/19483	NEW	80	Average: \$1999	Windows XP Home Very good 97		Dual optical drive design lets you use DVD-ROM and bundled CD-RW drive simultaneously. Price includes \$99 optional second battery. (★★★★☆)
5	Fujitsu LifeBook C Series find.pcworld.com/16404	Jan 02	79	Average: \$1649	Windows 2000 Good 88		Outguns other laptops by offering four USB ports; DVD/CD-RW combination drive is a pleasant find in a low-cost notebook. (★★★★☆ Jan 02)
6	Toshiba Satellite 5005-S504 find.pcworld.com/19484	NEW	79	Average: \$2099	Windows XP Home Very good 95		Fantastic sound and dedicated audio controls will delight music lovers; also includes SD and SmartMedia slots. Uses desktop CPU. (★★★★☆)
7	Chem USA ChemBook 3830 find.pcworld.com/12840	Jan 02	79	Inexpensive: \$1499	Windows Me Very good 79		All-in-one model also makes a nice stand-alone CD player. Battery, hard drive, and memory could be easier to access. (★★★★☆ Nov 01)
8	Sony VAIO PCG FX-390P find.pcworld.com/19485	NEW	78	Average: \$2199	Windows XP Professional Average 83		Removable floppy drive, tiltable keyboard, and clearly marked connections highlight this comfortable all-in-one. (★★★★☆)
		Percent of overall rating ▶		20 percent	15 percent		

See find.pcworld.com/10860 for details on PC World's Star Ratings.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. See "Your Guide to the Top 100" on page 129 for more details.

² Except where noted, all CPUs are SpeedStep chips, which run at a slower speed when on battery power.

³ Word score reflects both listed and unlisted features.

BURNING YOUR OWN MUSIC CDs can be fun, fast, and easy—unless you're using a laptop with only one optical drive. If that's the case, you could spend as much time swapping discs as you'll spend listening to the end results. Compaq's new Presario 2701, number four on our value list this month, avoids this problem by including two optical drives: a fixed DVD-ROM drive and a CD-RW drive that shares a bay with the floppy drive. A supplementary second battery came with our test model of

this Pentium III-M-1000/733-based system, which is a solid deal for \$1999.

The 2701's lighter sibling, the \$1599 Presario 1720, gets second place on the value chart. Though it offers only a single DVD-ROM and CD-RW combination drive, it has many of the features you get on the more expensive machine, including an IEEE 1394 port, for \$400 less.

Three other laptops we reviewed this

Visit find.pcworld.com/20024 for reviews of all products ranked in this chart or tested this month.

BASE CONFIGURATION							Extra features ²	Overall design	Battery life (hours:min) ⁴	Average weight (pounds) ⁵	Vendor's reliability/service
CPU ¹	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Multi-purpose bays						
1-GHz Pentium III-M	15	256	20	Touchpad, eraserhead	1	Very good: 8X DVD-ROM drive, built-in modem and network adapter, Microsoft Office XP Small Business Edition 2002	Outstanding	Good/ 3:01	Heavy/ 9.0	Good/Fair	
1.2-GHz Pentium III-M	15	256	48	Eraserhead	2	Very good: 6X DVD-ROM and 4X/4X/24X CD-RW combo drive, built-in modem and network adapter, Lotus SmartSuite	Outstanding	Average/ 2:19	Heavy/ 8.5	Good/Fair	
1.2-GHz Pentium III-M	14.1	256	20	Touchpad, eraserhead	2	Very good: 8X DVD-ROM and 8X/8X/24X CD-RW combo drive, built-in modem and network adapter, Office XP SBE 2002	Very good	Average/ 2:58	Heavy/ 8.1	Good/Fair	
1.13-GHz Pentium III-M	15	256	30	Touchpad, eraserhead	1	Good: 8X DVD-ROM drive, built-in modem and network adapter	Outstanding	Very good/ 3:58	Average/ 7.8	Good/Fair	
1.13-GHz Pentium III-M	15.7	256	30	Touchpad	2	Good: 6X DVD-ROM and 4X/4X/24X CD-RW combo drive, built-in modem and network adapter	Very good	Good/ 3:42	Heavy/ 9.3	Fair/Fair	
1.13-GHz Pentium III-M	14.1	256	48	Eraserhead	1	Good: 8X DVD-ROM drive, built-in modem and network adapter, Lotus SmartSuite	Outstanding	Average/ 2:41	Light/ 6.5	Good/Fair	
1.13-GHz Pentium III-M	14.1	256	30	Eraserhead	1	Very good: 8X DVD-ROM and 8X/4X/24X CD-RW combo drive, built-in modem and network adapter	Very good	Good/ 3:04	Average/ 7.1	Good/Fair	
5 percent							10 percent	10 percent	5 percent	10 percent	25 percent
1-GHz Pentium III-M	14.1	256	20	Touchpad	1	Good: 8X DVD-ROM drive, built-in modem and network adapter, Microsoft Works 2002	Very good	Good/ 3:30	Average/ 7.0	Fair/Fair	
1-GHz Pentium III-M	14.1	256	20	Touchpad	1	Good: 6X DVD-ROM and 4X/4X/24X CD-RW combo drive, built-in modem and network adapter	Average	Good/ 3:13	Average/ 6.8	Fair/Poor	
1-GHz Pentium III	14.1	256	30	Eraserhead	1	Good: 8X/4X/24X CD-RW drive, built-in modem and network adapter, Lotus SmartSuite	Outstanding	Average/ 2:22	Light/ 6.7	Good/Fair	
1-GHz Pentium III-M	15	512	30	Touchpad	1	Very good: 8X DVD-ROM drive, 8X/4X/24X CD-RW drive, built-in modem and network adapter	Very good	Good/ 3:19	Very heavy/ 10.1	Fair/Poor	
1-GHz Pentium III	14.1	128	30	Touchpad	0	Good: 8X DVD-ROM and 8X/3X/24X CD-RW combo drive, built-in modem and network adapter	Average	Good/ 3:18	Average/ 7.7	Good/*	
1.1-GHz Pentium III ⁷	15	512	30	Touchpad	0	Good: 8X DVD-ROM and 8X/4X/24X CD-RW combination drive, built-in modem and network adapter, Lotus SmartSuite	Very good	Poor/ 1:47	Heavy/ 8.7	Good/Fair	
1-GHz Pentium III ⁷	14.1	256	20	Touchpad	0	Average: 8X/4X/32X CD-RW drive, built-in modem and network adapter	Average	Average/ 2:54	Average/ 7.7	/*	
1-GHz Pentium III	15	256	30	Touchpad	1	Good: 8X DVD-ROM and 8X/4X/24X CD-RW combo drive, built-in modem and network adapter, Microsoft Word 2002	Very good	Average/ 2:46	Heavy/ 8.2	Good/*	
5 percent							10 percent	10 percent	5 percent	10 percent	25 percent

¹ Unless otherwise noted, all notebooks come with a lithium ion battery.
² Includes computer, AC adapter, power cord, floppy drive, and optical drive.

⁴ Insufficient data to give a rating.
⁵ Single-speed desktop CPU.

month made the cut, including the \$3154 Toshiba Tecra 9000, the second notebook on our charts to offer both 802.11b (Wi-Fi) and Bluetooth wireless antennas. At number seven on the power chart, the Tecra 9000 also boasts stylish looks, with an all-silver case, and 3-hour battery life.

Want a notebook sure to elicit a "wow" from everyone who sees it? Toshiba's \$2099 Satellite 5005-S504, sixth on the


value list, offers rocking good sound and an attractive glossy blue lid.

If you like Sony notebooks but you're not keen on their funky Jog Dial pointing devices, the new \$2199 VAIO PCG FX-390P might make you change your mind. This model, which finished eighth on our value list, centers a Jog Dial between the mouse buttons, where it's much easier to roll and press. —Carla Thornton ▶



TOSHIBA'S SATELLITE 5005-S504 has built-in Harman/Kardon speakers.

TOP 15 HOME PCs

	POWER SYSTEM	Issue tested	Overall rating	Street price (12/7/01)	PC WorldBench 4 performance score ¹ 	Comments
1	Best BUY ABS Performance Ti 500 find.pcworld.com/17321	Feb 02	91	Very inexpensive \$1699	Windows XP Home Very good 117	Loaded system in a towering black case delivers speed, smooth game play, and powerful sound at a bargain price. (★★★★★ Feb 02)
2	Falcon Northwest Mach V Athlon 2000 find.pcworld.com/19222	NEW	90	Very expensive \$4095	Windows XP Home Outstanding 126	If you have the cash, you'll be hard-pressed to find a better entertainment system than this Mach V. (★★★★★)
3	Compaq Presario 8000Z find.pcworld.com/19221	NEW	86	Average \$2560	Windows XP Home Very good 116	Well-equipped system includes everything you need to import, edit, and burn home movies on a DVD. (★★★★☆)
4	Polywell Poly 880K7 find.pcworld.com/19224	NEW	82	Average \$2650	Windows XP Home Very good 119	This quick system delivers great performance; it has a good-looking LCD monitor and crisp-sounding speakers. (★★★★☆)
5	Sony VAIO PCV-MXS10 find.pcworld.com/19225	NEW	74	Expensive \$3399	Windows XP Home Poor 93	This PC offers a wide variety of features for multimedia enthusiasts, but its performance is slow. (★★★★☆)
6	Alienware Area-51 find.pcworld.com/15102	Dec 01	68	Expensive \$3079	Windows XP Home Good 107	Well-equipped gaming system is decked out with a DVD-ROM drive and a game joystick, but monitor's quality disappoints. (★★★★☆ Dec 01)
7	Gateway 700C find.pcworld.com/16442	Dec 01	66	Average \$2558	Windows XP Home Average 102	Brilliant LCD monitor tops off a good-looking system. Speed and sound quality are respectable but not stunning. (★★★★☆ Dec 01)
VALUE SYSTEM		Percent of overall rating ▶		10 percent	25 percent	
1	Best BUY NuTrend Athlon Mega 3 find.pcworld.com/15112	Dec 01	95	Average \$1339	Windows XP Home Outstanding 111	Our speedy value champ includes a great-looking LCD monitor, a printer, and extensive documentation. (★★★★★ Dec 01)
2	Dell Dimension 4300 find.pcworld.com/15105	Dec 01	91	Inexpensive \$1179	Windows XP Home Good 94	Solid all-around system but with only middling performance, audio, and video. Documentation is first-rate. (★★★★☆ Dec 01)
3	HP Pavilion 7966 ² find.pcworld.com/16502	Jan 02	75	Expensive \$1548	Windows XP Home Good 90	This well-stocked, smartly built system came up short on sound and display quality, especially when playing DVDs. (★★★★☆ Jan 02)
4	Gateway 300C find.pcworld.com/17281	Feb 02	74	Inexpensive \$1019	Windows XP Home Average 81	Makes up for low performance and integrated graphics with strong features, monitor, and sound system. (★★★★☆ Feb 02)
5	Polywell Poly 1000DU find.pcworld.com/15114	Dec 01	74	Average \$1325	Windows XP Home Good 93	System squeezes impressive performance from a low-cost processor, but the system's overall price is high. (★★★★☆ Dec 01)
6	Gateway 500C ³ find.pcworld.com/15109	Dec 01	73	Expensive \$1687	Windows XP Home Average 87	Solidly constructed; lagged on performance tests, but well equipped for music lovers. (★★★★☆ Dec 01)
7	Dell Dimension 2100 find.pcworld.com/15104	Dec 01	73	Very inexpensive \$779	Windows XP Home Average 79	This well-built, low-cost PC is fine for basic computing, but it's the slowest performer on our chart. (★★★★☆ Dec 01)
8	Gateway Profile 3CX find.pcworld.com/19223	NEW	67	Expensive \$1699	Windows XP Home Good 94	Provides a space-saving all-in-one design and includes a good monitor, but it's pricey and offers little room for expansion. (★★★★☆)
		Percent of overall rating ▶		20 percent	20 percent	

Go to find.pcworld.com/10860 for details on PC World's Star Ratings.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. For more details, see "Your Guide to the Top 100" on page 129.

² In gigabytes.

³ Vertical cases are towers (over 20 inches), midsize towers (15.5 to 20 inches), or minitowers (under 15.5 inches). Horizontal cases are desktops (5 inches or taller) or compacts (under 5 inches).

WITH SOLID PERFORMANCE and a good price, ABS's Performance Ti 500 remains our power Best Buy. But it has some stiff competition: Falcon Northwest leads four newcomers onto the power chart. For gamers who want smoking performance and have money to burn, the Mach V Athlon 2000 delivers—but at a heart-stopping price of \$4095. It landed a PC WorldBench 4 score of 126, the highest we've seen so far from a home PC, and it comes with a 22-inch monitor and a set of six speakers.

In third place just below the Falcon, Compaq's latest Presario, the 8000Z, is a well-equipped computer for budding video directors. Our test 8000Z came with a DVD-RW drive and a handy IEEE 1394 port on the front for importing home movies from a camcorder. Add to that Sonic Solutions' DVDit video editing software and a 120GB hard drive, and you have an amateur's movie studio in a box.

Visit find.pcworld.com/19301 for reviews of all products ranked in this chart or tested this month.

BASE CONFIGURATION						Extra features	Graphics/ sound/ quality	Setup and ease of use	Vendor's reliability/ service
CPU	RAM (MB/type)	Hard drive ¹	Monitor (Inches)	Graphics	Case type ²				
1.53-GHz Athlon XP 1800+	256/DDR SDRAM	60	19	64MB Leadtek WinFast Ti 500 TD	Tower	Very good: 16X DVD-ROM drive, 24X/10X/40X CD-RW drive, V.90 modem, network adapter, Corel WordPerfect Office 2002, Adaptec Easy CD Creator	Very good/ Outstanding	Good	*/^
1.66-MHz Athlon XP 2000+	1024/DDR SDRAM	80	22	64MB VisionTek Xtasy 6964	Midsized tower	Good: 16X DVD-ROM drive, 24X/10X/40X CD-RW drive, network adapter; Deus Ex, Giants	Very good/ Outstanding	Very good	*/^
1.53-GHz Athlon XP 1800+	512/DDR SDRAM	120	19	64MB Compaq GeForce3 Ti 500	Midsized tower	Good: DVD-RW and 8X/4X/24X CD-RW combo drive, 24X-48X CD-ROM drive, V.90 modem, network adapter, Microsoft Money 2000 Standard, Works 2000	Very good/ Outstanding	Very good	Fair/ Poor
1.53-GHz Athlon XP 1800+	256/DDR SDRAM	80 ⁵	18 (LCD)	64MB Polywell GeForce3 Ti 500	Midsized tower	Average: 16X DVD-ROM drive, 16X/10X/40X CD-RW drive, V.90 modem, network adapter, Deus Ex, Giants, Sacrifice	Very good/ Very good	Very good	*/^
1.7-GHz Pentium 4	512/SDRAM	80	15 (LCD)	32MB Sony GeForce2 MX	Minitower	Outstanding: DVD-RW and 8X/4X/24X CD-RW combo drive, V.90 modem, network adapter, Adobe Photoshop Elements and Premiere LE, Corel WordPerfect	Good/ Good	Very good	Good/^
2-GHz Pentium 4	256/RDRAM	60	19	64MB PNY Verto GeForce3	Tower	Very good: 16X DVD-ROM drive, 24X/10X/40X CD-RW drive, V.90 modem, network adapter, Microsoft SideWinder joystick and Game Pad Pro	Good/ Good	Average	*/^
2-GHz Pentium 4	256/RDRAM	80	15 (LCD) ⁶	64MB VisionTek NV20	Midsized tower	Average: 16X DVD-ROM drive, 12X/8X/32X CD-RW drive, V.90 modem, network adapter, Microsoft Works Suite 2001, Norton AntiVirus 2002	Very good/ Good	Average	Fair/ Fair
10 percent						10 percent	15 percent	5 percent	25 percent
1.33-GHz Athlon	256/DDR SDRAM	40	15 (LCD)	64MB Leadtek WinFast GeForce2	Midsized tower	Outstanding: 16X DVD-ROM drive, 24X/10X/40X CD-RW drive, V.92 modem, network adapter, Epson Stylus C60 color printer, WordPerfect Office 2000	Good/ Good	Average	*/^
1.5-GHz Pentium 4 ⁷	256/SDRAM	40	17	32MB Dell GeForce2 MX	Midsized tower	Average: 16X/10X/40X CD-RW drive, network adapter, Microsoft Works Suite 2001	Very good/ Average	Good	Outstanding/ Good
1.7-GHz Pentium 4	512/SDRAM	80	17	32MB Asus AGP-V3800M	Midsized tower	Very good: 16X DVD-ROM drive, 12X/8X/32X CD-RW drive, V.90 modem, network adapter, Microsoft Works 2001, Pinnacle Studio DV, McAfee Security	Average/ Limited	Good	Fair/ Poor
1.1-GHz Celeron	256/SDRAM	80	17	Integrated Intel 810	Minitower	Good: 16X/10X/40X CD-RW drive, V.92 modem, network adapter, Microsoft Works Suite 2001, Norton AntiVirus 2002, Roxio Easy CD Creator 5	Good/ Average	Good	Fair/ Fair
1-GHz Duron	128/DDR SDRAM	40	19	32MB Matrox Millennium G450	Midsized tower	Good: 16X DVD-ROM drive, 16X/10X/40X CD-RW drive, V.90 modem, network adapter, Lexmark Z53 Color Jetprinter, Logitech Webcam	Good/ Very good	Average	*/^
1.7-GHz Pentium 4	256/SDRAM	40	17	64MB Gateway GeForce2 MX400	Minitower	Very good: 16X DVD-ROM drive, 16X/8X/32X CD-RW drive, V.90 modem, network adapter, Creative Nomad II MP3 player, Microsoft Works Suite 2001	Good/ Good	Very good	Fair/ Fair
1.1-GHz Celeron	128/SDRAM	20	17	Integrated Intel 810	Minitower	Limited: 24X-48X CD-ROM drive, V.92 modem, Microsoft Works Suite 2001	Average/ Average	Good	Outstanding/ Good
1.2-GHz Pentium III	128/SDRAM	40	15 (LCD)	Integrated Intel 810	All-in-one	Good: 16X/10X/40X CD-RW drive, V.90 modem, network adapter, Microsoft Works Suite 2001, Money 2002	Limited/ Limited	Very good	Fair/ Fair
10 percent						10 percent	10 percent	5 percent	25 percent

¹ Insufficient data to give a rating.
² Two 40GB hard drives with RAID.

³ Vendor has replaced the original CTX PV505 monitor with a Hitachi CML151.
⁴ Now sold with a 1.6-GHz processor.

⁵ Same configuration as the Pavilion 7965, which appeared in the January 2002 issue.
⁶ Same configuration as the Gateway 500X, which appeared in the January 2002 issue.

At number four, the Polywell Poly 880K7 is reasonably priced for a system with an Athlon XP 1800+ processor and a great-looking 18-inch LCD monitor. It also comes with a large software bundle containing, among other programs, the games Deus Ex, Giants, and Sacrifice.

Sony's innovative and very stylish VAIO PCV-MXS10, in the fifth slot, is a multimedia marvel, with a DVD-RW drive, a

radio and TV tuner, and a built-in Mini-Disc player and recorder. But all those extras add up: At \$3399, the PCV-MXS10 costs as much as significantly faster PCs.

Squeaking in at number eight on the value chart, the Gateway Profile 3CX's all-in-one design fits in a small office but lacks the expandability of a full-size system. It comes with a 15-inch LCD monitor and a 16X/10X/40X CD-RW drive. ▶



WITH THE LATEST Athlon processor, Falcon Northwest's Mach V will appeal to gamers.

The AMD Athlon™ XP Processor Extreme Performance for Windows® XP

The AMD Athlon™ XP processor with QuantiSpeed™ Architecture^a is powering the next generation in computing platforms while delivering the ultimate performance for Microsoft's next generation operating system, Windows® XP. AMD worked diligently with Microsoft to ensure the AMD Athlon™ XP processor was compatible, easy to use, and optimized to run Windows® XP.

Productivity

Tremendous performance while working on multiple applications

Multimedia

Get rapid results when working with digital media including audio, video, and digital files

QuantiSpeed™ Architecture^a

The AMD Athlon™ XP processor features QuantiSpeed™ Architecture^a, which boosts overall productivity and enables the ultimate computing experience

Compatibility

Designed to run flawlessly on the world's most popular software

Wait less.

Experience more.

The new AMD Athlon™ XP processor features QuantiSpeed™ Architecture^a. You can now enjoy efficient multitasking when using multiple peripherals, quickly edit home movies, digital photos, boost software performance and burn CDs at lightning speed with fast file downloads. With the new and improved 3DNow! Professional technology, download files and surfing the 'Net while getting Crystal-clear audio enhances digital music and video experiences. Furthermore, you can now make gaming opponents over the 'Net wishing they had an AMD Athlon™ XP processor.



^a AMD Athlon XP Processor 1700+ with QuantiSpeed™ architecture outperforms competitive 1.7GHz PC processors. QuantiSpeed™ architecture operates at 1.47GHz
 AMD Athlon XP Processor 1800+ with QuantiSpeed™ architecture outperforms competitive 1.8GHz PC processors. QuantiSpeed™ architecture operates at 1.53GHz
 AMD Athlon XP Processor 1900+ with QuantiSpeed™ architecture outperforms competitive 1.9GHz PC processors. QuantiSpeed™ architecture operates at 1.60GHz
 AMD Athlon XP Processor 2000+ with QuantiSpeed™ architecture outperforms competitive 2.0GHz PC processors. QuantiSpeed™ architecture operates at 1.67GHz

Atlas Xelerator XP

\$569
KM1301



XP3000

Athlon XP 1700+ Processor with QuantiSpeed™ architecture

- AMD Athlon XP Processor
- 200/266MHz FSB and UDMA-100 Support
- VIA KLE133 PC-133 and 4X AGP Support
- 256MB PC-133 SDRAM
- 40 GB UDMA-100 Hard Drive
- 56X CD-ROM
- Trident Blade 3D Shared AGP
- Lucent PCI 56K Voice Modem and 10/100 NIC
- PCI 3D Wavetable Stereo Sound
- Atlas 440W 2.1 Speakers w/Subwoofer
- Deluxe Windows 98 Keyboard
- Deluxe Mouse w/Wheel
- Microsoft Windows XP Home Edition
- Sun Micro StarOffice
- AMD Certified Power Supply

Athlon XP 1800+ with QuantiSpeed™ architecture

\$599
KM1302

Athlon XP 1900+ with QuantiSpeed™ architecture

\$659
KM1303

Athlon XP 2000+ with QuantiSpeed™ architecture

\$709
KM1304

\$1,079
KM2302



XP6000

Athlon XP 1800+ Processor with QuantiSpeed™ architecture

- New VIA KT266A DDR Chipset
- 200/266MHz FSB and UDMA-100 Support
- DDR PC2100 and 4X AGP Support
- 256MB PC2100 (266MHz) DDR RAM
- 40 GB UDMA-100 Hard Drive
- 16X DVD-ROM
- 24X10X40 CDRW Drive
- Nvidia GEFORCE 2 Titanium 3D DVD 64MB DDR
- Creative Labs Modem Blaster PCI Voice Modem
- SoundBlaster PCI 128 4-Channel 3D Wavetable
- MLJ-452 4.1 Ch Speakers w/Subwoofer
- 19" 0.25DP OSD Monitor
- Deluxe Windows 98 Keyboard
- Deluxe Mouse w/Wheel
- Microsoft Windows XP Home Edition
- Sun Micro StarOffice
- 350W AMD Certified Power Supply

Athlon XP 1700+ with QuantiSpeed™ architecture

\$1,039
KM2301

Athlon XP 1900+ with QuantiSpeed™ architecture

\$1,139
KM2303

Athlon XP 2000+ with QuantiSpeed™ architecture

\$1,189
KM2304

\$1,289
KM3304



XP8000

Athlon XP 2000+ Processor with QuantiSpeed™ architecture

- New nForce TwinBank DDR Chipset
- 200/266MHz FSB and UDMA-100 Support
- DDR PC2100 and 4X AGP Support
- 256MB PC2100 (266MHz) DDR RAM
- 60 GB UDMA-100 Hard Drive
- 16X DVD-ROM
- Nvidia GEFORCE 3 Ti 200 3D DVD 64MB DDR
- nForce 10/100 Ethernet NIC and 56K Modem
- nForce APU 3D Dolby Digital 5.1 Certified Sound
- Creative Labs Inspire 5.1 5300 Speakers w/Subwoofer
- 19" 0.25DP OSD Monitor
- Microsoft Intelli Internet Keyboard
- Microsoft Intelli Mouse w/Wheel
- Microsoft Windows XP Home Edition
- Sun Micro StarOffice
- AMD Certified Power Supply

Athlon XP 1700+ with QuantiSpeed™ architecture

\$1,139
KM3301

Athlon XP 1800+ with QuantiSpeed™ architecture

\$1,169
KM3302

Athlon XP 1900+ with QuantiSpeed™ architecture

\$1,239
KM3303



**ATLAS MICRO
LOGISTIC INC.**

www.buy-atlas.com

1.800.336.6898



TOP 10 HARD DRIVES

THE FIRST BEST BUY award in our new Top 10 chart goes to the 120GB Maxtor DiamondMax D540X drive, which combines enormous storage capacity and a good price. A close second is the 100GB Western Digital Special Edition Caviar, which boasts outstanding speed scores. While all the drives on

the chart are backward compatible and support the Ultra ATA/100 and earlier interfaces, only Maxtor's drives support the newer Ultra ATA/133 interface. Since few PCs come with ATA/133 support built in, you'll have to buy a PCI interface card (about \$50) to take advantage of the newer interface. ►

	HARD DRIVE: 50GB OR OVER	Street price (12/14/01)	Overall rating	Unformatted capacity (GB)	Performance	Comments
1	Best BUY Maxtor DiamondMax D540X (120GB) find.pcworld.com/19521	\$230	81	120	Good	FEATURES: 5400 rpm, Ultra ATA/133 interface, 2MB buffer, 12 ms average seek time, diagnostic software and installation kit, three-year warranty, 12-hour weekday toll-free support. SUMMARY: This drive delivers a winning combination of high capacity, competitive pricing, and solid performance. ★★★★★
2	Western Digital Special Edition Caviar find.pcworld.com/19562	\$349	81	100	Outstanding	FEATURES: 7200 rpm, Ultra ATA/100 interface, 8MB buffer, 8.9 ms average seek time, installation kit, three-year warranty, 10-hour weekday, 8-hour Saturday toll-free support. SUMMARY: Has a larger-than-usual cache and exceptional speed, but you pay a stiff premium for the privilege. ★★★★★
3	Western Digital Caviar find.pcworld.com/19561	\$299	80	120	Very good	FEATURES: 7200 rpm, Ultra ATA/100 interface, 2MB buffer, 8.9 ms average seek time, installation kit, three-year warranty, 10-hour weekday, 8-hour Saturday toll-free support. SUMMARY: Western Digital's largest drive is pricey, but it has the third fastest overall speed on the chart. ★★★★★
4	Maxtor DiamondMax Plus D740X (80GB) find.pcworld.com/19501	\$190	79	80	Good	FEATURES: 7200 rpm, Ultra ATA/133 interface, 2MB buffer, 8 ms average seek time, diagnostic software and installation kit, three-year warranty, 12-hour weekday toll-free support. SUMMARY: Like all of the Maxtor drives on the chart, supports ATA/133, ATA/100, and ATA/56 interfaces. ★★★★★
5	IBM Deskstar 120GXP find.pcworld.com/19564	\$369	78	124	Very good	FEATURES: 7200 rpm, Ultra ATA/100 interface, 2MB buffer, 8.5 ms average seek time, installation kit, three-year warranty, 13-hour weekday toll-free support. SUMMARY: Second-fastest and most expensive drive here, it uses IBM's "pixie dust" technology to cram more data onto its platters. ★★★★★
6	Maxtor DiamondMax D540X (160GB) find.pcworld.com/19503	\$300	78	160	Good	FEATURES: 5400 rpm, Ultra ATA/133 interface, 2MB buffer, 12 ms average seek time, diagnostic software and installation kit, three-year warranty, 12-hour weekday toll-free support. SUMMARY: Moderately priced for a drive with top-end capacity, but it's also slower than other Maxtor drives here. ★★★★★
7	IBM Deskstar 60GXP find.pcworld.com/19565	\$189	75	60	Good	FEATURES: 7200 rpm, Ultra ATA/100 interface, 2MB buffer, 8.5 ms average seek time, installation kit, three-year warranty, 13-hour weekday toll-free support. SUMMARY: The 60GB version of the Deskstar provides solid performance but costs more than other drives of comparable size. ★★★★★
HARD DRIVE: UNDER 50GB						
1	Best BUY Maxtor DiamondMax Plus D740X (40GB) find.pcworld.com/19502	\$130	76	40	Very good	FEATURES: 7200 rpm, Ultra ATA/133 interface, 2MB buffer, 8 ms average seek time, diagnostic software and installation kit, three-year warranty, 12-hour weekday toll-free support. SUMMARY: Impressive performance at a moderate price earns the single-platter version of the D740X its Best Buy. ★★★★★
2	Seagate Barracuda ATA IV find.pcworld.com/19523	\$115	75	40	Good	FEATURES: 7200 rpm, Ultra ATA/100 interface, 2MB buffer, 9 ms average seek time, diagnostic software and installation kit, three-year warranty, 9-hour weekday toll-free support. SUMMARY: Well priced, but slower than the Maxtor D740X, especially in our test that copies a large file. ★★★★★
3	Seagate U Series 6 find.pcworld.com/19542	\$90	74	40	Average	FEATURES: 5400 rpm, Ultra ATA/100 interface, 2MB buffer, 8.9 ms average seek time, diagnostic software and installation kit, three-year warranty, 9-hour weekday toll-free support. SUMMARY: Terrific price, but lackluster speed. It was especially slow in our Adobe Photoshop and find-file tests. ★★★★★

HOW WE TEST: Each drive's overall rating is based on price (25 percent for drives 50GB or over, 30 percent for smaller drives), performance (45 percent for large drives, 40 percent for small drives), features (20 percent), and technical support policies (10 percent). To test performance, we copy 640MB of data (first as one large file and then as a number of folders and files) from one location on the drive to another, time how long it takes to open a 105MB file in Adobe Photoshop 6 and perform a number of operations, and time how long it takes to do a find-file operation in Windows. All tests are carried out on a Dell Dimension 8200 with a 2-GHz Pentium 4 CPU, running Windows XP and using the integrated Ultra ATA/100 interface. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. See find.pcworld.com/10860 for details on PC World's Star Ratings.

THE PIZZA GUY MIGHT NOT DELIVER, BUT WE CAN.



EARTHLINK™ HIGH SPEED INTERNET. SATELLITE SERVICE POWERED BY DIRECWAY.™

Satellite access is a great way to enjoy the real Internet at really fast speeds. Satellite frees up your phone line and its always-on connection means no more busy signals or delays. And because EarthLink Satellite is powered by DIRECWAY, you get upload and download capabilities. Almost anyone is eligible – all you need is a clear view of the southern sky. If you're lucky, maybe we'll even stop off in town for a pizza before coming out to install your dish. Sign up now by calling **1-800-EARTHLINK**, or by visiting **www.earthlink.net/broadband/satellite**.

GET LINKED



©2001 EarthLink, Inc. All rights reserved.
©2001 Hughes Network Systems, a unit of Hughes Electronics Corporation. DIRECWAY and Broadband that's out of this world are trademarks of Hughes Electronics Corporation. All rights reserved.



TOP 10 PRINTERS

Visit find.pcworld.com/19581 for reviews of all products ranked in this chart or tested this month.

SINCE OUR JANUARY INK JET roundup, we've seen a few changes to the Top 10 chart. Canon discontinued its S600 model; returning to the chart is its comparable S630 Color Bubble Jet. We also tested two new ink jets from HP, as well as one new model from Compaq. The \$99 HP Deskjet 920c

was the only one to make the Top 10, but the Deskjet 995c is a great option for users willing to pay \$399 for more power and built-in Bluetooth technology. The Compaq 1400P Color InkJet is one of the least-expensive printers we've seen with a flash-media slot, but it falls short on graphics. ▶

	INK JET PRINTER	Street price (12/13/01)	Overall rating	Speed for plain text/full-page graphics (ppm)	Print quality for text/graphics	Cost per page for monochrome/color (cents)	Comments
1	Best BUY Lexmark Z43 Color Jetprinter find.pcworld.com/10561	\$100	92	4.6/0.6	Good/Good	5.1/18.9	FEATURES: Rated 12 ppm monochrome/6 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Delivers clean text; crisp, narrow parallel lines; and detailed, realistic color graphics. Photos were washed out and somewhat fuzzy, though. (★★★★☆ Jan 02)
2	Best BUY Epson Stylus C80 find.pcworld.com/16660	\$179	91	6.9/1.5	Adequate/Good	3.8/12.5	FEATURES: Rated 12 ppm monochrome/5 ppm color. 2880-by-720-dpi maximum resolution, 150 sheets input, 30 output. SUMMARY: Lightning-fast unit good for high-volume home-office printing. Excels at photos and uses pigment-based inks, so photos should last longer. (★★★★☆ Jan 02)
3	Lexmark Z53 Color Jetprinter find.pcworld.com/10560	\$130	87	5.9/0.6	Good/Very good	5.1/18.9	FEATURES: Rated 16 ppm monochrome/8 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Printed text considerably faster than the Z43, but is otherwise very similar. Colors appeared too bright in photo tests. (★★★★☆ Jan 02)
4	HP Deskjet 920c Color Inkjet Printer NEW find.pcworld.com/19264	\$99	85	4.2/0.7	Good/Very good	6/13.8	FEATURES: Rated 5.2 ppm monochrome/2.2 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Affordable printer with respectable print quality. Both gray-scale and color graphics were attractive. But limited 90-day warranty is unimpressive. (★★★☆☆ Jan 02)
5	Canon S630 Color Bubble Jet Printer find.pcworld.com/13501	\$199	85	6.3/0.7	Very good/Very good	2/10.7	FEATURES: Rated 17 ppm monochrome/12 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Creates better details on small fonts and serifs than the S500. Unfortunately, its gray-scale images looked jagged and streaky. (★★★★☆ Jan 02)
6	Canon S300 Color Bubble Jet Printer find.pcworld.com/16641	\$99	84	5.1/0.8	Very good/Good	2.3/12.1	FEATURES: Rated 11 ppm monochrome/7.5 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Text output quality was clean with fine details. Photo output looked good, though slightly washed out. (★★★★☆ Jan 02)
7	Canon S500 Color Bubble Jet Printer find.pcworld.com/16644	\$149	84	5.8/0.7	Good/Very good	2/10.7	FEATURES: Rated 12 ppm monochrome/8 ppm color. 2400-by-1200-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Bundled with a digital photo album and panoramic photo-stitching software. Graphics quality ranks among the best. (★★★★☆ Jan 02)
8	Epson Stylus C60 find.pcworld.com/16647	\$99	82	5.6/1.4	Adequate/Adequate	5/15	FEATURES: Rated 12 ppm monochrome/8 ppm color. 2880-by-720-dpi maximum resolution, 100 sheets input, 30 output. SUMMARY: Printed subtle details in test photos quite well and with blazing speed. A capable photo printer, though some photos showed a slightly red cast. (★★★★☆ Jan 02)
9	HP Deskjet 845c Color Inkjet Printer find.pcworld.com/16680	\$99	80	3.8/0.5	Adequate/Good	6/13.7	FEATURES: Rated 8 ppm monochrome/5 ppm color. 1200-by-600-dpi maximum resolution, 100 sheets input, 50 output. SUMMARY: Delivers smooth, detailed gray-scale images and superb highlights and shadows on photos. An excellent option for inexpensive photo printing. (★★★★☆ Jan 02)
10	HP Deskjet 940c Color Inkjet Printer find.pcworld.com/16681	\$149	79	4.7/0.7	Good/Good	6/13.8	FEATURES: Rated 12 ppm monochrome/10 ppm color. 2400-by-1200-dpi maximum resolution, 150 sheets input, 50 output. SUMMARY: Gray-scale images looked wonderful in our tests; glossy photos displayed great detail and texture, but were too dark. (★★★★☆ Jan 02)

HOW WE TEST: The overall rating for color ink jet printers is based on price (25 percent), print quality (20 percent), features (15 percent), ease of use (15 percent), speed (10 percent), service and support (10 percent), and cost of consumables (5 percent). Data based on tests designed and conducted by the PC World Test Center. All rights reserved. See find.pcworld.com/10860 for details on PC World's Star Ratings.



Extreme Performance for Microsoft® Windows® XP Professional

AMD Athlon™ XP processor plus Microsoft® Windows® XP – the new standard in reliability and performance designed for networks that demand the most from the computing experience.

Expect extreme performance and value from Tangent with Valera™ DDR PCs powered by AMD Athlon™ XP processors, preloaded with Microsoft® Windows® XP Professional.

Fast, Affordable Valera DDR Desktop Solutions for Educational Environments and State & Local Governments from Award-Winning* Tangent Computers.

Desktop or mid-tower choice gives IT flexibility. Generous memory and component options meet system demands across the enterprise. Features include up to 1.5GB of DDR SDRAM, 3-year parts & labor limited warranty, lifetime toll-free technical support and, of course, monitor, keyboard & mouse!



XP Meets XP

Reflecting More Than 30 Years of Design and Manufacturing Expertise, the AMD Athlon™ XP Processor Offers Reliability and Dependability from an Industry Leader. Increase Your Productivity with Impressive Power for Calculation-Intensive Applications.

VALUE

Valera DDR PC with

- AMD Athlon™ XP Processor 1600+ with QuantiSpeed™ architecture*
- 7-bay ATX mid-tower with PC99
- 128MB DDR SDRAM
- 1.44MB 3.5" floppy drive
- 20.0GB* hard drive, 7200 RPM
- 52X EIDE CD-ROM
- 15" monitor 1280 x 1024 70Hz .28dp
- 32MB NVIDIA™ TNT2™ M64, AGP 4X/2X
- Integrated AC97 audio controller
- Tangent multimedia speakers
- 10/100Mbit PCI NIC with WOL
- I/O ports: 2 serial, 1 parallel, 2 USB, 2 PS/2
- Internet keyboard with palm rest, PS/2
- 5-button 2-wheel mouse, PS/2
- Microsoft® Windows® XP Professional

\$980 | REF. #Q137302

MID-RANGE

Valera DDR PC with

- AMD Athlon™ XP Processor 1700+ with QuantiSpeed™ architecture*
- 7-bay ATX mid-tower with PC99
- 256MB DDR SDRAM
- 1.44MB 3.5" floppy drive
- 40.0GB hard drive, 7200 RPM
- 16X DVD-ROM & 48X CD-ROM IDE
- 8X/4X/32X CD-RW IDE
- 17" monitor 1280 x 1024 66Hz .27dp
- 32MB NVIDIA™ GeForce2 MX 400
- Creative Sound Blaster® Live!™ 5.1 Value PCI
- Altec Lansing® ACS 45.2 PowerCube™
- 10/100Mbit PCI NIC with WOL
- I/O ports: 2 serial, 1 parallel, 2 USB, 2 PS/2
- Internet keyboard with palm rest, PS/2
- 5-button 2-wheel mouse, PS/2
- Microsoft® Windows® XP Professional

\$1,349 | REF. #Q137303

Upgrade to 15" TFT LCD monitor for \$198

HIGH-PERFORMANCE

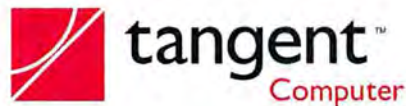
Valera DDR PC with

- AMD Athlon™ XP Processor 1900+ with QuantiSpeed™ architecture*
- 7-bay ATX mid-tower with PC99
- 256MB DDR SDRAM
- 1.44MB 3.5" floppy drive
- 60.0GB hard drive, 7200 RPM
- 8X/8X/8X/32X CD-RW/DVD-ROM Drive
- 15" TFT LCD monitor 1024 x 768
- 32MB NVIDIA™ GeForce2 MX 400
- Creative Sound Blaster® Live!™ 5.1 Value PCI
- Altec Lansing® ACS 45.2 PowerCube™
- 10/100Mbit PCI NIC with WOL
- I/O ports: 2 serial, 1 parallel, 2 USB, 2 PS/2
- Internet keyboard with palm rest, PS/2
- 5-button 2-wheel mouse, PS/2
- Microsoft® Windows® XP Professional

\$1,735 | REF. #Q137355

Upgrade to 17" TFT LCD monitor for \$269

Add Very Affordable, Extreme AMD Athlon™ XP Processor Performance to Your Enterprise Today.



November 2001, Valera™ PC

The Valera DDR PC is the next step in the evolution of an award-winning tradition of high-performance Tangent value. Now available with AMD Athlon XP processors.

800.342.9388 | www.tangent.com

*For hard drives, GB equals one billion bytes. *QuantiSpeed architecture outperforms competitive 1.6GHz processors. QuantiSpeed architecture operates at 1.40GHz. *QuantiSpeed architecture outperforms competitive 1.7GHz processors. QuantiSpeed architecture operates at 1.47GHz. *QuantiSpeed architecture operates at 1.6GHz. ©2002 Tangent Computer, Inc. All rights reserved. Prices and specifications valid in U.S. only and subject to change without notice. Shipping and taxes are additional. Tangent and the Tangent logo are registered trademarks and Pillar, Valera, and Network Alert are trademarks of Tangent Computer, Inc. AMD, the AMD Arrow logo, QuantiSpeed, AMD Athlon and combinations thereof are trademarks of Advanced Micro Devices, Inc. Microsoft and Windows are registered trademarks of Microsoft Corporation in the U.S. and other countries. Other product names are for identification purposes only and may be trade names of their respective companies.

TOP 10 CD-RW DRIVES

Visit find.pcworld.com/20081 for reviews of all products ranked in this chart or tested this month.

A HEALTHY \$30 PRICE DROP this month lifts Philips's 20X PCRW2010 drive to the top of the chart. Other changes include two new 24X/10X/40X models: Yamaha's pricey CRW3200 LightSpeed3 gets extra credit for its massive software bundle, while I/O Magic's MagicWriter DR-CDRW2440

loses points for the vendor's thin support. With a bargain price and solid performance, the LG Electronics GCE-8160B holds on as the sole 16X drive on the chart. We're still awaiting the next-generation 32X drives; we'll publish test results soon after we receive such products. ▶

	CD-RW DRIVE	Street price (12/11/01)	Overall rating	Performance/support policies	CD-R write speed for 650MB/ CD-RW write speed for 100MB (min:sec)	Comments
1	Best BUY Philips PCRW2010 find.pcworld.com/16060	\$120	86	Very good/ Very good	4:31/1:19	FEATURES: 20X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.22, one-year warranty, 11-hour weekday and 8-hour weekend toll-free support. SUMMARY: A \$30 price drop boosts this drive into first place. Has toll-free daily tech support and helpful documentation. (★★★★☆ Jan 02)
2	Best BUY TDK 24/10/40 VeloCD ReWriter find.pcworld.com/11142	\$145	86	Very good/ Very good	4:12/1:20	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.12, one-year warranty, 10.5-hour daily toll-free support. SUMMARY: One of the fastest drives we've tested, this model places high on the chart thanks to its seven-days-a-week tech support. (★★★★☆ Oct 01)
3	CenDyne Lightning 24x10x40 find.pcworld.com/14020	\$135	85	Very good/ Average	4:11/1:19	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.26, one-year warranty, 9-hour weekday and 4-hour Saturday support (calls are not toll-free). SUMMARY: Excellent performance and a competitive price make this drive a fine choice. (★★★★☆ Dec 01)
4	Yamaha CRW3200 LightSpeed3 find.pcworld.com/19461 NEW	\$185	83	Outstanding/ Good	4:09/1:16	FEATURES: 24X/10X/40X, IDE, internal, 8MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.31, one-year warranty, 8.5-hour weekday toll-free support. SUMMARY: The fastest drive on the chart. Its excellent software bundle includes Adobe Photo Deluxe 4.0 and Adobe ActiveShare. (★★★★☆)
5	OPS Que Internal 24x10x40x CD-RW find.pcworld.com/14040	\$140	83	Very good/ Good	4:12/1:20	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.22, one-year warranty, 11.5-hour weekday support (calls are not toll-free). SUMMARY: Commendable CD-R and CD-RW performance, as well as a competitive price, keeps this model in the Top 10. (★★★★☆ Dec 01)
6	Lite-On 24x10x40x LTR-24102B find.pcworld.com/16040	\$105	83	Very good/ Average	4:31/1:19	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.26, one-year warranty, 9-hour weekday support (calls are not toll-free). SUMMARY: This low-cost drive is held back by lackluster documentation and short technical support hours. (★★★★☆ Jan 02)
7	LG Electronics GCE-8160B find.pcworld.com/14000	\$100	82	Good/ Very good	5:32/1:31	FEATURES: 16X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Adaptec Easy CD Creator 4.03 and DirectCD 3.03, one-year warranty, 13-hour weekday and 8-hour Saturday toll-free support. SUMMARY: Sole 16X model on the chart. Strong all-around performer and fast CD-ROM reader for its speed class. (★★★★☆ Dec 01)
8	Sony CRX175A/A1 find.pcworld.com/18221	\$150	82	Outstanding/ Very good	4:07/1:18	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, BHA B's Recorder Gold 3.01 and B's Clip 2.29, one-year warranty, 12-hour weekday and Saturday toll-free support. SUMMARY: This drive provides top-notch CD-R/RW write performance and comes with an excellent software bundle. (★★★★☆ Feb 02)
9	Teac CD-W524E find.pcworld.com/18182	\$130	82	Very good/ Average	4:30/1:33	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, Roxio Easy CD Creator 5.1 and DirectCD 5.1, one-year warranty, 9-hour weekday support (calls are not toll-free). SUMMARY: Though this drive's performance is a little sluggish compared with other 24X offerings, Teac includes a better-than-average software bundle. (★★★★☆ Feb 02)
10	I/O Magic MagicWriter DR-CDRW2440 find.pcworld.com/19441 NEW	\$150	82	Outstanding/ Average	4:11/1:19	FEATURES: 24X/10X/40X, IDE, internal, 2MB buffer, buffer underrun protection, Ahead Nero Burning ROM 5.5 and InCD 2.2, one-year warranty, 9-hour weekday support (calls are not toll-free). SUMMARY: Fast drive with easy installation, but thin documentation and support. Offers headphone jack and volume dial. (★★★★☆)

HOW WE TEST: To gauge CD-ROM read performance, we time how long the drive takes to install Microsoft Office 2000 SBE (disc one). To determine CD-R write performance, we burn data to CD-R discs from an image file and on the fly. We evaluate digital audio extraction speed by extracting 320MB of musical tracks from an audio CD to our hard drive. We measure CD-RW performance by copying 100MB of files to a CD-RW disc, then rewriting the same data to the same disc. Overall ratings are based on performance (35 percent), price (25 percent), features (20 percent), tech support policies (10 percent), and ease of installation (10 percent). See find.pcworld.com/10860 for details on PC World's Star Ratings. ¹ Vendor's speed ratings, listed in order: CD-R write/CD-RW write/CD-ROM read.

To Own The Ultimate CD-RW, You Need Connections.



Fortunately, With The Backpack Triple Play, All Three Come Standard.

It takes connections to get things done. And the Backpack Triple Play is the only CD-RW that comes with **THREE** easy-to-use connections.

The new high-speed USB 2.0 interface works with any USB port. The pc-card connects to notebooks. The parallel port interface connects to your printer port.



With these three plug and play connections you can write (up to 32X*), play and rewrite cds on any desktop pc or notebook. Choose either the classic desktop or the portable bantam model.

Use our connections, and buy the ultimate CD-RW—the Backpack Triple Play CD-Rewriter.

*with USB 2.0, several models available

backpack triple play cd-rewriter 

MicroSolutions™
The port•ability leader.

800-890-7227 x200
www.micro-solutions.com

TOP 10 DIGITAL CAMERAS

Visit find.pcworld.com/20301 for reviews of all products ranked in this chart or tested this month.

OLYMPUS'S D-40 ZOOM leads our new chartmakers this month, landing at number six. It's easy to take with you and has a long battery life. Canon's PowerShot S40 takes eighth place. The S40 has the best image quality we've seen so far, keeping even the smallest details sharp. In ninth, Nikon's

Coolpix 885 is compact, and its lithium batteries lasted an impressive 373 shots. Image quality, however, was mediocre, and the controls are confusing. Just missing the chart, Ricoh's Caplio RR1 has an unusual, long, thin body and a pop-up LCD viewfinder that swivels all the way around. ▶

	CAMERA: \$500 AND OVER	Street price (12/7/01)	Overall rating	Image quality	Ease of use	Battery life/shots	Comments
1	Best BUY Casio QV-4000 find.pcworld.com/16261	\$689	85	Very good	Good	Excellent/ 389	FEATURES: 4.1-megapixel resolution, 16MB CompactFlash media, 34mm-102mm focal range; USB and video output; 16.6 ounces. SUMMARY: Solid all-purpose camera. Better look and design than earlier Casio models, with great image quality, many control options, and an innovative Best Shot feature. (★★★★☆ Jan 02)
2	Best BUY Canon PowerShot G2 find.pcworld.com/14800	\$899	83	Outstanding	Adequate	Very good/ 348	FEATURES: 4-megapixel resolution, 32MB CompactFlash media, 34mm-102mm focal range; USB and video output; 18.9 ounces. SUMMARY: Full-featured camera takes the best photos of the bunch and has a long battery life. Includes a roomy storage card and a swing-out viewfinder. (★★★★☆ Dec 01)
3	Epson PhotoPC 3100Z find.pcworld.com/14804	\$599	83	Good	Very good	Good/ 271	FEATURES: 3.34-megapixel resolution, 16MB CompactFlash media, 34mm-102mm focal range; USB and video output; 16.9 ounces. SUMMARY: Great price for this easy-to-use model. Takes movies with sound. Practical choice for a family with both novice and experienced photographers. (★★★★☆ Dec 01)
4	Nikon Coolpix 995 find.pcworld.com/14801	\$799	82	Very good	Good	Very good/ 309	FEATURES: 3.34-megapixel resolution, 16MB CompactFlash media, 38mm-152mm focal range; USB and video output; 16.2 ounces. SUMMARY: Huge, sometimes intimidating list of features, including a swivel lens and custom buttons. Photos look good, with fine detail. Drops \$100 this month. (★★★★☆ Dec 01)
5	Sony Cyber-shot DSC-S85 find.pcworld.com/14803	\$799	81	Good	Good	Excellent/ 427	FEATURES: 4.1-megapixel resolution, 16MB Memory Stick media, 34mm-102mm focal range; USB and video output; 16.4 ounces. SUMMARY: Well designed and easy to use, with extremely long battery life. Photos looked a bit oversaturated, however, and the shutter button is touchy. (★★★★☆ Dec 01)
6	Olympus D-40 Zoom NEW find.pcworld.com/19143	\$699	81	Good	Good	Very good/ 369	FEATURES: 4-megapixel resolution, 16MB SmartMedia card, 35mm-98mm focal range; USB and video output; 8.8 ounces. SUMMARY: One of the smallest 4-megapixel cameras available, the D-40 is stylish and relatively easy to use; a good choice for sophisticated traveling snapshooters. (★★★★☆)
7	Toshiba PDR-M81 find.pcworld.com/14802	\$699	81	Very good	Good	Very good/ 325	FEATURES: 4.2-megapixel resolution, 8MB SmartMedia card, 35mm-100mm focal range; USB and video output; 12.3 ounces. SUMMARY: Impressive picture quality and easy-to-navigate menus and controls mark this model. It has fewer advanced features than competing cameras. (★★★★☆ Dec 01)
8	Canon PowerShot S40 NEW find.pcworld.com/19141	\$799	80	Outstanding	Adequate	Adequate/ 173	FEATURES: 4-megapixel resolution, 16MB CompactFlash media, 35mm-105mm focal range; USB and video output; 11.1 ounces. SUMMARY: The PowerShot S40 has a stylish aluminum body and takes beautifully sharp and vivid photos. A couple of controls can be confusing, however, and battery life is short. (★★★★☆)
9	Nikon Coolpix 885 NEW find.pcworld.com/19142	\$599	78	Adequate	Adequate	Excellent/ 373	FEATURES: 3.2-megapixel resolution, 16MB CompactFlash media, 38mm-114mm focal range; USB and video output; 10 ounces. SUMMARY: A compact size and lots of user-settable controls highlight this Nikon; but image quality was below average in our tests, and the menus are too complicated. (★★★★☆)
10	Olympus Camedia C-4040 Zoom find.pcworld.com/16264	\$799	78	Good	Good	Adequate/ 222	FEATURES: 4.1-megapixel resolution, 16MB SmartMedia card, 35mm-105mm focal range; USB and video output; 14.1 ounces. SUMMARY: Solidly designed, general-purpose camera keeps to basics. Has a fast f1.8 lens, automatic and manual exposure modes; makes QuickTime movies with sound. Good for business use. (★★★★☆ Jan 02)

HOW WE TEST: Each camera's overall rating is based on price (15 percent), picture quality (30 percent), ease of use (15 percent), features (20 percent), battery life (10 percent), and support (10 percent). For all ratings, higher is better. To gauge picture quality, we take a series of shots, with and without flash, at 640 by 480 resolution and at the camera's highest resolution. We take pictures of a complex still life and of a mannequin to see how well each camera captures image details and subtle colorings such as skin tones. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Camera weights include batteries. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. See find.pcworld.com/10860 for details on PC World's Star Ratings. * 35mm film equivalent.

POLYWELL 2002

Smooth, Rich Internet Experience

American Made Computers

800.789.8027

The Ultimate PC Workstations with Dual Boot OS



POLY
SYSTEMS



www.Polywell.com



Extreme Performance for Windows® XP

Expert 24.7 Technical Support Services

Boost software performance with
QuantiSpeed™ architecture

POLYSTATION 890E

The Fastest x86 based Workstation

2x AMD Athlon™ MP Processor 2000+
with QuantiSpeed™ architecture*
outperforms competitive 2.0GHz processors
1GB DDR ECC memory (Exp. to 3GB)
12-Bay Aluminum Tower w/450W PS
120G Internal IDE-133 Disk Array HD
40x16x10x CDRW, 16x DVD-ROM
ELSA Gloria DCC 64MB Open GL Graphics
19" High-Res.26mm Graphics Monitor
Sound Blaster Live Audigy MP3
Creative 5.1 Theater Subwoofer Speakers
56K Modem, 100bit LAN, 1394 Firewire
MS® Windows® XP and Linux Dual Boot

Starts at \$3,999 SKU# 890E0107PW

POLY 880NF

The Fastest PC on Earth

AMD Athlon™ XP Processor 2000+
with QuantiSpeed™ architecture*
outperforms competitive 2.0GHz processor
512MB DDR memory (Exp. to 2GB)
10-Bay Aluminum Tower w/3000W PS
80G Internal IDE-133 Disk Array HD
40x16x10x CDRW, 16x DVD-ROM
Nvidia GeForce3 Ti500 64MB Graphics
19" High-Res.26mm Graphics Monitor
Sound Blaster Live Audigy Gamer
Creative 5.1 Theater Subwoofer Speakers
56K Modem, 100bit LAN, 1394 Firewire
MS® Windows® XP Home Edition

Starts at \$2,199 SKU# 880NF0107PW



Polywell Computers, Inc 1461 San Mateo Avenue South San Francisco CA 94080 650.583.7222 Fax: 650.583.1974

*QuantiSpeed(TM) architecture operates at 1.67Ghz. AMD and ATHLON are trademarks of Advanced Micro Devices, Inc.. MS and Windows are registered trademarks of Microsoft Corporation.

MORE REVIEWS

MISSED AN ISSUE OF *PC World* or passed your copy along to a friend? Here's a recap of other *Top 100* topics from previous issues. To read reviews of the products ranked on these Top 10 charts, go online and type in the *PC World* Find-It URL at

the top of each chart (for example, find.pcworld.com/18801 for 19-inch CRT monitors on the *Top 10 Monitors* chart). Next month's *Top 100* will cover CD-RW drives, 17-inch CRT monitors, and digital cameras priced at under \$500. ■



THE BROTHER HL-1440 outputs smooth black text at an impressive 11.2 ppm via its USB connection.



THE SLEEK SONY CPD-G420S, a 19-inch monitor, displayed sharp text, crisp icons, and striking, accurate colors in our tests.

PRINTERS

find.pcworld.com/18901

MONOCHROME LASER PRINTERS

From the February 2002 issue

1 **Best BUY** Brother HL-1440
find.pcworld.com/11581

2 Lexmark E320
find.pcworld.com/17421

3 HP LaserJet 1000
find.pcworld.com/17404

4 Samsung ML-1250
find.pcworld.com/17401

5 Brother HL-1650
find.pcworld.com/17406

1 **Best BUY** Xerox DocuPrint N2125
find.pcworld.com/11600

2 Samsung ML-1651N
find.pcworld.com/17402

3 HP LaserJet 4100n
find.pcworld.com/11661

4 Brother HL-1670N
find.pcworld.com/11662

5 Lexmark T522dn
find.pcworld.com/18342

MONITORS

find.pcworld.com/18801

19-INCH CRT MONITORS

From the February 2002 Issue

1 **Best BUY** ViewSonic G5790
find.pcworld.com/10573

2 **Best BUY** Optiquest 095
find.pcworld.com/10800

3 Compaq S920
find.pcworld.com/18802

4 Hewlett-Packard P920
find.pcworld.com/10578

5 Sony CPD-G420S
find.pcworld.com/10577

6 IBM P97
find.pcworld.com/18803

7 ViewSonic G90f
find.pcworld.com/14622

8 Philips Brilliance 109P
find.pcworld.com/18804

9 Iiyama I91A
find.pcworld.com/10806

10 Samsung SyncMaster 900NF
find.pcworld.com/14521

GRAPHICS BOARDS

find.pcworld.com/17921

GRAPHICS BOARDS

From the February 2002 Issue

1 **Best BUY** Gainward CardExpert GeForce2 MX TwinView/Vivo Golden Sample
find.pcworld.com/11423

2 **Best BUY** ATI Radeon 8500
find.pcworld.com/17122

3 MSI MX400 Pro-VT32S
find.pcworld.com/14540

4 Asus AGP-V7100 Pro Pure 32MB
find.pcworld.com/13101

5 Gainward CardExpert GeForce2 Ti/500 XP Vivo Golden Sample
find.pcworld.com/17721

6 MSI MX400 Pro-TC64S
find.pcworld.com/11302

7 Asus AGP-V7100 Pro TV 64MB
find.pcworld.com/16220

8 Matrox Millennium G550
find.pcworld.com/16240

9 VisionTek Xtasy 6564
find.pcworld.com/17661

10 VisionTek Xtasy 5864
find.pcworld.com/17701

DIGITAL CAMERAS

find.pcworld.com/18305

DIGITAL CAMERAS \$500 AND UNDER

From the February 2002 Issue

1 **Best BUY** Toshiba PDR-M71
find.pcworld.com/17961

2 **Best BUY** Casio QV-2900UX
find.pcworld.com/14807

3 HP Photosmart 318xi
find.pcworld.com/14806

4 Olympus Camedia C-2040 Zoom
find.pcworld.com/10584

5 Fujifilm FinePix 2600 Zoom
find.pcworld.com/17965

6 Nikon Coolpix 775
find.pcworld.com/17968

7 Casio QV-3500EX
find.pcworld.com/17967

8 Canon PowerShot A20
find.pcworld.com/10586

9 Kodak DX3900 Zoom
find.pcworld.com/17962

10 Canon PowerShot S110
find.pcworld.com/17996

SMALL-OFFICE/HOME-OFFICE

CORPORATE

HERE'S HOW

EDITED BY DENNIS O'REILLY AND ERIC DAHL



WINDOWS TIPS

SCOTT DUNN

Give XP's Search Tool a Good Going Over

Windows XP THE MOUNTAIN of data and media files accumulating on your PC's drives makes a good file-searching tool a necessity these days. Too bad Windows XP's revamped Search feature isn't that tool. XP's Search is handicapped by annoying animations, the loss of valuable features present in the Find and Search tools in earlier versions of Windows, and outright bugs. But all is not lost. Follow these steps to improve, work around, or completely replace what

was, until recently, an irreplaceable utility. **Put on a happy interface.** To give Search a much-needed face-lift, choose *Start•Search* or *Start•Search•For Files or Folders* (depending on your Start menu settings), or simply open any folder window and press **<F3>**. By default, Search steps you through a process (complete with an irrelevant animated character) instead of letting you specify search parameters right away.

For a more streamlined approach, use the so-called 'advanced options': Click

Change preferences, and in the next pane, choose either *Without an animated screen character* or *With a different character*. If you want faster document searches, click *With Indexing Service* (for faster local searches). If you've never used Indexing Service before, choose *Learn more about Indexing Service* on the next screen to get help on this feature, or check last September's *Windows Tips* (find.pcworld.com/17521) for further information.

Return to the main preferences pane (the one with the heading, 'How do you want to use Search Companion?') and click *Change files and folders search behavior*. Choose the *Advanced* option and click **OK** (see **FIGURE 1**). Finally, click *More advanced options* near the bottom. Check your preferred options: You'll almost certainly want to choose *Search subfolders*, and you may also want to check *Search system folders* and *Search hidden files and folders*. At this point, you need to conduct at least one search to save your new settings for future searches: Enter any text in either of the two text boxes at the top of the left pane, click *Search*, and then click *Stop* at any time. When you next start the Search utility, just type in your search parameters and press **<Enter>**.

Get results. Unfortunately, making your searches in Windows XP as simple as they are in other versions of Windows is only half the battle. Once you've completed a search, Windows XP displays the results in a list in the right pane of the Search window—but something is missing: the Web view pane. In Windows Me and Windows 2000, this pane provides quick information about the size of files selected in the results list. It also offers preview thumbnails of a selected image file, a mini-player for previewing some

146 WINDOWS TIPS

Get more out of Windows XP's Search tool; the free PowerDesk 4 file manager outdoes Windows Explorer.

150 INTERNET TIPS

Don't let spyware sneak onto your PC's hard drive; if it's already there, eradicate it once and for all.



FIGURE 1: CHOOSE ADVANCED options in Preferences to make Windows XP's Search tool more like it was in previous Windows versions.

sound and movie formats (in Windows 2000), a link to open the folder containing the selected file, and other useful features.

Many of these functions are still present in XP's Search; they're just hidden and strangely transmogrified. To get information about your search results, you must hide the Search Companion pane (also called the Search Explorer Bar). Either click the close box in the upper-right corner of the pane, or choose the *Search* button on the toolbar. Or close the pane from the keyboard by pressing either **<Ctrl>+E** or **<F3>**. Hiding this Search pane reveals a common tasks pane (see **FIGURE 2**). If you don't see it, choose *Tools>Folder Options*, make sure the General tab is in front,



FIGURE 2: TO PREVIEW MEDIA FILES in search results, hide the Search pane to reveal the common tasks pane (left).

152 STEP-BY-STEP

Thinking of moving to XP? Here's our guide to the ins and outs of installing Microsoft's latest operating system.

154 HARDWARE TIPS

USB 2.0 has arrived, and now's the time to upgrade your peripherals; old graphics cards in new AGP slots.

select *Show common tasks in folders*, and click *OK*. Now select one or more files in the search results list to see the information in the Details section of the pane on the left. The common tasks pane also may not appear if the Search window is too small. To see it, simply maximize the window or drag one of its side boundaries out. If the Details area has scrolled out of view, use the pane's scroll bar or click all the headings above it (Results Tasks, File and Folder Tasks, and Other Places) to shrink them out of the way.

In the common tasks view, the pane shows a thumbnail of a single selected image file and some movie formats, along with other file information. You may also see data such as an image file's dimensions in pixels or an MP3 file's duration. If you select multiple files, the Details area also shows the total size of the selection. This feature may not work when you drag over files to select them; if it doesn't, try **<Ctrl>**-clicking to select multiple files, or **<Shift>**-clicking to select a range of files.

The common tasks pane lacks a player for sound and movie files in the search results, but you'll find this feature in another Explorer Bar. Choose *View>Explorer Bar>Media*, or press **<Alt>+V** followed by **E** and **M**. Select a movie or sound file that Windows Media Player supports, and click the *Play* button. For a larger view of movie files, click the icon on the right above the progress bar (see **FIGURE 3**). Resize this undocked version by dragging the edges, and redock it by clicking either the icon above the progress bar or the Close box in the upper-right corner of the player. You will have to click the *Stop* button

158 ANSWER LINE

No-cost text-editor alternatives to Notepad and WordPad; use a non-USB keyboard or mouse with a USB-only PC; fax from a PC with no modem.

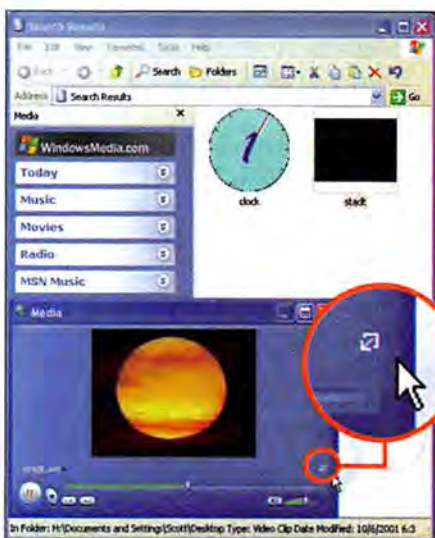


FIGURE 3: RESIZE MOVIE-FILE previews by clicking the dock-undock button (circled).

when the file has finished playing to keep the Media bar from automatically playing the next file in the search results list.

The media-preview feature is great for previewing all the found files. Choose *View>Arrange Icons by* and then the category by which you want to sort the files to be played. Now select the file you want to start with and click the *Play* button. The Media bar will play each file in the currently displayed order starting from your selection; it will then return to the top of the list until all files have played once. Click the *Stop* button when you're done or the files may continue playing even if you switch to a different Explorer Bar.

Whenever you're ready to start another search, just press **<Ctrl>+E** or **<F3>** to bring back the Search Companion with your last-used settings still present.

Ease the pane. If you don't like bouncing between the Search Companion pane and other Explorer Bars to see informa- ▶



FIGURE 4: PUT FILE FINDER on your Start menu by choosing this context-menu item.

tion about your search results, a shorter path is available. To use it, first click the View menu and make sure that Status Bar is checked. The status bar won't tell you anything about the combined size of all the files, but it will tell you the number of files found or the number in the current selection. If a single file is selected, the bar will list the file's location and size as well as specific information for certain file types—the same details that you'd see in the Details area of the common tasks pane, if it were visible.

To view this information for individual files, hold the mouse over a file name for a moment until a 'tool tip'-style pop-up appears. Or see this information for all files at a glance by choosing View•Details, or choose Details from the Views button on the toolbar. For file-specific information, such as sound bit rate or image dimensions, choose View•Choose Details, check the items you want, and click OK. You can also choose to view some information categories by right-clicking the category heads at the top of the file list in Details view and checking or unchecking items on the pop-up menu.

If you would rather preview files than see details about them, you can choose to see miniature versions of common Web-graphic formats and animations, such as .jpg, .gif, and .swf (Shockwave Flash), by choosing View•Thumbnails. And to hear .mp3, .wma, and other sound files, or to watch movies in MPEG or some other video format, simply double-click an item to preview it in Windows Media Player or another associated application.

GET MORE OUT OF POWERDESK FILE FINDER



ONTRACK'S FREE PowerDesk 4 file management utility is customizable in ways that far outstrip Windows Explorer. If you don't have it, stop what you're doing right now and download it at find.pcworld.com/17547. Or buy the enhanced shareware version from www.ontrack.com—it's only \$18 for the download version (a bit more if you want a disk sent to you).

One of PowerDesk's most useful tools is the File Finder accessory. File Finder resembles Windows 95's Find feature, but File Finder has several unique capabilities. For example, it lets you search for files with specific attributes and print all or a selected portion of the results list. Here are some tips for getting more out of File Finder.

Fix File Finder's shortcut. On the default Windows XP Start menu, you can make File Finder more accessible by choosing Start•All Programs•PowerDesk 4.0, right-clicking File Finder in the PowerDesk 4 menu, and then choosing Pin to Start Menu (see FIGURE 4). File Finder will be on the first menu you see when you click Start. To remove it, choose Unpin from Start Menu.

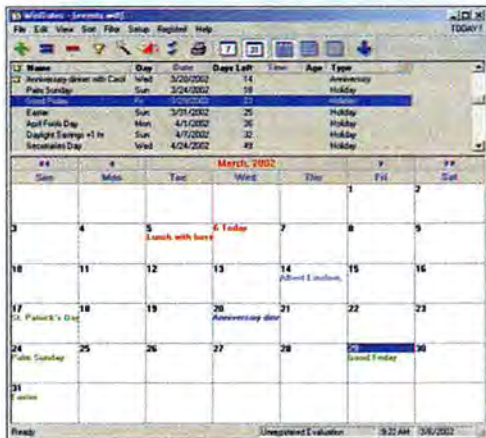
Launch File Finder fast. If you like to launch searches from the folder you're currently in by pressing <F3>, you'll discover that <F3> launches the Windows Search tool in Windows Explorer, whereas it launches File Finder in PowerDesk—no surprise there. Here's how to launch File Finder from Windows Explorer. First, locate the file PDFind.exe in the folder in which you installed PowerDesk. Then make sure the Links toolbar is displayed in the folder window (if it isn't, you can display it by choosing View•Toolbars•Links). Finally, drag PDFind.exe onto the Links bar. Voilà! You've just created a button that will launch File Finder from any window that displays the Links toolbar. Unfortunately, while this makes File Finder more accessible in your Explorer folder windows, it still won't launch File Finder in the current folder.

WINDOWS TOOLBOX

Make a Date with WinDates

IF YOU DON'T USE Microsoft Office, or if you consider Microsoft Outlook an unwieldy, bloated behemoth, you may find yourself looking for a simple computer calendar to remind you of upcoming events, deadlines, and anniversaries. Shareware calendars are ubiquitous, but most of them are pricey, clumsy, complicated, or just plain ugly. Not so WinDates from Rockin' Software.

Elegantly designed, WinDates has all the features you'd expect: a built-in holiday list; the ability to color-code and filter different types of events (holidays, work, birthdays, meetings, and more); alarms to remind you of appointments at



an interval you choose; a 'snooze' feature for postponing those reminders; and week, month, event, or combination views. The program also lets you print calendars and event lists and is incredibly customizable. WinDates is well worth the \$20 registration fee. Download it at find.pcworld.com/17561 or go to www.rockinsoftware.com (its creators' site).

To launch File Finder from anywhere, right-click any drive or folder and choose File Finder. File Finder will open with the path set to the current folder. ■

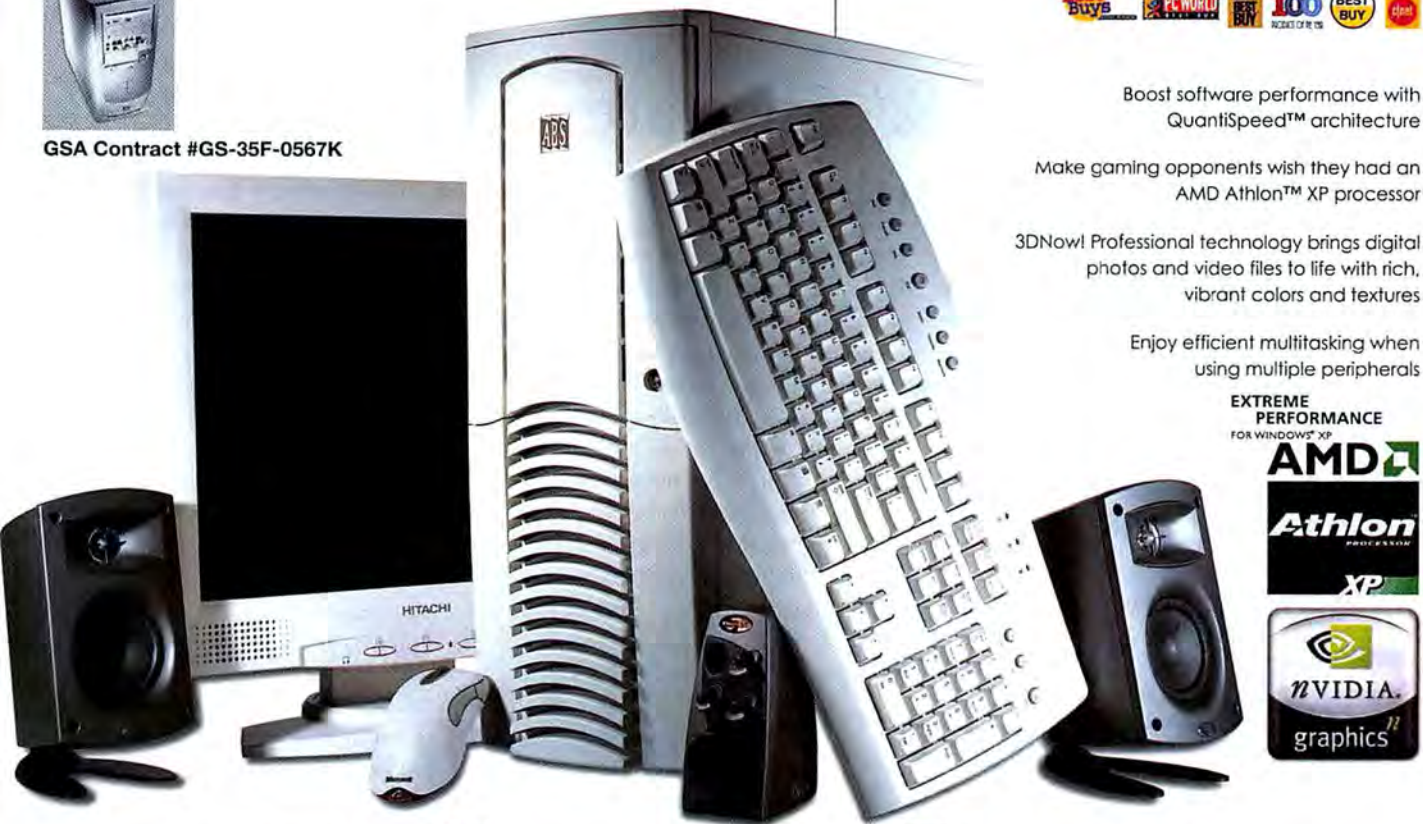
Send Windows-related questions and tips to scott_dunn@pcworld.com. Windows Tips pays \$50 for published items. Scott Dunn is a contributing editor for PC World.

www.abspc.com

3 Year Limited Parts Warranty / Lifetime Labor Warranty / 30 Days Money Back Guarantee
 Optional 24 / 7 Tech Support Available / 30 Days Earthlink Internet Access
 100% Non-Proprietary & Upgradable



GSA Contract #GS-35F-0567K



Best Overall Performance

"ABST™ delivers the best overall Performance."

Cnet Editors' Choice December 2001



Boost software performance with QuantiSpeed™ architecture

Make gaming opponents wish they had an AMD Athlon™ XP processor

3DNow! Professional technology brings digital photos and video files to life with rich, vibrant colors and textures

Enjoy efficient multitasking when using multiple peripherals

EXTREME PERFORMANCE FOR WINDOWS™ XP



ABST™ TIGER

- AMD Athlon™ XP 266FSB DDR ATA100 4X AGP Mainboard
- High-Performance Heatsink/Cooling System
- White Full-Tower ATX Case w/340 Watt (picture shown)
- Kingston 512MB Fast PC2100 DDR SDRAM Memory
- 100GB 7200RPM Ultra ATA100 Hard Drive
- 16X DVD Player
- Plextor 24X10X40 BURN-Proof™ CD-ReWritable Drive
- New Nvidia GeForce 3 Ti 500 w/64MB 4X AGP Video Card
- Hitachi CM715 19" .26mm 1600x1200 Color Monitor
- New Creative Labs SoundBlaster Audigy X-Gamer Card & Mic
- New Klipsch ProMedia 5.1 THX-Certified 500-Watt Surround Sound Subwoofer/Speaker System
- U.S. Robotics PCI Hardware 56K V.90 Data/Fax/Modem
- 3Com 905 10/100 Network Controller, Broad Band Ready
- Mitsumi 1.44MB Floppy Drive
- Microsoft Internet Keyboard & Microsoft IntelliMouse Optical
- Microsoft Windows XP Home Edition
- Free Software: Corel WordPerfect Office 2002 CD
- Free ABS™ High Quality Cloth-Surface Mouse Pad
- Free ABS™ PC Organizer (3" Color Binder w/Plastic Ziplock Pockets for User Manual, Drivers & Application Softwares)

AMD Athlon™ XP Processor 2000+ with **\$2059** # 3840
 QuantiSpeed™ architecture* outperforms competitive 2.0GHz processors

AMD Athlon™ XP Processor 1900+ with **\$2019** # 3849
 QuantiSpeed™ architecture** outperforms competitive 1.90GHz processors

ABST™ JAGUAR

- AMD Athlon™ XP 266FSB DDR ATA100 4X AGP Mainboard
- High-Performance Heatsink/Cooling System
- ATX Beige Mid-Tower Case w/300 Watt (AMD Certified)
- Kingston 256MB Fast PC2100 DDR SDRAM Memory
- 60GB 7200RPM Ultra ATA100 Hard Drive
- 16X DVD Player
- Lite-On 24X10X40 SMART-BURN® CD-ReWritable Drive
- New Nvidia GeForce 2 Ti w/64MB 4X AGP Video Card
- OpenGL, DirectX, Direct3D Support
- Hitachi 17" .27DP 1280x1024 Color Monitor
- New Creative Labs SoundBlaster Audigy Sound Card & Mic
- Creative Inspire 5300 5.1 Subwoofer/Speaker System
- Zoom 56K V.92 Data/Fax/Modem
- PCI 10/100 Network Controller, Broad Band Ready
- Mitsumi 1.44MB Floppy Drive
- Microsoft Office Keyboard & Microsoft IntelliMouse Optical
- Microsoft Windows XP Home Edition
- Free ABS™ High Quality Cloth-Surface Mouse Pad
- Free ABS™ PC Organizer (3" Color Binder w/Plastic Ziplock Pockets for User Manual, Drivers & Application Softwares)
- Add Lexmark Z43 Color Printer @ \$99

AMD Athlon™ XP Processor 1800+ with **\$1179** # 3828
 QuantiSpeed™ architecture*** outperforms competitive 1.80GHz processors

AMD Athlon™ XP Processor 1700+ with **\$1159** # 3827
 QuantiSpeed™ architecture**** outperforms competitive 1.70GHz processors

ABST™ COUGAR

- AMD Athlon™ XP 266FSB DDR ATA100 4X AGP Mainboard
- High-Performance Heatsink/Cooling System
- ATX Beige Mid-Tower Case w/300 Watt (AMD Certified)
- Kingston 256MB Fast PC2100 DDR SDRAM Memory
- 30GB 7200RPM Ultra ATA100 Hard Drive
- 56X CD-ROM Player
- Add 16x10x40 CD-ReWritable Drive @ \$89
- Optional Hitachi 17" .27DP 1280x1024 Color Monitor @ \$165
- Matrox G550 w/32MB 4X AGP Dual Display Video Card
- Creative Labs SoundBlaster Live! S.1 Sound Card & Mic
- Altec Lansing AVS500 Subwoofer/Speaker System
- Zoom 56K V.92 Data/Fax/Modem
- PCI 10/100 Network Controller, Broad Band Ready
- Mitsumi 1.44MB Floppy Drive
- Microsoft Internet Keyboard & Microsoft IntelliMouse
- Microsoft Windows XP Home Edition
- Free ABS™ High Quality Cloth-Surface Mouse Pad
- Free ABS™ PC Organizer (3" Color Binder w/Plastic Ziplock Pockets for User Manual, Drivers & Application Softwares)
- Add Microsoft Office Small Business Edition @ \$189
- Add Epson C60 Stylus Color Printer @ \$89

AMD Athlon™ XP Processor 1700+ with **\$799** # 3857
 QuantiSpeed™ architecture***** outperforms competitive 1.70GHz processors

AMD Athlon™ XP Processor 1600+ with **\$779** # 3856
 QuantiSpeed™ architecture***** outperforms competitive 1.60GHz processors

ABST™ PCs use genuine Microsoft® Windows® www.microsoft.com/piracy/howtotell



800.230.4233

Corporate Sales 800.926.8088

Sales Hours: Mon-Fri 7:00AM-6:00PM PST
 Sat 9:00AM-1:00PM PST

Sales Hours: Mon-Fri 7:00AM-5:00PM PST

Technical Support: Mon-Fri 8:30AM-5:30PM PST Technical Support: 800.685.3471 General Office: 562.695.8823 9997 East Rose Hills Road, Whittier, CA 90601

Price, specifications, and terms are subject to change without notice. Picture shown with upgrad options. ABS™ is not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. Onsite service may be provided by contracted third party provider. Technician will be dispatched if necessary following phone support. AMD, the AMD Arrow logo, AMD Athlon, and combinations thereof are trademarks of Advanced Micro Devices, Inc. "QuantiSpeed™" architecture operates at 1.67GHz. "QuantiSpeed™" architecture operates at 1.60GHz. "QuantiSpeed™" architecture operates at 1.533GHz. "QuantiSpeed™" architecture operates at 1.47GHz. "QuantiSpeed™" architecture operates at 1.40GHz.

www.abspc.com

INTERNET TIPS

SCOTT SPANBAUER

Get That #@&* Spyware Off My Computer!

HAVE YOU DOWNLOADED a new version of Netscape Communicator or RealPlayer, only to discover that you received an uninvited "download manager" in the deal? If you think a download manager sounds useless, you're mistaken. It actually is useful to someone—just not to you.

use a dial-up connection, the programs keep track of your online doings but go to sleep when you close the link.

Fortunately, you don't have to tolerate spyware. Since it first came to light several years ago (see Steve Gibson's welcome rant on the subject at grc.com/optout.htm), many software vendors

have either removed spyware from their products (Headlight Software's GetRight is an example of this) or provided tools that allow the user to remove it. But the best way to deal with spyware is to find out which applications contain it and then choose Big Brother-free alternatives. In some cases, you can opt out of installing the spyware during the host program's installation process. In others, you may be able to purchase a commercial version of the same application that omits the spying component.

Before downloading and installing an application, look it up on one of several online spyware databases. Spychecker (www.spychecker.com) is one such service, and Camtech 2000's Spy Chaser (find.pcworld.com/18261) is a nifty downloadable database of nearly 1000 spyware-infested apps (see FIGURE 1).

EYE ON THE SPIES

PREVENTION IS all well and good, but what about getting rid of spyware that's already infiltrated your system? Here's what I suggest: First, uninstall any applications on your computer that you don't use (this is a good idea even if the programs don't contain spyware). Next, make

an inventory of the applications that you do use, and compare your list with the Spychecker database. Note the maker of the spyware in each case, and uninstall the software that hosted it.

Now download and run the spyware maker's own uninstall utility, if one is available. For example, visit www.radiate.com/privacy/remover.html to download Radiate's Aureate remover.

Finally, download and run Lavasoft's free Ad-aware spyware detection and removal utility (www.lavasoftusa.com). Ad-aware gives you lots of control over how thoroughly it scans your system's memory, Registry, and drives for spyware, and it allows you to decide on a case-by-case basis whether to eliminate discovered spyware or permit it to remain active. ■

Send your questions and tips to nettips@spanbauer.com. We pay \$50 for published items. Scott Spanbauer is a contributing editor for PC World.

SWITCH BROWSERS AT WILL

"CLICK HERE," coaxes the link. You do so, and Internet Explorer launches. Do you wish another browser had popped up instead? The first step in establishing Netscape or Opera as your default Web browser is to tell IE to stop trying to make itself the default. Choose **Tools•Internet Options•Programs**, uncheck **Internet Explorer should check to see whether it is the default browser** at the bottom of the dialog box, and click **OK**.

To make Netscape 6.2 take charge, choose **Edit•Preferences**, and then select **System** under the **Advanced** category. Check the box for every file type and protocol listed in the two windows on the right that you want Netscape to handle (at the very least, you should check **HTML documents**, **http:**, and **https:**), and click **OK**. In Opera 6, choose **File•Preferences**, select **Default Browser** in the list of settings on the left, and check every file type and protocol you want Opera to handle; then click **OK**.

Netscape 6.2, alas, seems unable to take charge of links displayed in other programs. Let's hope 6.3 will fix that.



FIGURE 1: IS THAT PROGRAM SPYWARE? Find out before you download, with the free Spy Chaser database.

Tools such as Real's RealDownload, Netscape's SmartDownload, and Radiate's GoZilla have just one objective: to monitor and log your download activity, and then send targeted Web advertising to you based on that activity. And those programs aren't the only nosy parkers in town. Hundreds of freeware, shareware, ad-supported, and even shrink-wrapped commercial applications contain components that maintain a record of your online activity and transmit that information to an advertiser's server.

Not only do the programs spy on you (usually after giving you minimal notice that they intend to do so), but they do it via the Internet connection that you pay for. Uninstalling the host application often leaves the spyware unaffected. If you



TRU XP home

The Ultimate system for your home.



\$599

- AMD Athlon XP Processor 1600+ with QuantiSpeed architecture** outperforms competitive 1.6 GHz processors.
- 256MB Shared SDRAM
- Savage4 3D AGP graphics
- 20GB 7200RPM Hard Drive
- Creative Labs 52X CD Rom
- Windows XP Home Edition
- 56K Fax/Voice Modem*
- Stereo speakers
- 2 Front USB Ports
- Internet Keyboard
- Scroll mouse
- 1 Year Toll Free Tech Support
- Just Add Monitor



wait less XPerience more



Introducing the new TRU™ XP system by Thompson's Computer Warehouse, featuring the AMD Athlon™ XP processor with QuantiSpeed™ architecture which boosts overall productivity and enables the ultimate computing experience. Well suited for business, home office, gaming, and personal use, this flexible platform has the features needed for today's demanding applications and leaves room for future expansion. By choosing the durable TRU™ XP Home system for your home office, the TRU™ XP Pro for the Business Professional, or the powerful TRU™ XP Gamer for the hardcore gamer, you're getting a processor designed to run flawlessly on the world's most popular software and a system that delivers next generation features that will give you the power to perform.

TRU XP Pro

The Ultimate system for the professional

- AMD Athlon XP Processor 1700+ with QuantiSpeed architecture*** outperforms competitive 1.7 GHz processors.
- Savage4 3D AGP graphics
- 256MB Shared SDRAM
- 30GB 7200RPM Hard Drive
- 16X DVD Player
- Microsoft Windows XP Pro Edition
- 56K Fax/Voice Modem*
- 10/100 Fast Network Card
- Stereo speakers
- 2 Front USB Ports
- Microsoft Office Keyboard
- Microsoft Optical Intellimouse
- 1 Year Toll Free Tech Support

TRU XP Gamer

The Ultimate system for the gamer

- AMD Athlon XP Processor 1800+ with QuantiSpeed architecture**** outperforms competitive 1.8 GHz processors.
- 512MB DDR RAM
- 40GB 7200RPM Hard Drive
- 16X DVD Player
- 10/100 Fast Network Card
- Microsoft Windows XP Pro Edition
- 56K Fax/Voice Modem*
- Stereo speakers
- 2 Front USB Ports
- Creative Audigy Sound Card
- GeForce 2 Titanium 64mb AGP Video
- Microsoft Office Keyboard
- Microsoft Optical Intellimouse
- 1 Year Toll Free Tech Support

TRU XP Barebone

The Ultimate system for the techie

- Supports AMD Athlon™ and Duron™ Processors
- Savage4 3D AGP graphics
- AC'97 16-bit stereo sound
- Supports up to 1GB SDRAM
- 52x Creative Labs CD-ROM
- Internet Keyboard
- 2 Front USB Ports
- 3 button scroll mouse.
- Stereo speakers
- 1 Year Toll Free Tech Support

Simply add the following to complete your system:
Athlon or Duron CPU, Fan, Memory, Hard Drive,
Modem/Network card, Operating system, Monitor

\$799

**Add a 17" Monitor for only \$149

\$1199

**Add a 17" Monitor for only \$149

\$199

**Add a 17" Monitor for only \$149

TFCWO.com 800.394.4503

Sales Hours : Mon-Fri 9AM-7PM EST Technical Support Hours : Mon-Fri 10AM-6PM EST
Customer Service : 1.800.394.4503 Technical Support Line : 1.800.407.3232

Price, specification, and terms are subject to change without notice. Thompson's Computer Warehouse is not responsible for errors in typography and/or photography. TRU is a trademark (TM) of Thompson's Computer Warehouse. It can not be used, copied, or reproduced without the written consent of Thompson's Computer Warehouse. *Due to FCC rules that restrict power output, current download speeds are limited to 53kps, upload speeds are limited to 33 kbps. Actual speeds may vary depending on line conditions. Actual items may differ from pictured. **Quantispeed architecture operates at 1400MHz ***Quantispeed architecture operates at 1467MHz ****Quantispeed architecture operates at 1533MHz

STEP BY STEP

STAN MIASTKOWSKI

Master the Windows XP Upgrade Process

MICROSOFT HYPE to the contrary, deciding whether to upgrade your current version of Windows to Windows XP isn't exactly a no-brainer. Certainly, XP has some neat new features and is more stable than its predecessors, but it requires

you to have fairly heavy-duty system resources, and it's incompatible with some older hardware and software. And then there's the expense: The upgrade version of XP Home will cost you \$99; the upgrade to XP Pro will set you back \$199.

Assessing the merits of an XP upgrade involves answering several questions, not only about whether you should upgrade, but also about whether you *can* upgrade your existing PC. Even if you can, you must consider whether the prospective benefits are worth the potential hassle—especially if you have an older system.

The bottom line: Before upgrading to XP, you must do some homework. We've assembled an overview of the decision points involved in the upgrade process. For detailed information on the new OS, see November's "Windows XP Inside and Out" (find.pcworld.com/15120). ■

Stan Miastkowski is a contributing editor at PC World. Send him questions at stan_miastkowski@pcworld.com.

A IS YOUR PC UPGRADABLE?

1 How old is your PC? If your computer is less than a year old, upgrading to Windows XP should be easy. Things get iffier with PCs between one and two years old. If your PC is more than two years old, you're usually better off keeping what you have or buying a new PC with XP preinstalled.

2 Are you running an old version of Windows? If you currently run Windows 95 or Windows 3.11, you're ineligible for the upgrade version of XP; instead, you'll need to buy a full-installation version (\$199 for the Home version; \$299 for Pro).

3 Consult your PC maker. Many vendors' Web sites have a dedicated section containing XP-specific upgrade notes and advice. If there isn't one at your PC maker's site, go to the site's support section and search for your specific PC model. You may find (as shown here) that an XP upgrade isn't recommended. If your PC is home-built, proceed to steps four, five, and six.

HP's home page for Windows XP

Introduction [View all Pages](#)

Hewlett Packard does not recommend upgrading this Pavilion Desktop computer to Windows XP. Although this system may meet Microsoft (®) minimum system requirements for the upgrade, some product features and software may not be compatible with Windows XP. HP will not be providing XP compatible drivers/BIOS/software for this model of Pavilion Desktop PC.

4 Check your PC's hardware. Though Microsoft recommends a minimum of a 300-MHz processor for Windows XP, you'll be happier with at least a 500-MHz CPU. Plus, you'll need no less than 128MB of RAM (256MB is better). And figure on setting aside at least 1.5GB of free hard-disk space.

5 Run the PCWorld.com XP Readiness Test. PCWorld.com's XP Readiness Test (www.pcworld.com/xpready), an interactive diagnostic test that PC World coproduced with PC Pit-

Test	Test Result	Recommended	Next Step
Processor (CPU)	Ready: This system meets the recommended minimum of 300MHz processor or better.	Ready	
Memory	Ready: This system meets the recommended minimum of 128MB of RAM.	Ready	
Free Hard-Disk Space	Not Ready: This system does not have enough free hard-disk space for the upgrade.	Not Ready	Free up hard-disk space.

stop, will check your system to see how it stacks up for an XP upgrade and will recommend fixes if any are necessary.

6 Run the Upgrade Advisor. For a comprehensive evaluation of your PC's XP compatibility, run Microsoft's Upgrade Advisor. It's included with all versions of XP. To check out your PC before you buy the full operating system, aim your browser at find.pcworld.com/14081

and download the 50MB Upgrade Advisor. If you want to avoid the download time, ask a computer dealer; most have free Upgrade Advisor CDs available.



B SHOULD YOU UPGRADE?

1 Is your PC stable? If your existing Windows installation seems to work fine, your best bet is to stay with what you have. But if you're plagued by random lockups or by the infamous Blue Screen of Death, it's time to seriously consider an upgrade.

2 What applications and hardware are you using? Older applications, legacy DOS-based programs, and some hardware may not work correctly or at all in Windows XP. (See item 6 of Decision Point A.)

3 What applications are you planning to use? If you expect to take advantage of the latest applications (Microsoft Office XP, for example) or you want to get into the realms of digital media (photos, music, or video), XP is a wise choice. It has the power, stability, and tools to handle cutting-edge applications.

C HOME VERSION OR PROFESSIONAL?

1 **What version of Windows are you running?** If you currently run Windows NT or 2000, your only upgrade option is to Windows XP Professional. Only users of Windows 98, 98 SE, or Me are eligible for an upgrade to the Home version of XP.

2 **What new features do you want?** You should upgrade your system to the Professional version of XP if any of the following describe your situation:

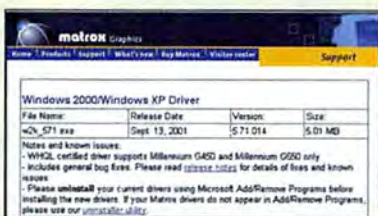
- ◆ You use Windows in an office environment.
- ◆ You want to protect sensitive data using the encrypting file system.
- ◆ You have a PC with multiple processors.
- ◆ You restrict access to your PC over a network.
- ◆ You want to remotely access your XP system from another PC.
- ◆ You administer multiple XP systems.

D BEGIN THE UPGRADE

YOU'VE PURCHASED XP and are ready to start installing it. But before you begin, you should perform a few crucial steps.

1 **Upgrade hardware (if required).** If you need to beef up your PC's RAM or install a larger hard drive, do it now. Visit www.pcwstepbystep.com for links to PC World columns on common upgrades.

2 **Do a complete backup.** Windows XP will make major changes in your PC, so a before picture is essential.



3 **Get the latest drivers and updates.** Though Windows XP has drivers for most popular hardware, it's a good idea to get the latest drivers for your graphics card, sound card, and other devices direct from the manufacturers' Web sites. Also check for XP-specific updates for your application software.

4 **Remove incompatible software.** If you decide to perform an upgrade instead of a clean install (see Decision Point E), uninstall any software that the Windows XP Upgrade Advisor tells you is incompatible. You won't be able to remove it once you've installed XP.



E UPGRADE OR NEW INSTALLATION?

Do you have a second hard drive or second partition in your PC? If so, you can opt to do a clean install of Windows XP, which Microsoft calls a New Installation. This creates a dual-boot system that lets you run XP or your old version of Windows at start-up.

A clean install allows you to try out XP, while leaving your current OS and applications untouched. But it won't migrate your software to XP; you'll have to re-install the programs to use them in XP.

If you opt instead for an upgrade, your applications and data will automatically migrate to XP, and you can still uninstall Windows XP later if you wish. But in that case, you'll lose any applications (and related data) that you install after upgrading to XP.

Microsoft advises upgrading, but a clean install can save you a lot of grief, especially if you have lots of free disk space. If you don't have a second hard drive or an extra partition on your first, see find.pcworld.com/17901 for advice on adjusting your hard drive's partitions.



F NTFS OR FAT32 FILE SYSTEM?



Choose your file system. You can opt to upgrade your existing FAT32 file system to NTFS (New Technology File System) during Windows XP setup. NTFS makes better use of disk space and is more reliable than the FAT32 system, which Windows 98, 98 SE, and Me use. Upgrading to NTFS is a good choice, but if you're dual-booting Windows XP you won't be able to access the NTFS partition from old versions of Windows.

G FINISHING UP

IF YOU'VE FOLLOWED the steps above, and jumped through all the Product Activation hoops, you shouldn't have problems finishing Windows XP's setup. In the unlikely event that your PC locks up during installation, shut the machine off, wait a minute, and turn it on again. If you run into problems after installation, the Help and Support Center on your PC (at *Start•Help*) offers a wealth of information.



HARDWARE TIPS

KIRK STEERS

**CONNECT DEVICES
WITH A USB HUB**

**A UTILITY FOR
CACHE MANAGEMENT**

**AN OLD AGP CARD
IN A NEW AGP SLOT**

For Fast, Easy Computing, USB Is the Bus to Ride

LOTS OF THINGS get better with time: friendship, a fine cabinet, and yes, even PCs. Every day we're bombarded by advertisements hawking systems that are faster and cheaper—so much so that it's easy to lose sight of really useful improvements, like the Universal Serial Bus.

USB is *the* way to connect anything to your PC. It's fast, simple, and so much better than parallel and serial ports that they look downright medieval by comparison. (Not to say that leeches and a good suit of armor don't come in handy every now and then. But, hey, enough about my personal life.) Judging from all the e-mail I get about problems with parallel and serial ports, a surprising number of you still aren't aware of just how great USB is. And with USB 2.0, the spec gains even more advantages. Here's a rundown on why you should be riding with USB.

Ease of use: USB just works better. Period. Getting hardware to function on a ser-

ial or parallel port often requires a complicated configuration. USB avoids the hassles of setting and juggling IRQs and other resources. One IRQ covers all the hardware attached to each USB port. USB peripherals have fewer compatibility problems than peripherals using serial or parallel ports.

Speed: A USB 1.1 controller transfers data at up to 12 mbps, or about four times faster than the speediest parallel port and 100 times quicker than a serial port. While that won't affect the performance of a mouse or joystick, it makes a big difference with printers, scanners, and other data-hungry peripherals.

Portability: All USB devices can be hot-swapped, which means that you can plug a piece of hardware into your PC, or unplug one, while your system is running. The operating system will automatically recognize and configure new USB devices.

Support for old hardware: There once was a lack of USB peripherals, but now almost every I/O device comes in a USB version. Even old devices run off USB by using an adapter that converts parallel, serial, and other devices to USB. Belkin and SIIG are two vendors that offer such adapters.

One port, many devices: With the use of a USB controller, a single USB port can theoretically support up to 127 different devices, although practically speaking, it's unlikely you'll ever run more than ten

peripherals at one time. All the devices connected to a USB 1.1 controller have to share its 12-mbps bandwidth. If you need to run multiple devices that eat up more than 12 mbps, you can use a PCI adapter card to add a USB controller to your PC. Belkin sells a USB 1.1 PCI adapter card for \$39 and a USB 2.0 version for \$59.

Easy linking: If you've ever tried to chain together two devices—such as a printer and a Zip drive—you know it can be a real nightmare. USB allows any device to be connected to any other USB device that has a built-in hub. So you'll never have to crawl under your desk to reach the back of your PC when attaching a peripheral.

Some keyboards and monitors have built-in hubs with one or two USB ports. If you don't already have one of these, consider buying a dedicated USB hub



FIGURE 1: EASILY ADD AND REMOVE USB hardware by installing a USB hub such as Belkin's four-port device.

that sits on your desktop. Dedicated hubs have clusters of two, four, or more ports. Belkin's four-port USB 2.0 hub, for example, costs as little as \$52 online (see **FIGURE 1**). If your hub connects lots of USB devices to your PC, make sure you have adequate power to run them all. Printers and many similar devices have their own power connections, but mice, keyboards, modems, and others get their power from the USB connection. If the devices need more power than the USB port can deliver, the entire bus may shut down. When this happens, Windows displays a warning icon next to the Universal Serial Bus Controller entry in Device Manager. Fortunately, you can avoid power problems by using the right type of USB hub.

Bus-powered USB hubs draw electrici-

SPEND YOUR CACHE WISELY

WHEN YOUR PC uses the same chunk of data over and over, it often stores that piece of information in fast memory, or cache, where it can retrieve the data faster than it can off a hard drive. Storing the right amount of data in the cache can improve your PC's performance. Outer Technologies' \$10 Cacher is an excellent shareware utility that lets you conveniently monitor memory use and control your cache settings. Go to find.pcworld.com/17641 to get the download.

USB VS. FIREWIRE DATA RATES

SPECIFICATION	Maximum data rate (mbps)	Comments
USB 1.1	12	Supports low-speed (up to 1.5 mbps) peripherals such as mice and keyboards, as well as printers, scanners, and other medium-speed devices.
USB 2.0	480	Also called High-Speed USB, the new standard is fast enough to support external hard drives, CD-RW drives, and other high-speed peripherals.
IEEE 1394 (FireWire)	400	Popular spec for digital video cameras; will allow direct connection of IEEE 1394 devices (such as a DVD player to a TV) without the signal having to pass through a PC.

FIGURE 2: USB 2.0 HARDWARE MOVES DATA slightly faster than devices using an IEEE 1394 (FireWire) connection, but it can be more than 40 times faster than USB 1.1 devices.

ty from the incoming USB connector and output up to 100 mA per port (that's milliamps, a measure of electrical current). Self-powered hubs draw their own power or, in the case of the root hub in your PC, get it from the PC. They provide up to 500 mA per port. Keyboards, mice, and other low-power USB devices use 25 mA to 40 mA and run well on a 100-mA port of a bus-powered hub. More-demanding devices need to use a self-powered hub.

If you buy a self-powered hub, make sure it provides a full 500 mA to each port—some don't. To check, divide the hub's total amperage rating (found in its documentation or on the power supply) by the number of ports. For example, a four-port hub should provide at least 500 mA per port, or 2 amps total.

If your PC originally shipped with Windows 98 or later, it almost certainly has a set of working USB ports. Look on the

back of your PC for two narrow, rectangular openings. If you have an older system without USB, an adapter card should get you up and running. (Using USB on systems running Windows 95 is, at best, problematic. If that's what you're using, consider an OS upgrade.)

Many PC peripherals now support the USB 2.0 specification. USB 2.0 devices can run more than 40 times faster than those using USB 1.1. The top USB 2.0 data rate is 480 mbps, which is faster than the IEEE 1394 (FireWire) ports that run hard drives, digital still and video cameras, and CD-RW drives (see **FIGURE 2**).

USB 2.0 products are backward compatible, so you can use older USB devices on a USB 2.0-equipped PC. So what's the catch? USB 2.0 products are a bit more expensive. Also, the selection of USB 2.0 devices is limited at present, and they require a USB 2.0-ready PC to run them.

Look for the first USB 2.0-ready motherboards and systems to hit the mar- ▶

cure for the blue screen blues

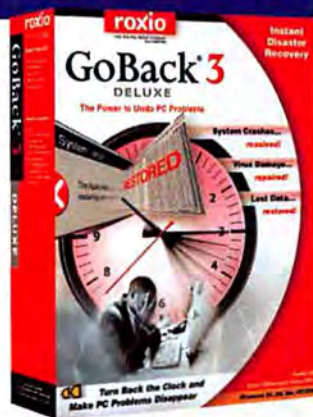
Instantly undo any system crash, file loss, virus attack, botched installation, or operator error with GoBack[®] 3 Deluxe from Roxio, the # 1 selling system recovery software.*

"If Norton SystemWorks is a lifesaver, then GoBack is the entire cast of Baywatch"— *Home Office Computing*

"...the utility with the best bag of tricks is GoBack...To travel back in time and salvage your system, there's no better choice than GoBack."— *PC Magazine*

For a free sample of Roxio's GoBack 3 Deluxe, log onto roxio.com/control

roxio[™]
THE DIGITAL MEDIA COMPANY



*PC Data Unit sales of GoBack 3 Deluxe
©2001 Roxio, Inc. All rights reserved. Roxio, the Roxio tagline, and the Roxio logo are trademarks of Roxio, Inc., which may be registered in certain jurisdictions. GoBack is a registered trademark of Roxio, Inc., in the United States, and may be registered in some other jurisdictions. All other trademarks used are owned by their respective owners.

ket sometime this spring. You can add USB 2.0 functionality to your system now by using one of the adapters mentioned above. But before buying a USB 2.0 product, check with the vendor to confirm the availability of USB drivers for your operating system. As I write this, USB drivers for Windows XP are still unavailable, and drivers for Windows 98 and Me aren't always included with USB products.

ANY AGP PORT IN A STORM?

? MY BROTHER JUST gave me his old Pentium III PC minus a graphics card. I opened up its case to add the AGP 2X graphics card I took from my former computer, but the AGP slot in the P-III PC is much longer than the slot in my old system. Can I safely add my old graphics card to the newer computer's AGP slot?

Peter Miller, Topeka, Kansas

YOU PROBABLY CAN, but before adding an old AGP card to a new motherboard, make sure the two are compatible.

There are three different types of AGP slots: the original AGP 1.0 1X/2X slot, the AGP 2.0 2X/4X slot, and the AGP Pro slot. The 1X/2X version is the shortest and can be distinguished from the 4X type by a small separator that divides it into two sections. The 4X slot also has extra pins at one end.

From your description, your PC probably has an AGP Pro slot. These slots have an extension added to the end of the 4X slot without the extra pins. While the AGP Pro slots are designed for top-end graphics cards costing over \$1000, they are also found frequently on motherboards used in mainstream PCs.

Because the AGP Pro slot is backward compatible, a 1X/2X or 2X/4X AGP card will work in the slot. But take care when inserting a 1X/2X card to avoid incorrectly inserting it into the AGP Pro extension. Often these extensions come with a cover to prevent this, but the covers can fall off.

Also make sure your graphics card and

motherboard support the same operating voltages. The original AGP 1.0 spec called for motherboards and cards that operate at 3.3V, and the AGP 2.0 spec added support for operation at 1.5V. If your old graphics card operates at 3.3V, you'll need a motherboard that supports 3.3V AGP. Likewise, a card that runs at 1.5V needs a corresponding AGP slot.

Fortunately, many motherboards come with 'universal' AGP slots that support either voltage, and many of the latest graphics cards support both voltages as well. Not all setups do, however. A few motherboards out there run exclusively at 1.5V and won't support the older 3.3V cards. Check with your motherboard and graphics card vendors to determine your hardware's precise requirements. ■

Kirk Steers is a PC World contributing editor. Reach him at kirk_steers@pcworld.com. Hardware Tips welcomes your tips and questions and pays \$50 for published items.

The Nature Conservancy®
Saving the Last Great Places

Together with communities, businesses and people like you, we preserve precious places around the world. As they were. As they are. As they will be. Forever. 1-888-2 JOIN TNC | nature.org

Cool Computer Upgrades.

POWER SUPPLIES

"If you're building a machine you need to trust, go with PC Power & Cooling products. Get its case, power supply (the best, period), and CPU fan."

John Dvorak

ECONOMICAL

Save on quality UL recognized power supplies.

STANDARD 145 SFX-L (eMachines)

STANDARD 230 SLIM

STANDARD 250 ATX

ULTRA-QUIET

Unrattle your nerves with a Silencer® power supply. Its high-efficiency fan and low-turbulence circuitry reduce noise by up to 90%. You'll wonder if it's on!

SILENCER 150 1U

SILENCER 275 ATX

SILENCER 400 ATX

HIGH-PERFORMANCE

For power that won't skip a beat during drive access or utility sags, upgrade your PC with a premium Turbo-Cool® unit.

You'll get 50%-100% more power, built-in line conditioning, tight regulation, ultra-clean output, enhanced cooling, UL/ULC, and 3-5 year warranty!

TURBO-COOL 300 1U

TURBO-COOL 300 SLIM

TURBO-COOL 300 ATX

TURBO-COOL 350 ATX

TURBO-COOL 450 ATX

TURBO-COOL 450 A4 (Tyan 2462, 2468)

TURBO-COOL 450 XE (SuperMicro P4DC6, DCE)

TURBO-COOL 475 (ATX, A4, XE)

TURBO-COOL 600 (Tower, ATX, or Sun)

REDUNDANT POWER

For mission-critical reliability (2 million hrs.), get our high-capacity DualPower 840 System. Shown with Tower Case.

DUAL-POWER™ 840 ATX (Fault-Tolerant)



ENCLOSURES

ECONOMICAL



Build your own PC with our popular Personal Mid-Tower case. Features rigid construction, 6 drive bays (upgradable to 8), removable motherboard tray, and easy-access side panels.

PERSONAL MID-TOWER CASE

PROFESSIONAL SERIES



Distinctive style, heavy-duty construction, 10 drive bays, AT/ATX compatible, extra cooling and EMI suppression. You can't beat our all-steel, USA-made full-tower cases! Std. beige or deluxe version with casters, bold black finish, and a bright chrome bezel.

SOLID-STEEL TOWER CASE

DELUXE CHROME TOWER CASE

SLEEKLINE™ SYSTEMS

The incredible SleekLine™ 1400 packs more power in less space than any other desktop computer. With 1U server technology, it's faster than PC World's #1 Power PC!



The innovative SleekLine™ 1400 Mini 1U Computer features Intel's high-performance Micro-ATX Server Board and the amazing Intel Tualatin processor with 512K cache (that's double the cache of a Pentium 4)!

PERFORMANCE COMPARISON

COMPUTER	SIZE (cu. in.)	PERFORMANCE ¹
SleekLine™ 1400	525	115 (w/XP)
Dell™ 8200 (2GHz)	2087	106 (w/XP)

¹As measured by PC WorldBench 4 (higher no. is better).

SleekLine comes with 256MB SDRAM, 40/100GB hard drive, built-in 10/100 Ethernet, high-resolution 3D graphics, and a versatile, space-saving, USA-made enclosure that can be mounted, stacked, or carried!

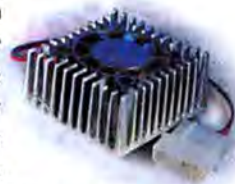
SLEEKLINE 1000 (ASUS M/B, 1GHz Pentium III)

SLEEKLINE 1400 (Intel M/B, 1.4GHz Tualatin)

CPU COOLERS

INTEL®

Processors run hot, often over 230°F! Cool'em by 90°F-140°F with genuine CPU-Cool™ coolers. Their long-life, ball-bearing fans are integrated into patented, die-cast heat sinks. Last 10 times longer than cheap imitations! USA-made. 5-year warranty.



CPU-COOL 1.9W (150-200 Pentium)

CPU-COOL M1 (Pentium II, III, SECC2)

CPU-COOL Z1-C (Celeron, PGA 370)

CPU-COOL Z1-HF (Pentium III, FC-PGA)

CPU-COOL 1U (Pentium III, FC-PGA, 1U)

DUAL CPU-COOL X2 (Xeon, redundant)

DUAL CPU-COOL P4 (Pentium 4, redundant)

AMD®

CPU-COOL Z1-H (K6-2, K6-3)

CPU-COOL AG (Athlon/Athlon XP)

HARD DRIVE COOLERS

Heat distorts hard disk platters!

Cool your drives by 20°F-40°F with our reliable, solid-steel Bay-Cool.

BAY-COOL DRIVE COOLER (1 drive)

BAY-COOL III DRIVE COOLER (1-3 drives)



ACCESSORIES



ATX-to-AT CONVERSION CABLE

PENTIUM 4 ATX12V ADAPTER

PC POWER'S ATX POWER SUPPLY TESTER

TURBO-COOL® 2X AIR PROPULSION SYSTEM

BUSS-COOL DUAL-FAN CARD COOLER

VIDEO-COOL GRAPHICS CARD COOLER

SILENCER® AUXILIARY BALL-BEARING FAN

110 ALERT® OVERTEMPERATURE ALARM

SLEEKLINE DESKBOTTOM MOUNTING BRACKET

SLEEKLINE 19" RACKMOUNT BRACKETS

SLEEKLINE DRIVE AND PCI CARD OPTIONS

17th Anniversary

PC POWER & COOLING, INC.

1985-2002

www.pcpowercooling.com • 5995 Avenida Encinas, Carlsbad, CA 92008 • (760) 931-5700 • (800) 722-6555

Hours: 7 a.m. - 5 p.m. (PT) Mon.-Fri. Terms: Visa, MC, AE, COD, or PO. Warranty: 5 years for Turbo-Cool (400-600), CPU-Cool, and Bay-Cool; 3 years for Turbo-Cool (200-350), DualPower, and SleekLine; 2 years for all others. SleekLine, Silencer, Turbo-Cool, DualPower, Dual CPU-Cool, and 110 Alert are trademarks or reg. trademarks of PC Power & Cooling, Inc. All other trademarks are properties of their respective owners. © 2002 PC Power & Cooling, Inc.

ANSWER LINE

LINCOLN SPECTOR

Replace Your Default Text Editors in Windows

? WHEN I OPEN a text document that is too long for Notepad, Windows brings it up in WordPad—a program I don't care for. Is there any way for me to change this default setting?

Lee Roberson, via the Internet

A LOT OF OTHER free text editors exist, and just about all of them are better than Windows' own Notepad and WordPad. Most are able to handle files larger than 64KB, the size at which Notepad hands things over to WordPad.

My favorite free text editor is Fookes Software's NoteTab Light, a stripped-down version of a more powerful shareware program. NoteTab Light uses tabs to track open text files (see **FIGURE 1**). Two stellar features are its Word-like autocorrect and its FTP uploads and downloads.

To make NoteTab Light your default text editor, open the program and select *Help>Replace MS Notepad*. This replaces the file Notepad.exe with a program that launches NoteTab Light in all situations where, under the old regime, Notepad would have opened automatically.

Another good free editor is Sven Tore

Iversen's TextIt. Though less powerful than NoteTab Light, TextIt has a handy search-and-replace function, and it can automatically detect URLs. Notepad users will feel right at home with the program.

TextIt associates itself with the .txt extension, but it doesn't replace Notepad .exe, and uninstalling TextIt doesn't restore the .txt file association to Notepad. Visit find.pcworld.com/17662 to download NoteTab Light, and find.pcworld.com/17663 to get TextIt.

KEYBOARDS AND MICE VS. USB-ONLY PCs



? MY NEW COMPUTER doesn't have standard keyboard and mouse connectors, just USB ports. Will a USB keyboard work in an emergency DOS environment? Is there any way that I can hook up a conventional (non-USB) keyboard?

Colleen Chapman, via the Internet

BOTH A USB keyboard and a USB mouse should work in DOS mode. PCs built without standard PS/2 keyboard and mouse ports generally have operating system-independent USB keyboard and mouse support built in. However, mice won't work in DOS and outside Windows without a separate mouse driver—usually Microsoft's mouse.exe.

So what do you do if you have a favorite keyboard or mouse that isn't USB-based? Your best bet is to buy an adapter that allows you to plug both a standard keyboard and mouse into a single USB port. Unfortunately, though, none of the adapters that I tested could handle every

outside-Windows keyboard and mouse chore, so you should still keep a USB keyboard and mouse handy just in case. Cables To Go (www.cablestogo.com) offers a good adapter priced at \$40, though I've seen it on sale for as little as \$27.

MODEM-LESS PC FAXING



? I NOW HAVE DSL and no longer have a dial-up modem. How do I send a fax without a modem?

Ted Buckley, Monterey, California

EVEN IF YOU KEEP your modem, switching to broadband Internet access can wreak havoc on PC-based faxing. I recommend using EFax (www.efax.com), which lets you receive faxes over the Net without a modem. The free, basic EFax service assigns you a fax number and delivers your incoming faxes as e-mail attachments that you read using the company's proprietary, advertiser-supported software.

If you also need to send faxes without a modem, you should sign up for EFax Plus (\$10 per month). The service provides a local phone number and allows you to fax any printable file via proprietary software and your e-mail system. But you're also charged 10 cents for every 30 seconds of transmission time—and the rate is even higher for international faxes. ■

Send your questions to answer@pcworld.com. Answer Line pays \$50 for published items. You can find Contributing Editor Lincoln Spector's humorous writing at www.thelinkinspector.com.

TRIM YOUR FOLDERS FOR FASTER LOADING

SOME FOLDERS SEEM to take forever to load. Michael Segal of Brookline, Massachusetts, suggests a reason why. The FAT32 file system has trouble handling folders with more than 32KB of directory listings, and it slows down considerably at that point. The directory listing contains file names and other data; but the number of files, not the file sizes, is what matters. Generally, a folder reaches 32KB only if it contains at least 400 to 600 files and subfolders. The solution: Move some of the files to another folder.

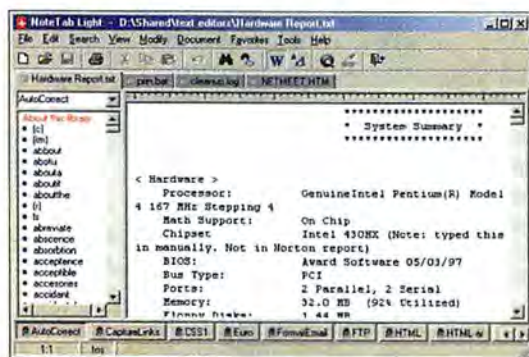


FIGURE 1: THE FREE NOTETAB Light offers tabbed access to open files and a Word-like autocorrect feature.

Best Buy & Best Buy



"Athlon Special is a great choice for the savvy buyer who recognizes... powerful, inexpensive..."

"Athlon Mega is powerful system that will appeal to gamers or anyone else who needs high performance."

"While a bargain system at heart, this Athlon Mega adds luxury where it counts. It's a well-rounded system for families and home-office workers."



- NuTrend System Includes
- 1.44MB Floppy Drive
 - 104-Key Keyboard
 - Desktop Microphone
 - PS/2 Mouse w/NuTrend Mouse Pad
 - Microsoft Windows XP
 - Corel WordPerfect Office 2002



Athlon Ultra

- ▶ AMD Athlon™ XP FSB266 DDR 4X AGP M/B
- ▶ Inwin ATX Mid-Tower Case w/300 Watt (AMD Certified)
- ▶ 512MB PC2100 DDR Memory
- ▶ 100GB Ultra ATA100 Hard Drive
- ▶ Hitachi CM715 19" .26 SVGA Color Monitor
- ▶ 16X DVD-ROM Drive
- ▶ Plextor 24X10X40 CD-Rewritable Drive
- ▶ Nvidia GeForce 3 Ti 500 64MB 4X AGP Card w/TV-Out
- ▶ New Creative Labs SoundBlaster Audigy Platinum Sound Card
- ▶ Altec Lansing 641 4.1 THX 400W Surround Sound Speakers
- ▶ US Robotics 56K V.92 Hardware Fax Modem
- ▶ 3Com 905 10/100 Ethernet Card
- ★ Optional One-Year On-site Service @ \$29

AMD Athlon™ XP Processor 2000+ with **\$1899** #A310
 QuantiSpeed™ architecture** outperforms competitive 2.0GHz processors

AMD Athlon™ XP Processor 1900+ with **\$1859** #A319
 QuantiSpeed™ architecture** outperforms competitive 1.90GHz processors

Athlon Special

- ▶ AMD Athlon™ XP FSB266 DDR 4X AGP M/B
- ▶ Inwin ATX Mid-Tower Case w/300 Watt (AMD Certified)
- ▶ 128MB PC2100 DDR Memory
- ▶ 30GB Ultra ATA100 Hard Drive
- ▶ Hitachi CM615 17" .27 SVGA Color Monitor
- ▶ 16X DVD-ROM Drive
- ▶ 16X10X40 CD-Rewritable Drive
- ▶ Nvidia GeForce 2 MX 4X AGP 64MB Card w/TV-Out
- ▶ Creative Labs SoundBlaster Level 5.1 Sound Card
- ▶ Altec Lansing AVS300 Speakers w/Subwoofer
- ▶ ZOOM 56K V.92 Fax Modem
- ▶ PCI 10/100 Network Card, Broadband Ready
- ★ Optional One-Year On-site Service @ \$29

AMD Athlon™ XP Processor 1800+ with **\$969** #A368
 QuantiSpeed™ architecture*** outperforms competitive 1.80GHz processors

AMD Athlon™ XP Processor 1700+ with **\$939** #A367
 QuantiSpeed™ architecture**** outperforms competitive 1.70GHz processors

Athlon Mega

- ▶ AMD Athlon™ XP FSB266 DDR 4X AGP M/B
- ▶ Inwin ATX Mid-Tower Case w/300 Watt (AMD Certified)
- ▶ 256MB PC2100 DDR Memory
- ▶ 40GB Ultra ATA100 Hard Drive
- ▶ Hitachi 15" LCD Color Flat Panel
- ▶ 16X DVD-ROM Drive
- ▶ 16X10X40 CD-Rewritable Drive
- ▶ Nvidia GeForce 2 Ti 4X AGP 64MB Card w/TV-Out
- ▶ Creative Labs SoundBlaster Audigy Sound Card
- ▶ Altec Lansing AVS500 5-Piece Speaker System
- ▶ ZOOM 56K V.92 Fax Modem
- ▶ PCI 10/100 Network Card, Broadband Ready
- ▶ Free Epson C60 Stylus Color Printer

AMD Athlon™ XP Processor 1900+ with **\$1399** #A339
 QuantiSpeed™ architecture** outperforms competitive 1.90GHz processors

AMD Athlon™ XP Processor 1800+ with **\$1339** #A338
 QuantiSpeed™ architecture** outperforms competitive 1.90GHz processors

Athlon Force

- ▶ AMD Athlon™ XP FSB266 DDR 4X AGP M/B
- ▶ Inwin ATX Mid-Tower Case w/300 Watt (AMD Certified)
- ▶ 128MB PC2100 DDR Memory
- ▶ 20GB Ultra ATA Hard Drive
- ▶ Hitachi CM615 17" .27 SVGA Color Monitor
- ▶ 16X DVD-ROM Drive
- ▶ Nvidia TNT2 M64 w/32MB 4X AGP Video Card
- ▶ Creative Labs SoundBlaster Level 5.1 Sound Card
- ▶ Altec Lansing AVS300 Speakers w/Subwoofer
- ▶ ZOOM 56K V.92 Fax Modem
- ▶ PCI 10/100 Network Card, Broadband Ready
- ★ Optional One-Year On-site Service @ \$29

AMD Athlon™ XP Processor 1700+ with **\$859** #A367
 QuantiSpeed™ architecture**** outperforms competitive 1.70GHz processors

AMD Athlon™ XP Processor 1600+ with **\$839** #A386
 QuantiSpeed™ architecture**** outperforms competitive 1.60GHz processors

Nutrend PCs use genuine Microsoft® Windows® www.microsoft.com/piracy/howtotell

EXTREME PERFORMANCE
 FOR WINDOWS® XP



Powerful performance for data intensive software

Send email, receive instant messages, and listen to MP3s, all at the same time

Boost software performance with QuantiSpeed™ Architecture

Enjoy efficient multitasking when using multiple peripherals



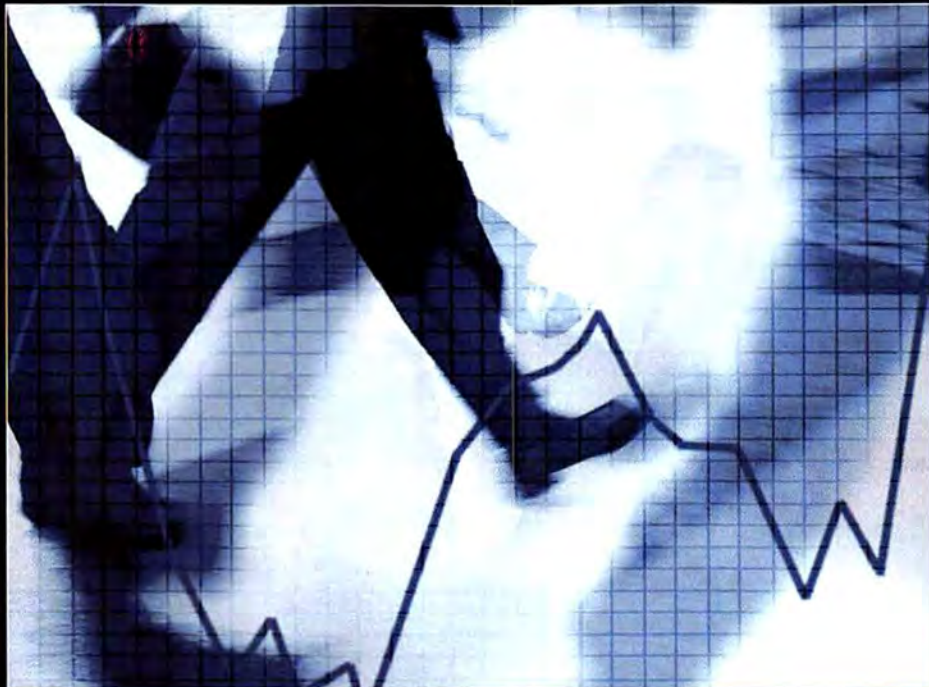
The Best Value for Your Money

www.nutrend.com 888.482.6678

Sales Hours: Mon-Fri 7:00AM-6:00PM PST Sat 9:00AM-1:00PM PST Technical Support: 888-525-5181

Lifetime Toll-Free Technical Support / 3 Years Limited Parts / Lifetime Labor Warranty / 30 Days Money Back Guarantee

Price, specification, and terms are subject to change without notice. Picture shown with optional upgrades. Nutrend is not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. On-site service may be provided by contracted third party provider. Technician will be dispatched if necessary following phone support. AMD, the AMD Arrow logo, AMD Athlon, and combinations thereof are trademarks of Advanced Micro Devices, Inc. "QuantiSpeed" architecture operates at 1.6GHz. "QuantiSpeed" architecture operates at 1.80GHz. "QuantiSpeed" architecture operates at 1.90GHz. "QuantiSpeed" architecture operates at 2.0GHz.



DIRECTIONS2002

IT Leadership for the Rebound

The rebound is coming. It always does. And while it's easy to focus on the "when" of the rebound, the real question should be "what then?" After the IT recession of 2001 we can expect new user buying behavior, new channel requirements and new vendor success factors.

Attend IDC's Directions and learn about the timing and strength of the rebound, the shape of the new industry it will leave in its wake, and the new strategy for leadership it will demand of suppliers.

Featured topics include:

- Competing in the age of bioscience
- Global software in a changed world
- Life beyond the PC: How to succeed in the device market
- Delivering the promise of broadband networks
- Disaster prevention, preparedness, and recovery services
- IP telephony
- Effective indirect sales strategies
- Web services
- Interactive consumer services
- Infrastructure and services to enable the wireless enterprise

... and much more!

To view a complete list of topics, please go to
www.idc.com/events

March 20, 2002
Boston, Massachusetts

April 3, 2002
San Jose, California

SPECIAL OFFER!

Register by February 20 and receive a \$200 discount off the conference fee.

Register Online Now

www.idc.com/Directions02/Boston
or
www.idc.com/Directions02/SanJose

or Call

800.605.5849
(978.597.0133 outside the US)

 **IDC**
Analyze the Future

Co-sponsored by:

 **InfoWorld**

PC WORLD

COMPUTERWORLD

Don't let computing cost get you down!

**Refurbished,
Revitalized,
Remarkable.**



Computers and more!

You will find remarkable savings on all your computing needs. At MicroExchange.com we've taken the high cost of technology and made it the right price.

Refurbished products from name brand manufacturers like Compaq, Dell, HP and more. You never have to worry about quality, since our products are put through stringent testing and certification standards to ensure "like new" appearance and performance.

Just in case you have questions our friendly online experts at 1-800-284-9296 are ready to help you with questions or ordering.

Visit us today!

www.MicroExchange.com

MICRO EXCHANGE™ Since 1985

acer
The dawn of a new day at Acer

COMPAQ

hp HEWLETT
PACKARD

DELL

IBM

Quantum
Leadership in Data Protection Solutions

All pricing subject to change. For all prices and products, MicroExchange reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes or typographical errors in advertisements. All products sold by MicroExchange are third party products and are subject to the warranties of any of the applicable manufacturers. Please refer to www.microexchange.com for additional terms and conditions. ©2001 MicroExchange™, 13760 Diplomat Drive, Dallas Texas 75234 All rights reserved. All registered trademarks and trademarks are the property of their respective owners.



Since 1991

COMPUTER GATE INTERNATIONAL

Corporation,
Government
and
School P.O. Welcome

http://caps.computergate.com Toll Free: 1-888-437-0895

Fax: (408) 730-0735 email: sales@computergate.com

First place to look for big savings

Select a category

- Accessories
- Batteries
- CD/DVD Drives
- CPUs
- Cables & Adapters
- Cases
- Cooling Kits
- Digital Cameras
- Furniture
- HDD Mobile Racks
- Hard Drives
- I/O Boards
- Input Devices
- Memory
- Modems
- Monitors
- Motherboards
- Multimedia
- Network Hardware
- Network Wiring
- Power Equipment
- Printer Supplies
- Printers
- Scanners
- Software
- Sound Cards
- Storage & Media
- Switch Boxes
- Tool Kits
- USB Devices
- VGA Cards

AMD XP 1500+ High End System

- 20GB HDD.
- 32MB Video Card.
- 16X DVD-ROM.
- 56K Modem.
- 16X12x40 CD-RW Drive.
- Window XP Home Edition, Keyboard, Mouse, Floppy, Bundled Software.



SCK74..... \$769.95

ECS P4VXAD P4 Socket 478 VIA, ATX, 5 PCI, ATA/100, Audio

Plus Free 128MB DDR DIMM Memory



BBEP4VXADD..... \$94.95

March Prizell!

Business Card CD Labeling Kit



Enter a Free Drawing at:
http://caps.computergate.com
Free Color Catalog Available on Line!!!

All Kinds Of Motherboard On Our Website. We Update Price Daily!

Socket 423	
ECS P4VXAS, VIA, ATX, 5PCI, Audio, DDR.	
B8EP4VXAS.....	\$89.95
VIA P4X266-VL33-S, P4X266, ATX, 5PCI, Audio, DDR.	
B8VVL33S.....	\$89.95
Gigabyte GA-8IDX3, I845, ATX, 6PCI, Audio, SDRAM.	
B8G8IDX3.....	\$109.95
Abit BW7, I845, 6 PCI, 1 CNR, Audio.	
B8BBW7.....	\$124.95
B8BBW7R.....	\$154.95
Abit TH7-Raid, I850, ATX, 5PCI, Audio.	
B8BTH7R.....	\$154.95



Socket 478	
Abit BL7-RAID, I845, ATX, 6PCI, 1CNR, Audio.	
B8BBL7R.....	\$144.95
Asus P4B266, I845D, ATX, 6PCI, DDR, USB 2.0.	
B7AP4B266.....	\$167.95
Intel D845WN, I845, ATX, 6PCI, Audio, SDRAM, Retail.	
B8ID845WNL.....	\$134.95
MSI 845 ULTRA-ARU, I845B, ATX, 5PCI, RAID, USB 2.0.	
B8M639801.....	\$149.95
VIA P4XB-S, P4X266, ATX, 5PCI, AC97, DDR.	
B8VP4XBS.....	\$94.95
ECS P4VXAD, VIA, ATX, 5PCI, Audio, DDR.	
B8EP4VXAD.....	\$94.95

Socket A	
ECS K7S5A, SIS, ATX, 5PCI, Audio.	
B7EK7S5A.....LAN.....	\$59.95
FIC AZ11EA, AMD, ATX, 5PCI.	
B7FAZ11EA...Audio.....	\$69.95
Gigabyte 7VTXE, ATX, 5PCI, DDR, AC97.	
B7G7VTXE.....	\$89.95
Abit KG7, AMD, ATX, 6PCI	
B7BKG7L...Lite.....	\$119.95
B7BKG7.....	\$118.95
B7BKG7R...Raid.....	\$142.95
Asus A7A266, AliMagik, ATX, 5PCI.	
B7AA7A266...266MHz.....	\$120.95
B7AA7A266A...Audio.....	\$120.95
Gigabyte 7DXC, AMD761, 5PCI, DDR, ATA/100, AudioC.	
B7G7DXC.....	\$114.95
B7G7DXR...Raid.....	\$129.95

Hard Drives

Maxtor	
. 7200 rpm, ATA/133, 2048K Cache.	
GHDW20FJ...20GB.....	\$77.95
GHDW40FJ...40GB.....	\$89.95
GHDW60FJ...60GB.....	\$129.95
GHDW80FJ...80GB.....	\$170.95
Western Digital	
. 7200 rpm, ATA/100, 2048 K Cache Memory.	
GHDW20F...20GB.....	\$73.95
GHDW30BB...30GB.....	\$92.95
GHDW40BB...40GB.....	\$94.95
GHDW60BB...60GB.....	\$139.95
GHDW80BB...80GB.....	\$169.95
GHDW100F...100GB.....	\$219.95
IBM	
. 7200 rpm, ATA/100, 2048 K Cache.	
GHD140F...40GB.....	\$99.95
GHD160F...60GB.....	\$124.95
GHD175F...75GB.....	\$229.95
Seagate	
. 7200 rpm, ATA/100, 2048 K Cache.	
GHDS40F...40GB.....	\$94.95
GHDS60F...60GB.....	\$129.95
GHDS80F...80GB.....	\$200.95

MORE HARD DRIVES ON THE WEB

Network Wiring

350MHz Enhanced Cat.5 Patch Cable, 14	Only \$3.99 each.
CNWTCE14...Gray.....	\$3.49/2+
CNWTCE14B...Black.....	\$3.49/2+
CNWTCE14E...Blue.....	\$3.49/2+
CNWTCE14G...Green.....	\$3.49/2+
CNWTCE14N...Orange.....	\$3.49/2+
CNWTCE14R...Red.....	\$3.49/2+
Gigabit Cat6 Cable, 1000 BaseT, Molded UTP, Blue Color	
CNWTCE603E...3 feet.....	\$6.99
CNWTCE607E...7 feet.....	\$8.99
CNWTCE614E...14 feet.....	\$10.99
CNWTCE625E...25 feet.....	\$15.99
CNWTCE650E...50 feet.....	\$25.99
CNWTCE61ZE...100 feet.....	\$44.99
Cat5 Patch Cable Solid, Plenum, UTP.	
CNWTCE1ZZL.....	\$164.95

CD/DVD-ROM/RW

Internal IDE CD-Rom	
MCRF52X Afrey 52X.....	\$24.99
MCRCY52X Cyberdrive.....	\$27.99
MCRAR56X Acer 56X.....	\$26.99
Internal IDE CD-RW	
MWSY161040 Sony.....	\$84.95
MWAR2410 Acer.....	\$89.95
MWAP241040 Aopen.....	\$92.95
MWL241040 Lite-On.....	\$104.95

Network Card

Asound 10/100 Base TX, Realtek Chipset, 32-bit, PCI Bus	
NECAS01.....	\$5.99
ArkPC 10/100 Base, Realtek Chipset, PCI Bus	
NECA32RT.....	\$7.95
D-Link DFE530TX+, 10/100 Mbps, PCI, RJ45, Nway	
NECD530P.....	\$10.95
3 COM Fast Etherlink XL 10/100 Mbps, PCI, 3C905	
NECC905CXM.....	\$31.95

Input Drives

Logitech First Mouse L35 3 Buttons, PS/2, No Logo.	
JMSLS35.....	\$7.95
Logitech Wheel Mouse U48 with USB Connector, Bulk.	
JMSLU48.....	\$9.95
AOpen PS/2 Mouse, 520 dpi, S57, 2 Button, Bulk.	
JMSAPGS57.....	\$2.49
Microsoft Office Keyboard PS/2 and USB 3 pcs/pack.	
KMSOFF.....	\$94.95
AOpen KB855 107 Key Keyboard with PS/2 port.	
KAOKB855.....	\$5.49

CPU

AMD XP OPGA, OEM.	
IP7AX19...1900+.....	1.60GHz
IP7AX18...1800+.....	1.53GHz
IP7AX17...1700+.....	1.47GHz
IP7AX16...1600+.....	1.40GHz
IP7AX15...1500+.....	1.33GHz
AMD Duron	
Socket A, OEM.	
IP7AD900.....	900MHz
IP7AD950.....	950MHz
IP7AD1G.....	1GHz
IP7AD12.....	1.2GHz
AMD Athlon	
T-Bird Socket A, OEM.	
IP7AT12G.....	1.2GHz
IP7AT13G.....	1.3GHz
IP7AT14G2...266MHz.....	1.4GHz
Intel Pentium III FCPGA, retail.	
IP711ZBP.....	133MHz 1GHz
IP71933EBP.....	133MHz 933MHz
Intel Pentium 4 Socket 423, retail.	
IP4I17.....	1.7GHz
IP4I18.....	1.8GHz
IP4I19.....	1.9GHz
IP4I20.....	2.0GHz
Intel Pentium 4 Socket 478, retail.	
IP5I17.....	1.7GHz
IP5I20.....	2.0GHz

Prices valid from 01/15/2002 to 02/28/2002. Price subject to change without notice! All trademarks are property of their respective owners. Not responsible for typographical or printing error.

2960 Gordon Avenue, Santa Clara CA 95051 ¥ Mon — Fri 6:00am to 6:00pm ¥ Saturday 8:00am to 2:00pm (PST)

FOR ADVERTISING INFORMATION
CALL TOLL FREE:

888/254-0711

Senior Vice President of Sales
Neal Mandel 212/655-5157



Southeast/Midwest
Shirley Nixon 212/655-5114

Northwest
Michelle Deutsch 212/655-5201

Sales Manager/Northeast/West Coast
Debra Robbins 212/655-5111

PC WORLD

MARKETPLACE

INTERNET / ISPs

AIT	800/878-4084
Blue Genesis.....	866/258-3351
Dialtone Internet	800/617-1407
Hostway	800/397-2449
Innerhost	800/621-8309
OLM.net	877/265-6638
Starweb	877/533-4932
Timehost Network.....	888/598-1772

PRODUCTIVITY

Crichlow Data.....	800/678-4535
E.T.I.....	800/757-5453 x201

InkFarm	800/INKFARM
Panasonic	800/528-8601
Projector People.com.....	888/228-9865
Worth Data	800/345-4220
Zoom Telephonics.....	800/631-3116

TRAINING/ENTERTAINMENT

Academic Superstore.....	800/580-9237
ACCIS.....	800/767-2427
Micro 2000	800/864-8008
Smart Certify.....	877/TRAINING

SYSTEMS/PERIPHERALS

Granite Digital	510/471-6442
-----------------------	--------------

MEMORY/UPGRADES

1-800-4-MEMORY	800/463-6679
Upgrade Source	800/961-5889

SERVICES/SUPPLIES

Big Clearance	888/828-3636
CBL Data Recovery.....	800/551-3917
Condre.....	866/500-3472
Drivesavers	800/440-1904
Ei Printing.....	800/245-5775
Floppy Copy	800/732-3475
inkjetkits.com.....	800/644-3475
atdiscount.com.....	888/426-2914
Softman Products	888/999-2611

Shop Here!
Internet • ISPs

Supermarkets are for
diapers and **frozen** foods.

For the best cut of **meat**,
you need to go see your

▶ **butcher.**

Not all web hosting companies give you the best hosting service for your web site. They serve up everything and anything to attract your business, but when it comes down to web hosting, their quality is less than Grade "A".

At Hostway, hosting is our business. Whether you need a web site, an online store or dedicated server, we have the right solution for you. Hostway is consistently ranked at the top of web hosting providers because we are the best at what we do - delivering reliable, affordable web hosting with a level of dedication and 24/7 support unmatched by others.

It's not surprising that over half of our customers are referrals from existing customers.

Don't settle for anything less than the best - we'll give you the 'prime cut' in hosting every time, all the time.

Gold Plan **\$13.95** /mo.

200 MB Disk | 6 GB Traffic | 10 Email

Sign up today and get
Free Setup!

www.hostway.com/promo/pcworld

Toll Free **1.800.397.2449**

sales@hostway.com

www.hostway.com

HOSTWAY

The Hosting Company



Advanced Hosting Platform

- Windows 2000 Server
- SQL Server 2000
- MS Access 2000
- ASP / XML / WAP
- ASP Components
- Live Statistics
- Active Directory
- Windows Media
- HostMechanic™

Cutting-edge Publishing Tools

- Visual Studio.NET
- MS FrontPage 2002
- Microsoft® Office XP

Yesterday, Today, & Tomorrow...

We've been around... and we're here to stay!



Win a **FREE**
iPAQ Pocket PC!

Visit our Web site for details...

iINNERHOST is the most trusted provider in the industry for hosting Microsoft® based Web sites and applications.



Toll Free: 800.621.8309
www.innerhost.com
Complex Hosting in a Global Environment™



A TRUE TALE OF A TRULY TERRIFIC WEB HOST!

On the bike trail, Bruce Argyle of utahmountainbiking.com craves thrills and chills. But when it comes to his web host, he wants stability, dependability, and around-the-clock support. And... a site that never goes down. That's why Bruce loves OLM.net.

He also likes paying only a fifth of what he used to, for just what he needs: lots of space, plenty of traffic and lightning-fast connections.

OLM.net's scalable Internet solutions include everything from e-commerce to reseller programs. With a 30-day money-back guarantee, shouldn't you take OLM.net for a test ride?

Save up to 50% off hosting by visiting www.olm.net/promo.



877-2-OLM.NET • info@olm.net • www.olm.net

©2001 OLM, LLC

Web Hosting

E-Commerce

Server Solutions

Domain Registration

AIT's unique & powerful Server Technology gives you the competitive edge
Includes many FREE standard features you can RESELL

WEB HOSTING

Advanced Internet Technologies, Inc.

AS LOW AS **7.95**

FREE Shopping Cart

Domain Registration

Microsoft® SharePoint
TeamServices Sites

Secure Digital Certificates

Dedicated and Co-location Solutions
ASP Hosting Solutions

aitcom.net
sales@aitcom.net

1-800-878-4084

Resellers

Additional Domains
(LINUX)
\$2/month

Additional Domains
(Windows 2000)
\$5/month



Rated #1 Web Hosting
Company with RateHosts



STANDARD FEATURES

- FREE Domain Name Registration
www.yourcompany.com
- TOLL FREE 24/7 Technical & Billing Support
- Dedicated IP Address
- 99.9% Network Uptime Guaranteed
- 30 Day Money Back Guarantee
- Unlimited Hits
- Application and Ecommerce Hosting
- Secure Credit Card Processing
- Redundant OC12 & DS3 Backbones
- Redundant Cisco 7000 Series Routers
- On-Site UPS & Generator Backup
- Your Own FTP Directory
- Your Own CGI-BIN
- Access to all config files
- Unlimited POP Email Accounts
- Unlimited Email Forwarding/Aliases
- Unlimited Email Autoresponders
- Anonymous FTP
- Password Protected Directories
- Easy to Use Control Panel
- Online Billing Status
- Real Time Ticket Support System
- Webalizer® Statistics and Log Files
- Daily Tape Backups/DataVault
- MS FrontPage® Extensions
- FREE Marketing Newsletters
- FREE Park Domains
- FREE SSL & PGP®
- FREE CGI/JAVA Libraries
- FREE AIT Mall Listing & PAL
- FREE MCart® Webstore / Shopping Cart
- FREE Guestbook & ChatRoom
- FREE Customer Support Queue
- Telnet Access - SSH Access
- mSQL and MySQL Database & ODBC
- Real Audio/Video capabilities
- Macromedia®, Adobe®, NetObjects Fusion®
- MCPS®, CyberCash®, Payment Net®
- eTools® Office Suite - Chat, Web Based Email
- BBS, Auction, Calendar, Banner Exchange
- WAP Enabled (Wireless)
- FREE Search Engine Submission

No Setup Fee If Switching From A Competitor
Ask About a Month of FREE Hosting

Your Hosting Solution	Server 1 Powersite	Win2K Powersite	Server 2 Reseller	Win2K Reseller	Server 3 Reseller	Server 4 Reseller	Server 5 Reseller
Disk Space (can be customized)	155 MB	155 MB	300 MB	350 MB	700 MB	15 GB	36.4 GB x 3
Max # of domains you can host	N/A	N/A	25	25	75	256	1000
Base Monthly Server Cost	\$18.95	\$18.95	\$59.95	\$89.95	\$149.95	\$359.95	\$1,999.95
Max. per domain cost @ \$2.00/domain/mo	N/A	N/A	\$50.00	\$125.00*	\$150.00	\$512.00	\$2,000.00
Max. possible cost to you/ month	\$18.95	\$N/A	\$109.95	\$214.95	\$299.95	\$871.95	\$3,999.95
Your monthly gross profit @ \$19.95 domain	N/A	N/A	\$498.75	\$498.75	\$1,496.25	\$5,107.20	\$19,950.00
Your monthly net profit reselling hosting	N/A	N/A	\$388.80	\$283.80	\$1,196.30	\$4,235.25	\$15,950.05
Additional Profit Reselling AIT Extras***	N/A	N/A	\$1,250.00	\$1,250.00	\$3,750.00	\$12,800.00	\$50,000.00
Total Monthly Profit	N/A	N/A	\$1,638.80	\$1,533.80	\$4,946.30	\$17,035.25	\$65,950.05

*Additional domains for Windows2000 Reseller Hosting Solution - \$5.00/month
***Assumes Reseller sells the many FREE AIT offerings at \$50/month per customer

MARKETPLACE

Shop Here! Internet • ISPs

IF YOU THINK A RELIABLE MANAGED HOSTING SERVICE SHOULD BE EXPENSIVE... WE CAN ALWAYS RAISE OUR PRICES.



\$195 Per month

IBM MANAGED HOSTING

CPU	INTEL Celeron 800 MHz
MEMORY	128 MB
STORAGE	20 GB IDE HD
IPS	Free
TRAFFIC	25 GB Burstable
SETUP	\$195

Your choice of: Linux, Windows 2000, Windows NT or FreeBSD.



Call: 1.800.617.1407 or visit: www.dialtone.com/ibm22

Time Host .com .info .biz .cc .tv
Web Hosting

Free! Domain Registration (with 3 Months Hosting Service)
 Applications: Easy to Setup Standard FTP Access

Resellers! Get an Automated Order Form!
 Become a Timehost Agent, get your own Reseller Web Site!

Virtual Hosting | Dedicated Servers | Email Hosting | Resellers
<http://www.timehost.net/> (888) 598-1772

Email Hosting
 Web based Email
 Spam Filters

Online Storage Hosting
 Easy to Setup
 Web based File Management
 Standard FTP Access

Free Calling Card Minutes
 All Orders receive the Initial amount paid in Free Calling Card Minutes

Find it fast. Buy it now.

Shopping for computer products? The fastest, easiest way to get your hands on exactly what you're looking for is the PC World Marketplace classified ads. From memory and software to peripherals and service, it's where one-stop shopping begins.

PC WORLD Marketplace

Are you paying too much for Web Hosting?

A TALE OF TWO DEVELOPERS



Developing an Ulcer

- Costs \$1,000's in servers and management
- Very restricted, can only add limited features
- Server crashes with a spike in traffic
- Guaranteed 99.9% chance of getting a headache



Developing a really nice tan

- One flat fee of \$129 for a multi-domain server
- Tools to build and manage world class websites
- Award winning platform - UNIX/NT Hybrid
- 99.9% uptime guarantee - NO SETUP FEE

Introducing: The Most Reliable Web Hosting Server on the Planet:

www.bluegenesis.com • sales@bluegenesis.com

VM Server

Enjoy the freedom to manage your own server, and the comfort knowing that your websites are running on our award winning clustered architecture. Let BlueGenesis.com take care of all the hardware, software, and systems infrastructure, while you concentrate your efforts on what matters most: building your customers websites and making more money!

Single domain hosting available for as low as \$9.99!

For leading hosting packages and domains names
Call TODAY! 1-866-258-3351

* Monitor this ad and we will let you up with a 30 day free trial.



Starweb ProHost

FREE Domain Registration & Site Creator

Web Hosting

Hosting Solutions Made Easy



24/7 tech support - No set-up fees - 30 day guarantee



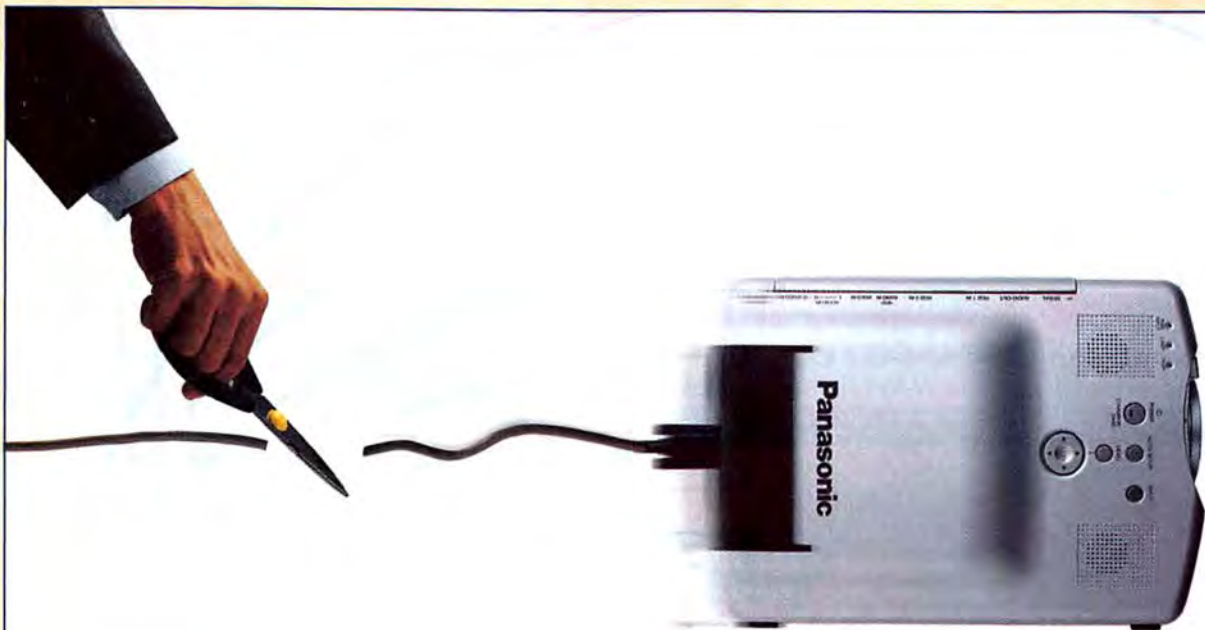
e-commerce

sales@starwebprohost.com

1-877-533-4932

www.starwebprohost.com

Custom Web Design



We've made 'em
Lighter.
 We've made 'em
Brighter.
 And now we're
 really gonna
Cut Loose.

Introducing the first wireless projector with multiple-presenter capability.

Panasonic's new PT-L711XNTU wireless projector unleashes exciting interactive possibilities. Because it can receive data from multiple IEEE 802.11b-equipped wireless PCs consecutively, colleagues can seamlessly interact in a group presentation. In addition to eliminating tiresome cables, wireless lowers the cost per user, so sharing this projector is easy and efficient. Add advanced features like Digital Cinema Reality™ video processing and lamp life double (4,000 hours) that of most other systems, and it's clear Panasonic's "X" series projectors are leading the way to the presentation future. To find out more, please call us at 1-800-528-8601 or visit www.panasonic.com/projectors.

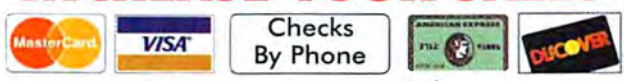


ULTRA-PORTABLES

	Features	Lumens	Resolution
PT-L711XNTU	Wireless Multiple Presenters Micro Lens Array	1600 ANSI	XGA (UXGA max.)
PT-L711XU	Ultra-Bright Micro Lens Array	1600 ANSI	XGA (UXGA max.)
PT-L701XSDU	SD Card Slot For PC-Free Presentations SD Memory Card Support	1200 ANSI	XGA (UXGA max.)
PT-L701XU	High Resolution	1200 ANSI	XGA (UXGA max.)
PT-L511XU	High Brightness Easy Operation	1500 ANSI	SVGA (SXGA max.)
PT-L501XU	Easy Set Up	1200 ANSI	SVGA (SXGA max.)

Panasonic[®]
 The difference is your image.™

**— BUSINESS OWNERS —
ACCEPT CREDIT CARDS
INCREASE YOUR SALES**



E-Commerce Specialists

Electronic Transfer, Inc.

Mike Knudtson **800-757-5453** Ext. 201
www.electronictransfer.com or Mikek@etransfer.net

ETI is a registered ISO/MSP of National Bank of the Redwoods, Santa Rosa, CA.
American Express & Discover Approved Separately

**Shopping
for computer
products?**



The fastest, easiest way to get your hands on exactly what you're looking for is the PC World Marketplace classified ads. From memory and software to peripherals and service, it's where one-stop shopping begins.

PC WORLD Marketplace

Productivity Shop Here!

ink & toner

2500+ items, all with flat \$3.50 shipping per order!
SPECIAL \$2 discount: enter promo code PCW34.

EPSON

S020189	Orig. Epson	23.99
	Inkfarm brand	3.99
S020108	Orig. Epson	24.75
	Inkfarm brand	10.45
S020191	Orig. Epson	24.92
	Inkfarm brand	15.25
T003011	Orig. Epson	23.35
T007201	Orig. Epson	23.95

Too much to list! See website or call.

BROTHER

TN-430	Orig Brother	51.11
TN-460	Orig Brother	61.95
DR-400	Orig Brother	129.95
LC02C	Orig Brother	7.63

Too much to list! See website or call.

ALPS

106058-00	4-pack C/M/Y/K	26.52
-----------	----------------	-------

We carry all alps ink and paper!

LEXMARK

15M0120	New	35.96
	Refilled	28.91
13T0101	New	141.65
1382920	New	175.28

Too much to list! See website or call.

NEC

30-077	Color cart.	21.81
20-122	Toner	114.44

HEWLETT-PACKARD

51645A	New HP	24.61
	Refilled cart	18.75
C6578A	New HP	52.99
	Refilled cart	27.91
C6578D	New HP	31.91
C1823D	New HP	29.99
	Refilled cart	22.99
C1823T	New HP	44.99

Too much to list! See website or call.

CANON

BCI-3bk	Orig Canon	13.79
	INKFARM brand	6.85
BCI-21c	Orig Canon	16.99
	INKFARM brand	10.75

We carry all Canon ink and paper!

QMS / MINOLTA

1710322-001		75.87
-------------	--	-------

Too much to list! See website or call.

XEROX / TEKTRONIX

8R7381	Black	42.53
8R7380	Color	41.14
8R7382	Color, high yield	47.71
016-1756-00		96.48

Too much to list! See website or call.

OKIDATA

52107201		24.14
56116801		177.13

1-800-INKFARM
inkfarm.com
the ink & toner supersite.™

The Heart of a Powerful Wireless Network

ZoomAIR™
WIRELESS



\$199
after \$30 Rebate

IG-4165

Internet Gateway/Router

Use the ZoomAir Gateway/Router with 802.11b standard networking cards to share cable, DSL, ISDN, or dial-up Internet connections. Fast 11 Mbps connectivity. Superior firewall protection, including SPI, NAT, VPN passthrough, and MAC address filtering. Easy setup and management is light years ahead of the competition. Includes two wired Ethernet ports, and a printer sharing port.



\$79.99



\$129.99

Micro Warehouse
800-955-1488
Ask for #VW85884

PC Connection
888-800-0510
Ask for #249420

CDW Computing Solutions
Built for Business™
800-239-6789
Ask for CDW #328544

Plug it in tomorrow.

SONY VPL-CS4

SVGA (800 x 600), 1000 lumens, 5.3 lbs.
Call for Today's **\$1899.99**
Lowest Price ...



TOSHIBA TLP-250

SVGA (800 x 600), 1000 lumens, short-throw lens, 8.1 lbs.
Today's Lowest **\$2095.00**
Discount Price ..



InFocus LP130

XGA (1024 x 768), 1100 lumens, 3 lbs.
Call for Today's **\$3599.99**
Lowest Price ...
Plus \$200 rebate from InFocus



ProjectorPeople.com
Call 888-228-9865
M-F 8-8 EST. or order online at
www.projectorpeople.com



Real People
Real Fast
Real Smart
Real Cheap

Bar Code Headquarters

MARKETPLACE

Shop Here! Productivity

Portable Batch Readers



- Scan or key data to 512K memory
- Battery operated (3 AAs)
- Upload collected data to host computer - serial, USB, or keyboard
- Built-in USB port for PC and Mac
- 2 built-in inventory programs
- Patented voice prompts - easy to record with supplied microphone
- Battery recharging circuitry built-in
- Free Windows utility for data upload, program transfers, and tables
- UPC/EAN, 128, 39, I 2of5, 93, etc...
- Able to interface with almost any PC or Mac software via keyboard/USB
- Easy to create custom programs with custom displays and voice messages
- Complete with wand - **\$759**
- Complete with built-in Laser - **\$1299**

NEW!
512K, built-in
USB, and
smaller laser!

Keyboard Wedge Readers

- Attaches as second keyboard, no software needed
- For Windows, DOS or Mac
- Code 39, UPC/EAN, 128, 2 of 5, Code 93, Codabar, etc.
- Wand, Laser, CCD, Slot Badge, Magstripe
- Complete with wand - **\$284**
- Integrated Laser model - **\$599**



Labeling Software

- Design and print any format, any size label
- Supplied formats include Sears, Kmart, Penney's, WalMart, EIA, AIAG, etc.
- Code 128, UPC/EAN, 2 of 5, Codabar, Code 39, PDF417
- Lines, boxes, rotations, color, BMP, etc.
- Simple custom operator interface and label database
- Prints to LaserJet, DeskJet, and Dot-Matrix
- LabelRIGHT for Windows 95/98/NT/ME/2000 - **\$295**

LabelRIGHT DEMO available on website

Polyester Laser Label Stock

- Won't smudge, tear, or smear like paper labels
- Water-resistant, weather-resistant, labels and adhesive
- Use for shelf labels, bin labels, file folders, or outdoor labels
- Designed specifically for laser printers - **free samples available!**
- **Worth Poly™** available exclusively from Worth Data

RF On-line Terminals

- Scan and key data on-line remote from computer
- Computer sends display and triggers voice messages on Terminal
- All programming on host (VB, C, Access, etc.)
- 1,000 ft. range (500,000 sq. ft.)
- Bar code input by Wand, Laser or CCD
- Base Station - **\$845** (up to 16 Terminals)
- Complete Terminal with Wand - **\$1215**
- With integrated Laser scanner - **\$1790**



RF Scanners

- Cordless on-line scanning
- Transmits up to 100 feet
- **New!** Linear Imager CCD's - 2-Way & 1-Way
- No license necessary
- Base attaches as a second keyboard
- Serial attachment also available
- Up to 8 RF CCD's/Lasers per 2-Way Base
- Complete 1-way CCD - **\$899**
- 2-way CCD with Base - **\$1199**



USB Wedge Saver™

The Wedge Saver USB Adapter converts almost any legacy keyboard wedge reader to a "plug and play" USB reader in minutes. Take advantage of the USB interface on new computers without having to buy a new bar code reader!



- USB Wedge Saver™ - **\$49**

Bar Code Fonts for Windows

- Insert TrueType or Postscript bar codes
- Use with any Windows font-based program
- Prints Code 39, UPC/EAN, Code 128, PostNet, Codabar, I 2 of 5
- Hotkey desktop translation or DLL for programmers
- BarFont for Windows - **\$199**

Bar Code Printer with Software

- Citizen industrial Thermal Transfer printer for bar code labels
- Includes Windows label design software, cable, labels, and ribbon
- Up to 4 inch label width
- Prints up to 6" per second
- Complete Package - **\$1345**
- Lower priced model at \$585



CALL FOR FREE CATALOG AND BAR CODE PRIMER!

Call Us Toll Free 800-345-4220

Broadest Selection of PC Bar Code Products in the Industry

- Technically superior products direct from the manufacturer
- Toll free technical support
- 24-hour turnaround on repairs
- 30-day money back guarantee
- 17 years of dedicated service



Now you can buy online!

- go to www.barcodehq.com/w to
- download LabelRIGHT demo
- download full color catalog or primer
- get free label samples
- buy online! - see our special offers!

Super Savings for Students Teachers & Schools!
ACADEMIC DISCOUNTS
 FREE CATALOG AVAILABLE!

Fantastic Savings on all your Adobe® & Microsoft® needs.

ACID Pro 3	\$149	Dreamweaver 4	\$98	Painter 7	\$199
Acrobat 5	Call!	El Universe 4	\$449	Photoshop 6	Call!
Amorphium Pro	\$99	EyeCandy 4000	\$69	Poser 4	\$119
AutoCAD 2002	\$279	FileMaker Pro 5.5	\$149	Sound Forge 5	\$149
Bryce 5	\$79	Flash 5	\$98	Vectorworks 9	\$83
Director 8.5	\$329	LightWave 3D 7b	\$889	Wacom Graphire2	\$84
		Office XP	Call!	Web Design Studio	\$239

PC World readers: Use Priority Code **PCW35** to save 50% on ground shipping.

1-800-580-9237 FAX ID'S & POS TO 512-450-0263

ACADEMIC SUPERSTORE

www.AcademicSuperstore.com

Anywhere, Anytime, Always
 the leading edge of learning.

Earn your college degree in computer science or information systems through ACCIS' distance education programs.

- B.S. or M.S. degree
- No classes to attend
- Self-paced study
- DANTES Affiliated
- VA eligible

Free catalogue: 1-800-767-2427 or visit www.accis.edu



American College

of Computer & Information Sciences

ACCREDITED MEMBER DISTANCE EDUCATION TRAINING COUNCIL

Micro2000

The **ULTIMATE**
 A+ Certification
 Bundle

Micro 2000's A+ Certification Bundle contains the two most powerful tools you could have in your arsenal:

Micro 2000's all new A+ Certification Course - which contains extensive training guides, 3 hours of instructional video, and 7 hours of realistic simulations. Also included is Challenge Interactive, the interactive test simulator from Wave Technologies, which contains over 1100 sample test questions to make sure you're ready to pass and get your certificate.



Micro-Scope V.X - recognized by technicians everywhere. Micro-Scope is operating system independent and communicates directly with the PC's hardware with results far more accurate than DOS or Windows based diagnostics. This new version includes new testing for **LAN cards** and **Multi-processor systems**. The new version also includes a **PC Health screen** to monitor system temperature, fan speeds, and voltage. Includes excellent FREE phone support. Our technicians can walk you through any technical situation, whether you're in your office or on-site.

WWW.MICRO2000.COM

Call Today:
 1-800-864-8008

“Master Your Network Guaranteed.”

Get the knowledge and skills you need to maximize network performance...Guaranteed. Solving your network problems is really very simple. The only thing that can increase network efficiency, speed and performance is your own networking knowledge and skills. SmartCertify Direct's training courses give you the ability to end networking frustration and prepare for IT certification quickly and easily. Our courses combine the effectiveness and personalization of classroom training with the convenience and affordability of self-study training for an interactive online study solution guaranteed to get you IT certified. In addition, our courses are developed in partnership with industry leaders like Microsoft®, Novell® and Cisco® to further ensure your success.



MCSE
 MCP
 Linux™
 Office 2000

Cisco®
 CNE™
 CIW™
 CNA

PC Repair
 A+® Certification
 Networking
 UNIX®

MCSD
 Visual C++®
 Visual Basic®
 Java™ 2

C++
 Webmaster
 Lotus®
 Oracle® and More!

Visit www.it-train.com and Register to Win a Dell PC!

End networking frustration today!

Call TOLL FREE **1-877-TRAINING** for a free course catalog!

TOLL FREE 1-877-872-4646



25400 US Hwy. 19N., #285, Clearwater, FL 33763 · 1-800-475-5831 · (727) 724-8904 · Fax (727) 726-0922
 Copyright © 2001 SmartForce, PLC. SmartCertify Direct, the SmartCertify Direct logo and SmartCertify's ClassWare are trademarks of SmartForce, PLC. All other trademarks are property of their respective owners.

SmartCertify Direct
 Preparing You for a Successful IT Career

PC

Custom **ULTRA 160 SCSI LVD** - **Ultra 100 IDE** - **Firewire 1394**

If you want Ultra SCSI Performance use our Quality Cables & Active Terminators. High Performance Solutions for Ultra100 IDE and FireWire Improves Performance.

MARKETPLACE

Shop Here! Systems • Peripherals

SCSI Ultra 160 RAID

SCSIVue™ SCSI RAID Enclosures

Ultra 160 SCSI - FireWire Towers
14 & 20 Bay



Temperature ALARM!
From: \$999

SCSIVue™ Ultra 160 SCSI Cases



From: \$99

OPTIONS:

- Ultra 160 LVD Cable Kit
- Dual Hot-Swap Redundant PS
- Hot-Swap SCSI Bays w/ Bracket
- 2-3 Fan Bay Coolers w/ Brk
- Temp Alarm System

• Ultra SCSI Custom Teflon Cable Available
• Custom Enclosures in 1 Day for RAID & Arrays

SCSIVue™ Rack Mount RAID

Our 8 Bay Rack Mount Enclosure includes a 300 watt power supply. These cases are commercial quality. Optional rails are also available.



\$399

Bay Cooler Kit keeps those HOT Ultra SCSI Drives COLD as ICE!

Dual Fan & Bracket \$29

HOT SWAP Pull Out Bays
Compatible with all 50 pin & 68 pin SCSI Buses up to Fast SCSI 2. From: \$79

From: \$99

Active Digital SCSI Repeater

- Models for all SCSI types
- PS included • Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

SCSIVue™ Gold Diagnostic Cables

Benefits:

- No Loss Of Important Data
- Faster Performance
- Test Cable Integrity

Features:

- Diagnostic Indicators • Large Ferrite Filters
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Extra Heavy 26 Gauge Wire • 100 Styles in Stock

From: \$39

Gold VHD Ultra 160 SCSI Cable

From: \$109

Features:

- New .8mm Ultra 160 LVD SCSI Connector
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Diagnostic Indicators • Large Ferrite Filters

LVD-TPO Teflon Internal Cables

Benefits:

- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:

- Perfect 90 or 132 Ohm Impedance • Custom in 1 Day
- Triple Protection Connector • Gold contacts Silver Wire

From: \$39

50 Pin Replacement Cable for External Drive Cases.

From: \$29

Color Catalog at... www.scsiopro.com

FireWire RAID IDE Ultra 100 RAID

Speed Breakthru... 40 MB/s!!!

FireVue™ FireWire RAID systems

offer up to 480 gigabytes of storage. Using the second generation of FireWire. We are now able to get a true 40MB/s data transfer rate; 3 Times faster than the competition!

480 Gigabyte \$3995

8 Hot-Swap Bays Kit

8 - Bay Tower holds 480 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

240 Gigabyte \$1995

4 Hot-Swap Bays Kit

4 - Bay Tower holds 240 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

120 Gigabyte \$995

2 Hot-Swap Bays Kit

2 - Bay Tower holds 120 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.



Blue Neon glow strip in every bay shows that drive is powered properly. Our Hot-Swappable RAID Systems offer quick and easy bay interchangeability and complete fault tolerance. Each Hot-Swap Bay includes 2 fans and our exclusive Blue Neon Light. Systems can be Easily Transportable custom configured to your specific needs. Our RAID Systems use standard IDE ATA100 Drives offering low cost and high reliability. Each system uses Maxtor DiamondMax 60 Gigabyte 7200rpm drives with three year warranties.

240 Gigabyte \$1895

4 Hot-Swap Bays

480 Gigabyte \$3695

8 Hot-Swap Bays

FireVue™ FireWire 1394 Adapters

These FireWire 1394 Gender Changer and Cable Extenders allow you to use your current cables to extend or change your connector ends. Combined with the added versatility that these devices offer is the ability to also monitor 1394 power. Exclusive LED circuit tells that power is being supplied to the 1394 bus.

4-4 Pin - Connects 2 Cables \$19.95

6-6 Pin - Connects 2 Cables \$19.95

4-6 Pin - Converts 6p Cable \$19.95

6-4 Pin - Converts 4p Cable \$19.95

FireVue™ Gold FireWire 1394 Cables

Diagnostic LED monitors power on the FireWire cable. Gold Connectors, Ferrite Beads, and perfect cable characteristics. Lengths up to 32', both 4 and 6 pins.

From: \$29

Our 32' 6 pin to 6 pin Cable is a Granite exclusive. These cables go longer because they are made better! 2 x Specification.

FireVue™ FireWire 1394 6 Port HUB

These FireWire 1394 HUB / Repeater allow you to connect up to 6 devices. They can also be wired together to offer unlimited capabilities. Power Supply guarantees proper operation of many devices at the same time and rejuvenates the lines.

Power Source Included \$99

FireVue™ FireWire 6" Patch Cables

LED shows that power is being supplied \$19.95

6" Patch Cable connects External Cases or Internal Drives in RAID Cases. Large Ferrite Bead protect cable from static and noise interference.

FireVue™ FireWire 1394 to Cardbus

The perfect solution for any PCMCIA Laptop or Portable computer. This card is both Mac and PC compatible. Gives you two 1394 6-pin FireWire connectors. Supports up to 400MB speed. Optional Power Supply \$99

FireVue™ FireWire Case Kits

Simply add your IDE drive to our case and you have an instant FireWire Drive. Two models, 3.5" and 5.25" Supports Hard Drives, CD-Roms, tape, and a variety of other devices. \$159

FireVue™ FireWire 1394 to PCI Host

Gives you four 1394 6-pin FireWire connectors. IEEE Standard compliant with auxiliary power connector on card. Supports up to 400MB speed. Works with Mac OS 8.6 or newer, just plug it in. Also supports Windows 98SE, 2000, and 2000 Server. \$99

FireVue™ FireWire Hot-Swap Bay

The Hot-Swap FireWire Bays fit all standard 5 1/4" openings. Can be used in any standard enclosure computer opening. Comes with Neon glow bar indicator, Ultra fast 40 MB/s second generation speed, and two cooling fans. \$159

FREE Technical Support!!!

Available to everyone, customer or not. We will fix your storage problems...call us. FREE... Color Catalog also available Call 510-471-6442 or SEE www.scsiopro.com

SCSIVue™ Active Terminator

From: \$29

Optional Remote Display

Nine models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits:

- Improves SCSI Bus Performance
- Less Errors, More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:

- Active Regulation • Fast 50 & Fast Wide 68
- Status Indicators • Gold Contacts

Gold Diagnostic Adapters

Both 50 pin and 68 pin (all combinations) From: \$39

Gender Changer

Drive Bus Changer (run 68 pin on 50 pin bus)

• 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)

• 80 Pin SCA Drive to 68 Pin (converts SCA to 68 SE or LVD)

\$49 Hot Swap Terminator

Now you can safely remove any SCSI device from a SCSI chain by simply clicking a switch. Optional Power Supply provides term. power.

SCSI Cable Tester - LED Readout

Three models to choose:

- 50 IDC From: \$29
- 50 Cen
- 68 MD

Hot-Swap Case Kit

Additional BAYS \$29.95



FireVue™ FireWire Hot-Swaps

Hot-Swap Case Kits offer versatility and low cost transportable data storage. You simply buy the kit and as many extra bays to hold all the storage you need. Perfect for video production jobs, just dedicate a drive and bay for every job. With the low cost of IDE storage this system is one of the most cost effective "on-line" storage systems available.

IDEVue™ IDE RAID Systems

120 Gigabyte 2 Hot-Swap Bays

Kit Includes:

- Hot-Swap Case, 2 Bays, with 65 watt power supply.
- Two Hot-Swap Bays with fans
- Two 36" Teflon Cables
- Two Maxtor 60 Gigabyte 5400 rpm ATA 100 IDE Drives
- One 2 Port Escalade™ PCI RAID Controller.

\$955 Kit

240 Gigabyte 4 Hot-Swap Bays \$1895

480 Gigabyte 8 Hot-Swap Bays \$3695

IDEVue™ ATA 100 RAID PCI Host

Speeds up to 100MB/s! 1/2 of a Terabyte with today's new larger capacity drives. Cost effective and fast. Linux, Win 98, ME, NT.

Offered in three packages, 2 Drive, 4 Drive, and 8 Drive models, it is now easy to configure a RAID System that fits your needs. Using the exclusive TwinStar™ and DiskSwitch™ technologies, Escalade supports RAID 0, RAID 1, and RAID 10.

It also allows for both HOT-SWAP and HOT SPARE support. These exclusive technologies create an environment that provides both data security and blistering fast speeds.

2 Port Model \$145

4 Port Model \$245

8 Port Model \$445

IDEVue™ ATA 100 TPO Cables

Ultra 66/100 TPO Cables use 80 conductor cable and special 40 pin connectors. The best you can buy for internal or external use. From: \$29.95

IDEVue™ ATA 100 Teflon Cables

Ultra 66/100 Teflon Cables use 80 conductor cable and special 40 pin connectors. These are designed for RAID applications or where additional shielding and protection is required. From: \$29.95

IDEVue™ ATA 100 Hot Swap Bay

The IDE Ultra100 Hot Swap Bay works with hard drives and removable drives. Includes cooling fan, key lock, and 96 pin high reliability interconnection. LED indicators for Power and HDD Activity. From: \$39.95

ICEBox™ IDE Hot Swap Bay \$49

The Ultimate ATA 100 Hot Swap Bay, dual fan with ICE Cold Temp. Blue Neon fan indicators, key lock. For true Hot-Swap you must use a Host Adapter



SAME DAY SHIPPING
100% SATISFACTION GUARANTEE
Excellent Service Since 1997

Phone: (310) 305-3644

FAX: (310) 305-3645

e-mail: sales@buycheapsoftware.com

FREE Shipping or
Norton Anti-Virus 2002
with any purchase over \$200

MICROSOFT Mention this ad and get a free Anti-Virus 2002 w/ any MS Office

Word XP 2002 CD/COA Full OEM Version	\$59
Office XP Pro Upgrade Retail Box	\$259
Office XP Pro Full Version Retail Box	\$429
Office XP Standard Upgrade Retail Box	\$217
Office XP Standard Full Version Retail Box	\$369
Office XP Small Bus. Full OEM Version, CD/COA	\$227
Office XP Professional Full OEM Ver., CD/COA	\$329
Office 2000 Pro Full OEM Version, CD/COA	\$349
Office 2000 Small Bus. Full OEM Ver., CD/COA	\$180
Office XP Developer Ed. Full Retail Box	\$509
Office Pro 95 Full OEM, CD/COA/Manual	\$99
Office Pro 4.3 Full OEM, CD/COA/Manual	\$59
Word & Works 2000 CD/COA Full OEM Version	\$59
Word & Works 2001, w/Encarta 2001, Money 2001, Picture It! Pub 2001, Street & Trips 2001 Full OEM/CD/COA	\$64
Project 2000 SR-1 Full Retail Box	\$349
Visual Basic Pro+ 6.0 Full Ver. Retail Box	\$335
Visual C++ Pro 6.0 Full Ver. Retail Box	\$319
Visual Studio Pro+ 6.0 Full Ver. Retail Box	\$489
Visual Studio Enterprise+ 6.0 Full Retail Box	\$995

MICROSOFT WINDOWS XP

Windows XP Home Edition Full OEM	\$96
Windows XP Home Ed. Up-Grade Retail	\$99
Windows XP Pro Edition Full OEM	\$149
Windows XP Pro Edition Up-Grade Retail	\$189
Windows 2000 Pro SP2 Full OEM Version	\$145
Windows Millennium Full OEM Version	\$78
Windows Me Retail Box Upgrade from Win 95 or 98	\$96
Windows 98.2 CD/COA/Manual Full DSP Version	\$97
Windows 98.2 Upgrade Retail Box	\$101
Windows 98.2 Plus CD/COA/Manual Full DSP Ver.	\$125
Windows 95 OSR 2.5 w/CD-Manual-License DSP	\$65
Windows 95 OSR 2.1 w/CD-Manual-License DSP	\$33
Windows 3.11 w/CD-Manual-License DSP	\$55

No Credit Card Surcharge



Corporate POs & CODs WELCOME

WIN XP/2000 & BACKOFFICE 2000

Windows XP Pro Edition Full OEM	\$149
WINDOWS 2000 PRO SP2 Full OEM Version	\$145
NT Workstation 4.0 CD/Man Lic. Full DSP w/SP6A	\$79
WINDOWS 2000 Server Full OEM w/5-CAL	\$698
WINDOWS 2000 Server Full Retail Box w/5-CAL	\$795
WINDOWS 2000 Server Full Retail Box w/10-CAL	\$879
WINDOWS 2000 Server Full Retail Box w/25-CAL	\$1069
WINDOWS 2000 Adv. Server Full Ver. w/25-CAL	\$1369
WINDOWS 2000 Server 20-Client Access Lic. only	\$429
NT Server 4.0 CD Full DSP Version w/5-CAL	\$399
NT Server 4.0 CD Full Retail Version w/10-CAL	\$459
BackOffice Server 2000 Full Retail w/5-CAL	\$2149
BackOffice Server 2000 Retail Upgrade w/5-CAL	\$1399
BackOffice Server 4.5 w/5-CAL Full Retail Box	\$1429
BackOffice 2000 Small Bus. s-CAL Full OEM	\$1129
BackOffice 4.5 Small Bus. Serv. 5-CAL Full Ver	\$1049

SQL 2000 & Exchange 2000

SQL 2000 w/5-CAL Full Ver/Retail Box	\$1172
SQL 2000 w/10-CAL Full Ver/Retail Box	\$1499
SQL 2000 Standard One Processor, Full Retail	\$3499
SQL 2000 Enterprise Ed. Full w/25-CAL	\$3299
SQL 2000 Enterprise Ed. One Proc. Unlimited	\$5499
SQL 7.0 Standard w/5-CAL Full Retail Box	\$1249
Exchange 2000 w/5-CAL Full Retail Box	\$979
Exchange 2000 Ver. Upgrade w/5-CAL Retail Box	\$609
Exchange 2000 Enterprise Ed. w/25-CAL Upgrade	\$1449
Exchange 2000 Enterprise Ed. w/25-CAL Full Retail	\$1849
Exchange 5.5 w/25-CAL Full Retail Box	\$1299
Exchange Conference Server 2000 Retail	\$1099
SharePoint Server 2001 w/25 CAL	\$3999
ISA Standard Server 2000 One Processor	\$1439
ISA Enterprise Server 2000 One Processor	\$3499
Commerce Server 2000 One Processor	\$6999
Host Integration Server 2000 One Processor	\$1899

ADOBE

Acrobat 5.0 CD Full Retail Version	\$218
Photoshop 6.0 Full Retail Version	\$569
Photoshop 6.0 Upgrade Retail Version	\$147
Pagemaker 7.0 Full Retail Version	\$375
Illustrator 10.0 Full Retail Version	\$269
InDesign 2.0 Full Retail Version	\$499
Go Live 5.0 Full Retail Version	\$299

COREL WordPerfect/Draw

All Corel software includes OEM hardware	
Wordperfect Office 2002 Pro Full OEM CD only	\$54
Wordperfect Office 2002 Pro Full OEM CD-Manual	\$83
Wordperfect Office Std. 2000 Full OEM CD only	\$39
Wordperfect Office 8.0 CD-Manual, Full OEM Ver	\$29
CorelDraw 10.0 Graphics Suite Full Retail Version	\$425
CorelDraw 9.0 Office Full Version Retail Box	\$109
CorelDraw 9.0 Graphics Suite Program CD only OEM	\$45

Lotus

Lotus Millennium 9.6 Retail Upgrade Version	\$155
Lotus Millennium 9.5 CD-Manual Full OEM Version	\$49
Lotus Millennium 9.0 CD Full OEM Version	\$32

INTUIT/QUICKBOOKS

Quicken Suite 2001 Full Retail CD	\$32
Quicken Suite 2002 Full Retail CD	\$45
QuickBooks Basic 2002 Full Retail Version	\$159
QuickBooks Pro 2002 Full Retail Version	\$239
QuickBooks Pro 2002 (S-User) Full Retail Version	\$699
QuickBooks 2001 Standard CD & Manual, Full Version	\$103
QuickBooks Pro 2001 (S-User) Full Retail Box	\$378

VISIO/MICROSOFT

Visio Professional 2002 Full Retail Box	\$445
Visio Tech/Standard 2000 Full Version, Retail Box	\$265
Visio Professional 2000 Full Version, Retail Box	\$249
Visio Enterprise 2000 Full Version, Retail Box	\$399

Softman Products

12654 W. Washington Blvd., Los Angeles, CA 90066

SYSTEM INTEGRATORS & RESELLER INQUIRIES WELCOME
PACIFIC TIME MONDAY - FRIDAY 7AM-7PM; SAT. - 8AM-4PM

Prices subject to change without notice.
All trademarks are property of their respective owners.
Call for pricing on products not listed.

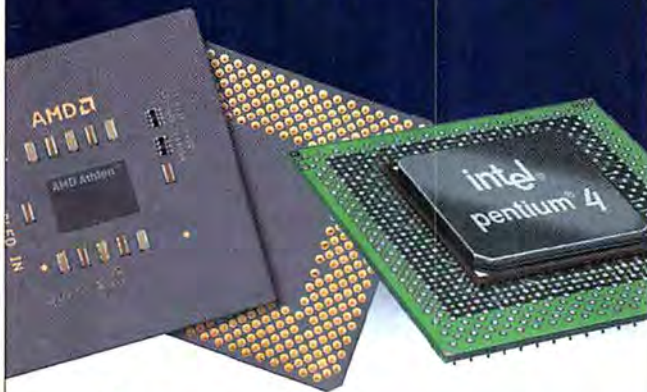
Upgrading?

The Hottest Computer Products.

The Lowest Prices.

UpgradeSource.com

The Computer Hardware You Want.



www.upgradesource.com

(800) 961-5889

@atdiscount.com
The Online Discount Network

www.AtDiscount.com

Mention Promo #PC102 get a 10 pack of DiscSavers FREE

FREE

FREE \$5 value with ANY purchase

- CD-R Media As-Low-As **\$2.39** ea
- CD-R Printers As-Low-As **\$1099**
- InkJet Cartridges As-Low-As **\$1.99** ea
- CD Stomper Label Refills As-Low-As **\$9.99**
- Auto-Load DVD Duplicators **\$3100**
- NEW Click'N Design 3D Software **\$19.99**

DVD-R 4.7GB Media \$4.49 each
For Pioneer DVR-A03 Drive As-Low-As

HOT ITEM!
Orbit II
IN-STOCK

KARAOKE Duplicators

As-Low-As **\$495**

MICROBOARDS Technology, Llc.

888-426-2914
949-955-3595

17961-A Cowan Ave., Irvine CA 92614
Fax: 949-955-3599

Call for current pricing. Prices subject to change.

AutoTracer Standalone

- Standalone automated robotic system (No PC required)
- One button operation
- 100 disc capacity
- Continuous reload capability



The World Is Spinning



www.condre.com

CD Tracer 724

- High volume, maximum throughput production system with (7) 24X recorders, 100 discs + per hour
- Low cost system with user friendly interface

CD Tracer 424

- (4) writer tower configuration with 24X speed
- Sleek footprint for desktop applications
- Best price / performance system available

ONLY \$649

CD Tracer 124

- Lowest cost one to one CD duplication
- Easy one button operation
- 24X speed for fast throughput

ONLY \$1,895

CD DUPLICATION
TOLL FREE 1-866-500-3472

7887 Fuller Road, Eden Prairie, MN 55344



Current Software.

BIG
CLEARANCE.COM

Clearance Prices.

Big Deal
Windows 2000 Pro
\$147

Buyers, Sellers & Dealers Welcome

Adobe Top Products

Illustrator	from \$145
PageMaker	from \$89
FrameMaker	from \$209
InDesign	from \$99
GoLive	from \$99
LiveMotion	from \$129
AfterEffects	from \$149
Premiere	from \$179

Borland Top Products

Borland C++	from \$269
Borland Delphi	from \$389
Borland JBuilder	from \$390

Corel Top Products

CorelDRAW	from \$59
-----------	-----------

WordPerfect Std	from \$44
WordPerfect Pro	from \$55

Intuit Top Products

Quicken Deluxe	from \$26
Quicken Suite	from \$32
Quickbooks Pro	from \$169
Quickbooks Pro 5 user	from \$279
Quickbooks Std	from \$99

Microsoft Office Products

Office XP	from \$199
Office 2000	from \$149
Office 97	from \$129
Word 2000	from \$49
Project 2000	from \$179

Microsoft Windows

Windows XP Home	from \$99
Windows XP Pro	from \$159
Windows 2000 Pro	from \$147
Windows NT 4.0	from \$69
Windows Me	from \$77
Windows 98.2	from \$99
Windows 95	from \$39

Microsoft Servers

Windows 2000 Server	from \$459
NT Server	from \$395
ISA Server	from \$1399
SQL Server	from \$1159
Commerce Server	from \$6499
BizTalk Server	from \$16999

BackOffice Server	from \$1499
BackOffice SBS	from \$849

Symantec

Norton AntiVirus	from \$15
Internet Security	from \$31
ACT	from \$39
PC Anywhere	from \$39
WinFax Pro	from \$35
SystemWorks Pro.	from \$24

McAfee

VirusScan	from \$12
Utilities Deluxe	from \$15
Office 2000	from \$12
Total Virus Defense	from \$285

Super Big Deal
ACT! 2000
\$39

And that's not all! Call now or visit our website for current pricing on our full-line of products.

FREE SHIPPING!
www.bigclearance.com 888-828-3636

INKJET REFILLS

Reduce printing costs up to 80%
Fill your existing cartridges!



Do-it-yourself kits include illustrated instructions, tools, and inks specific to each model to provide the highest quality

REFILL KITS AND CARTRIDGES AVAILABLE FOR

HEWLETT PACKARD, CANON, EPSON, LEXMARK, APPLE, XEROX, OKIDATA, BROTHER, COMPAQ, NEC, DIGITAL

www.inkjetkits.com
800-644-3475

Find it
fast.
Buy
it **now.**



PC WORLD
Marketplace

CHECKS!



Check Us Out...

- FAST turn-around, low-cost shipping
- Software compatibility guaranteed! Quicken® / Quickbooks® / MS Money® Peachtree® / Custom programs and many more!
- Your logo imprinted FREE

NEW catalog available with new product lines!

- 13 check colors available in many styles
- Business stationery, all kinds of envelopes
- Deposit slips, carbonless manual forms
- Software-ready laser invoices and statements

Now offering toner/inkjet cartridges

Call: 800.245.5775
Fax: 800.893.0177
Email: info@checksforless.com

www.checksforless.com

The Excellence in Printing Company
EiPrinting



Printing
Packaging
Assembly
Fulfillment
CD-R Duplication
Diskette Duplication
CD-ROM Replication

1-800-732-3475
www.floppycopy.com

 Floppy Copy

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:



1. Fastest, most successful data recovery service available.
2. Recommended and certified by all drive companies to maintain your warranty.
3. Advanced, proprietary recovery techniques.
4. Retrieve recovered data instantly with DATAEXPRESS™ over high speed secured Internet lines.
5. 24-hour, onsite, and weekend services.
6. Featured on CNN, BBC, Forbes; also in Popular Mechanics, InfoWorld, PCWorld, and many others.
7. Federal and State Contracts.

“We Can Save It!”


Visit DriveSavers at www.drivesavers.com

©2001 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 INTL 415-382-2000

DRIVESAVERS
DATA RECOVERY
Since 1985

PC WORLD Classified

SERVICES/SUPPLIES



Data Recovery Technologies Inc.

WHEN I.T. HAPPENS
EMERGENCY
DATA RECOVERY

1.800.551.3917
www.cbltech.com

200 Business Park Drive, Armonk, NY

PRODUCTIVITY

POINT OF SALE!

Before You Buy or Sell
Another Point Of Sale Package,
Take A Serious Look At



The POS Software You Can Depend On!

- Point of Sale
- Accounts Payable
- Inventory Control
- General Ledger
- Accounts Receivable
- Mailing List

Over the past 15 years, The General Store has replaced over 40 competitive packages. The General Store is a dependable, powerful, and flexible software solution that has been installed in retail stores around the world.

Call today for more information and a FREE DEMO, or visit our web site at www.thegeneralstore.com.

800-678-4535
Lakeland, FL 33801

HDB
CRICHLAW DATA SCIENCES, INC.

MEMORY/UPGRADES

WE CAN BEAT ANY QUOTED PRICE ON ANY MEMORY FROM ANYWHERE.

WE CAN PAY HIGHER THAN ANYONE FOR YOUR OLD MEMORY.

Lifetime Warranty on All Parts

1-800-4-MEMORY
www.18004memory.com

PCWORLD

PRESIDENT, CEO Jeff Edman
EXECUTIVE ASSISTANT Patricia Owen

ADVERTISING SALES

PUBLISHER
Bob Ostrow (508/370-0844)
ASSOCIATE PUBLISHER
Wayne Silverman
(201/587-7318)
SALES ASSOCIATE Lisa Iozzia

EAST

EASTERN ADVERTISING DIRECTOR
New York City

Thalia M. Karakitsios
(646/215-9395)

*Mid-Atlantic/New York State/
New Jersey/Southeast*

Judy Sutter, Senior Account
Manager (404/845-2884)

SALES ASSOCIATE
Charyle Gandee

Midwest/Ohio/Michigan

Kathy McKay, Senior Account
Manager (847/759-2723)

SALES ASSOCIATE
Tammy O'Sullivan

*New England/Long Island/
Eastern Canada*

Nancy Percival, Account
Manager (508/370-0846)

SALES ASSOCIATE
Angela Beaudoin

Jason Bishop, Sales Development
Manager (508/370-0877)

WEST

WESTERN ADVERTISING DIRECTOR
Orange County/San Diego

Susan Green (949/442-4021)

SALES ASSOCIATE Sheila Morales
*South Bay/Fremont, CA/Mid-S.F.
Peninsula/Oregon*

Alicia Langer, Account Manager
(415/267-4578)

*San Francisco Bay Area/
Los Angeles/Pacific Northwest/
Western Canada*

Rob Wright, Account Manager
(415/978-3266)

SALES ASSOCIATE
Vanessa Grenfell

Duane Hampson, Senior Sales
Development Manager
(415/978-3133)

Texas/Southwest

Harvey Diamond, Senior
Account Manager
(972/398-2608)

SALES ASSOCIATE Janine Copey

CUSTOM PUBLISHING/EVENTS

**ASSOCIATE PUBLISHER, MARKET
DEVELOPMENT** Michael Carroll
(508/370-0842)

SALES ASSOCIATE Kim Carvalho

CONSUMER ADVERTISING SALES

Northeast

Edman & Company
(212/551-1121)

Southeast

Judy Sutter, Senior Account
Manager (404/845-2884)

Detroit, MI

Joe McHugh & Associates
(248/273-1480)

Midwest

Kathy McKay, Senior Account
Manager (847/759-2723)

Texas/Southwest

Harvey Diamond, Senior
Account Manager
(972/398-2608)

West

Hutch Looney & Associates
(323/931-3444 x222)

**PC WORLD MARKETPLACE/
PC WORLD ACTION CARDS**
Neal Mandel (212/655-5157)

PC WORLD REPRINTS

Mike Shober
(717/399-1900 x129)

PCWORLD.COM AD SALES

ASSOCIATE PUBLISHER
Michael Carroll (508/370-0842)

CLIENT SERVICES MANAGER

Michael Dwornik
(415/975-2674)

Northwest

Melissa Gruber, Regional
Manager (415/974-7373)

Southwest

Cindy Crow, Account Manager
(949/442-4005)

East

Sean Murphy, Account Manager
(212/399-3155)

MARKETING & RESEARCH

**DIRECTOR OF MARKETING AND
RESEARCH** Sandy Wong

MARKETING

PR MANAGER Amy Dalton

PRESENTATION SPECIALIST
Jenean East

MARKETING SPECIALIST
Karen Grayson

RESEARCH

RESEARCH MANAGER
Gerry Davidson

SENIOR RESEARCH ANALYST
Lisa Huck

RESEARCH ANALYST
Alison Fennings Wetherall

CONSUMER MARKETING

**VICE PRESIDENT, CONSUMER
MARKETING** Shawne Burke Pecar

ASSOCIATE CIRCULATION DIRECTOR
David Cobb

DIRECTOR, SINGLE COPY SALES
Cheryl Stephenson

**SENIOR MANAGER, RETENTION
MARKETING** Lisa Radler

**SUBSCRIPTION MARKETING
MANAGER** Linda Trinh

DIRECT MAIL MARKETING MANAGER
Simon Thaler

**ASSISTANT MANAGER, RETENTION
MARKETING** Patrick McConnell

CUSTOMER SERVICE SUPERVISOR
Tina Phelps Jimenez

**MEMBER ACQUISITION MARKETING
MANAGER, PCWORLD.COM**
Rafael Sosa

PRODUCTION

**DIRECTOR, PRINT AND ONLINE
PRODUCTION** Nancy Jonathans

TECHNOLOGY PRODUCTION MANAGER
Victoria Klum

ASSISTANT PRODUCTION MANAGER
Lisa S. Mireles

ADVERTISING TRAFFIC MANAGER
Yvette B. Joplin

AD TRAFFIC COORDINATOR
Rob Octavio

PCWORLD.COM STAFF

GENERAL MANAGER
Ulla McGee

MARKETING PROJECTS MANAGER
R. Bruce McCurdy

CUSTOMER SERVICE SPECIALIST
Michael E. England

DIRECTOR, SOFTWARE ENGINEERING
Newton Bailey

LEAD SOFTWARE ENGINEER
Jim Hutson

SENIOR APPLICATIONS DEVELOPERS
Arturo Flores, Blossom Woo,
Kayan Wong

**TECHNOLOGY TRANSFER PROGRAM
MANAGER** Wei Ming Xu

**EDITORIAL APPLICATIONS
DEVELOPMENT MANAGER**
Matthew Newton

ADMINISTRATION

HUMAN RESOURCES AND TECHNOLOGY

SENIOR VICE PRESIDENT
Richard Willoughby

DIRECTOR Katherine Coldwell
HR REPRESENTATIVE Julie McKie

**DIRECTOR TECHNOLOGY &
INFRASTRUCTURE** Mary Zones

DIRECTOR, INFORMATION SYSTEMS
Norman Noble

SENIOR NETWORK ANALYST
Walter Clegg

CLIENT SERVICES MANAGER
Mariaelena Robles Quale

NETWORK MANAGER
Rodney Barnes

IT DEVELOPER/ANALYST
Stan Erhart

INFORMATION SYSTEMS SPECIALISTS
Eileen Quan, Gabe Ramos

SYSTEMS ADMINISTRATOR
Tom Cowan

FINANCE

SENIOR VP, COO/CFD Vicki Peilen

DIRECTOR, FINANCE
Diane Ryczek-Rae

DIRECTOR, ACCOUNTING
Michelle Reyes

BUSINESS MANAGER Thomas Pena

ACCOUNTING ADMINISTRATION
Judith Bratton, Jason Villeneuve

**DIRECTOR, ADVERTISING ACCOUNT
SERVICES** Kevin Greene

**MANAGER, FINANCIAL ADVERTISING
SERVICES** Diane Hacker

PC World is a business unit of International Data Group (IDG). Headquartered in Boston, IDG informs more people worldwide about information technology than any other company in the world. With annual revenues of \$2.35 billion, IDG is the leading global provider of IT media, research, conferences, and expositions. IDG publishes more than 290 computer newspapers and magazines and 700 book titles in 75 countries, led by the *Computerworld/InfoWorld*, *Macworld*, *Network World*, *PC World*, *Channel World*, and *For Dummies* global product lines. IDG offers online users the largest network of technology-specific sites around the world through IDG.net (www.idg.net), which comprises more than 225 targeted Web sites in 55 countries. IDG is also a leading producer of 168 computer-related expositions in 35 countries, and research arm International Data Corporation (IDC) provides computer industry research and analysis through 49 offices in 41 countries worldwide. Company information is available at www.idg.com.

THE COMPANY: IDG is the world's leading IT media, research and exposition company. Founded in 1964, IDG had 1998 revenues of \$2.35 billion and has more than 9,000 employees worldwide. IDG offers the widest range of media options which reach 90 million IT buyers in 75 countries representing 95% of worldwide IT spending. IDG's diverse product and services portfolio spans six key areas including: print publishing, online publishing, expositions and conferences, market research, education and training, and global marketing services.

PUBLICATIONS: More than 90 million people read one or more of IDG's 290 magazines and newspapers in 75 countries each month. IDG's five global publication product lines—*Computerworld/InfoWorld*, *Macworld*, *Network World*, *PC World*, *CIO*, and *Channel World*—account for more than 175 of these titles, delivering a consistent class of buyers throughout the world.

BOOKS: In book publishing, IDG Books Worldwide has a diverse portfolio of technology, business, professional and how-to book brands, including the acclaimed *For Dummies* series, as well as computer-based learning tools. IDGB has a higher ratio of bestsellers to books published than any other technology publisher.

ONLINE: IDG offers online users the largest network of technology specific Web sites around the world through IDG.net (<http://www.idg.net>), which comprises more than 240 targeted Web sites in 55 countries. IDG.net provides a global gateway to the Web's richest content via highly targeted sites that reflect the dis-

ting information needs of each audience they serve. IDG Web sites are supported by the world's only global IT news organization: 2,000 journalists in 75 countries reporting the latest technology news and analysis in multiple languages around the world.

RESEARCH: International Data Corporation (IDC) is the world's leading provider of information technology data, analysis and consulting. With research centers in 42 countries and more than 500 research analysts worldwide, IDC is uniquely positioned to provide a global perspective on IT market and technology trends, serving more than 3,900 corporate and government agencies worldwide. IDC/LINK is the leading provider of worldwide market research in consumer computing, including personal computing, interactive entertainment, and online services.

EVENTS: IDG World Expo is a leading producer of more than 168 globally branded conferences and expositions in 35 countries. Industry leading international event series include E3Expo, Macworld Expo, ComNet, Windows World Expo and ICE (Internet Commerce Expo). Leading conferences include Agenda, DEMO, and Spotlight, in addition to customer-sponsored events such as the Netscape Developers Conference and new launch events such as LinuxWorld Conference and Expo. IDG produces 15 conferences and expositions in China alone, and was first to offer expos in emerging markets throughout Asia, Eastern Europe and Latin America.

EDUCATION: IDG's training subsidiary, ExecuTrain, is the world's largest computer training company, with more than 230 locations worldwide and 785 training courses. ExecuTrain specializes in the education of business professionals, teaching clients how to use popular business-related software through hands-on, instructor-led and multimedia training. ExecuTrain also offers technical training designed to help technology professionals keep pace with technological advancements, as well as custom training solutions for an organization's unique software requirements.

GLOBAL SOLUTIONS: IDG Global Solutions helps the industry's leading IT companies build international brand recognition by developing globally integrated marketing programs via IDG's print, online and exhibition products worldwide. IDG's diverse portfolio of global partnership services includes customized research, customized publishing, targeted conferences and seminars, and direct response tools. Further information about the company can be found at www.idg.com.

INDEX

WWW.PCWORLD.COM

Advertiser	URL	Page number	Advertiser	URL	Page number
ABS Computer Technologies, Inc	www.abspc.com	149	iiyama North America	www.iiyama.com	39
Alienware	alienware.com	71	Interland	www.interland.com	113
Anthro Corporation	www.anthro.com	35	Kingston Technology	www.kingston.com	123
APC	http://promo.apcc.com	65	McAfee.com	www.mcafee.com	69
Atlas Micro	www.atlasmicro.com	136	Micro Exchange Corporation	microexchange.com	161
Brother International	www.brother.com	9	Micron PC	www.micronpc.com	116
Buy.com	www.buy.com	115	Microsoft Corporation	www.microsoft.com	4-5
CDW Computer Centers, Inc.	www.cdw.com	C2 - 1	Microsolutions	www.micro-solutions.com	142
Compaq Consumer	www.athome.compaq.com	108-111	Minolta QMS	www.minolta-qms.com	57
Computer Gate International	www.computergate.com	162	NEC-Mitsubishi Electronics Display of America, Inc.	necmitsubishi.com	50-51
Creative Labs	www.creativelabs.com	36,67	NETGEAR	www.netgear.com	70
Crucial Technology	www.crucial.com	10-11,127	Netscape	www.netscape.com	79
CTX	www.ctxintl.com	16	NuTrend	www.nutrend.com	159
DATEK	www.datek.com	15	Office Depot	www.officedepot.com	25
Dell Computer Corp.	www.dell.com	52-53	Oracle	smallbusiness.oracle.com	42
Dell Computer Corp.	www.dell4me.com	95-97	PC America	www.pcamerica.com	125
Dell Computer Corp.	www.dell.com	C5-C8	PC Power & Cooling Systems	www.pcpowercooling.com	157
eBay	www.ebay.com	63	Pinnacle Systems	www.pinnaclesys.com	59
Executive Software	www.diskeeper.com	32	Polywell Computers	www.polywell.com	144
Fujitsu PC Corporation	www.fujitsupc.com	6	Roxio	www.roxio.com	101,155
Gateway	gateway.com	30-31	Samsung America	www.samsungmonitor.com	61
Gateway	gateway.com	40-41	Sony Electronics	www.sony.com/projectors	23
Hewlett Packard Printers	www.hp.com	2-3	Sony Electronics Inc.	www.sony.com/digitalimaging	77
Hewlett Packard	www.hpshopping.com	102	Sony Electronics Inc.	www.sony.com	44-45
Hitachi America	http://www.hitachi.com/lcd	46	Systemax	www.systemax.com	89
Hughes Network Systems	www.direcway.com	48,84,138	Tangent Computer	www.tangent.com	140
IBM Direct	ibm.com/smallbusiness7055	80-83	Thompson's Computer Warehouse	www.ttwo.com	151
iBUYPOWER.COM	iBUYPOWER.COM	121	Toshiba America	www.toshiba.com	12-13
IDC Directions 2002	www.idc.com/events/directions02/sanjose www.idc.com/events/directions02/boston	160	Viewsonic	www.ViewSonic.com	27
			Xerox Network Printers	www.xerox.com/officeprinting/zebra1853	29

Make E-Business Work

An Exclusive Membership Opportunity

Best Practices,
Knowledge Exchange,
Mentorship

More Than
50 Special Interest
Groups

Professional
Development
Opportunities

Conferences
and
Events

These are just a few of the important services offered by the E-Business Communication Association (EBCA), an organization developed to serve the needs of pioneering E-Business Communication Strategists—professionals that know how to make the best use of technology to meet e-commerce and business communication objectives. Learn how to put e-business strategies into practice. The EBCA is the world's most comprehensive organization of professionals who face the same challenge as you—making e-business work.

For more information about
the EBCA, visit us today at:

www.ebusinessca.com



E-BUSINESS COMMUNICATION ASSOCIATION



Tech Companies to You: 'Hello, Sucker!'

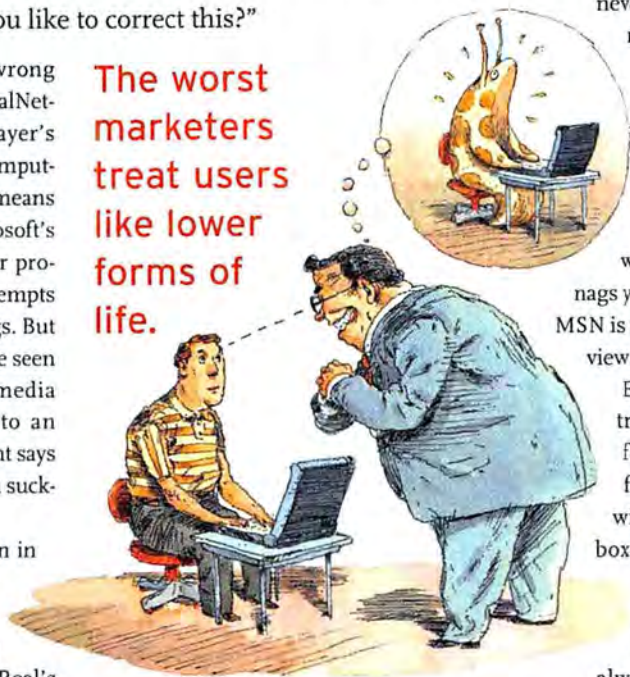
IF ANYBODY KEEPS A TECH-COMPANY brazenness index, it has to be heading straight off the charts. Take this little gem among recent dialog boxes: "RealPlayer is not the default player for one or more supported media types. Would you like to correct this?"

"Correct" it? There's nothing wrong here unless you happen to be a RealNetworks shareholder. True, RealPlayer's shameless effort to become your computer's default media player is by no means unique. Apple's QuickTime, Microsoft's Windows Media Player, and other programs try to do it too, and their attempts can cause havoc with system settings. But RealNetworks is the only vendor I've seen that implies your PC's current media associations somehow amount to an error. And that misleading statement says plenty about how Real sees you: as a sucker who doesn't know better.

I run across this attitude so often in the Web world that I constantly keep my guard up, but Real is a real doozy. At this writing, clicking on the "Check it out!" button on Real's home page takes you to a page where you can buy a copy of the new RealOne player—and speaking of brazenness, Real wants you to pay for a beta version. But from the evidence on the site, you'd never know that a free version existed. To find it, you have to click on links lower down on the page, spot a "free player" button in gray text on a gray background, and then avoid accepting a "free trial" offer that will eventually result in a credit card charge unless you phone the company to cancel. Once again, Real plays you for a sucker.

Nothing new there. Real has long used creative ways of hiding its attempts to put

The worst marketers treat users like lower forms of life.



you on as many of its mailing lists as possible. My favorite was the clever window that showed several boxes you could uncheck, but hid others unless you knew enough to scroll down to catch them, too.

TRICKSTERS OF THE TRADE

DOESN'T ALL THIS amount to a bad way to do business? Why would you ever buy anything from a company that treated you this way unless it had a monopoly? Luckily there's still competition left among media players—even if some of it comes from a monopolist called Microsoft.

Still, Real's attitude is hardly unique. Every spamster on the planet thinks that you're dumb enough to fall for a too-good-to-be-true offer from some clown you've never even heard of. Every Internet retailer who delays calculating the total cost of your order until you've surrendered your credit card number figures you'll have invested too much effort to back out. The in-your-face way Microsoft's Windows XP nags you to sign up for Passport and MSN is a symptom of the same worldview: The customer is a chump.

Ever-more-brazen online ads treat you like an even lower form of life. Lately I've been fighting pop-up and pop-under windows that don't have close boxes. The only way to remove them is to press **<Alt>-<F4>**—a trick most users won't know, and one that doesn't always work. It's getting to the point where you may have to reboot your PC just to get rid of an annoying ad.

Companies that heap contempt on their customers are not confined to the digital world. But it's especially repulsive when an outsider's message or software commandeers a machine that's supposed to be yours. Businesses that refuse to step lightly in our PCs may discover that treating customers like chumps makes for fewer customers, period. ■

Contributing Editor Stephen Manes, a cohort of the public television series Digital Duo, has written about PCs for nearly two decades.



Volume 20, number 3. *PC World* (ISSN 0737-8939) is published monthly at \$24.95 for one year (12 issues), \$49.90 for two years (24 issues), \$74.85 for three years (36 issues) by PC World Communications, Inc., 501 Second Street #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add \$12 per year for Canada; add \$30 per year for airmail for all other countries. Canadian GST Registration #R124669680. Periodicals Postage Paid at San Francisco, California, and at additional mailing offices. Canada Post International Publications Mail Product, (Canadian Distribution) Sales Agreement No. 663549. POSTMASTER: Send address changes to *PC World*, Subscription Dept., P.O. Box 37571, Boone, IA 50037-0571. Editorial and business offices: 501 Second St., #600, San Francisco, CA 94107, 415/243-0500. Copyright © 2002, PC World Communications, Inc. All rights reserved. The trademark *PC World* is owned by International Data Group and used under license by PC World Communications, Inc. *PC World Top 10*, *Top 10*, *PC World Top 100*, *Top 100*, and *Consumer Watch* are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

I'm a desktop trapped in a notebook's body.



Dell | Small Business

Inspiron™ 8100 Notebook

Pinnacle of Performance Notebook

- NEW Intel® Pentium® III Processor at 1.20GHz-M
- 15" Ultra XGA TFT Display
- 128MB PC133 SDRAM
- 20GB* Ultra ATA Hard Drive
- Fixed Internal 8X* Max Variable DVD-ROM
- 64MB DDR AGP 4X ATI* MOBILITY™ RADEON™ 7500
- 8-Cell Li-Ion Battery w/ExpressCharge™ Technology
- Internal Modem and 10/100 Ethernet Combo
- MS* Windows* XP Home Edition;
MS* Office XP Small Business
- 1-Yr Mail-In Service, 1-Yr Phone Tech Support

\$2029 QuickLoan **\$54**/mo., 48 mos.
E-VALUE Code:
01031-890220

Recommended upgrade:

- MS* Windows* XP Professional, add \$79



The NEW and incredibly powerful, 1.20GHz-M Dell Inspiron 8100. With my Intel® Pentium® III-M processor, I'm everything you'd expect from a desktop except the desk. And you'll quickly find I'm a lot easier to take on the road. My 15" display and 64MB graphics card bring multimedia images to brilliant life at amazing speed. I can burn a CD and run a DVD all at the same time on battery power alone. And because I'm a Dell, you get to work directly with the company that allows you to customize me to fit your needs. I may not look like a desktop, but I do have the power of one. So don't judge a notebook by its cover.

Computer Shopper Editor's Pick

Inspiron 8100 Notebook

– October 2001



Exceptionally powerful notebooks. Easy as **DELL™**

Visit www.dell.com/pcworld or call toll free 1-800-247-2095.



Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

Work or play,
We've got you covered.



Dell | Small Business Desktops

SmartStep™ 100D Desktop

NEW Economical Desktop Solution

- This Product is Available for Purchase Online Only
- Intel® Celeron™ Processor at 1.0GHz
- 128MB shared™ SDRAM
- 20GB Value Hard Drive
- 15" (13.8" v.i.s.) E551 Monitor
- Integrated Intel® 3D™ AGP Graphics
- 48X Max CD-ROM
- Integrated Audio; PC Speakers
- 10/100 PCI Fast Ethernet Network Card
- MS® Windows® 98; MS® Works 6.0
- 1-Yr Mail-In Service

\$599 QuickLoan: **\$16/mo.**, 48 mos.
E-VALUE Code:
01032-590205a

Recommended upgrade:

- APC ProBT2 Surge Protector, add \$39

Dimension™ 4300S Desktop

NEW Essential Desktop Solution

- Intel® Pentium® 4 Processor at 1.60GHz
- 128MB SDRAM
- 20GB Value Hard Drive
- 15" (13.8" v.i.s.) E551 Monitor
- 16MB ATI® Rage™ Graphics
- 48X Max CD-ROM
- Integrated Audio
- MS® Windows® XP Home Edition; MS® Works Suite
- 1-Yr Next Business Day On-Site Service*

\$699 QuickLoan: **\$19/mo.**, 48 mos.
E-VALUE Code:
01032-590206

Recommended upgrades:

- 3-Yr Next Business Day On-Site Service, add \$119
- MS® Windows® XP Professional, add \$99

OptiPlex™ GX240 Desktop

NEW Network-Optimized Managed PC

- Intel® Pentium® 4 Processor at 1.70GHz
- 256MB PC133 SDRAM
- 20GB (7200 RPM) Hard Drive
- 15" (13.8" v.i.s.) E551 Monitor
- 16MB ATI® Rage™ Ultra Graphics Card
- 48X Max CD-ROM
- MS® Windows® XP Professional
- OptiFrame™ Small Desktop Tool-less Chassis
- Integrated AC97 Audio
- 3-Yr Next Business Day On-Site Service

\$999 QuickLoan: **\$27/mo.**, 48 mos.
E-VALUE Code:
01032-390209a

Recommended upgrades:

- 16X Max Variable DVD-ROM Drive, add \$60
- 3-Yr Same-Day 4-Hour (5x10) On-Site Service,** add \$99



Dell | Small Business Notebooks

Inspiron™ 2500 Notebook

Practical and Affordable Notebook

- Intel® Pentium® III Processor at 900MHz
- 12.1" XGA TFT Display
- 128MB shared™ PC100 SDRAM
- 20GB Ultra ATA Hard Drive
- Fixed Internal 24X Max Variable CD-ROM
- Intel® Integrated 3D™ AGP Video
- Internal Mini-PCI 56K Capable Modem
- MS® Windows® XP Home Edition; MS® Works Suite 2002
- 1-Yr Mail-In Service; 1-Yr Phone Tech Support

\$949 QuickLoan: **\$27/mo.**, 48 mos.
E-VALUE Code:
01032-890209

Recommended upgrades:

- 1-Yr CompleteCare™ Service,** add \$99
- MS® Windows® XP Professional, add \$79

Inspiron™ 8100 Notebook

Pinnacle of Performance Notebook

- NEW Intel® Pentium® III Processor at 1.20GHz-M
- 15" Ultra XGA TFT Display
- 128MB PC133 SDRAM
- 20GB Ultra ATA Hard Drive
- Fixed Internal 8X™ Max Variable DVD-ROM
- 64MB DDR AGP 4X ATI® MOBILITY™ RADEON™ 7500
- 8-Cell Li-Ion Battery w/ExpressCharge™ Technology
- Internal Modem and 10/100 Ethernet Combo
- MS® Windows® XP Home Edition; MS® Office XP Small Business
- 1-Yr Mail-In Service; 1-Yr Phone Tech Support

\$2029 QuickLoan: **\$54/mo.**, 48 mos.
E-VALUE Code:
01032-890220

Recommended upgrade:

- MS® Windows® XP Professional, add \$79

Latitude™ C500 Notebook

Wireless-Ready Value Notebook

- Intel® Celeron™ Processor at 900MHz
- 12.1" SVGA Active Matrix Display
- 128MB PC100 SDRAM
- 10GB Ultra ATA Hard Drive
- 8MB ATI® Mobility™ 128 Video; AGP 2X
- MS® Windows® XP Home
- Modular 24X Max CD-ROM/Floppy Drive
- Internal Mini-PCI 56K Capable SoftModem
- Internal Wireless-Ready Antenna
- 1-Yr Next Business Day On-Site Service

\$1199 QuickLoan: **\$32/mo.**, 48 mos.
E-VALUE Code:
01032-790211

Recommended upgrades:

- 14.1" XGA Active Matrix Display, add \$50
- 3-Yr Next Business Day On-Site Service,** add \$298



Dell | Servers and Workstations

PowerEdge™ 500SC Server

NEW Basic Server at Our Lowest Price

- Intel® Celeron™ Processor at 1.10GHz
- 128MB 133MHz ECC SDRAM
- 20GB (7200 RPM) IDE Hard Drive
- Embedded Intel® 10/100 NIC
- 48X Max IDE CD-ROM
- 1-Yr Next Business Day On-Site Service;
- 1-Yr Limited Parts Warranty; 1-Yr 24x7 Dedicated Server Phone Tech Support
- Sale Price Includes \$100 Discount (Limited Time Offer**)

\$499 QuickLoan: **\$13/mo.**, 48 mos.
E-VALUE Code:
01032-290204

Recommended upgrades:

- 2nd 20GB (7200 RPM) IDE Hard Drive, add \$89
- 3-Yr Next Business Day On-Site Service,** add \$149

PowerEdge™ 1400SC Server

Small Business Value Server

- Intel® Pentium® III Processor at 1.0GHz
- Dual Processor Capable
- 128MB 133MHz ECC SDRAM
- 18GB (10K RPM) Ultra3 SCSI Hard Drive
- Embedded Ultra3 SCSI Controller
- Embedded Intel® 10/100 NIC
- 1-Yr Next Business Day On-Site Service;
- 1-Yr Limited Parts Warranty; 1-Yr 24x7 Dedicated Server Phone Tech Support

\$799 QuickLoan: **\$21/mo.**, 48 mos.
E-VALUE Code:
01032-290207

Recommended upgrades:

- PowerConnect™ 2016 16-Port Switch, add \$149
- 3-Yr Next Business Day On-Site Service,** add \$239
- MS® Windows® 2000 Server, add \$799

Dell Precision™ 340 Workstation

NEW Affordable, Scalable Performance Workstation

- Intel® Pentium® 4 Processor at 1.70GHz
- 128MB PC800 ECC SDRAM
- 20GB (7200 RPM) IDE Hard Drive
- ATI® Rage™ 128 Ultra 32MB AGP 4X Graphics Card
- 48X Max CD-ROM Drive; Integrated Sound
- MS® Windows® XP Professional
- Lifetime 24x7 Dell™ Precision™ Dedicated Tech Support
- 3-Yr Next Business Day On-Site Service*
- NEW Small Desktop Chassis; Monitor Not Included

\$999 QuickLoan: **\$27/mo.**, 48 mos.
E-VALUE Code:
01032-490209

Recommended upgrades:

- Mini Tower Chassis, add \$99
- 3-Yr Same-Day 4-Hour (5x10) On-Site Service,** add \$120
- NVIDIA® Quadro2 EX 32MB AGP 4X Graphics, add \$99

Visit www.dell.com/pcworld or call toll free 1-800-247-2095.



Dell Home Desktops

Dimension™ 2100 Desktop

Affordable Desktop Solution

- Intel® Celeron® Processor at 1.10GHz
- 128MB shared SDRAM at 100MHz
- 40GB Value Hard Drive
- 17" (15.9" v.i.s., 27dp) E771 Monitor
- Integrated Intel® 3D™ AGP Graphics
- 48X Max CD-ROM Drive
- SB Live! 1024V Digital Sound Card
- Harman Kardon® HK-195 Speakers
- 56K PCI Data Fax Modem for Windows®
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr At-Home Service,¹ 1-Yr 24x7 Phone Support

\$799 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-500207

Dimension™ 4400 Desktop

Superior Performance, Smart Value

- Intel® Pentium® 4 Processor at 1.60GHz
- 128MB DDR SDRAM at 266MHz
- 40GB Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., 27dp) E771 Monitor
- 16MB ATI® Rage™ Ultra Graphics Card
- 16X/10X/40X CD-RW Drive with Roxio's Easy CD Creator™
- SB Live! 1024V Digital Sound Card
- Harman Kardon® HK-195 Speakers
- 56K PCI Telephony Modem for Windows®
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr At-Home Service,¹ 1-Yr 24x7 Phone Support

\$999 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-500209

Dimension™ 8200 Desktop

Cutting-Edge Technology

- Intel® Pentium® 4 Processor at 1.80GHz
- 256MB RDRAM
- 20GB Ultra ATA/100 Hard Drive (7200 RPM)
- 17" (15.9" v.i.s., 27dp) E771 Monitor
- 64MB NVIDIA® GeForce2 MX Graphics Card with TV-Out
- 48X Max CD-ROM Drive
- 16X/10X/40X CD-RW Drive with Roxio's Easy CD Creator™ (2nd Bay)
- SB Live! 1024V Digital Sound Card
- Harman Kardon® HK-395 Speakers with Subwoofer
- 56K PCI Telephony Modem for Windows®
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr At-Home Service,¹ 1-Yr 24x7 Phone Support

\$1399 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-500213



Dell Home Notebooks

Inspiron™ 2500 Notebook

Practical and Affordable Mobility

- Intel® Celeron® Processor at 900MHz
- 14.1" XGA TFT Display
- 128MB shared PC100 SDRAM (256MB Max)
- 20GB Ultra ATA Hard Drive
- 24X Max CD-ROM Drive
- Intel® Integrated 3D™ AGP Video
- Sound Blaster™ Compatible
- 59Whr Li-Ion Battery
- Internal Mini-PCI 56K Capable Fax Modem
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr Mail-In Service, 1-Yr 24x7 Phone Support

\$1129 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-800211m

Inspiron™ 4100 Notebook

Uncompromising Performance in a Thin and Light System

- Intel® Pentium® III Processor at 1GHz-M featuring Enhanced Intel® SpeedStep™ Technology
- 14.1" Ultra XGA TFT Display
- 256MB 133MHz SDRAM (1GB Max)
- 20GB Ultra ATA Hard Drive
- 8X Max DVD-ROM Drive
- 32MB DDR 4X AGP NVIDIA® GeForce2 Go™ 200 Video
- Sound Blaster™ Compatible Sound with Wavetable
- 59 Whr Li-Ion Battery with ExpressCharge™ Technology
- Internal V.90/56K Modem and 10/100 Fast Ethernet Combo
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr Mail-In Service, 1-Yr 24x7 Phone Support

\$1729 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-800216m

Inspiron™ 8100 Notebook

The Ultimate Multimedia Notebook

- Intel® Pentium® III Processor at 1.2GHz-M featuring Intel® SpeedStep™ Technology
- 15" Super XGA+ TFT Display
- 384MB 133MHz SDRAM (512MB Max)
- 30GB Ultra ATA Hard Drive
- 8X Max DVD-ROM Drive
- 32MB DDR 4X AGP NVIDIA® GeForce2 Go™ Graphics
- Sound Blaster™ Compatible Sound with Wavetable
- 59 Whr Li-Ion Battery with ExpressCharge™ Technology
- Internal V.90/56K Modem and 10/100 Fast Ethernet Mini-PCI Combo
- MS® Windows® XP Home Edition, MS® Works Suite 2002
- 6 Months of America Online® Membership Included
- 1-Yr Limited Warranty, 1-Yr Mail-In Service, 1-Yr 24x7 Phone Support

\$2229 Ask us about no payments for 90 days for qualified customers
E-VALUE Code: 01032-800222m



Call: M-F 7a-9p, Sat 8a-5p CT

New Members Only. Must register for AOL within 30 days of invoice. To avoid paying monthly membership fees, cancel during the 6-month promotional period. Even during promo period, telephone access charges on your phone bill (call your phone co. for details) and surcharges for premium services and 800# access may apply, including in AK. Availability may be limited, especially during peak times. For new, 18+ U.S. members with major credit card or checking account only. Limited time offer.

Financing programs with availability may change without notice. Taxes and shipping charges apply, and your account programmed with their respective amounts. Delivery of goods is not responsible for return of shipping or processing charges. Not all states or territories are limited. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available.

Financing programs with availability may change without notice. Taxes and shipping charges apply, and your account programmed with their respective amounts. Delivery of goods is not responsible for return of shipping or processing charges. Not all states or territories are limited. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available.

Financing programs with availability may change without notice. Taxes and shipping charges apply, and your account programmed with their respective amounts. Delivery of goods is not responsible for return of shipping or processing charges. Not all states or territories are limited. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available.

Financing programs with availability may change without notice. Taxes and shipping charges apply, and your account programmed with their respective amounts. Delivery of goods is not responsible for return of shipping or processing charges. Not all states or territories are limited. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available.

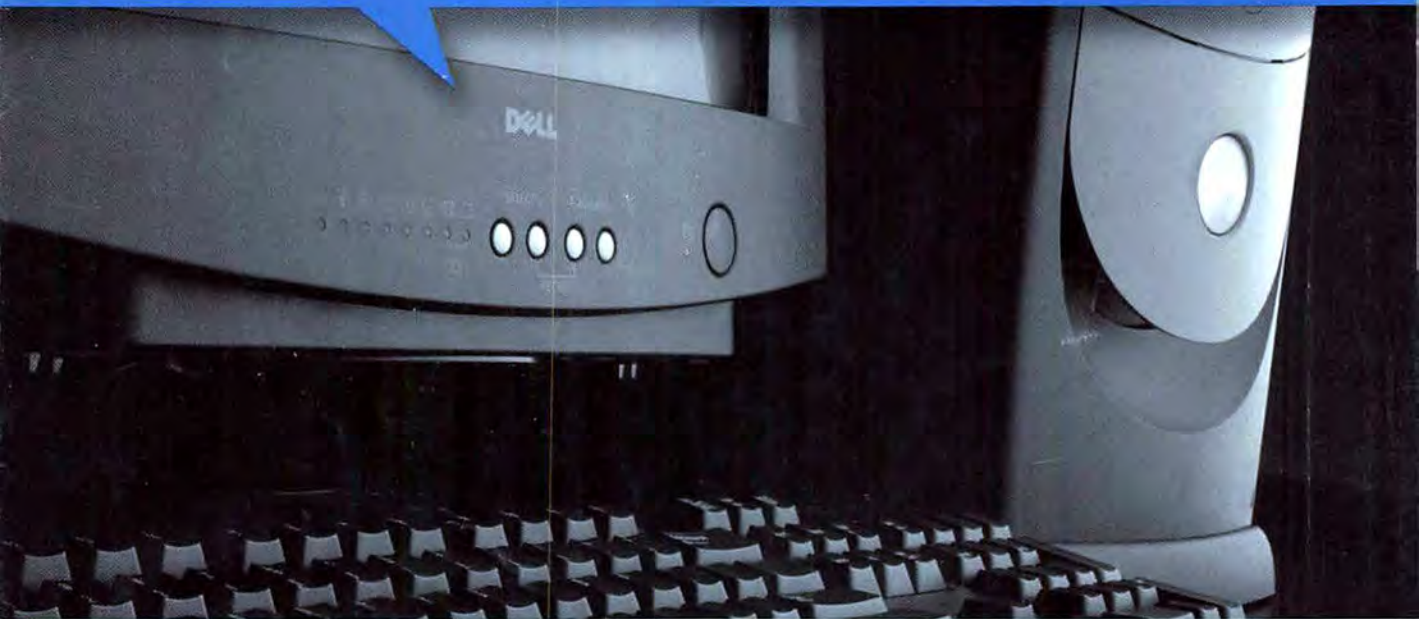
Financing programs with availability may change without notice. Taxes and shipping charges apply, and your account programmed with their respective amounts. Delivery of goods is not responsible for return of shipping or processing charges. Not all states or territories are limited. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available. Availability varies. All items on this site, services provided via third party providers with customer fees are also available.

Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

USE THE POWER OF THE E-VALUE CODE. Match our latest technology with our latest prices. Enter the E-VALUE code online or give it to your sales rep over the phone. www.dell.com/evale

The latest technology for less. Easy as **DELL**

Which is more impressive:
My Intel® Pentium® 4 processor or my price tag?



Dell | Home/Small Business

Dimension™ 4400 Desktop

NEW Superior Desktop Solution

- Intel® Pentium® 4 Processor at 1.6GHz
- NEW 128MB DDR SDRAM
- 20GB* (7200 RPM) Ultra ATA Hard Drive
- 19" (18.0" v.i.s.) M991 Monitor
- 64MB NVIDIA® GeForce2 MX Graphics
- 16x/10x/40x CD-RW Drive; Integrated Audio
- Harman Kardon® HK-395 Speakers with Subwoofer
- 56K PCI Data Fax Modem
- 10/100 PCI Fas; Ethernet Network Card
- MS® Windows® XP Home Edition, MS® Works Suite
- 1-Yr Next Business Day On-Site Service

\$1199 Quick! can **\$32/mo., 48 mos.***
E-VALUE Code: 01030-590211a

Recommended upgrade:

- MS® Windows® XP Professional, add \$99



The powerful, highly affordable **NEW Dimension 4400 desktop**. I'm the power and performance of an Intel® Pentium® 4 processor for a lot less than you ever thought possible. Which makes me an easy choice, whether you need a computer for home or for the office. My DDR SDRAM memory provides twice the transfer rate as SDRAM options and smoother graphics. And because you can work directly with Dell, you'll get the latest and greatest technology at an affordable price backed by award-winning service and support. I'm the impressive computer that keeps on impressing.

PC Magazine Readers' Choice Award

Service and Reliability
Dell Gets an "A" in Every Category
– August 2001



The latest technology, now within reach. Easy as **DELL™**

Visit www.dell.com/pcworld or call toll free **1-800-247-2095**.

 **USE THE POWER OF THE E-VALUE CODE.**
Match our latest technology with our latest prices. Enter the E-VALUE code online or give it to your sales rep over the phone. www.dell.com/evalue

Dell PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell